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

7-06
4 October 2006

FIRST REVIEW REPORT

APPLICATION A470

FORMULATED BEVERAGES

CONTENTS

Decision

FSANZ re-affirms its approval of the draft variations to the *Australia New Zealand Food Standards Code* (at Attachment 1) as notified to the Ministerial Council. This decision permits the voluntary addition of vitamins and minerals to formulated beverages because:

- the regulation of formulated beverages provides assurance for consumers regarding the protection of public health and safety by:
  - permitting the safe addition of vitamins and minerals to formulated beverages;
  - permitting the addition of vitamins and minerals to formulated beverages where an inadequacy or deficiency exists; and
  - setting a compositional requirement on the total sugar content of formulated beverages.
- regulation of formulated beverages ensures certainty for industry and provides informed consumer choice and prevents consumers being misled regarding the nutritional quality of the product;
- the variations to the Code meet FSANZ's statutory obligations and the COAG principles, and are therefore consistent with Ministerial policy guidance on voluntary fortification.
- the permitted range of vitamins and minerals is consistent with the principles of minimum effective regulation, the desirability of an internationally competitive food industry and the promotion of fair trading;
- the variations to the Code provide an effective regulatory framework within which industry can work efficiently and competitively;
- the inclusion of permissions for formulated beverages in the Code promotes equity by providing a regulation which enables the manufacture of formulated beverages in Australia;
- the explicit recognition of formulated beverages in the Code provides greater certainty for industry and reduces both the costs of compliance and enforcement; and
- the regulation impact assessment concludes that the net benefits of permitting formulated beverages outweigh any potential costs to affected parties.

Summary Table

MATTERS ADDRESSED IN THE FIRST REVIEW

MINISTERIAL COUNCIL ISSUE	FSANZ'S RESPONSE
1. Protection of public health and safety.	• Further assessment of the risk of sweetened beverages contributing to increased rates of obesity and dental caries/erosion. *Conclusions* *Based on the consumption pattern of formulated beverage consumers:* • *the population intake of sugar is highly unlikely to increase and could potentially be reduced therefore the risk from formulated beverages in promoting obesity and dental caries is minimal; and* • *formulated beverages will have minimal impact on the overall proportion of acidified beverages consumed by the population and therefore is unlikely to contribute to the risk of dental erosion.*
2. Consistency with existing policy guidelines set by the Ministerial Council. • Promote consumption patterns inconsistent with nutrition policies and guidelines of Australia and New Zealand • Promote increased consumption of foods high in sugar	• Additional consumer research obtained providing further information on consumer use and perceptions of different drinks and the key factors driving usage. • Provided further details on FSANZ's implementation of Ministerial Council's Policy Guideline (Attachment 2) requirements in relation to voluntary fortification not promoting increased consumption of foods high in sugar. *Conclusions* *The consumer research confirms the assumption at Final Assessment that formulated beverages are very unlikely to promote undesirable consumption patterns as:* • *most people who have consumed formulated beverages in the last 12 months have done so infrequently;* • *only a very small proportion of consumers of these products drink them more than once a week;* • *no Australian formulated beverage consumers drank them more than once every 3 or 4 days, while 1% of NZ consumers drank them every day and 1% every second day; and* • *18 to 24 year olds were the age group most likely to consume formulated beverages, followed by 14 to 17 year olds. However, even for these age groups, only a very small proportion consumes them more than once a fortnight.*

MINISTERIAL COUNCIL ISSUE	FSANZ'S RESPONSE
3. Provision of adequate information to enable informed choice.	• Consumer research commissioned to identify consumers understanding of formulated beverage products. *Conclusion* *The consumer research indicated that formulated beverage consumers understand the relative health merits of these products compared to other beverages.* • Further assessment of the bioavailability of the various forms of added vitamins and minerals. *Conclusion* *Formulated Beverages are considered to be comparable to other foods in their ability to deliver added vitamins and minerals to the human body*
4. Dietary data concerns • Out-of-date dietary data • Market share data	• Per capita beverage consumption data derived from more recent Australian market data (ACNielsen 2004) were cross-checked against the 1995 Australian National Nutrition Survey data to ensure validity of data used in the dietary intake assessments. • Additional market research data on consumption of formulated beverages in 2006 were also compared with data derived from the 1995 Australian National Nutrition Survey to ensure validity of the total amount of water based beverages assumed in the dietary modelling. *Conclusion* *The data obtained indicates that the 1995 and 1997 NNS consumption data being used to assess dietary nutrient intakes and food additive dietary exposures for this Application are relevant and reliable in terms of the total amount of water based beverages consumed.*

1. Introduction

In January 2006, the Australia and New Zealand Food Regulation Ministerial Council (Ministerial Council) requested a First Review of Application A470 – Formulated Beverages. This Application seeks to amend1 the *Australia New Zealand Food Standards Code* (the Code) to create a new standard permitting the addition of up to 16 vitamins and minerals2 to formulated beverages.

Formulated beverages are described as non-alcoholic, water-based, flavoured beverages containing claimable amounts of vitamins and minerals. They are examples of recent innovative drinks that represent a small but significant sector of the global beverage market.

[1] The amendments include variations to Standard 1.1.1 – Preliminary Provisions – Application, Interpretation and General Prohibitions, Standard 1.3.1 – Food Additives, Standard 1.3.2 – Vitamins and Minerals and Standard 2.6.2 – Non-Alcoholic Beverages and Brewed Soft Drinks.

[2] The Applicant is seeking permissions for a range of added vitamins and minerals (16) however based on the current market product profile it is unlikely that all permissions would be used in a single product.

Currently only three vitamins (vitamin C, folate and beta-carotene) are permitted to be added to general-purpose beverages including juices and fruit drinks containing at least 25% fruit juice.

The purpose of this First Review is to respond to the concerns raised by the Ministerial Council, as outlined in Section 3. The main focus of the Review is the likelihood of formulated beverages:

- being inappropriately substituted for other beverages;
- promoting the increased consumption of foods high in sugar; and
- creating the potential for consumers to be misled.

FSANZ has addressed these issues by seeking additional information from the Applicant, undertaking further assessments and engaging external expertise.

2. Objectives of review

The objective of the First Review is to reconsider the draft variations (at Attachment 1) notified to the Ministerial Council by FSANZ in December 2005 in light of the Council's concerns as outlined in Section 3.

3. Grounds for the review

A First Review was requested on the grounds that approval of the draft variations:

- does not protect public health and safety;
- is not consistent with existing policy guidelines set by the Ministerial Council; and
- does not provide adequate information to enable informed choice.

Additional comments provided by Ministers included the following:

- The Application is inconsistent with interpretation of the '*Specific Order' Principles – Voluntary Fortification* of the Ministerial Policy Guideline *Fortification of Food with Vitamins and Minerals* (at Attachment 2) in two key areas. Fortification of formulated beverages will promote:

    - increased consumption of foods high in sugar; and
    - consumption patterns inconsistent with nutrition policies and guidelines of Australia and New Zealand .

- voluntary permissions to add iodine and folate may compromise the capacity to evaluate future mandatory fortification programs;

- the estimated nutrition intake is based on the Australian National Nutrition Survey 1995 which is outdated and may not accurately reflect the consumption patterns of present diets.

4. Background

In June 2002, FSANZ received a paid Application from the Australian Beverages Council Limited[3] requesting the creation of a new standard in the Code for formulated beverages. Permissions for a range of food additives, excluding caffeine and carbon dioxide, the use of some fruit-based ingredients and sugar were also sought.

During the assessment process, the Applicant notified FSANZ that cordials were to be withdrawn from the scope of the Application. In addition, the requested number of vitamins and minerals permissions was reduced from 23 to 16.

In December 2005, the FSANZ Board approved the draft variations to the Code and notified the Ministerial Council. This decision permitted the voluntary addition of up to 16 vitamins and minerals to non-alcoholic, water-based, flavoured beverages with specific compositional criteria of a maximum 24 % fruit ingredients and 7.5 grams of sugar per 100 ml.

In January 2006, the Ministerial Council sought a First Review of the draft variations to the Code. FSANZ sought an extension until 30 September 2006 to complete this Review. This was to allow FSANZ more time to undertake additional work to strengthen the evidence base in relation to the impact of formulated beverages on consumer behaviour and to further explore the impact of formulated beverages on dietary consumption patterns. As part of this work, FSANZ commissioned Roy Morgan to undertake consumer research to examine the likely responses of consumers to this group of beverages.

5. Ministerial Council Review Grounds

The First Review of the draft variations to the Code has been undertaken addressing the matters stated in the Ministerial Council's request (as listed above) and also having regard to the ministerial policy guidance on vitamin and mineral fortification.

One of the key issues underpinning the review request relates to the impact of formulated beverages on consumer behaviour, and subsequent changes to dietary consumption patterns. Specifically, concerns have been raised in relation to:

- a lack of evidence and data to understand the impact of formulated beverages on consumer behaviour and consumption patterns, particularly the potential for formulated beverages to promote increased consumption of foods high in sugar;

- the potential for formulated beverages to replace healthier beverage options;

- the consumption of formulated beverages by children, particularly as children may already consume too many 'extra' foods and beverages; and

- the potential for consumers to be mislead regarding the nutritional quality of formulated beverages to consumers, particularly as formulated beverages may have higher levels of sugar than other beverage choices.

[3] Formerly known as the Australasian Soft Drink Association Limited.

These concerns about the impacts on consumers stem from a paucity of data and information about consumer motivations and behaviours towards relatively new categories of foods and beverages. Recognising this, FSANZ sought additional information concerning the impact of formulated beverages on consumers' behaviours and consumption patterns from the Applicant. Additional data was either not available or could not be provided due to its commercial-in-confidence nature.

5.1 Consumer research

To respond to the concerns raised in the First Review, in July 2006 FSANZ commissioned Roy Morgan Research Pty Ltd, a member of FSANZ's market research panel, to carry out consumer research in both Australia and New Zealand. A summary of the key research findings is provided below. A copy of the full report Roy Morgan Research *Formulated Beverages Survey* is at Attachment 3.

5.1.1 Methodology

A two phase approach was adopted to collect relevant consumer information and data. The first phase involved in-depth interviews to provide information to develop a questionnaire for data collection in the second phase. This is a standard methodology widely used in survey design.

5.1.1.1 Phase one: in-depth interviews

Eight in-depth interviews were carried out with selected Australian and New Zealand consumers.
The interviews were used solely to gain insights into the breadth of responses to formulated beverages to ensure that drafting of the questionnaire included relevant and meaningful questions. This phase of the research was preparatory. Importantly, the in-depth interviews were used to clarify the terms and concepts that consumers use to categorise and refer to formulated beverages. While regulators and industry may readily classify formulated beverages as a particular class of beverages, the in-depth interviews confirmed that some consumers do not readily distinguish formulated beverages from some other types of non-carbonated beverages such as sports drinks. This had implications for the design of the questionnaire used in the second phase of the research.

5.1.1.2 Phase two: online survey

Data collection in the second phase of the research used an on-line survey of a representative sample of Australian and New Zealand consumers aged 14 years and older. The questionnaire was developed by FSANZ in conjunction with Roy Morgan Research. A key feature was the use of pictures of currently available formulated beverages on the Australian and New Zealand market to ensure that participants were responding to formulated beverages and not other beverages that they may confuse with them. This was noted during phase one of the research and care was taken in the questionnaire design to ensure that participants were referred to particular brands of existing formulated beverages rather than a more general category that could be misinterpreted. In Australia the brands of visual stimuli used were: *Mizone, G Force, Thorpedo, Play, Temple Hydrotherapy* and *Waterplus*. In New Zealand, *Mizone*, *G Force Aquashot, E_2*, and *Charlies Sportswater* brands were used.

Particular care was taken to ensure the group surveyed was representative of the Australian and New Zealand populations. The survey sample was a quota-based sample including ages and locations to ensure a representative spread of respondents from across age ranges and across both urban and rural Australian and New Zealand communities. Individuals were invited by email from Roy Morgan Research's on-line panel of more than 50,000 participants. The survey was open during the period of Friday 21 July 2006 until Monday 31 July 2006. This is the period just following school holidays in a number of states, a time when treats such as drinks may be more commonly consumed. Conversely the survey took place in the middle of winter, a time when consumption of cold beverages may be reduced. While acknowledging the uncertainties the survey timing may introduce, the questionnaire was designed to limit timing biases.

Representativeness of the sample was ensured through a two stage process. Initially the demographic characteristics of those completed the survey were checked against those who did not respond. This ensured that there was no systematic bias in the non-response that needed to be explored. In the second stage, the sample was statistically analysed to check it against the Australian and New Zealand census data to ensure the online sample was demographically representative of the broader Australian and New Zealand populations. As there were some slight differences between the sample and the population, the sample was weighted to reflect the population accurately. The characteristics of the sample are provided at Attachment 4. The data discussed in subsequent part of this section draw on weighted data reflecting the Australian and New Zealand communities.

5.1.2 Key findings

- Most people who have consumed formulated beverages in the last 12 months have done so infrequently.

- Only a very small proportion of consumers of these products drink them more than once a week.

- No Australian formulated beverage consumers drank them more than once every 3 or 4 days, while 1% of NZ consumers drank them every day and 1% every second day.

- 18 to 24 year olds were the age group most likely to consume formulated beverages, followed by 14 to 17 year olds. However, even for these age groups, only a very small proportion consumes them more than once a fortnight.

- There are no socio-economic or gender differences between people who consume these products and those who don't.

- Formulated beverage consumers understand the relative health merits of these products compared to other beverages.

- Consumers of these products eat the same amounts of fruits and vegetables as non-consumers, and formulated beverages consumers have significantly higher levels of exercise than non-consumers.

5.1.2.1 Who drinks formulated beverages?

The consumer research found formulated beverages had been tried, on at least one occasion in the last 12 months, by 28.1% of all Australians aged 14 or older and 60.5% of all New Zealanders aged 14 or older (see Table 1). The difference between the two countries[4] was statistically significant which reflects the relative maturity of the New Zealand market.

Table 1: Proportion of people who have tried formulated beverages at least once

	Australia	New Zealand	Total
Tried formulated beverage	28.1%	60.5%	33.3%
Never tried formulated beverage	71.9%	39.5%	66.7%

Note: Weighted proportions

The majority of Australians and New Zealanders were not regular formulated beverage drinkers, with most having tried a formulated beverage only once or twice (see Table 2). Regular drinkers of formulated beverages are those who consume formulated beverages at least once a fortnight.

There are a significantly higher proportion of regular drinkers of formulated beverages in New Zealand than in Australia[5], with 13% of New Zealanders regularly drinking formulated beverages compared with 2% in Australia[6].

Table 2: Frequency of formulated beverage consumption

	Australia		New Zealand	
	Total	Formulated Beverage Drinkers	Total	Formulated Beverage Drinkers
Not A Regular Drinker, Only Tried Them Once Or Twice	19%	69%	28%	46%
Once Every Few Months	5%	17%	13%	22%
Once A Month	2%	6%	7%	12%
Once A Fortnight	1%	2%	6%	9%
Once A Week	1%	3%	3%	4%
Once Every Three Or Four Days	0%	2%	3%	4%
Every Second Day	0%	0%	1%	1%
Once A Day or More Frequently	0%	0%	0%	1%
Regular formulated beverage drinkers	2%	100%	13%	100%
Total tried formulated beverage	28%		61%	

Note: Weighted proportions

[4] χ^2=237.8, d.f.=1, p<0.001.
[5] χ^2= 85.1, d.f. =1, p<0.001.
[6] Note, throughout this discussion, regular formulated beverage drinkers are those that drink formulated beverages at least once a fortnight.

The reference quantity for formulated beverages is 600 ml. The research found the estimated quantity of consumption for those who drink formulated beverages at least once a week is 2.8 (600 ml) bottles per person per week.

Demographically, there were no differences in the level of formal education and the level of household income between those who regularly drink formulated beverages and those who do not. Similarly, females and males were equally represented among those who regularly drink formulated beverages and those who do not.

There was no discernable relationship between age and the regular consumption of formulated beverages.

In both countries, the highest proportion of consumers who drank these products once a fortnight or more within a single age cohort was the 18 to 24 year old age group. The second highest proportion in New Zealand was the younger age group of 14 to 17 year olds, whilst in Australia the second highest proportion of regular drinkers were the 35 to 44 year olds.

5.1.2.2 Are young people consumers of formulated beverages?

The impact of formulated beverages on young people was a concern raised in the first review request. Data for this particular age group was analysed to better understand the consumption patterns and behaviour in response to formulated beverages.

In summary, of Australian 14-17 year olds:

- 62% have tried at least one formulated beverage in the last 12 months;
- 2% have consumed a formulated beverage at least once a fortnight, but none drank them more than once every three or four days; and
- young Australian consumers, who drank these products at least once a fortnight, drink on average 1.4 bottles (600 ml) per person per week.

In summary, of New Zealand 14-17 year olds:

- 87% have tried at least one formulated beverage in the last 12 months;
- 16% consumed a formulated beverage at least once a fortnight; and
- young New Zealand consumers, who consume these products once or fortnight or more, drink on average 1.4 bottles (600 ml) per person per week.

5.1.2.3 Why do consumers drink formulated beverages?

The main reason people gave for drinking a formulated beverage was sampling a new brand of drink in response to curiosity about the brand. Advertising, taste, being healthy and value for money were also important motivations for the first trial of a formulated beverage.

There were some notable differences between regular drinkers (that is those who drank these beverages at least once a fortnight) and others in terms of healthiness. While aspects of healthiness were important for both regular drinkers and others, the different aspects had different levels of importance for each group. Regular drinkers of formulated beverages considered the presence of vitamins and minerals and quick re-hydration more important in their choice of drinks than those who do not drink formulated beverages or do not drink them regularly.

While both regular drinkers and others considered the quality of 'keeps me healthy' important in choosing a drink, this was significantly more important in drink choices for those who do not regularly drink formulated beverages.

A more general scale seeking to quantify the level of healthy consciousness through purchasing behaviour did not find statistically significant differences between those who were regular drinkers of formulated beverages and those who were not.

5.1.2.4 Do formulated beverages supplement or replace other beverages?

An issue raised in the Ministerial review request was whether formulated beverages supplement or substitute fluid intakes; and if the latter, what types of beverages were being replaced with formulated beverages? The research found that among regular formulated beverage drinkers, approximately one third increased their fluid intake, one third substituted current intakes with formulated beverages and one third both increased and supplemented their intakes (see Table 3).

Table 3: Supplementation and substitutions responses

Supplementation/Substitution response	Regular FB drinkers
Increases total daily fluid intake	30.0%
Both increases total daily fluid intake and replaces some other drink	32.1%
Replaces some other drink	37.9%

Note: Weighted proportions

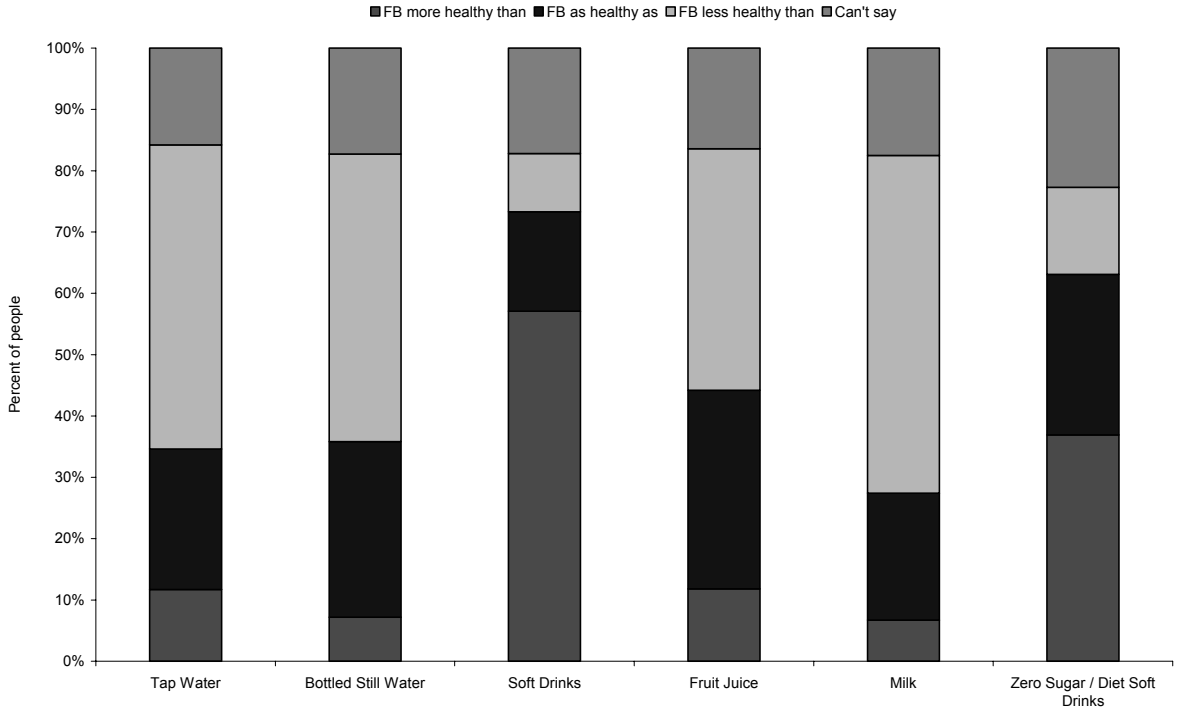
As a single category of beverage, water (in all its forms and containing no additives) was substituted by formulated beverages on at least one occasion by 43.5% of regular formulated beverage drinkers. Around 20% of individuals substituted tea/coffee or soft drinks with formulated beverages.

5.1.2.5 Are consumers misled by formulated beverages?

The Review Request highlighted concerns that consumers may be misled about the benefits of formulated beverages in comparison to other beverage options. However, the research showed that consumers do hold accurate perceptions of formulated beverages in terms of their overall healthiness, sugar levels, and vitamin and mineral content relative to other beverages.

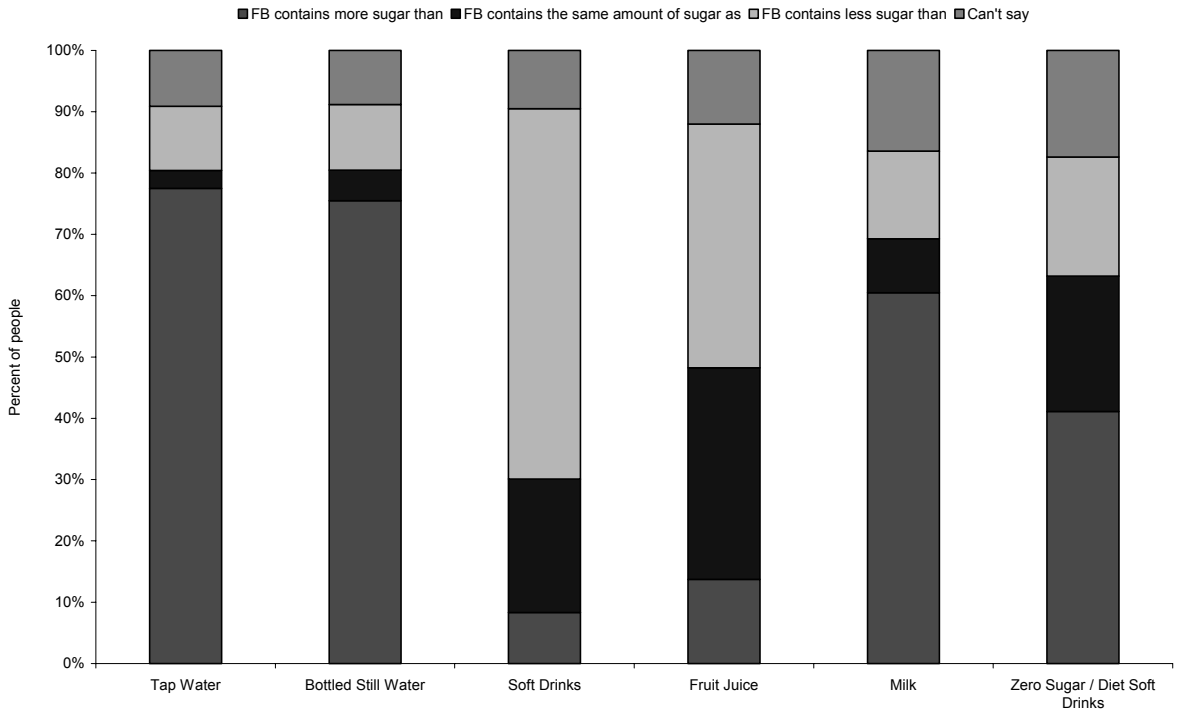
In terms of overall healthiness, the majority of consumers held the accurate perception that formulated beverages are 'less healthy' than water (bottle and tap) and milk (Figure 1). Similarly, the majority of consumers accurately perceived formulated beverages to be 'more healthy' than soft drinks, and to a lesser extent low sugar soft drinks. With fruit juice, consumers were split in their perceptions between the view that fruit juice was 'as healthy as' formulated beverages or was 'more healthy' than formulated beverages.

Figure 1: Perceptions of formulated beverage healthiness



In terms of sugar the majority held the accurate perception that formulated beverages contained more sugar than the waters and milk (Figure 2). Similarly the majority held the accurate perception that formulated beverages contained less sugar than soft drinks. For fruit juices, the majority were split between saying formulated beverages had about the same level of sugar or less sugar.

Figure 2: Perceptions of formulated beverage sugar levels



Perceptions regarding vitamin and mineral content were simpler than overall healthiness and sugar levels. The majority of consumers held the accurate perception that formulated beverages contained more vitamins and minerals than waters (tap and bottle) and soft drinks (normal and low sugar). For both milk and fruit juices, perceptions varied with no clear majority.

5.1.2.6 Does the consumption of formulated beverages impact on consumers' diet and lifestyle choices?

The issue of the broader impacts of formulated beverages on regular drinkers diet and lifestyle choices related to the extent to which formulated beverages would be perceived as a 'silver bullet' that can provide greater health benefits than they are clinically able to do. To explore this issue fully, the research included several exploratory questions to determine: Firstly, whether regular drinkers of formulated beverages consume lower levels of fruit and vegetables because they believe they can supplement their intake through formulated beverages, and secondly, whether regular drinkers undertake less exercise because they perceive formulated beverages to be a lower energy options than soft drinks? In both scenarios, the answer was 'no'.

Regular formulated beverage drinkers were significantly more likely to undertake higher levels of exercise than those who do not drink formulated beverages or those who do not drink them regularly (Table 4).

Table 4: Exercise levels

Exercise levels	Regular FB drinkers	Others
Sedentary	6.3%	9.3%
Low	34.0%	41.7%
Medium	30.0%	35.5%
High	29.7%	13.5%

Note: Weighted proportions
Distributions are significantly different (χ^2=7.98, d.f. =3, p<0.05)

There were no significant difference in the number of serves of vegetables and fruit per day that regular formulated beverage drinkers and others consumed. Similarly there were no significant differences in the proportion of each group who satisfied Australia's National dietary guideline recommendations of consuming 5 serves of vegetables and 2 serves of fruit per day.

5.1.3 Conclusion

The consumer research conducted by Roy Morgan Research Pty Ltd re-affirms the assumptions made by FSANZ at Final Assessment in relation to the impact of formulated beverages on consumer behaviour. Key findings from the research confirmed that:

- Australians and New Zealanders across all genders, age groups, and socio-economic groups consume formulated beverages;

- the frequency of consumption is relatively low, with 2 % and 13 % of Australians and New Zealanders respectively consuming a formulated beverage at least once a fortnight;

- the highest proportion of regular drinkers of formulated beverages in both Australia and New Zealand were those aged 18-24 years old;

- young people (14-17 year olds) are not more likely to be regular drinkers of formulated beverages compared to the whole population 14 years and over;

- formulated beverages are equally used by consumers to both supplement fluid intake or to replace another beverage, with the most commonly replaced beverages being water, tea/coffee or soft drinks; and

- consumers do hold accurate perceptions of formulated beverages in terms of their nutritional content relative to other beverages.

5.2 Protection of public health and safety

5.2.1 Current consumption patterns and dietary modelling

The Ministerial Council request raised specific concerns about whether the consumption data underpinning the dietary modelling assessment for Application A470 (based on 1995 or 1997 NNS) food consumption data reflects current consumption patterns.
The NNS data provide the best estimate of the actual consumption of food and beverages for each person in the survey and thus allow for estimates of nutrient intakes or food additive exposure for the population or sub-groups of the population. There are no other data sets that have more recent detailed food consumption data recorded on an individual basis.

Since 1995-1997 the consumption amounts of some food groups may have changed, while other new foods have been introduced into the market. Therefore, at Final Assessment the estimates of beverage consumption derived from the 1995/97 NNS were checked against the data derived from ACNielsen ScanTrack (Australian Beverages Council Ltd, 2005) for the 2004 Australian market to ensure that current beverage consumption levels used in the modelling were valid. The ACNielsen ScanTrack data are 'apparent' consumption data only (mean consumption per capita based on total sales volumes), not actual consumption patterns as reported in national nutrition surveys.

The per capita consumption of soft drinks, still water, energy drinks, mixers, mineral waters, sports drinks and juice drinks determined from the ACNielsen ScanTrack data was 310 ml/capita/day (Australian Beverages Council Ltd, 2005). This was in the same range as the figure of 341 g/person/day determined from the 1995 NNS for respondents aged 2 years and above.

The ACNielsen ScanTrack data indicated that the NNS consumption data being used to assess dietary nutrient intakes and food additive dietary exposures for this Applicant are relevant and reliable in terms of the **total** amount of water based beverages consumed.

5.2.2 Implications of consumer research on dietary modelling

FSANZ has compared the level of formulated beverage consumption reported in the 2006 consumer research to the Final Assessment estimates of formulated beverage intakes for various Australian and New Zealand population sub-groups. The consumer research showed that for those who drink formulated beverages at least once per week, the average quantity of consumption was 2.8 bottles per person per week (1,680 ml per week based on a 600 ml bottle size, equivalent to 240 ml per day). For the population group aged 14-17 years old, the average consumption of formulated beverages was 1.4 bottles per week (840 ml per week based on a 600 ml bottle size, equivalent to 120 ml/day). In comparison, the dietary modelling based on the 1995 NNS assumed for the same group of 14-17 year olds a formulated beverage consumption of 795 ml/day daily (see Attachment 5).

This comparison demonstrates that the assumption about the amount of formulated beverage consumed that was included in the dietary modelling at Final Assessment was an overestimate. The actual impact of allowing formulated beverages on the market on total nutrient intakes or total food chemical exposure is therefore likely to be less than that predicted at Final Assessment.

5.2.3 Sugar content of formulated beverages

At Final Assessment, FSANZ proposed a compositional criterion of 7.5 g of sugar per 100 ml for formulated beverages. This was applied on the basis that sugar was the predominant energy source in formulated beverages, and that formulated beverages would most likely be positioned in the market as 'healthier' beverage alternatives.

5.2.3.1 The dietary modelling outcomes

In the Final Assessment the current consumption patterns for non-alcoholic water based beverages based on the ACNielsen ScanTrack data were used to determine whether substitution of selected non-alcoholic beverages (soft drinks, still water, energy drinks, mixers, mineral waters, sports drinks and juice drinks) by formulated beverages would increase total sugars intakes from non-alcoholic beverages.

The dietary modelling of sugar intakes at Final Assessment showed that if all manufacturers produced formulated beverages with sugar contents at the maximum permitted i.e. 7.5 g/100 ml, then a small increase in mean population sugar intakes by 4 g (54 kJ) would occur (up to 22% increase in total sugars from non-alcoholic beverages or approximately 4% from the whole diet).

This outcome was considered to be an overestimate because the dietary modelling assumed that all formulated beverages would have sugar contents at the maximum permitted level, and that 100% of like-beverages[7] would be substituted by a formulated beverage product. Consumer research undertaken since Final Assessment also confirms that this assumption was likely to overestimate the amount of formulated beverages consumed, with only 21% of Australian and 32% New Zealand consumers reporting that they would substitute an existing beverage for a formulated beverage product.

[7] Soft drinks, bottled waters, energy drinks, mineral waters, sports drinks, juice drinks and cordials. Fruit juice was not considered to be a 'like-beverage'.

It should be noted that the recent consumer research indicated that consumers may substitute tap water, tea, coffee or fruit juice with formulated beverages. These options were not included in the dietary modelling at Final Assessment. Substitution of tap water will increase sugar intakes whereas substitution of fruit juice may decrease sugar intakes (sugar content 7–10%). The impact of substituting tea and coffee with formulated beverages is unknown because discretionary sugar may be added to these beverages. However, the impact of any changes in substitution patterns to that assumed at Final Assessment is likely to be small in comparison to the overall impact of the reduced amount of formulated beverages actually consumed compare to that used in the modelling (see 5.2.1).

Therefore, FSANZ reaffirms its conclusion at Final Assessment, that the introduction of a formulated beverages category (with a 7.5 g/100 ml maximum sugar requirement) is unlikely to increase population sugar intakes. Given the size of the substitution overestimate, it is even possible that a reduction in overall mean population sugar intakes may occur.

5.2.3.2 Reference quantities and serving sizes

A reference quantity of 600 ml was allocated to formulated beverages so that the labelling of vitamins and mineral content claims on these products could be regulated under Standard 1.3.2 – Vitamins and Minerals of the Code. Reference quantity values are used in Standard 1.3.2 to determine the maximum claim that can be made on the added vitamins and minerals within a food; e.g. 2.5 mg niacin (25% RDI) per 600 ml. However, the reference quantity does not determine the potential range of serving sizes that will be available at a retail level. For example, it is possible that formulated beverages will be available in smaller serving sizes (e.g. 250 ml) even though their claiming permissions are based on a different volume. The serving sizes of currently available formulated beverage products are generally larger than the standard serving size for soft drinks, juices and cordials. Concern has been raised by the Ministerial Council that these larger serving sizes combined with a maximum sugar restriction of 7.5 g/100 ml could elevate population sugar intakes, and that restricting the serving size of formulated beverages would be a potential means of addressing this concern. However, the consumer research obtained since Final Assessment shows that even with 600 ml serving sizes available, consumers only drink formulated beverages at an average 120 ml/day (1.4 bottles/week). Therefore, FSANZ considers that the low level of consumption for formulated beverages makes a restriction on the serving size of these products unnecessary, especially when similar beverages (with higher sugar concentrations and greater consumption levels) are not subject to such restrictions.

5.2.3.3 Consistency with health claims disqualifying criteria

Comments were received from the Ministerial Council stating that the health claims disqualifying criteria on sugar content should be consistent with the sugar restriction applied to formulated beverages. It should be noted that the maximum 7.5 g/100 ml sugar requirement proposed for formulated beverages does not relate to permissions for claims.

As part of Proposal P293 – Nutrition, Health and Related Claims:

- foods displaying nutrition content claims only (e.g. 'contains *nutrient*') will not be subject to generic disqualifying criteria, but if they carry claims about vitamins and minerals the food must comply with the current requirements of standard 1.3.2;

- in order to make a pre-approved, high level health claim (e.g. '*nutrient* helps reduce the risk of osteoporosis'), it is proposed that a liquid will need to contain 4.5 g sugar/100 ml or less, assuming the food is not disqualified by other nutrients such as energy, sodium or saturated fat, and subject to relevant qualifying criteria; and

- with respect to general level health claims, it is proposed that the current requirements of Standard 1.3.2 will still apply to claims in relation to vitamins and minerals i.e. the beverage would need to be a 'claimable' food at least until further review of Standard 1.3.2.

The implications of the above are that water-based beverages containing less than or equal to 4.5 g sugar/ 100 ml (subject to other criteria) will potentially be able to make either general level or high level claims; and water-based beverages containing 4.6–9.9 g sugar/ 100 ml will (at least until further review of Standard 1.3.2) be able to make general level health claims.

The maximum 7.5 g/100 ml sugar requirement is a compositional measure, and is intended to regulate the sugar profile of all formulated beverages regardless of whether these products display certain claims or not. The level has been set because formulated beverages will most likely be positioned as 'healthier' beverage alternatives and applying a compositional requirement for sugar assists in maintaining the integrity of the product range and minimises any ambiguity with other categories of water-based beverages.

Disqualifying criteria in relation to health claims will be released for further public comment in November 2006 as part of the Preliminary Final Assessment Report for Nutrition, Health and Related Claims. It should also be recognised that vitamin and mineral content claims will be subject to future work by FSANZ in addition to the health claims work.

5.2.4 Risk of obesity, dental caries and dental erosion

The reported increasing prevalence of obesity in Australia and New Zealand is a significant public health concern for both countries. Dental health is also a significant public health issue, as dental diseases continue to place a high financial burden on Australian and New Zealand health systems. It is for these reasons that FSANZ paid particular attention at Draft and Final Assessments to the risks of developing obesity and dental caries/erosion that may occur with increased formulated beverage intake.

Changes have been made to the material on dental caries and dental erosion to reflect additional evidence since the Final Assessment Report, although the material on sugar-containing beverages and overweight/obesity has remained unchanged as no new material has been identified. FSANZ also notes that a recently published meta-analysis on the association between sugar-containing beverages and overweight/obesity (Malik *et al*., 2006) has captured a similar evidence base to that provided at Final Assessment.

The findings of the revised dental health assessment remain the same as at Final Assessment even though more information has been obtained; that is, there are associations between an increased intake of sugar-containing beverages and the development of dental caries, and between the consumption of acidic beverages and dental erosion.

An updated discussion on the literature relevant to sugar-containing beverages and dental caries, and on acidic beverages and dental erosion can be found at Attachment 6.

5.2.4.1 Impact of Formulated Beverages on Population Sugar Intakes

As discussed in section 5.1.1.1, the Final Assessment modelling of population sugar intakes, combined with additional consumer data on formulated beverage consumption patterns, indicates that the introduction of formulated beverages onto the market is likely to have a very limited influence on population sugar intakes. Consumer consumption data obtained since Final Assessment also shows that the level of formulated beverage intake is likely to be relatively low and therefore will have a minimal impact on the overall proportion of acidified beverages consumed as part of individual diets.

5.2.4.2 The risk of childhood obesity

Comments have been made by the Ministerial Council about the potential impact of formulated beverage consumption specifically on children, and that the proposed maximum 7.5 g/100 ml sugar requirement will be inadequate to manage the risk of obesity in children.

The dietary modelling of sugar intakes provided at Final Assessment and the additional consumer information obtained since Final Assessment have been based on 'apparent' consumption data (i.e. the sugar available in the food supply) and cannot be used to determine changes in total sugars intakes for specific population sub-groups such as children.

However, as a means of addressing the impact of formulated beverages on children, FSANZ has further reviewed NNS data on the consumption patterns for this age group (2-18 years). This information has some inherent uncertainty due to the potential shift in beverage consumption patterns over the last 10 years (hence the previous use of AC Nielsen ScanTrack data for the modelling of sugar intakes), and continues to be insufficient for a quantitative analysis of sugar intakes in children. However, these data give a general idea of how beverage consumption patterns in children differ to those for the entire population (see Table 5 below).

Table 5: Estimated percentage of various Australian population groups consuming beverages that have higher sugar contents than formulated beverages[#]

Population Group	No. of Respondents	% population consuming beverages* with higher sugar content than formulated beverages**	% population consuming beverages* with lower sugar content than formulated beverages**
2-18 years	3007	69	10
19 years and above	10851	34	12
2 years and above	13858	41	11

Data used in this analysis is from the 1995 Australian National Nutrition Survey. A New Zealand assessment has not been conducted, as consumption data are unavailable for 2-14 year olds.

* Beverages are defined as those products that may be substituted with formulated beverages (fruit juice drinks, cordials, soft drinks, mineral waters, sports drinks and bottled waters).

** It is assumed that all formulated beverages will contain sugar at the proposed maximum restriction of 7.5 g/100 ml.

The results in Table 11 show that children consume a much higher (nearly 100%) proportion of higher sugar-containing beverages than the remainder of the population. Therefore, the substitution of these beverages with a formulated beverage (containing up to a maximum 7.5 g/100 ml sugar) is likely to have a greater impact on lowering their energy intake than would be the case for the rest of the population. As such, the risks of overweight/obesity and dental caries are not expected to be any greater for children than the rest of the population.

5.2.4.3 Decreasing population sugar intakes

FSANZ notes the comments made by the Ministerial Council that population sugar intakes are already too high, and that decreased consumption of current sugar intakes is required rather than the maintenance of current intakes. However, the Ministerial policy guidance in its specific order principles for voluntary fortification states that:

> *The permission to fortify should not promote consumption patterns inconsistent with the nutrition policies and guidelines of Australia and New Zealand;* and
>
> *The permission to fortify should not promote increased consumption of foods high in salt, sugar or fat.*

The impact on sugar intakes identified in the dietary modelling is consistent with this policy guidance. The introduction of formulated beverages is unlikely to increase *per capita* total sugar intakes. Also, the Dietary Guidelines state that sugar-containing beverages should be consumed in moderation (Australia), or that beverages with low sugar contents should be consumed to reduce energy intakes (New Zealand). As many beverages contain higher levels of sugar than the maximum 7.5 g/100 ml restriction proposed for formulated beverages, FSANZ considers that the introduction of a formulated beverages category is consistent with these dietary guidelines, as it is unlikely to increase population sugar intakes and/or will provide lower sugar-content beverage options for consumers.

5.2.5 Nutritional Need for the Added Vitamins and Minerals

5.2.5.1 Impact of Nutrient Reference Values

FSANZ was aware of the process to develop NHMRC/MoH Nutrient Reference Values during the Final Assessment for Application A470. At that time, the values of the proposed vitamins and minerals were in draft form, and therefore FSANZ could not be certain that these values would reflect the final NHMRC/MoH recommendations.

However, FSANZ has now been able to compare the finalised Estimated Average Requirement values recommended by the NHMRC/MoH to those that were used at Final Assessment (from the United States or the United Kingdom).
Table 6 below shows how the NHMRC/MoH values represent an increase, decrease or no change from the overseas Estimated Average Requirements.

Table 6: Summary of the impact from the introduction of the NHMRC/MoH Nutrient Reference Values

Vitamin / Mineral	Overall Direction of Change from Overseas to NHMRC/MoH Estimated Average Requirements
Thiamin	↑
Folate	↑
Vitamin B_{12}	↑
Vitamin C	↑
Calcium	↑
Phosphorus	↑
Selenium	↑
Vitamin A	No change
Niacin	No change
Vitamin B_6	No change
Iron	No change
Zinc	No change
Riboflavin	↓
Magnesium	↓
Vitamin E	Converted to AI
Copper	Converted to AI

The Estimated Average Requirement for the first seven vitamins and minerals has increased. This means that a greater proportion of the population can be identified as having an inadequate intake of the vitamin or mineral (note that inadequacy has been defined as > 3% of the population with an intake below the Estimated Average Requirement).

This increase does not affect the overall determination of a nutritional need for folate, calcium or selenium, as these nutrients were previously identified as having an inadequate population intake. Thiamin, vitamin B_{12}, vitamin C, and phosphorus were assessed as having adequate population intakes, however it is unlikely that these outcomes would change as the dietary modelling for Application A470 showed that Australian and New Zealand intakes of these nutrients are currently at very high levels (across all age groups).

The Estimated Average Requirements recommended by the NHMRC/MoH for riboflavin and magnesium are lower than overseas Estimated Average Requirements, although this reduction has occurred mostly with the values for very young age groups. A lowering of the Estimated Average Requirement has the effect of reducing the proportion of the population identified as having an inadequate intake. However, both riboflavin and magnesium had significant levels of inadequacy identified across the population, especially in adult population groups (inadequacies ranged from 5-30% population intakes below the Estimated Average Requirement for various population subgroups). Therefore it is likely that a level of inadequacy would still be identified for these nutrients even though the use of NHMRC/MoH values may reduce the proportion of the population with intakes below the Estimated Average Requirement.

NHMRC/MoH Estimated Average Requirements for vitamin A, niacin, vitamin B_6, iron and zinc are very similar to their overseas counterparts, and therefore the assessment on the nutritional need for these nutrients does not change.

There has been a substantial change in the recommendations for Vitamin E and copper, with the allocation of an Adequate Intake values instead of an Estimated Average Requirement. An Adequate Intake value is not suitable for determining the adequacy of population intakes, and FSANZ previously determined that nutrients with an Adequate Intake would not be assessed as having an inadequate population intake. Therefore, the change to an Adequate Intake does not pose a significant problem for these nutrients, as Australian and New Zealand populations were previously identified as having an adequate intake of copper, and an Estimated Average Requirement was not used in the process of determining vitamin E's nutritional need.

In summary, the application of the NHMRC/MoH Nutrient Reference Values has little impact on the results of the nutritional needs assessment provided by FSANZ at Final Assessment.

5.2.5.2 Consideration of Mandatory Iodine and Folic Acid Fortification

FSANZ is currently assessing mandatory fortification of the food supply with iodine and folic acid. In undertaking these assessments, FSANZ has considered the impact of voluntary fortification practices on overall population iodine and folic acid intakes. Although the issues of iodine and folic acid mandatory fortification are still under consideration, the Draft and Final Assessment Reports have indicated that not only will population intakes remain at safe levels with both mandatory and voluntary fortification of foods with iodine and folic acid, but that voluntary fortification permissions may make a significant contribution to Australian and New Zealand iodine and folic acid intakes. FSANZ will assess the ongoing impact of voluntary fortification permissions on future mandatory fortification programs as part of its broader fortification review. Further information in relation to this review is provided in Section 5.4.1.

5.2.6 Excess intake of vitamins and minerals

The potential for formulated beverages to increase health risks from over-consumption of vitamins and minerals was given full consideration at Final Assessment. In undertaking this risk assessment, FSANZ applied an Upper Level to each of the proposed vitamin and mineral additions. The Upper Level is the highest intake, including potential intakes from supplements, that is likely to pose no adverse health risk for almost all individuals in the specified life stage group. The Upper Level is not a recommended level of intake. An individual who exceeds the Upper Level will have an increased risk of experiencing adverse health effects, however an excess intake does not necessarily guarantee that these effects will occur.

5.2.6.1 Impact of changes to Upper Levels

FSANZ used overseas Upper Levels in its previous assessments for Application A470. The introduction of Australian and New Zealand Upper Levels by the NHMRC/MoH has little effect on these previous assessments, as most of the Upper Levels are similar to those used at Draft and Final Assessments.

However, there are three nutrients that have substantially different Upper Levels: vitamin B_6, vitamin D and iron. The NHMRC/MoH Upper Levels for vitamin B_6 and vitamin D are higher (and thus less conservative) than the overseas Upper Levels that were previously used.

Therefore, the application of NHMRC/MoH vitamin B_6 and vitamin D Upper Levels is not considered to have a significant effect on the risk assessment for these nutrients.

For iron, no Upper Level could be established at Draft and Final Assessments, and at that time it was instead determined that no more than 30 mg/day was a safe intake on the basis that iron stores would not reach excessive levels at this intake. The NHMRC/MoH Upper Level for iron is higher than this value (so fewer individuals are likely to exceed the Upper Level), and therefore the previous conclusion (that formulated beverages will not increase iron intakes to excessive levels) is considered to be appropriate.

5.2.6.2 Long-term and accumulative effects of vitamin and mineral intakes

FSANZ considered the severity of adverse effects that could be caused by high intakes of the requested vitamins and minerals, as well as the levels of intake that are likely to produce these effects. For various vitamins and minerals there is a wealth of information regarding the potential long-term effects from high intake levels. In particular, the Upper Levels that were used in FSANZ risk assessments have been set on the likelihood of adverse health events, including chronic illnesses. Therefore, it was possible to make reasonable assumptions on health impacts of the proposed vitamin and mineral additions should individuals exceed the Upper Level for a period of time.

Where the dietary modelling showed a small margin between the calculated intake for a particular vitamin or mineral and its Upper Level, the potential intake from other sources such as supplements was also considered to ensure that the Upper Level would not be exceeded.

5.2.6.3 Risk Assessment for Fat-Soluble Vitamins

For fat-soluble vitamins, the accumulation of these nutrients in the body has been taken into account as part of the establishment process for their Upper Levels.

In respect to vitamin D, the Upper Level for children up to 10 years is 25 μg/day, and for the remainder of the population the Upper Level is 50 μg/day. The dietary modelling for Application A470 showed that 95th percentile intake of vitamin D following formulated beverage introduction would be between 2.1-5.4 μg/day, which is much lower than the Upper Level. Also, the amount of vitamin D proposed for addition to formulated beverages is 2.5μg per 600 ml, which is 5-10% of the Upper Level. Therefore, the risk of exceeding the Upper Level for vitamin D is considered minimal, and would remain so even if consumer took vitamin D supplements in addition to their regular formulated beverage intake.

For vitamin E, the Upper Level ranges from 70 to 300 mg/day depending on age and gender. The requested amount of vitamin E in formulated beverages is 2.5 mg per 600 ml serve, which is 1-4% of the Upper Level. The dietary modelling estimated that the 95th percentile intakes of vitamin E would be 9-16 mg/day following the introduction of formulated beverages. Therefore, an additional intake of 2.5 mg of vitamin E per 600 ml serve of formulated beverages is unlikely to increase population intakes to such a level that the UL would be exceeded. Even if a consumer took supplemental vitamin E, the overall risk of exceeding the UL would be minimal.

5.2.6.4 Subpopulation Groups at Risk from Increased Iron or Iodine Intakes

The risk assessment presented at Final Assessment indicated that there are some subpopulation groups sensitive to either iron or iodine, which could be at risk of developing adverse effects at levels already present in the food supply.

These risks were not dismissed in the Final Assessment Report. Rather, FSANZ considered that regulatory measures were already in place to manage the risks identified with the addition of iron and iodine to formulated beverages. These measures consist of the requirement for labels to clearly indicate the vitamins and minerals that have been added to the product within the ingredient list (iron and iodine in this instance), a requirement that applies equally to all food categories including formulated beverages.

It was determined that consumers would be able to identify a formulated beverage product that contained added iron or iodine, and make an informed choice on whether it is appropriate to include such a product in their diet.

On a final note, the Ministerial Council's attention is drawn to the developments that have taken place through the release of the Draft Assessment Report for Proposal P230 – Consideration of Mandatory Fortification with Iodine. Proposal P230 has indicated that a communication strategy will be used to inform endocrinologists of the potential (and low) risk of adverse effects for population groups currently experiencing some form of iodine deficiency (the main group sensitive to iodine), which may occur with the increased iodine content in the food supply.

5.2.7 Conclusions for Public Health and Safety

From a re-consideration of the risk to public health and safety, FSANZ concludes that:

- the introduction of a formulated beverages category (with a maximum 7.5 g/100 ml sugar requirement) would not increase overall mean population sugar intakes, and could potentially reduce population sugar intakes;

- because population sugar intakes are unlikely to increase, the risk that formulated beverages will promote obesity and dental caries (in both adult and child populations) is considered minimal;

- consumer data obtained since the Final Assessment shows that the level of formulated beverage intake is likely be relatively low, will have a minimal impact on the overall proportion of acidified beverages consumed in population diets, and therefore is unlikely to contribute to the risk of dental erosion;

- the application of the NHMRC/MoH Nutrient Reference Values to FSANZ's risk assessment of vitamin and mineral intakes does not change the results that were identified at Draft and Final Assessments;

- the risks to the population from excessive consumption of vitamins and minerals added to formulated beverages is considered minimal, even with long-term intakes of formulated beverages; and

- there are adequate labelling requirements already in place to manage any risks for iron and iodine sensitive groups within the population.

5.3 Consistency with policy guidance

5.3.1 Provision of adequate information to enable informed choice

One of the Policy Guideline's 'Specific Order' Policy Principle is that *the fortification of a food, and the amounts of fortificant in the food, should not mislead the consumer as to the nutritional quality of the fortified food.*

The review request expressed concerns that this Application may mislead consumers by:

- fortified foods being perceived as being 'healthier' than other similar drinks;

- consumers underestimating the level of risk-increasing nutrients due to the presence of claims about beneficial nutrients in the same product; and

- the lack of bioavailability of the vitamins and minerals added to formulated beverages.

5.3.2 Perception of formulated beverages being 'healthier'

At Final assessment, FSANZ identified a potential risk that formulated beverages may be considered 'healthier' than similar beverages. The use of labelling, such as warning and advisory statements, has been recommended by some stakeholders to help mitigate this risk and to assist consumers in making informed choices. For example, advisory statements alerting consumers to the presence of sugar or not recommending consumption of formulated beverages by children have been suggested.

As noted in Section 5.1 above, it is likely that consumers of formulated beverages will most often substitute them for other beverages, particularly water, tea/coffee and soft drinks, rather than other foods. Depending on the specific beverage type being substituted, these may or may not contain higher levels of sugar than formulated beverages. However, from the expected consumption of formulated beverages by the small proportion of the population who are regular consumers (2.8 bottles (600 ml) per week), the FSANZ's risk assessment indicates that formulated beverages are unlikely to increase the sugar intakes of the population.

On this basis, the risk of increasing rates of obesity and dental caries due to increased sugar intakes from formulated beverages would be minimal. Furthermore, the need for a labelling statement would apply to all sweetened beverages, including both fortified and non-fortified juices/drinks, soft drinks and cordials.

In addition, the Roy Morgan research showed that consumers do hold accurate perceptions of formulated beverages in terms of their overall healthiness, sugar levels, and vitamin and mineral content relative to other beverages.

FSANZ's labelling risk management framework for decision-making is outlined below:

High risk
Where the risk to public safety is potentially life threatening and it can reasonably be assumed that the general population or the specific target group is unaware of the potential safety risk, a prescribed labelling statement is needed to alert consumers of the risk. Warning Statements are required where the risk to public health and safety is high and awareness of the potential risk is low.

Medium risk
Advisory statements are provided where the general population or a sub group of the population are largely unaware of a potential, but non life threatening risk to public health and safety and need advice about that risk.

Low risk
Where a risk to public health and safety is determined to be low because the likelihood of an adverse event occurring is rare and the consequences minor, it should be sufficient to rely on general labelling provisions and existing food law to manage the risk. An education initiative could be used to raise awareness of and promote the use of general labelling information (FSANZ, 2002).

FSANZ has assessed the potential risk to public health and safety as a result of this Application as being low and as a consequence has reaffirmed its position that no specific labelling statements are currently required. FSANZ believes that the general labelling provisions outlined in Section 5.3.2 will be sufficient to enable consumers to make informed choices.

FSANZ supports and acknowledges the role nutrition education can play in providing information in relation to the role of formulated beverages products in the overall diet and believes this approach is consistent with level of risk identified.

5.3.2.1 Existing labelling requirements

Under current labelling requirements, an added vitamin or mineral must be listed in the ingredient list and if a nutrition content claim is made in relation to a food, the nutrient is required to be listed in the Nutrition Information Panel on the label.

'Source' or 'good source' vitamin and mineral claims for fortified foods can be made provided that a reference quantity of the food contains at least 10% or 25% of the RDI respectively for a vitamin or mineral[8]. The above requirements would provide consumers with factual information as to the amounts of fortificant in the food. These labelling requirements are also in accordance with the additional policy guidance for voluntary fortification which states *there should be no specific labelling requirements for fortified food, with the same principles applying as to non-fortified foods.*

[8] Vitamin C 100% RDI

5.3.3 Claims misleading consumers

There is concern that consumers may underestimate the level of risk-increasing nutrients (specifically sugar) due to the presence of claims about beneficial nutrients in the same product. As discussed in Section 5.2.2.4, FSANZ is aware of this potential risk and since communication of voluntary fortification will mainly be through labelling claims, the proposed health claims framework will address these issues. In addition, the results of the consumer research indicate that consumers understand the nature of these products and are not misled as to their relative 'healthiness'.

5.3.4 Bioavailability

Several comments were received from the Ministerial Council relating to the bioavailability of the vitamins and minerals additions proposed for formulated beverages. These comments mentioned that:

- the food matrix has an important influence on bioavailability, and
- there is no evidence showing that the proposed vitamins and mineral additions to formulated beverages will provide a benefit to consumers

These comments have been addressed in the following sections.

5.3.4.1 Influence of the Food Matrix on Bioavailability

FSANZ recognises that the confounding modifiers of bioavailability include the nutrient's release from the food matrix during digestion. However, this particular confounding factor is no more likely to be an issue for the addition of vitamins and minerals to formulated beverages than is the case with similar additions to other food products.

Further, as formulated beverages contain few, if any, known inhibitors of bioavailability as part of their composition (e.g. dietary fibre), the vitamins and minerals added to these products may even be more bioavailable than is the case with other foods containing vitamins and minerals.

5.3.4.2 Benefits Obtained from Added Vitamins and Minerals

At Final Assessment, data was presented on the intestinal absorption of vitamins and minerals, as shown in Table 7 below. This information demonstrates that even under ideal conditions, regardless of its source (including natural sources), a vitamin or mineral is generally not fully absorbed and thus not fully bioavailable.

Table 7: Absorption Rates of Various Vitamins and Minerals*

Vitamin / Mineral	Absorption (%)	Notes
Beta-carotene	10-90	Absorption rate is dependent on concurrent fat intake. Dispersal in a water medium facilitates absorption.
Folic Acid	50-100	The lower absorption values apply to naturally occurring forms of folic acid, while supplemental forms are more highly bioavailable.
Pantothenic Acid	50-100	Food sources are absorbed to a lesser extent than supplemental forms.
Vitamin B_{12}	1.2-50	Vitamin B_{12} is dose dependent; a maximum of 2 μg can only be absorbed from a dose/meal due to saturation of transport mechanisms. Lower doses have higher absorption rates.
Vitamin C	≤98%	Vitamin C is inversely dose/intake dependent; small doses have the highest absorption rates, while very large doses are poorly absorbed.
Vitamin E	<10-80	Vitamin E is inversely dose/intake dependent; small doses have the highest absorption rates, while very large doses are poorly absorbed.
Calcium	25-60	Food and supplemental sources of calcium do not differ in their rate of absorption. For all forms of calcium, the higher 60% absorption rate is found in young children, and decreases down to 25% by adulthood.
Iodine	~97	
Iron	~15	This value applies to the whole diet (all sources). Iron absorption values fluctuate widely around this figure, and in the case of natural sources, haem iron is absorbed more readily than non-haem iron.
Magnesium	~50	This value applies to food sources of magnesium. This value can decrease depending on dietary fibre and protein intake. Supplemental forms of magnesium are not as well absorbed as food sources.
Selenium	50-90	Food sources of selenium are absorbed at the higher end of this range. Supplemental sources are absorbed at the lower end of the range.

* Source: United Kingdom Department of Health. (1993) Dietary Reference Values for Food, Energy and Nutrients for the United Kingdom. Crown Publications; London, pp3-10. Report on Health and Social Subjects.

In this context, the vitamins and minerals added to formulated beverages are likely to vary in their bioavailability in the same manner as vitamins and minerals obtained from other foods (in both added and natural forms). Formulated beverages are therefore considered to be comparable to other foods in their ability to deliver added vitamins and minerals to the human body.

It is because of this variability and uncertainty that FSANZ is unable to draw any definite conclusions on the actual bioavailability of either natural or added vitamins and minerals present in specific individual foods, including formulated beverages.

FSANZ cannot draw any conclusions on the actual bioavailability of vitamins and minerals added to specific foods, however formulated beverages are considered to be comparable to other foods in their ability to deliver added vitamins and minerals to the human body.

5.3.5 Conclusion

FSANZ has assessed the potential for consumers to be misled by this Application and concluded that the risk is low. However, to further reduce these risks, FSANZ proposes:

- that the health claims framework will seek to ensure that the presence of claims on fortified foods will not mislead consumers; and
- to support education initiatives to help raise awareness of general labelling information and the role of fortified food in the diet.

5.4 Other issues raised

5.4.1 Monitoring and review

The review request noted several concerns in relation to monitoring and review. These included the possibility of voluntary fortification provisions compromising the capacity to evaluate future mandatory fortification programs and the accumulate effects from consumption of the permitted vitamins and minerals added to formulated beverages.

At Final Assessment FSANZ advised that, as part of its role in developing food standards that permit voluntary addition of vitamins and minerals to specific foods, a five year monitoring system would be developed to assess the impact of these decisions over time on the nutritional status of the Australian and New Zealand populations.

The main objective of the monitoring system is to investigate the impact of cumulative fortification permissions on:

- the food supply;
- the population as a whole; and
- population subgroups in relation to health (assessed as to adequacy of nutrient intakes, safety of nutrient intakes).

As part of its ongoing work, and to ensure the ongoing safety and effectiveness of both voluntary and mandatory fortification scenarios, FSANZ will undertake the following monitoring activities:

- track changes in voluntarily fortified foods because of the potential impact this might have on dietary intakes of folic acid and iodine;
- update the food composition databases;
- track labelling changes on fortified foods;
- track changes in food consumption patterns for different demographic groups in key food categories that are likely to be fortified; and
- research changes in consumers' attitudes and behaviour towards fortified foods.

Responsibility for establishing and funding a monitoring system to assess the impact of fortification on the population extends beyond FSANZ's responsibilities under the FSANZ Act 1991, and will require the concomitant involvement of health and regulatory agencies at a Commonwealth, State and Territory level in Australia and the New Zealand Government.

5.4.2 Impact on nutrition education

The review request noted that the Final Assessment for this application did not include an explicit public health impact assessment. Furthermore, it was suggested that it would be of value to determine whether or not the introduction of fortified products such as formulated beverages would have an impact on nutrition education programs and further complicate dietary messages. Whilst this point was not explicitly investigated by FSANZ, given the role of education is outside FSANZ's statuary mandate, the consumer research found the majority of consumers held accurate perceptions about the overall healthiness' of formulated beverages. This suggests consumers are not confused or being misled as to the nutritional quality of formulated beverages; and that there would be minimal, if any, negative impact on nutrition education and associated dietary messages.

5.4.3 Proposed changes to the regulation of dietary supplements in New Zealand

One of the major issues raised in relation to this Application is the anomalous trans-Tasman regulation of dietary supplements. At Final Assessment, FSANZ acknowledged a number of parallel processes which were occurring that directly impacted on the future of the *New Zealand Dietary Supplements Regulations 1985* (NZDSR). These included the development of the Australia New Zealand Therapeutic Products Authority and policy development by the Ministerial Council on the addition of substances other than vitamins and minerals to food.

To date, work is still progressing on these concurrent activities. FSANZ believes the intention is to align products currently regulated under the NZDSR with the Code where possible. We understand a discussion document proposing changes to the regulation of food-type dietary supplements and therapeutic-type dietary supplements will be released for public comment before the end of 2006. FSANZ expects their completion will, in time, assist the future transition of food-type dietary supplements into the appropriate standards in the Code.

5.4.4 Dietary supplementation

The review request noted a paucity of information in relation to dietary supplement consumption and whether the safe consumption of the proposed vitamins and minerals proposed for addition to formulated beverages could be based on dietary data alone. It was not possible to include potential contributions to nutrient intake or additive exposures from the use of complementary medicines (Australia) or dietary supplements (New Zealand) in the dietary modelling assessments. Although some data were collected in the NNSs, it was either not detailed enough to include in the databases underpinning FSANZ's dietary modelling or has simply not been included in the databases to date. However, as the amounts of these substances consumed are small relative to food consumption amounts, the impact on total intakes or dietary exposure is also expected to be limited.

6. Review options

Three options were considered in this Review:

1. re-affirm approval of the draft variations to the Code as notified to the Ministerial Council;

2. re-affirm approval of the draft variations to the Code subject to any amendments FSANZ considers necessary; or

3. withdraw approval of the draft variations to the Code as notified to the Ministerial Council.

7. Conclusion and decision

The First Review concludes that the preferred option is Option 1 - re-affirm the approval of the draft variations to the Code as notified to the Ministerial Council (at Attachment 1).

Attachments

1. Ministerial Council's Policy Guideline on Fortification of Food with Vitamins and Minerals.
2. Draft variations to the Australia New Zealand Food Standards Code.
3. Roy Morgan Consumer Research Formulated Beverages Survey.
4. Survey Sample Characteristics.
5. Revised Assessment of the Dental Health Risks Associated with the Consumption of Sugar-Containing and Acidic Beverages.

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Malik, V.S., Schulze, M.B. and Hu, F.B. (2006) Intake of sugar-sweetened beverages and weight gain: a systematic review. *Am.J.Clin.Nutr.* 84(2):274-288.

Roy Morgan consumer research (2006) Formulated Beverages Survey. A research report prepared for FSANZ.

Attachment 1

Draft variations to the *Australia New Zealand Food Standards Code*

To commence: on gazettal

[1] ***Standard 1.1.1*** *of the Australia New Zealand Food Standards Code is varied by –*

[1.1] *omitting from the* Schedule, *from* Column 2, *in relation to* Pantothenic acid –

No permitted form specified

substituting

Calcium pantothenate
Dexpanthenol

[1.2] *omitting from the* Schedule, *from* Column 2, *in relation to* Selenium –

No permitted forms specified

substituting –

Seleno methionine
Sodium selenate
Sodium selenite

[2] ***Standard 1.3.1*** *of the Australia New Zealand Food Standards Code is varied by –*

[2.1] *inserting in* Schedule 1 item 14.1.4 *the heading –*

Formulated Beverages*

[2.2] *inserting in* Schedule 1 item 14.1.4 *after the heading* Formulated Beverages* –

123	Amaranth	30	mg/kg	
160b	Annatto extracts	10	mg/kg	products containing fruit or vegetable juice only
200 201 202 203	Sorbic acid and sodium, potassium and calcium sorbates	400	mg/kg	
210 211 212 213	Benzoic acid and sodium, potassium and calcium benzoates	400	mg/kg	
220 221 222 223 224 225 228	Sulphur dioxide and sodium and potassium sulphites	115	mg/kg	
242	Dimethyl dicarbonate	250	mg/kg	
281	Sodium propionate	GMP		products containing fruit or vegetable juice only
282	Calcium propionate	GMP		

385	Calcium disodium EDTA	33	mg/kg	products containing fruit flavouring, juice or pulp or orange peel extract only
444	Sucrose acetate isobutyrate	200	mg/kg	
445	Glycerol esters of wood rosins	100	mg/kg	
480	Dioctyl sodium sulphosuccinate	10	mg/kg	
950	Acesulphame potassium	3000	mg/kg	Clause 4 limits do not apply
951	Aspartame	GMP		
954	Saccharin	150	mg/kg	
955	Sucralose	GMP		
956	Alitame	40	mg/kg	
957	Thaumatin	GMP		
961	Neotame	GMP		
962	Aspartame-acesulphame salt	6800	mg/kg	

[3] ***Standard 1.3.2*** *of the Australia New Zealand Food Standards Code is varied by –*

[3.1] *inserting in the* Table to clause 3 –

Formulated Beverages	600 mL	Folate Vitamin C Carotene forms of Vitamin A Niacin Thiamin- Riboflavin Calcium Iron Magnesium Vitamin B6 Vitamin B12 Vitamin D Vitamin E Iodine Pantothenic acid Selenium	50 µg (25%) 40 mg (100%) 200 µg (25%) 2.5 mg (25%) 0.28 mg (25%) 0.43 mg (25%) 200 mg (25%) 3.0 mg (25%) 80 mg (25%) 0.4 mg (25%) 0.5 µg (25%) 2.5 µg (25%) 2.5 mg (25%) 38 µg (25%) 1.3 mg (25%) 17.5 µg (25%)	

[4] ***Standard 2.6.2*** *of the Australia New Zealand Food Standards Code is varied by –*

[4.1] *omitting from the* Purpose –

The Standard defines a number of products and sets certain compositional requirements for packaged water, electrolyte drinks and brewed soft drinks.

substituting –

The Standard defines a number of products and sets certain compositional requirements for packaged water, electrolyte drinks, brewed soft drinks and formulated beverages.

[4.2] *inserting in the* Table of Provisions

9 Composition of formulated beverages

[4.3] *inserting in clause 1* –

Formulated beverage means a non-carbonated, water-based flavoured beverage that contains added vitamins and/or minerals, prepared from one or more of the following –

(a) water; and
(b) fruit juice; and
(c) fruit purée; and
(d) concentrated fruit juice; and
(e) concentrated fruit purée; and
(f) comminuted fruit; and
(g) orange peel extract; and
(h) mineral water; and
(i) sugars.

[4.4] *inserting after the* Editorial note *in clause 8* –

9 Composition of formulated beverages

(1) A formulated beverage must contain no more than –

(a) 240 mL/L of fruit prepared from any of the sources specified in the definition for formulated beverage in paragraphs 1(b) to (g); and
(b) 75 g/L of sugars.

(2) A formulated beverage must not contain –

(a) carbon dioxide; or
(b) caffeine.

(3) A formulated beverage must not be mixed with other beverages.

Editorial note:

Formulated beverages are liquid products which are sold in a form designed to be consumed as is, that is, without the need to reconstitute or add further ingredients.

ATTACHMENT 2

Policy Guideline Fortification[9] of Food with Vitamins and Minerals

This Policy Guideline provides guidance on development of permissions for the addition of vitamins and minerals to food.

The Policy Guideline does not apply to special purpose foods the formulation and presentation of which are governed by specific standards in Part 2.9 of the Australia New Zealand Food Standards Code (the Food Standards Code).

The policy should only apply to new applications and proposals. There is no intention to review the current permissions.

The policy does not apply to products that should be or are regulated as therapeutic goods. This should not lead to a situation were generally recognised foods, through fortification, become like or are taken to be therapeutic goods.

The policy assumes the continuation of a requirement for an explicit permission for the addition of a particular vitamin or mineral to particular categories of foods to be included within the Food Standards Code. Currently the majority of permissions are contained in Standard 1.3.2 – Vitamins and Minerals.

Regard should be had to the policy in development of regulatory measures applying to the mixing of foods where one, or both of the foods may be fortified.

The policy for regulation of health and nutrition claims on fortified food is covered by the Policy Guideline on Nutrition, Health and Related Claims. Claims should be permitted on fortified foods, providing that all conditions for the claim are met in accordance with the relevant Standard.

'High Order' Policy Principles

The Food Standards Australia New Zealand Act 1991 (the Act) establishes a number of objectives for FSANZ in developing or reviewing of food standards.

1. The objectives (in descending priority order) of the Authority in developing or reviewing food regulatory measures and variations of food regulatory measures are:
   (a) the protection of public health and safety
   (b) the provision of adequate information relating to food to enable consumers to make informed choices; and
   (c) the prevention of misleading or deceptive conduct.

2. In developing or reviewing food regulatory measures and variations of food regulatory measures the Authority must also have regard to the following:

[9] Within the context of this policy Fortification is to be taken to mean all additions of vitamins and minerals to food including for reasons of equivalence or restoration.

(a) the need for standards to be based on risk analysis using the best available scientific evidence;
(b) the promotion of consistency between domestic and international food standards;
(c) the desirability of an efficient and internationally competitive food industry;
(d) the promotion of fair trading in food; and
(e) any written policy guidelines formulated by the Council for the purposes of this paragraph and notified to the Authority.

These objectives apply to the development of standards regulating the addition of vitamins and minerals to food.

A number of other policies are also relevant to the development of food standards including the Council Of Australian Governments document 'Principles and Guidelines for national Standard Setting and Regulatory Action by Australia and New Zealand Food Regulatory Ministerial Council and Standard Setting Bodies(1995, amended 1997)(Australia only), New Zealand Code of Good Regulatory Practice (November 1997), the Agreement between the Government of Australia and the Government of New Zealand concerning a Joint Food Standards System and relevant World Trade Organisation agreements.

Specific Order Policy Principles - Mandatory Fortification

The mandatory addition of vitamins and minerals to food should:

1. Be required only in response to demonstrated significant population health need taking into account both the severity and the prevalence of the health problem to be addressed.
2. Be required only if it is assessed as the most effective public health strategy to address the health problem.
3. Be consistent as far as is possible with the national nutrition policies and guidelines of Australia and New Zealand.
4. Ensure that the added vitamins and minerals are present in the food at levels that will not result in detrimental excesses or imbalances of vitamins and minerals in the context of total intake across the general population.
5. Ensure that the mandatory fortification delivers effective amounts of added vitamins and minerals with the specific effect to the target population to meet the health objective.

Additional Policy Guidance - Mandatory Fortification

The specified health objective of any mandatory fortification must be clearly articulated prior to any consideration of amendments to the Food Standards Code to require such mandatory fortification.

The Australian Health Ministers Advisory Council, or with respect to a specific New Zealand health issue, an appropriate alternative body, be asked to provide advice to the Australia and New Zealand Food Regulation Ministerial Council with respect to Specific Order Policy Principles 1 and 2, prior to requesting that Food Standards Australia New Zealand raise a proposal to consider mandatory fortification,

The assessment of public health strategies to address the stated health problem must be comprehensive and include an assessment of alternative strategies, such as voluntary fortification and education programs.

Consideration should be given, on a case by case basis, to a requirement to label foods that have been mandatorily fortified by including the information in the Nutrition Information Panel of the food label.

An agreement to require mandatory fortification also requires that it be monitored and formally reviewed to assess the effectiveness of, and continuing need for, the mandating of fortification.

Specific order policy principles – Voluntary fortification

- The voluntary addition of vitamins and minerals to food should be permitted only:
  - Where there is a need for increasing the intake of a vitamin or mineral in one or more population groups demonstrated by actual clinical or subclinical evidence of deficiency or by data indicating low levels of intake.

  or
  - Where data indicates that deficiencies in the intake of a vitamin or mineral in one or more population groups are likely to develop because of changes taking place in food habits.

  or
  - Where there is generally accepted scientific evidence that an increase in the intake of a vitamin and/or mineral can deliver a health benefit.

  or
  - To enable the nutritional profile of foods to be maintained at pre-processing levels as far as possible after processing (through modified restoration[10]).

  or
  - To enable the nutritional profile of specific substitute foods to be aligned with the primary food (through nutritional equivalence).
- The permitted fortification has the potential to address the deficit or deliver the benefit to a population group that consumes the fortified food according to its reasonable intended use.
- Permission to fortify should not promote consumption patterns inconsistent with the nutrition policies and guidelines of Australia and New Zealand.
- Permission to fortify should not promote increased consumption of foods high in salt, sugar or fat.
- Fortification will not be permitted in alcoholic beverages.

[10] The principle of Modified Restoration as derived from The FSANZ document *Regulatory principles for the addition of vitamins and minerals to foods*. (Canberra, 2002) is as follows:
Vitamins and minerals may be added, subject to no identified risks to public health and safety, at moderate levels (generally 10-25% Recommended Dietary Intake (RDI) per reference quantity) to some foods providing that the vitamin or mineral is present in the nutrient profile, prior to processing, for a marker food in the food group to which the basic food belongs. The vitamin or mineral must be naturally present at a level which would contribute at least 5% of the RDI in a reference quantity of the food. This regulatory principle is based on the restoration or higher fortification of the vitamin or mineral to at least pre-processed levels in order to improve the nutritional content of some commonly consumed basic foods.

6. Permissions to fortify should ensure that the added vitamins and minerals are present in the food at levels which will not have the potential to result in detrimental excesses or imbalances of vitamins and minerals in the context of total intake across the general population.

- The fortification of a food, and the amounts of fortificant in the food, should not mislead the consumer as to the nutritional quality of the fortified food.

Additional Policy Guidance - Voluntary Fortification

Labelling – There should be no specific labelling requirements for fortified food, with the same principles applying as to non-fortified foods. An added vitamin or mineral is required to be listed in the Nutrition Information Panel only if a claim is made about it and the vitamin or mineral is present at a level for which a claim would not be misleading. An added vitamin or mineral must be listed in the ingredient list under current labelling requirements.

Monitoring/Review - A permission to voluntary fortify should require that it be monitored and formally reviewed in terms of adoption by industry and the impact on the general intake of the vitamin/mineral.

ATTACHMENT 3

Formulated Beverages Survey

September 7, 2006

- Prepared for -

Food Standards Australia New Zealand
PO Box 7186
Canberra ACT 2610
Australia

- Prepared by -

Roy Morgan Research
401 Collins Street
Melbourne, Victoria 3000

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INTRODUCTION

Background

Food Standards Australia New Zealand (FSANZ) has recommended amending the Australia New Zealand Food Standards Code (the Code) to create a category of beverages, known as Formulated Beverages. Formulated Beverages are defined as non-carbonated, non-alcoholic, water-based flavored beverages that contain added vitamins and / or minerals. They are distinct from 'sports drinks' (usually with added amino acids) and 'energy drinks' (which are carbonated and caffeinated). Formulated Beverages are not permitted to be produced in Australia, however, under the Trans-Tasman Mutual Recognition Agreement (TTMRA) they can be produced in New Zealand and imported and sold in Australia. Under the TTRMA goods need only comply with the standards or regulations applying in the country in which they are produced before they can be sold in the other country. Under the proposed new category, Formulated Beverages would have a maximum compositional requirement of 24% fruit ingredients and 7.5g sugar per 100ml. Formulated Beverages are expected to fill a market niche with consumption trends away from high sugar beverages towards healthier alternatives.

Objectives

FSANZ has received a request from Ministers to respond to several issues before a final decision is made as to whether Formulated Beverages can be manufactured in Australia. In responding to the review request, FSANZ wanted to:

- Seek information regarding the likely responses of consumers to this group of beverages;
- Acquire data that can demonstrate likely patterns and levels of Formulated Beverage consumption;
- Understand the motivations behind decisions to consume or not consume;
- Determine the extent to which Formulated Beverages will potentially replace tap or bottled water thereby increasing sugar consumption and contributing to obesity;
- Find out how (potential) consumers view these products in terms of their 'healthiness' and levels of sugar / energy and if they are able to accurately assess products relative to other non-alcoholic beverages.

Methodology

Roy Morgan Research recommended an online survey methodology to achieve the objectives of the project and at the same time keep the project cost within FSANZ's budget. This methodology also has the benefit of allowing presentation of the visuals of the different formulated beverage brands to respondents in order to stimulate recognition and recall of consumption of Formulated Beverages.

Questionnaire Development and Testing

Prior to the conduct of the online survey, in-depth telephone interviews were conducted with Formulated Beverages drinkers from New Zealand and Australia. This qualitative research phase assisted in the formulation of the questionnaire for the online survey.

The questionnaire was then developed by Roy Morgan Research in close consultation with FSANZ. The questionnaire was programmed as a web-survey for completion on line, and took approximately 15 minutes for respondents to complete, on average. A copy of the final questionnaire in outline form is in the Appendix to this report.

Once programmed, a short pilot of the questionnaire was conducted before the main sample was released.

Sample

Sample for the online Formulated Beverages survey was obtained from the Roy Morgan Research Online Panel, which contains a subset of Roy Morgan Single Source participants. This subset currently contains thousands of email addresses of New Zealanders and Australians aged 14 years or older who recently participated in the Establishment Survey and mentioned that they are willing to participate in other surveys.

Respondents for the Formulated Beverages online survey were recruited by sending out email invitations to a sample drawn from the Online Panel. A total of 2,091 respondents participated in the survey with 1,281 respondents coming from Australia and 810 respondents coming from New Zealand.

Experience has taught us that there can be differences between the general population and the population of an online research panel. An online survey is limited to some extent in its ability to "represent" the total population.

For instance, younger people who live in metropolitan areas and have a higher socio-economic status are more likely to have access to the internet. Potential internet biases were addressed in several ways:

- Quotas were set to ensure that key demographic segments were not under-represented in the online sample. Quotas for the different age groups were set to ensure that the sample was representative of each country's population. In order to obtain a representative geographical spread, the sample was stratified by region within each country.
- To help understand the extent to which the online sample differed from the overall population, we examined the income and education patterns of both the New Zealand respondents and the Australian respondents compared to the New Zealand and Australian population patterns of income and education division. While there were differences, they were minor. There was insufficient justification in using these differences to add a further level of weighting to attempt to correct for the differences between the online sample and the general population.
- Chi-square tests were conducted on the age and location groups for both the New Zealand respondents and the Australian respondents compared to the New Zealand and Australian population patterns (see Appendix One Technical Notes for additional information). The tests showed that within both countries, for both age and location, the differences between the sample distribution and the population distribution were not statistically significant.

Weighting

Australia and New Zealand have been sampled deliberately at very different rates for this study in order to ensure adequate representation of formulated beverage consumers. In this regard, weights were applied to the data in order to correct for these disproportions and combine the data from the two countries in a meaningful way.

As mentioned previously, the study produced a reasonably balanced sample by age and sex and area within each country but still with some slight discrepancies compared to the proportions of the actual population. Therefore the data were weighted by age, sex and area within each country in order to correct for the remaining discrepancies in sampling, removing any slight biases that might have arisen from over or under representing any age, sex or area groups. The weights applied were based on the 2006 Australian Bureau of Statistics (ABS) and Statistics New Zealand (SNZ) population estimates. The weights applied, thus, sufficiently enabled projection of survey figures to the population.

Statistical Significance Testing

Statistical significance testing of the survey results has been conducted for individual cells within each county and between the two countries For significance testing within each country, individual cells were compared with corresponding row totals. For significance testing between the two countries, individual cells from Australia were compared with corresponding cells from New Zealand. Statistical significance is indicated in the following tables when appropriate (see Appendix One Technical Notes for additional information).

Outputs and Deliverables

This report comprises a set of summary tables and brief descriptive text. The other main deliverables were:

- An ASTEROID dataset
- An SPSS dataset

MAIN FINDINGS

Non-Alcoholic Beverage Consumption

Non-Alcoholic Beverages Consumed in a Typical Week

In a typical week, the most commonly consumed non-alcoholic beverages in both Australia and New Zealand are tea and coffee (86% Australia; 85% New Zealand) followed by tap water (68% Australia; 69% New Zealand) and fruit juice or fruit drinks (58% Australia; 54% New Zealand).

More than 9 out of 10 Australians and New Zealanders drink water with nothing added to it (92% Australia; 94% New Zealand) in a typical week. This includes tap water, filtered water and plain bottled water.

Just over a third of Australians and New Zealanders drink any kind of bottled water in a typical week (37% Australia; 36% New Zealand). This includes bottled water with and without additives.

As a proportion of each country's population, there were more drinkers of white milk, cordials, flavoured milk and bottled sparkling water in Australia than in New Zealand (white milk 35% cf. 29%; cordials 26% cf. 13%; flavoured milk 18% cf. 11%; bottled sparkling water 10% cf. 5%).

On the other hand, there were more drinkers of energy drinks and flavoured bottled still water or bottled still water with vitamins added in New Zealand compared to Australia (energy drinks 15% cf. 5%; bottled water or with vitamins or flavours added 11% cf. 4%).

Table 1: Non-Alcoholic Beverages Consumed in a Typical Week

By Country and By Drinker Type (Drank FB in the Last 12 Months)

	Australia			New Zealand		
	Total	**FB Drinker**	**Non-FB Drinker**	**Total**	**FB Drinker**	**Non-FB Drinker**
Base: Unweighted	*1,281*	*341*	*940*	*810*	*490*	*320*
Base: Weighted (in 000)	*16,828*	*4,722*	*12,106*	*3,265*	*1,977*	*1,288*
	%	%	%	%	%	%
Tea / Coffee	86	82*	88*	85	80*	91*
White milk (except in tea / coffee)	35+	42*+	32*+	29+	32+	26+
Flavoured milk	18+	25*+	15*+	11+	13*+	8*+
Soy drinks	8	6*	9*	7	6	9
Tap water	68	67	68	69	68	71
Filtered water	37	38	37	41	45*	34*
Bottled still water (nothing added)	30	42*+	25*+	27	32*+	19*+
Bottled still water (flavours and/or vitamins added)	4	8*+	2*	11+	18*+	1*
Bottled sparkling water (with or without flavour)	10+	13*+	9*+	5+	5+	5+
Fruit juice / Fruit drinks	58	61	57+	54	56	50+
Cordials	26+	35*+	23*+	13+	15+	11+
Energy Drinks (e.g. Red Bull)	5+	12*+	3*	15+	22*+	5*
Sports Drinks (e.g. Powerade)	8	19*+	4*+	7	11*+	-*+
Zero sugar / diet soft drinks	23	30*	20*	24	27*	19*
Soft drinks (e.g. cola, lemonade)	37	47*+	33*+	34	40*+	25*+
Rain Water / Tank Water	2+	-	2+	-+	-	1+
Hot Chocolate / Cocoa (e.g. Milo)	1+	-+	1+	4+	4+	4+
Herbal Tea	1	-	1	1	1	1
Others	1	1	1	1	1	1
WATER SUMMARY:						
Total Water with Nothing Added	92	93	92	94	94	94
Total Bottled Water	37	49*	32*+	36	44*	23*+

Q1 : This question is about what you drink in a typical week. Which of the following types of non-alcoholic drinks would you normally drink?

Base : All Respondents

\- Figure is less than 0.5%

\+ Difference significant between the two countries

* Difference significant as compared to the total population for that country

Table 2: Non-Alcoholic Beverages Consumed in a Typical Week

By Age Group

	Australia						New Zealand					
	14 to 17	**18 to 24**	**25 to 34**	**35 to 44**	**45 to 54**	**55+**	**14 to 17**	**18 to 24**	**25 to 34**	**35 to 44**	**45 to 54**	**55+**
Base: Unweighted	*74*	*127*	*203*	*249*	*268*	*360*	*60*	*101*	*132*	*162*	*151*	*204*
Base: Weighted (in 000)	*1128*	*2016*	*2836*	*3012*	*2832*	*5003*	*253*	*404*	*536*	*640*	*555*	*876*
	%	%	%	%	%	%	%	%	%	%	%	%
Tea / Coffee	52*	74*	82	86	92*	98*	38*	71*	82	89	93*	98*
White milk (except in tea / coffee)	49*	49*	40	33	26*	30*	44	35	29	36	22*	22*
Flavoured milk	24	32*	21	21	12*	9*	28*	28*	12	9	5*	4*
Soy drinks	12	7	7	4*	11	9	0	8	9	6	9	7
Tap water	66	62	69	77*	64	66	65	75	73	74	59*	68
Filtered water	38	35	43	34	37	36	29*	47	42	43	43	37
Bottled still water (nothing added)	24	45*	40*	33	30	17*	25	46*	27	28	31	14*
Bottled still water (flavours and/or vitamins added)	7	10*	4	4	3	2*	10	17	17	14	7	6*
Bottled sparkling water (with or without flavour)	2*	10	9	10	14*	11	1	5	5	5	8	5
Fruit juice / Fruit drinks	68	67*	63	56	52*	54	70*	76*	50	52	47	46
Cordials	44*	28	33*	32*	20*	18*	24*	14	19	17	9*	7*
Energy Drinks (e.g. Red Bull)	14*	11*	11*	5	2*	0	28*	36*	15	21*	7*	2*
Sports Drinks (e.g. Powerade)	19*	13	11	11	6	2*	11	11	9	8	6	3*
Zero sugar / diet soft drinks	22	21	23	31*	29*	15*	21	36*	25	28	25	15*
Soft drinks (e.g. cola, lemonade)	60*	62*	38	38	29*	24*	65*	55*	41	31	24*	21*
Rain Water / Tank Water	1	0	3	1	3	2	0	0	0	-	0	-
Hot Chocolate / Cocoa (e.g. Milo)	1	1	-	1	1	1	5	4	8	3	2	4
Herbal Tea	2	-	-	1	1	-	0	0	2	1	0	1
Others	3	0	0	1	1	-	0	0	0	2*	0	1
WATER SUMMARY:												
Total Water with Nothing Added	94	95*	92	95*	91	91	89	97	96	95	93	94
Total Bottled Water	27*	50*	45*	39	39	26*	32	59*	38	37	40	21*

Q1 : This question is about what you drink in a typical week. Which of the following types of non-alcoholic drinks would you normally drink?

Base : All Respondents

\- Figure is less than 0.5%

* Difference significant as compared to the total population for that country

Non-Alcoholic Beverages Consumed the Most

Coffee or tea were also the most consumed non-alcoholic beverage in both Australia (37%) and New Zealand (44%) in a typical week (Table 3). Tap water is the non-alcoholic beverage next most consumed (26% in Australia; 22% in New Zealand). Filtered water ranks third (16% in Australia; 14% in New Zealand).

As a proportion of each country's population, more people in Australia mentioned water with nothing added as the most consumed non-alcoholic beverage than in New Zealand (45% cf. 40%).

Table 3: Non-Alcoholic Beverages Consumed the Most, 2nd, 3rd

By Country

	Australia			New Zealand		
	Drank the Most	2nd	3rd	Drank the Most	2nd	3rd
Base: Unweighted	*1,281*	*1,281*	*1,281*	*810*	*810*	*810*
Base: Weighted (in 000)	*16,828*	*16,828*	*16,828*	*3,265*	*3,265*	*3,265*
	%	%	%	%	%	%
Tea / Coffee	37+	29+	11+	44+	25+	8+
White milk (except in tea / coffee)	1	5	10	1	4	9
Flavoured milk	-	2+	3+	-	1	2
Soy drinks	-	1	3	-	-+	2+
Tap water	26	19+	11	22	24+	9
Filtered water	16	7+	5	14	11+	6
Bottled still water (nothing added)	3	4	6	3	4	6
Bottled still water (flavours and/or vitamins added)	-	-+	-+	-	2+	2+
Bottled sparkling water (with or without flavour)	1	2	1	-	1	1
Fruit juice / Fruit drinks	4	11	19	4	9	18
Cordials	2	4	6+	1	3	3+
Energy Drinks (e.g. Red Bull)	-	-+	1+	1	2+	3+
Sports Drinks (e.g. Powerade)	-	1	1	-	1	1
Zero sugar / diet soft drinks	3	6	6	3	5	7
Soft drinks (e.g. cola, lemonade)	5+	6	7+	3+	6	9+
Rain Water / Tank Water	1	1	-	-	-	-
Hot Chocolate / Cocoa (e.g. Milo)	-	-+	-+	-	2+	2+
Others	-	-	-	-	-	1
Total Who Drink Only One Product Type	n/a	2	2	n/a	2	2
Total Who Drink Only Two Product Types	n/a	n/a	8	n/a	n/a	10
WATER SUMMARY:						
Total Water with Nothing Added	45+	30+	21	40+	38+	21
Total Bottled Water	4	6	7	4	7	9

Q2 : In a typical week, which of the following would you drink the most of?
Q3 : After [Answer in Q2], which of the following would you drink the second most of?
Q4 : After [Answer in Q2 and Q3], which of the following would you drink the third most of?
Base : All Respondents
\- Figure is less than 0.5%
\+ Difference significant between the two countries

Amongst Formulated Beverages (FB) drinkers, coffee or tea are the most consumed non-alcoholic beverage in both Australia (29%) and New Zealand (39%) in a typical week (Table 4).

As a proportion of FB drinkers in each country, a significantly greater proportion of FB-drinking New Zealanders mentioned coffee or tea as the most consumed beverage compared to Australia. Tap water closely follows coffee/tea when it comes to the most consumed non-alcoholic beverage (27% of FB drinkers in Australia; 21% in FB drinkers in New Zealand). Filtered water ranks third (17% in Australia; 16% in New Zealand).

Proportionally more FB drinkers in Australia mentioned water with nothing added as the most consumed non-alcoholic beverage than in New Zealand (49% cf. 42%).

Table 4: Non-Alcoholic Beverages Consumed the Most, 2nd, 3rd

Among those who drank Formulated Beverages in the last 12 Months

	Australia			New Zealand		
	Drank the Most	2nd	3rd	Drank the Most	2nd	3rd
Base: Unweighted	*341*	*341*	*341*	*490*	*490*	*490*
Base: Weighted (in 000)	*4,722*	*4,722*	*4,722*	*1,977*	*1,977*	*,1977*
	%	%	%	%	%	%
Tea / Coffee	29+	27	12	39+	23	8
White milk (except in tea / coffee)	1	4	9	2	5	8
Flavoured milk	-	3+	4+	1	1+	1+
Soy drinks	-	1	1	0	-	1
Tap water	27	15+	10	21	21+	10
Filtered water	17	6+	5	16	10+	6
Bottled still water (nothing added)	5	5	8	4	4	6
Bottled still water (flavours and/or vitamins added)	-	1+	1+	-	3+	4+
Bottled sparkling water (with or without flavour)	1	1	1	-	1	1
Fruit juice / Fruit drinks	5	12	16	5	10	17
Cordials	4	5	6+	2	2	3+
Energy Drinks (e.g. Red Bull)	-	1+	2+	1	3+	4+
Sports Drinks (e.g. Powerade)	-	2	2	-	1	2
Zero sugar / diet soft drinks	3	9	8	4	5	8
Soft drinks (e.g. cola, lemonade)	6	7	7	3	6	11
Rain Water / Tank Water	-	-	-	-	-	-
Hot Chocolate / Cocoa (e.g. Milo)	-	-	-	-	2	2
Others	-	-	1	-	-	1
Total Who Drink Only One Product Type	n/a	-	1+	n/a	2	2+
Total Who Drink Only Two Product Types	n/a	n/a	6	n/a	n/a	7
WATER SUMMARY:						
Total Water with Nothing Added	49	26+	23	42	35+	22
Total Bottled Water	6	7	10	5	8	10

Q2 : In a typical week, which of the following would you drink the most of?
Q3 : After [Answer in Q2], which of the following would you drink the second most of?
Q4 : After [Answer in Q2 and Q3], which of the following would you drink the third most of?
Base : Those who have tried any Formulated Beverage brand in the last 12 months
- Figure is less than 0.5%
\+ Difference significant between the two countries

Table 5: Non-Alcoholic Beverages Consumed the Most

By Age Group

	Australia						New Zealand					
	14 to 17	**18 to 24**	**25 to 34**	**35 to 44**	**45 to 54**	**55+**	**14 to 17**	**18 to 24**	**25 to 34**	**35 to 44**	**45 to 54**	**55+**
Base: Unweighted	*74*	*127*	*203*	*249*	*268*	*360*	*60*	*101*	*132*	*162*	*151*	*204*
Base: Weighted (in 000)	*1128*	*2016*	*2836*	*3012*	*2832*	*5003*	*253*	*404*	*536*	*640*	*555*	*876*
	%	%	%	%	%	%	%	%	%	%	%	%
Tea / Coffee	10*	14*	22*	37	48*	57*	7*	16*	29*	46	55*	68*
White milk (except in tea / coffee)	6	-	1	1	1	1	6	1	-	2	1	-
Flavoured milk	-	-	1	1	1	-	1	1	1	1	-	-
Soy drinks	-	-	-	-	1	1	-	-	1	-	-	-
Tap water	31	38*	28	28	23	20*	46*	26	30*	20	17	14*
Filtered water	17	19	23*	14	12	14	12	20	21*	13	15	8*
Bottled still water (nothing added)	3	5	4	4	3	2	1	6	1	5	4	3
Bottled still water (flavours and/or vitamins added)	-	-	-	-	1	-	2	1	1	-	-	-
Bottled sparkling water (with or without flavour)	-	-	1	1	1	1	-	-	-	1	1	-
Fruit juice / Fruit drinks	14*	7	4	2*	3	1*	8	16*	2*	3	3	2*
Cordials	8	3	3	2	-*	1*	6	1	3	1	-	-
Energy Drinks (e.g. Red Bull)	-	-	-	-	-	-	2	1	2	1	-	-
Sports Drinks (e.g. Powerade)	-	-	-	-	-	-	-	1	-	1	-	-
Zero sugar / diet soft drinks	1*	4	3	5	3	1*	1	7	5	3	2	2
Soft drinks (e.g. cola, lemonade)	7	10*	7	5	3	1*	8	4	6	2	2	-
Rain Water / Tank Water	1	-	2	-	2	1	-	-	-	1	-	-
Hot Chocolate / Cocoa (e.g. Milo)	1	-	-	1	-	-	-	-	1	1	-	-
Herbal Tea	1	-	-	-	-	-	-	-	-	1	-	1
Others	2	-	-	-	1	-	-	-	-	-	-	1
WATER SUMMARY:												
Total Water with Nothing Added	51	62*	56*	45	39*	36*	59*	52*	52*	38	37	25*
Total Bottled Water	3	5	5	4	5	3	3	7	2	6	5	3

Q2 : In a typical week, which of the following would you drink the most of?
Q3 : After [Answer in Q2], which of the following would you drink the second most of?
Q4 : After [Answer in Q2 and Q3], which of the following would you drink the third most of?
Base : All Respondents
\- Figure is less than 0.5%
* Difference significant as compared to the total population for that country

Formulated Beverage Consumption

Formulated Beverages Tried in the Last 12 Months

Both in Australia and New Zealand, Mizone is the Formulated Beverage tried by the greatest proportion of people in the last 12 months (21% in Australia: 44% in New Zealand). In Australia, Waterplus ranks second as the most tried FB in the last 12 months (10%), while G-Force ranks second in New Zealand (25%).

As a proportion of each country's population, significantly fewer people have tried FBs in the last 12 months in Australia than in New Zealand (28% cf. 61%).

Table 6: Formulated Beverages Tried in the Last 12 Months

By Country and By Drinker Type (Drank FB in the Last 12 Months)

	Australia		New Zealand	
	Total	**FB Drinkers**	**Total**	**FB Drinkers**
Base: Unweighted	*1,281*	*341*	*810*	*490*
Base: Weighted (in 000)	*16,828*	*4,722*	*3,265*	*1,977*
	%	%	%	%
Mizone	21+	76	44+	73
G Force	5+	19 +	25+	42+
Thorpedo	4	13	n/a	n/a
Play	2	7	n/a	n/a
Temple Hydrotherapy	1	2	n/a	n/a
Waterplus	10	37	n/a	n/a
Aquashot	n/a	n/a	34	56
E2	n/a	n/a	32	54
Charlies Sportswater	n/a	n/a	5	8
SUMMARY:				
Tried 1 Brand only	16	58+	18	29+
Tried Multiple Brands	12+	42+	43+	71+
Total Who Tried at least 1 Formulated Beverage Brand	28+	100	61+	100
Total Who Did NOT Try Any Formulated Beverage Brand	72+	0	39+	0

Q5 : New types of non-alcoholic water based beverages are now becoming more common. From the following please select all the drinks you have tried in the last 12 months.

Base : All Respondents

\- Figure is less than 0.5%

\+ Difference significant between the two countries

As a proportion of FB drinkers, significantly more New Zealander drinkers than Australian drinkers have tried multiple FB brands in the last 12 months (71% cf. 42%).

Table 7: Formulated Beverages Tried in the Last 12 Months

By Age Group

	Australia						New Zealand					
	14 to 17	**18 to 24**	**25 to 34**	**35 to 44**	**45 to 54**	**55+**	**14 to 17**	**18 to 24**	**25 to 34**	**35 to 44**	**45 to 54**	**55+**
Base: Unweighted	*74*	*127*	*203*	*249*	*268*	*360*	*60*	*101*	*132*	*162*	*151*	*204*
Base: Weighted (in 000)	*1128*	*2016*	*2836*	*3012*	*2832*	*5003*	*253*	*404*	*536*	*640*	*555*	*876*
	%	%	%	%	%	%	%	%	%	%	%	%
Mizone	52*	41*	32*	23	14*	4*	64*	65*	59*	54*	36*	19*
G Force	10	10	9	3	6	2*	61*	39*	30	32	18*	6*
Thorpedo	9	6	4	6	2	1*	n/a	n/a.	n/a	n/a	n/a	n/a
Play	11*	1	1	3	2	-	n/a	n/a.	n/a	n/a	n/a	n/a
Temple Hydrotherapy	1	2	1	-	1	-	n/a	n/a.	n/a	n/a	n/a	n/a
Waterplus	20*	22*	14	14	6*	2*	n/a	n/a.	n/a	n/a	n/a	n/a
Aquashot	n/a	n/a.	n/a	n/a	n/a	n/a	57*	53*	47*	34	29	14*
E2	n/a	n/a.	n/a	n/a	n/a	n/a	55*	49*	45*	40*	24*	11*
Charlies Sportswater	n/a	n/a.	n/a	n/a	n/a	n/a	7	7	6	6	5	2*
SUMMARY:												
Tried 1 Brand only	28*	19	24*	21	16	6*	14	14	19	22	22	13*
Tried Multiple Brands	34*	26*	16	12	6*	1*	73*	64*	61*	50*	33*	15*
Total Who Tried at least 1 Formulated Beverage Brand	62*	45*	40*	33	22*	7*	87*	78*	80*	72*	55	28*
Total Who Did NOT Try Any Formulated Beverage Brand	38*	55*	60*	67	78*	93*	13*	22*	20*	28*	45	72*

Q5 : New types of non-alcoholic water based beverages are now becoming more common. From the following please select all the drinks you have tried in the last 12 months.

Base : All Respondents

- Figure is less than 0.5%

* Difference significant as compared to the total population for that country

Frequency of Drinking Formulated Beverages

In Australia, the majority of those who have tried Formulated Beverages in the last 12 months are not regular users and have only tried them once (69%), while 46% of New Zealand FB drinkers have only tried them once.

As a proportion of each country's population, significantly more people have not tried FBs in the last 12 months in Australia than in New Zealand (72% cf. 39%).

Table 8: Frequency of Drinking Formulated Beverages

By Country and By Drinker Type

	Australia		New Zealand	
	Total	**FB Drinkers**	**Total**	**FB Drinkers**
Base: Unweighted	*1,281*	*341*	*810*	*490*
Base: Weighted (in 000)	*16,828*	*4,722*	*3,265*	*1,977*
	%	%	%	%
Not tried any in the last 12 months	72+	n/a	39+	n/a
Not a regular drinker, only tried them once	19+	69+	28+	46+
Once every few months	5+	17	13+	22
Once a month	2+	6+	7+	12+
Once a fortnight	1+	2+	6+	9+
Once a week	1+	3	3+	4
Once every three or four days	-+	2+	3+	4+
Every second day	-	-	1	1
Once a day	-	-	-	1
Several times a day	-	-	-	-

Q6 : You have tried [Answer in Q5], how often do you drink these drinks in total / this drink?
Base : All respondents
- Figure is less than 0.5%
+ Difference significant between the two countries

Table 9: Frequency of Drinking Formulated Beverages

By Age Group

	Australia						New Zealand					
	14 to 17	**18 to 24**	**25 to 34**	**35 to 44**	**45 to 54**	**55+**	**14 to 17**	**18 to 24**	**25 to 34**	**35 to 44**	**45 to 54**	**55+**
Base: Unweighted	*74*	*127*	*203*	*249*	*268*	*360*	*60*	*101*	*132*	*162*	*151*	*204*
Base: Weighted (in 000)	*1128*	*2016*	*2836*	*3012*	*2832*	*5003*	*253*	*404*	*536*	*640*	*555*	*876*
	%	%	%	%	%	%	%	%	%	%	%	%
Not tried any in the last 12 months	38*	55*	60*	67*	78*	93*	13*	22*	20*	28*	45	72*
Not a regular drinker, only tried them once	50*	30*	26*	23	17	4*	38	22	34	37*	32	15*
Once every few months	9	7	9*	5	3	1*	22	25*	20*	13	10	3*
Once a month	1	4	4*	1	1	-	11	9	11	8	6	4*
Once a fortnight	1	3	-	1	-	-	9	14*	5	6	2*	2*
Once a week	-	1	1	3*	1	-	4	1*	3	5	3	1*
Once every three or four days	1	-	-	-	-	1	2	6	5	2	1	1
Every second day	-	-	-	-	-	-	-	-	1	1	1	1
Once a day	-	-	-	-	-	-	2	-	1	-	1	-
Several times a day	-	-	-	-	-	-	-	-	1	-	-	-

Q6 : You have tried [Answer in Q5], how often do you drink these drinks in total / this drink?
Base : All respondents
- Figure is less than 0.5%
* Difference significant as compared to the total population for that country

Formulated Beverage Brand Consumed the Most

Amongst those who have tried any brand of Formulated Beverage in the 12 months, 62% in Australia mentioned that they drink Mizone the most, while 43% in New Zealand mentioned that they drink Mizone the most. In Australia, Waterplus ranks second (17%) while in New Zealand, Aquashot ranks second (23%).

As a proportion of each country's population, significantly more people have tried multiple FB brands in the last 12 months in New Zealand than in Australia (71% cf. 42%).

Table 10: Formulated Beverage Brand Consumed the Most

By Country

	Australia	New Zealand
Base: Unweighted	*341*	*490*
Base: Weighted (in 000)	*4,722*	*1,977*
	%	%
Mizone	62+	43+
G Force	11	13
Thorpedo	4	n/a
Play	4	n/a
Temple Hydrotherapy	1	n/a
Waterplus	17	n/a
Aquashot	n/a	23
E2	n/a	20
Charlies Sportswater	n/a	1

Q7 : Which of these do you drink the most?
Base : Those who have tried any Formulated Beverage brand in the last 12 months
- Figure is less than 0.5%
+ Difference significant between the two countries

Table 11: Formulated Beverage Brand Consumed the Most

By Age Group

	Australia						New Zealand					
	14 to 17	18 to 24	25 to 34	35 to 44	45 to 54	55+	14 to 17	18 to 24	25 to 34	35 to 44	45 to 54	55+
Base: Unweighted	*45*	*57*	*78*	*78*	*58*	*25*	*50*	*78*	*104*	*117*	*84*	*57*
Base: Weighted (in 000)	*699*	*912*	*1141*	*996*	*636*	*337*	*219*	*314*	*428*	*463*	*308*	*244*
	%	%	%	%	%	%	%	%	%	%	%	%
Mizone	71	66	68	57	52	52	42	47	41	45	37	48
G Force	7	7	13	6	21*	25	23	9	11	13	18	7
Thorpedo	2	2	2	9	2	7	n/a	n/a.	n/a	n/a	n/a	n/a
Play	12	2	1	4	5	-	n/a	n/a.	n/a	n/a	n/a	n/a
Temple Hydrotherapy	1	3	-	-	2	-	n/a	n/a.	n/a	n/a	n/a	n/a
Waterplus	7*	21	15	23	17	17	n/a	n/a.	n/a	n/a	n/a	n/a
Aquashot	n/a	n/a.	n/a	n/a	n/a	n/a	11*	27	23	20	31	30
E2	n/a	n/a.	n/a	n/a	n/a	n/a	24	17	24	23	13	15
Charlies Sportswater	n/a	n/a.	n/a	n/a	n/a	n/a	-	1	1	-	1	-

Q7 : Which of these do you drink the most?
Base : Those who have tried any Formulated Beverage brand in the last 12 months
- Figure is less than 0.5%
* Difference significant as compared to the total population for that country

Amongst those who drink Formulated Beverages at least once a fortnight, a clear majority consume one bottle of FB on a typical day when they drink FB (78% in Australia; 79% in New Zealand).

Amongst this same group (those who drink FBs at least once a fortnight), drinking less than one bottle on a day they drink is uncommon in New Zealand (10%) and exceedingly uncommon in Australia (less then 0.5%). However care should be taken with interpretation of the data for Australian drinkers at this level due to small sample size.

Table 12: Quantity of Formulated Beverages Consumed on a Typical Day

Among those who drink FB at least once a fortnight

By Country

	Australia	**New Zealand**
Base: Unweighted	*27*	*98*
Base: Weighted (in 000)	*361*	*394*
Standard Bottle = 600 ml.	%	%
Less than 1 bottle	-	10
1 bottle	79	79
2 bottles	21	11
3 bottles	-	-
More than 3 bottles	-	-
MEAN	1.21	1.06

Q8 : On a typical day when you drink [Answer in Q3], how much would you drink of these drinks in total / this drink?
Base : Those who drink Formulated Beverages at least once a fortnight
- Figure is less than 0.5%
\+ Difference significant between the two countries
Note: The figures in the column(s) with a sample (unweighted) base less than 30 should be treated with caution

Table 13: Quantity of Formulated Beverages Consumed on a Typical Day

Among those who drink FB at least once a fortnight

By Age Group

	Australia						New Zealand					
	14 to 17	**18 to 24**	**25 to 34**	**35 to 44**	**45 to 54**	**55+**	**14 to 17**	**18 to 24**	**25 to 34**	**35 to 44**	**45 to 54**	**55+**
Base: Unweighted	*2*	*5*	*3*	*7*	*4*	*6*	*10*	*20*	*20*	*24*	*13*	*11*
Base: Weighted (in 000)	*23*	*84*	*36*	*107*	*37*	*73*	*40*	*87*	*81*	*96*	*43*	*46*
Standard Bottle = 600 ml.	%	%	%	%	%	%	%	%	%	%	%	%
Less than 1 bottle	-	-	-	-	-	-	8	-	10	21	12	9
1 bottle	100	88	69	84	100	47	83	92	74	76	78	64
2 bottles	-	12	31	16	-	53*	10	8	16	3	10	27
3 bottles or more	-	-	-	-	-	-	-	-	-	-	-	-
MEAN	1.00	1.12	1.31	1.16	1.00	1.53	1.06	1.08	1.11	0.93	1.04	1.23

Q8 : On a typical day when you drink [Answer in Q3], how much would you drink of these drinks in total / this drink?
Base : Those who drink Formulated Beverages at least once a fortnight
\- Figure is less than 0.5%
* Difference significant as compared to the total population for that country

Other Non-Alcoholic Beverages Consumed on Days that Formulated Beverages are Consumed

Amongst those that have tried Formulated Beverages in the last 12 months, 72% in both Australia and New Zealand consumed tea or coffee on days that FB are consumed (tap water ranked second in both countries with 53%).

Table 14: Other Non-Alcoholic Beverages Consumed on Days that Formulated Beverages are Consumed

By Country

	Australia	**New Zealand**
Base: Unweighted	*341*	*490*
Base: Weighted (in 000)	*4,722*	*1,977*
	%	%
Tea / Coffee	72	72
White milk (except in tea / coffee)	16	14
Flavoured milk	10+	3+
Soy drinks	2	3
Tap water	53	53
Filtered water	30	34

	Australia	**New Zealand**
Base: Unweighted	*341*	*490*
Base: Weighted (in 000)	*4,722*	*1,977*
Bottled still water (nothing added)	18+	12+
Bottled still water (flavours and/or vitamins added)	1	1
Bottled sparkling water (with or without flavour)	6+	2+
Fruit juice / Fruit drinks	33+	24+
Cordials	15+	7+
Energy Drinks (e.g. Red Bull)	6	5
Sports Drinks (e.g. Powerade)	5+	2+
Zero sugar / diet soft drinks	18	14
Soft drinks (e.g. cola, lemonade)	21+	14+
Hot Chocolate / Cocoa (e.g. Milo)	-+	3+
Others	-	-
WATER SUMMARY:		
Total Water with Nothing Added	81	80
Total Bottled Water	22+	14+

Q9 : On a typical day when you drink [Answer in Q3], what other non-alcoholic drinks would you also drink? Select all that apply.

Base : Those who have tried any Formulated Beverage brand in the last 12 months

- Figure is less than 0.5%

+ Difference significant between the two countries

Table 15: Other Non-Alcoholic Beverages Consumed on Days that Formulated Beverages are Consumed

By Age Group

	Australia						New Zealand					
	14 to 17	**18 to 24**	**25 to 34**	**35 to 44**	**45 to 54**	**55+**	**14 to 17**	**18 to 24**	**25 to 34**	**35 to 44**	**45 to 54**	**55+**
Base: Unweighted	*45*	*57*	*78*	*78*	*58*	*25*	*50*	*78*	*104*	*117*	*84*	*57*
Base: Weighted (in 000)	*699*	*912*	*1141*	*996*	*636*	*337*	*219*	*314*	*428*	*463*	*308*	*244*
	%	%	%	%	%	%	%	%	%	%	%	%
Tea / Coffee	47*	61	72	87*	80	100	28*	49*	71	85*	90*	93*
White milk (except in tea / coffee)	22	11	17	19	16	13	32*	12	12	16	6*	7*
Flavoured milk	15	13	11	8	6	-	11*	5	3	1	-	-
Soy drinks	-	2	-	3	9	-	-	4	2	2	6	2
Tap water	57	51	56	62	38*	42	63	53	58	53	44	46
Filtered water	34	25	37	28	19*	37	21*	37	33	34	32	49*
Bottled still water (nothing added)	10	15	22	12	29	22	10	13	10	10	13	18
Bottled still water (flavours and/or vitamins added)	-	-	1	-	4	6	-	-	4	-	2	3
Bottled sparkling water (with or without flavour)	1*	5	9	4	14	6	-	2	2	2	2	2
Fruit juice / Fruit drinks	63*	28	35	18*	29	37	43*	29	19	22	24	15*
Cordials	24	13	18	11	14	10	17	7	14*	5	1*	-
Energy Drinks (e.g. Red Bull)	3	8	9	2*	4	6	8	10*	6	3	2*	-
Sports Drinks (e.g. Powerade)	14	5	-	4	3	4	1	3	-	3	2	0
Zero sugar / diet soft drinks	11	11	17	27*	19	21	14	16	17	7*	14	15
Soft drinks (e.g. cola, lemonade)	27	27	19	19	12*	22	27*	25*	16	11	6*	3*
Rain Water / Tank Water	-	-	1	-	1	-						
Hot Chocolate / Cocoa (e.g. Milo)	-	-	-	1	-	-	3	2	3	2	2	4
Herbal Tea	-	-	-	1	-	-	-	-	1	-	-	1
Others	2	-	1	-	-	-	-	-	-	-	-	2
WATER SUMMARY:												
Total Water with Nothing Added	85	76	82	85	75	78	82	79	82	78	76	82
Total Bottled Water	11*	19	28	16	34*	28	10	15	12	11	15	21

Q9 : On a typical day when you drink [Answer in Q3], what other non-alcoholic drinks would you also drink? Select all that apply.

Base : Those who have tried any Formulated Beverage brand in the last 12 months

\- Figure is less than 0.5%

* Difference significant as compared to the total population for that country

Total Daily Non-Alcoholic Fluid Consumption when Formulated Beverages are Consumed

Total non-alcoholic fluid consumption amongst FB drinkers showed few differences between the two countries, with a mean of approximately one and three quarter litres in both countries.

Table 16: Total Daily Non-Alcoholic Fluid Consumption when Formulated Beverages are Consumed

By Country

	Australia	**New Zealand**
Base: Unweighted	*341*	*490*
Base: Weighted (in 000)	*4,722*	*1,977*
	%	%
Less than 1 litre	10+	6+
About 1 litre	14	14
More than 1 litre but less than 2 litres	28	32
About 2 litres	28	27
More than 2 litres but less than 3 litres	11	13
About 3 litres	6	7
More than 3 litres	4+	1+
MEAN	1.76	1.75

Q10 : Thinking of your total non-alcoholic fluid consumption. On a typical day when you have drinks like [Answer in Q3], what would be your total consumption of fluids?

Base : Those who have tried any Formulated Beverage brand in the last 12 months

\- Figure is less than 0.5%

\+ Difference significant between the two countries

Table 17: Total Daily Non-Alcoholic Fluid Consumption when Formulated Beverages are Consumed

By Age Group

	Australia						New Zealand					
	14 to 17	**18 to 24**	**25 to 34**	**35 to 44**	**45 to 54**	**55+**	**14 to 17**	**18 to 24**	**25 to 34**	**35 to 44**	**45 to 54**	**55+**
Base: Unweighted	*45*	*57*	*78*	*78*	*58*	*25*	*50*	*78*	*104*	*117*	*84*	*57*
Base: Weighted (in 000)	*699*	*912*	*1141*	*996*	*636*	*337*	*219*	*314*	*428*	*463*	*308*	*244*
	%	%	%	%	%	%	%	%	%	%	%	%
Less than 1 litre	15	15	9	6	9	7	8	5	2*	9	5	8
About 1 litre	18	11	18	12	6*	21	18	20	13	9*	15	15
More than 1 litre but less than 2 litres	38	20	26	27	31	31	29	35	35	36	30	25
About 2 litres	18	27	28	26	41*	32	32	34	26	22	26	27
More than 2 litres but less than 3 litres	4*	17	8	20*	3*	-	2*	4*	18	16	13	19
About 3 litres	1*	4	6	7	9	7	11	2*	7	6	10	7
More than 3 litres	5	6	5	2	-	2	-	-	-	2	1	-
MEAN	1.56	1.83	1.77	1.88	1.75	1.66	1.67	1.59	1.83	1.78	1.81	1.78

Q10 : Thinking of your total non-alcoholic fluid consumption. On a typical day when you have drinks like [Answer in Q3], what would be your total consumption of fluids?

Base : Those who have tried any Formulated Beverage brand in the last 12 months

\- Figure is less than 0.5%

* Difference significant as compared to the total population for that country

Formulated Beverage as a Substitute or Supplement for other Non-Alcoholic Beverages

In Australia, a slight majority of people that have tried Formulated Beverages in the last 12 months replace some other drink but do not increase total fluid consumption (53%) on typical days that they drink Formulated Beverages, while 44% of New Zealand FB drinkers mention that FB consumption replaces some other drink but does not increase fluid consumption.

Table 18: Formulated Beverage as a Substitute or Supplement for other Non-Alcoholic Beverages

By Country and By Drinker Type (Drank FB in the Last 12 Months)

	Australia		New Zealand	
	Total	**FB Drinkers**	**Total**	**FB Drinkers**
Base: Unweighted	*1,281*	*341*	*810*	*490*
Base: Weighted (in 000)	*16,828*	*4,722*	*3,265*	*1,977*
	%	%	%	%
Increase total fluid consumption for the day but not replace some other drink	7+	26	18+	30
Replace some other drink on the day, but not increase total fluid consumption	15+	53+	26+	44+
Both increase total fluid consumption as well as replace some other drink	6+	21	16+	26
Not tried any Formulated Beverage in the last 12 months	72+	n/a	39+	n/a

Q11 : When you drink [Answer in Q3], does it …
Increase your total fluid consumption for the day, (but not replace some other drink)?
Replace some other drink on the day (but not increase your total fluid consumption)?
Both increase your total fluid consumption as well as replace some other drink?

Base : All respondents

\- Figure is less than 0.5%

\+ Difference significant between the two countries

Table 19: Formulated Beverage as a Substitute or Supplement for other Non-Alcoholic Beverages

By Age Group

	Australia						New Zealand					
	14 to 17	**18 to 24**	**25 to 34**	**35 to 44**	**45 to 54**	**55+**	**14 to 17**	**18 to 24**	**25 to 34**	**35 to 44**	**45 to 54**	**55+**
Base: Unweighted	*74*	*127*	*203*	*249*	*268*	*360*	*60*	*101*	*132*	*162*	*151*	*204*
Base: Weighted (in 000)	*1128*	*2016*	*2836*	*3012*	*2832*	*5003*	*253*	*404*	*536*	*640*	*555*	*876*
	%	%	%	%	%	%	%	%	%	%	%	%
Increase total fluid consumption for the day but not replace some other drink	19*	16*	7	7	6	2*	26	23	21	18	21	10*
Replace some other drink on the day, but not increase total fluid consumption	34*	20	22*	22*	10*	4*	30	31	35*	35*	23	14*
Both increase total fluid consumption as well as replace some other drink	9	9	11*	5	6	1*	31*	24	23*	19	11	4*
Not tried any Formulated Beverage in the last 12 months	38*	55*	60*	67	78*	93*	13*	22*	20*	28*	45	72*

Q11 : When you drink [Answer in Q3], does it …
Increase your total fluid consumption for the day, (but not replace some other drink)
Replace some other drink on the day (but not increase your total fluid consumption)
Both increase your total fluid consumption as well as replace some other drink
Base : All respondents
- Figure is less than 0.5%
* Difference significant as compared to the total population for that country

Non-Alcoholic Drinks Typically Replaced by Formulated Beverages

Amongst FB drinkers who say that FBs fully or partly replace other drinks on days they drink them, tap water is the drink most often replaced by Formulated Beverages, both in Australia and New Zealand (37% cf. 37%). In Australia, amongst the same group, bottled water is the drink second most often replaced by Formulated Beverages (24%), while in New Zealand tea and coffee rank second (23%). Filtered water ranks third in both Australia and New Zealand (20% cf. 22%), while soft drinks rank fourth in both Australia and New Zealand (19% cf 20%).

Table 20: Non-Alcoholic Drinks Typically Replaced by Formulated Beverages

By Country (Amongst Those For Whom Formulated Beverages Replace Other Drinks)

	Australia	New Zealand
Base: Unweighted	*254*	*344*
Base: Weighted (in 000)	*3,501*	*1,382*
	%	%
Tea / Coffee	15+	23+
White milk (except in tea / coffee)	1	2
Flavoured milk	3	3
Soy drinks	-	1
Tap water	37	37
Filtered water	20	22
Bottled still water (nothing added)	24	17
Bottled still water (flavours and/or vitamins added)	3	2
Bottled sparkling water (with or without flavour)	3	1
Fruit juice / Fruit drinks	9+	16+
Cordials	10	6
Energy Drinks (e.g. Red Bull)	2+	6+
Sports Drinks (e.g. Powerade)	9+	3+
Zero sugar / diet soft drinks	7	9
Soft drinks (e.g. cola, lemonade)	19	20
WATER SUMMARY		
Total Water with Nothing Added	67	63
Total Bottled Water	27+	18+

Q12 : When you drink [Answer in Q3], what other drink or drinks is it typically instead of?

Base : Those who have tried any Formulated Beverage brand in the last 12 months and claim that these drinks replace some other drink on the day (including those where Formulated Beverages both increase fluid consumption as well as replace some other drink)

\+ Difference significant between the two countries

Table 21: Non-Alcoholic Drinks Typically Replaced by Formulated Beverages

By Age Group (Amongst Those For Whom Formulated Beverages Replace Other Drinks)

	Australia						New Zealand					
	14 to 17	**18 to 24**	**25 to 34**	**35 to 44**	**45 to 54**	**55+**	**14 to 17**	**18 to 24**	**25 to 34**	**35 to 44**	**45 to 54**	**55+**
Base: Unweighted	*31*	*36*	*64*	*62*	*43*	*18*	*36*	*56*	*76*	*88*	*52*	*36*
Base: Weighted (in 000)	*488*	*583*	*931*	*791*	*468*	*241*	*155*	*223*	*313*	*345*	*192*	*154*
	%	%	%	%	%	%	%	%	%	%	%	%
Tea / Coffee	12	13	10	18	21	20	6*	15	17	26	30	42*
White milk (except in tea / coffee)	2	3	-	-	-	4	-	6	-	2	1	-
Flavoured milk	10	3	1	-	5	-	6	8	3	-	1	-
Soy drinks	-	-	-	-	-	-	-	-	2	-	-	-
Tap water	20*	42	39	45	36	30	37	46	43	30	37	29
Filtered water	26	11	18	21	24	28	16	18	24	19	18	41*
Bottled still water (nothing added)	4*	20	32	22	27	38	16	22	20	13	12	22
Bottled still water (flavours and/or vitamins added)	2	5	5	4	2	-	6	3	4	-	-	2
Bottled sparkling water (with or without flavour)	5	3	2	5	-	6	-	2	2	-	-	2
Fruit juice / Fruit drinks	17	13	10	5	2*	-	34*	18	8*	17	11	9
Cordials	18	9	10	9	7	-	13	5	8	6	-	-
Energy Drinks (e.g. Red Bull)	2	-	3	3	-	-	7	8	4	11*	-	-
Sports Drinks (e.g. Powerade)	8	7	10	11	10	-	4	5	4	3	-	-
Zero sugar / diet soft drinks	2	1*	6	12	12	11	6	17	4*	12	10	6
Soft drinks (e.g. cola, lemonade)	18	30	19	19	11	17	25	34*	27	15	8*	5*
WATER SUMMARY												
Total Water with Nothing Added	43*	70	74	70	70	66	60	69	73*	51*	64	64
Total Bottled Water	7*	25	34	29	27	44	16	26	20	13	12	22

Q12 : When you drink [Answer in Q3], what other drink or drinks is it typically instead of?

Base : Those who have tried any Formulated Beverage brand in the last 12 months and claim that these drinks replace some other drink on the day (including those where Formulated Beverages both increase fluid consumption as well as replace some other drink)

- Figure is less than 0.5%

* Difference significant as compared to the total population for that country

Non-Alcoholic Drinks that Typically Substitute Formulated Beverages

Amongst FB drinkers, bottled still water without additives ranks first in both countries as the drink type to replace Formulated Beverages if they were not available (Australia: 37% cf. New Zealand: 30%). Tap water ranked second in both countries as a replacement for FB (25% cf. 27%).

Table 22: Non-Alcoholic Drinks that Typically Substitute Formulated Beverages when FB brands are not available

By Country

	Australia	**New Zealand**
Base: Unweighted	*341*	*490*
Base: Weighted (in 000)	*4,722*	*1,977*
	%	%
Tea / Coffee	11	12
White milk (except in tea / coffee)	2	1
Flavoured milk	4	3
Soy drinks	1	-
Tap water	25	27
Filtered water	12+	18+
Bottled still water (nothing added)	37	30
Bottled still water (flavours and/or vitamins added)	10	10
Bottled sparkling water (with or without flavour)	5	4
Fruit juice / Fruit drinks	15	20
Cordials	7+	4+
Energy Drinks (e.g. Red Bull)	3+	11+
Sports Drinks (e.g. Powerade)	19	14
Zero sugar / diet soft drinks	11	11
Soft drinks (e.g. cola, lemonade)	17	17
Hot Chocolate / Cocoa (e.g. Milo)	-	1
NONE	2	2
Total Water with Nothing Added	63	62
Total Bottled Water	46+	37+

Q13 : Thinking about the last time you drank [Answer in Q3], if these drinks were not available, what would you have drunk instead?

Base : Those who have tried any Formulated Beverage brand in the last 12 months

- Figure is less than 0.5%

\+ Difference significant between the two countries

Table 23: Non-Alcoholic Drinks that Typically Substitute Formulated Beverages when FB brands are not available

By Age Group

	Australia						New Zealand					
	14 to 17	**18 to 24**	**25 to 34**	**35 to 44**	**45 to 54**	**55+**	**14 to 17**	**18 to 24**	**25 to 34**	**35 to 44**	**45 to 54**	**55+**
Base: Unweighted	*45*	*57*	*78*	*78*	*58*	*25*	*50*	*78*	*104*	*117*	*84*	*57*
Base: Weighted (in 000)	*699*	*912*	*1141*	*996*	*636*	*337*	*219*	*314*	*428*	*463*	*308*	*244*
	%	%	%	%	%	%	%	%	%	%	%	%
Tea / Coffee	7	4	7	16	20*	24	5*	2*	14	16	11	24*
White milk (except in tea / coffee)	3	-	-	3	4	-	-	1	-	2	3	-
Flavoured milk	10	-	2	5	2	6	13*	5	5	-	1*	1
Soy drinks	-	-	-	1	3	-	-	-	-	-	-	2
Tap water	31	24	21	26	23	24	35	15*	25	35*	27	24
Filtered water	18	7	7	14	18	18	23	9*	21	12*	16	38*
Bottled still water (nothing added)	22*	40	38	42	35	40	17*	35	31	31	26	37
Bottled still water (flavours and/or vitamins added)	3*	12	12	11	10	8	11	20*	7	8	7	10
Bottled sparkling water (with or without flavour)	4	3	2	6	10	4	8	1	3	4	3	4
Fruit juice / Fruit drinks	29*	13	15	8*	17	10	37*	17	15	16	23	18
Cordials	13	3	6	8	4	10	8	3	6	2	3	-
Energy Drinks (e.g. Red Bull)	4	3	6	-	-	-	19	15	13	11	2*	4*
Sports Drinks (e.g. Powerade)	15	25	16	25	15	14	14	11	19	17	11	7*
Zero sugar / diet soft drinks	13	10	9	9	13	16	12	11	12	10	11	10
Soft drinks (e.g. cola, lemonade)	27	16	15	18	10	22	32*	27*	15	11	10	11
Hot Chocolate / Cocoa (e.g. Milo)	-	-	-	-	-	-	3	1	1	-	-	-
Others	2	-	-	-	-	-	-	-	-	-	-	-
NONE	9	1	1	2	2	-	2	2	2	1	2	1
WATER SUMMARY												
Total Water with Nothing Added	61	61	59	67	63	71	55	49*	62	70*	61	70
Total Bottled Water	25*	47	50	51	49	46	18*	53*	36	36	33	44

Q13 : Thinking about the last time you drank [Answer in Q3], if these drinks were not available, what would you have drunk instead?

Base : Those who have tried any Formulated Beverage brand in the last 12 months

\- Figure is less than 0.5%

* Difference significant as compared to the total population for that country

Reasons for First Trial of Formulated Beverage

The most mentioned reason for first trial of Formulated Beverages was the same in both countries: "I was curious and wanted to try a new brand" (60% of Australian FB drinkers; 52% of New Zealand FB drinkers). The second most mentioned reason in Australia is: "Heard about the taste", while the second most mentioned reason in New Zealand is: "It was good value for money".

Table 24: Reasons for First Trial of Formulated Beverage

By Country

	Australia	**New Zealand**
Base: Unweighted	*341*	*490*
Base: Weighted (in 000)	*4,722*	*1,977*
	%	%
I saw it advertised	10+	15+
I was curious and wanted to try a new brand	60+	52+
It was the only choice of this type of drink available	10	7
It was a healthy drink	10	14
It was good value for money	7+	16+
Heard about the taste	11	13
Somebody else bought it for me / gave it to me	4	4
It was free/free sample	2	2
I was thirsty	1	-
I wanted the drink bottle for re-use	-	1
I needed re-hydration/fluid replacement/energy during/after exercise	2	2
Others	4	4

Q14 : When you first tried [Answer in Q3 if tried only one brand / Q4 if tried multiple brands], what were your reasons for trying this particular drink?

Base : Those who have tried any Formulated Beverage brand in the last 12 months

\- Figure is less than 0.5%

\+ Difference significant between the two countries

Table 25: Reasons for First Trial of Formulated Beverage

By Age Group

	Australia						New Zealand					
	14 to 17	**18 to 24**	**25 to 34**	**35 to 44**	**45 to 54**	**55+**	**14 to 17**	**18 to 24**	**25 to 34**	**35 to 44**	**45 to 54**	**55+**
Base: Unweighted	*45*	*57*	*78*	*78*	*58*	*25*	*50*	*78*	*104*	*117*	*84*	*57*
Base: Weighted (in 000)	*699*	*912*	*1141*	*996*	*636*	*337*	*219*	*314*	*428*	*463*	*308*	*244*
	%	%	%	%	%	%	%	%	%	%	%	%
I saw it advertised	3*	9	19*	9	9	4	13	24	8*	19	6*	22
I was curious and wanted to try a new brand	41*	56	66	62	74*	61	46	58	51	53	56	46
It was the only choice of this type of drink available	20	13	7	7	8	3	5	4	7	7	8	14
It was a healthy drink	13	7	13	5*	6	16	19	10	15	12	14	17
It was good value for money	2*	12	8	8	5	8	9*	11	19	24*	10	18
Heard about the taste	18	11	8	6	9	20	33*	22*	9	10	5*	7
Somebody else bought it for me / gave it to me	7	9	1	1	5	-	8	1*	2*	4	6	5
It was free/free sample	4	2	1	2	2	-	-	1	6	3	2	-
I was thirsty	2	-	1	1	-	4	-	-	2	-	-	-
I wanted the drink bottle for re-use	1	-	-	-	-	-	-	2	1	-	3	-
I needed re-hydration/fluid replacement/energy during/after exercise	2	3	3	1	-	-	-	1	3	1	4	2
Others	-	2	5	7	5	4	4	1	6	5	3	5

Q14 : When you first tried [Answer in Q3 if tried only one brand / Q4 if tried multiple brands], what were your reasons for trying this particular drink?

Base : Those who have tried any Formulated Beverage brand in the last 12 months

\- Figure is less than 0.5%

* Difference significant as compared to the total population for that country

Drink Choice Motivation

All respondents, irrespective of their involvement with Formulated Beverages, were asked about decision making factors when deciding what to drink. Taste is very important to the majority of Australians and New Zealanders (73% cf. 75%). "Flavour" ranked second in importance (40% cf. 37%).

Table 26: Drink Choice Motivation

By Country

	Australia				New Zealand			
	Importance				Importance			
	Very	Moderately	A Little	Not At All	Very	Moderately	A Little	Not At All
Base: Unweighted	*1,281*	*1,281*	*1,281*	*1,281*	*810*	*810*	*810*	*810*
Base: Weighted (in 000)	*16,828*	*16,828*	*16,828*	*16,828*	*3,265*	*3,265*	*3,265*	*3,265*
	%	%	%	%	%	%	%	%
Healthiness								
Contains vitamins and minerals	14	32	32	22	15	32	31	23
Keeps me healthy	37+	34	21	8	31+	37	23	9
Is nutritious	25+	35	26	14	19+	37	29	14
It has a low sugar or zero sugar content	31	29	22	18	32	28	23	17
Naturalness								
Contains no additives	31+	28	26	15+	25+	27	28	20+
Contains natural ingredients	32	36	21	12+	28	32	24	16+
Contains no artificial ingredients	31+	29	25	15+	25+	28	27	19+
Convenience								
Is easily available in shops	32	41	17	10	30	40	19	10
Can be bought in shops close to where I live / work	28	37	19	17	28	35	17	19
Is readily available at home	39+	32	17	11+	29+	29	20	22+
Sensory Appeal								
Smells nice	17	32	26	24	15	31	28	26
Looks nice	7	21	32	39	7	24	33	36
Tastes good	73	23	3	1	75	20	4	1
Has flavour	40	37	16	7+	37	37	15	11+
Price								
Is not expensive	34	41	18	6	33	42	18	7
Is good value for money	37	45	13	6	33	44	16	6
Familiarity								
Is familiar to me	15	42+	29	14	14	47+	27	11
Is what I usually drink	24	44	19	12	22	43	22	13
Is a product that most of my friends drink	-	5	14+	81+	1	5	17+	77+
Neophilia								
Is a new product	1	7	22	70	1	9	23	67
Is the first time I've seen a product	2	8	24	67	1	8	24	66

	Australia				New Zealand			
	Importance				Importance			
	Very	**Moderately**	**A Little**	**Not At All**	**Very**	**Moderately**	**A Little**	**Not At All**
Base: Unweighted	*1,281*	*1,281*	*1,281*	*1,281*	*810*	*810*	*810*	*810*
Base: Weighted (in 000)	*16,828*	*16,828*	*16,828*	*16,828*	*3,265*	*3,265*	*3,265*	*3,265*
A product so new that I'd be one of the first to try it	1	5	14	79	2	5	15	78
Provides Energy								
Is an energy "pick-me-up" drink	5	18+	28	49+	6	23+	29	42+
It re-hydrates my body quickly	20	35	28	17	22	37	25	17

Q15 : When you decide on something to drink, how important are the following in your decision?
Base : All Respondents
- Figure is less than 0.5%
+ Difference significant between the two countries

The following table and discussion looks at the same data, summarized to the "top two boxes" i.e. "very important" and "moderately important" combined, and compares FB drinkers and non-FB drinkers.

When comparing FB drinkers to non-FB drinkers within each country, significantly more non-FB drinkers than FB drinkers in New Zealand mentioned that a low sugar or zero sugar content is very important or moderately important for their drink choice motivation (66% cf. 55%). In Australia there was no significant difference between non-FB drinkers and FB drinkers for this same issue.

Taste is very important or moderately important to the vast majority of FB drinkers in both Australia and New Zealand (94% cf. 96%). "Good value for money" ranked second as being very important or moderately important for FB drinkers for drink choice motivation for Australians and New Zealanders (81% cf. 79%).

Table 27: Drink Choice Motivation

Very Important + Moderately Important (Top 2 Boxes) Rating
By Country and By Drinker Type (Drank FB in the Last 12 Months)

	Australia			New Zealand		
	Total	FB Drinker	Non-FB Drinker	Total	FB Drinker	Non-FB Drinker
Base: Unweighted	*1,281*	*341*	*940*	*810*	*490*	*320*
Base: Weighted (in 000)	*16,828*	*4,722*	*12,106*	*3,265*	*1,977*	*1,288*
	%	%	%	%	%	%
Healthiness						
Contains vitamins and minerals	46	47	45+	47	52^	39+^
Keeps me healthy	71	64^	74^	68	65^	72^
Is nutritious	60	53^	63^	56	56	57
It has a low sugar or zero sugar content	60	57	61	59	55^	66^
Naturalness						
Contains no additives	59+	53^	62^	52+	46+\^	60^
Contains natural ingredients	68+	63+^	70^	60+	55+^	68^
Contains no artificial ingredients	60+	53^	62^	53+	47^	63^
Convenience					^	
Is easily available in shops	73	74	72+	71	75^	64+^
Can be bought in shops close to where I live / work	65	70^	63^	64	68^	57^
Is readily available at home	71+	53+^	79^	58+	44+^	79^
Sensory Appeal						
Smells nice	49	50	49	46	46	46
Looks nice	28	30	28	30	32	27

	Australia			New Zealand		
	Total	**FB Drinker**	**Non-FB Drinker**	**Total**	**FB Drinker**	**Non-FB Drinker**
Base: Unweighted	*1,281*	*341*	*940*	*810*	*490*	*320*
Base: Weighted (in 000)	*16,828*	*4,722*	*12,106*	*3,265*	*1,977*	*1,288*
Tastes good	95	94	96+	95	96	93+
Has flavour	77	73	79+	74	75	73+
Price						
Is not expensive	75	77	74	75	78^	70^
Is good value for money	81	81	81+	77	79	75+
Familiarity						
Is familiar to me	57+	46+^	61^	61+	58+^	67^
Is what I usually drink	68	52^	74^	65	56^	78^
Is a product that most of my friends drink	5	6	5	6	7^	3^
Neophilia						
Is a new product	8	12^	7^	9	12^	6^
Is the first time I've seen a product	9	13^	8^	10	12^	7^
A product so new that I'd be one of the first to try it	6	7	6	7	9^	4^
Provides Energy						
Is an energy "pick-me-up" drink	24+	34^	19+^	29+	39^	14+^
It re-hydrates my body quickly	55	60	54	59	63^	52^

Q15 : When you decide on something to drink, how important are the following in your decision?
Base : All Respondents

- Figure is less than 0.5%

\+ Difference significant between the two countries

^ Difference significant between FB drinkers and non-FB drinkers within each country

Table 28: Drink Choice Motivation

Very Important + Moderately Important (Top 2 Boxes) Rating
By Age Group

	Australia						New Zealand					
	14 to 17	**18 to 24**	**25 to 34**	**35 to 44**	**45 to 54**	**55+**	**14 to 17**	**18 to 24**	**25 to 34**	**35 to 44**	**45 to 54**	**55+**
Base: Unweighted	*74*	*127*	*203*	*249*	*268*	*360*	*60*	*101*	*132*	*162*	*151*	*204*
Base: Weighted (in 000)	*1128*	*2016*	*2836*	*3012*	*2832*	*5003*	*253*	*404*	*536*	*640*	*555*	*876*
	%	%	%	%	%	%	%	%	%	%	%	%
Healthiness												
Contains vitamins and minerals	47	39	43	38*	47	54*	42	45	47	50	48	45
Keeps me healthy	56*	60*	66	66	76*	81*	52*	61	66	71	71	71
Is nutritious	49	54	58	54	63	67*	49	52	57	60	59	55
It has a low sugar or zero sugar content	41*	47*	56	54	69*	70*	27*	57	55	55	68*	71*
Naturalness												
Contains no additives	42*	40*	50*	55	70*	73*	23*	31*	50	56	61*	61*
Contains natural ingredients	45*	47*	64	63	78*	81*	30*	42*	55	63	72*	71*
Contains no artificial ingredients	45*	38*	53*	56	69*	72*	20*	31*	53	56	64*	65*
Convenience												
Is easily available in shops	62*	75	75	73	74	71	75	78	70	71	72	65
Can be bought in shops close to where I live / work	55	75*	70	65	63	60*	61	76*	68	60	63	58
Is readily available at home	59*	60*	66	69	75	81*	44*	45*	48*	47*	65	77*
Sensory Appeal												
Smells nice	52	58*	52	48	50	44*	54	49	53	39*	54*	39*
Looks nice	43*	37*	27	23*	28	25	47*	39	25	31	36	21*
Tastes good	96	94	97	96	94	95	97	93	98*	95	93	93
Has flavour	87*	77	77	76	74	78	84*	75	71	72	78	72
Price												
Is not expensive	79	82	79	75	73	70	84	80	83*	75	73	66*
Is good value for money	74	82	84	81	78	82	77	75	80	76	80	77
Familiarity												
Is familiar to me	57	61	50*	51*	54	66*	59	66	52*	54*	63	70
Is what I usually drink	66	71	62*	62*	64	77*	71	61	59	57*	69	72*
Is a product that most of my friends drink	18*	9	3*	2*	4	5	15*	8	4	4	5	4
Neophilia												

	Australia						New Zealand					
	14 to 17	**18 to 24**	**25 to 34**	**35 to 44**	**45 to 54**	**55+**	**14 to 17**	**18 to 24**	**25 to 34**	**35 to 44**	**45 to 54**	**55+**
Base: Unweighted	*74*	*127*	*203*	*249*	*268*	*360*	*60*	*101*	*132*	*162*	*151*	*204*
Base: Weighted (in 000)	*1128*	*2016*	*2836*	*3012*	*2832*	*5003*	*253*	*404*	*536*	*640*	*555*	*876*
Is a new product	22*	10	7	6	9	7	29*	9	10	7	9	6*
Is the first time I've seen a product	17	13	9	7	7	8	21*	12	7	7	9	10
A product so new that I'd be one of the first to try it	15*	9	4*	4	4	7	16	7	7	7	6	6
Provides Energy												
Is an energy "pick-me-up" drink	34	36*	25	22	21	18*	44*	42*	32	29	26	21*
It re-hydrates my body quickly	57	55	55	51	58	57	52	55	64	57	66	54

Q15 : When you decide on something to drink, how important are the following in your decision?
Base : All Respondents
- Figure is less than 0.5%
* Difference significant as compared to the total population for that country

Comparison of Beverages

The majority of Australians and New Zealanders perceived Formulated Beverages to be healthier than soft drinks (55% in Australia; 67% in New Zealand) and having more vitamins and minerals than soft drinks (59% in Australia; 69% in New Zealand).

Table 29: Comparison of Perceptions of Beverages against Formulated Beverages

By Country

	Australia						New Zealand					
	Tap Water	**Bottled Still Water**	**Soft Drinks**	**Fruit Juice**	**Milk**	**Zero Sugar / Diet Soft Drinks**	**Tap Water**	**Bottled Still Water**	**Soft Drinks**	**Fruit Juice**	**Milk**	**Zero Sugar / Diet Soft Drinks**
Base: Unweighted	*1,281*	*1,281*	*1,281*	*1,281*	*1,281*	*1,281*	*810*	*810*	*810*	*810*	*810*	*810*
Base: Weighted (in 000)	*16,828*	*16,828*	*16,828*	*16,828*	*16,828*	*16,828*	*3,265*	*3,265*	*3,265*	*3,265*	*3,265*	*3,265*
	%	%	%	%	%	%	%	%	%	%	%	%
FBs are perceived as												
More healthy than	11+	6+	55+	10+	6	36+	16+	11+	67+	21+	9	43+
As healthy as	22+	29	17+	31+	20+	26	26+	28	13+	42+	26+	25
Less healthy than	50	46	9	42+	55	13+	48	50	11	27+	54	19+
Can't Say	17+	19+	19+	18+	19+	25+	9+	10+	9+	10+	12+	13+
FBs are perceived as having												
More sugar than	72+	69+	8	16	51+	37	78+	75+	8	14	60+	41
Same sugar content as	3	6	20	29+	9	19	3	5	22	35+	9	22
Less sugar than	10	9	51+	31+	14	17	10	11	60+	40+	14	19
Can't Say	15+	16+	21+	24+	25+	28+	9+	9+	10+	12+	16+	17+
FBs are perceived as having												
More vitamins & minerals than	50+	50+	59+	11+	10+	53+	65+	64+	69+	21+	21+	64+
Same vitamins & minerals than	13+	15+	9	25+	17	13	9+	11+	8	34+	20	12
Less vitamins & minerals than	9	8	6+	36+	42+	5	11	10	9+	28+	36+	7
Can't Say	28+	27+	25+	28+	31+	29+	15+	15+	15+	17+	23+	18+

Q16 : Here are the drinks we showed you earlier. While you may not have tried all of these, we are interested in your general impressions. Would you say that these drinks are …?

Base : All Respondents

\- Figure is less than 0.5%

\+ Difference significant between the two countries

The majority of FB drinkers from both Australian and New Zealand perceived Formulated Beverages to be healthier than soft drinks (76% in Australia; 77% in New Zealand) and having more vitamins and minerals than soft drinks (79% in Australia; 76% in New Zealand).

Table 30: Comparison of Beverages against Formulated Beverages

Among those who drank Formulated Beverages in the last 12 months

	Australia						New Zealand					
	Tap Water	Bottled Still Water	Soft Drinks	Fruit Juice	Milk	Zero Sugar / Diet Soft Drinks	Tap Water	Bottled Still Water	Soft Drinks	Fruit Juice	Milk	Zero Sugar / Diet Soft Drinks
Base: Unweighted	*341*	*341*	*341*	*341*	*341*	*341*	*490*	*490*	*490*	*490*	*490*	*490*
Base: Weighted (in 000)	*4,722*	*4,722*	*4,722*	*4,722*	*4,722*	*4,722*	*1,977*	*1,977*	*1,977*	*1,977*	*1,977*	*1,977*
	%	%	%	%	%	%	%	%	%	%	%	%
FBs are perceived as												
More healthy than	17	10	76	19+	11	55	19	12	77	26+	9	52
As healthy as	26	37	11	41+	30	24	27	32	9	48+	31	25
Less healthy than	47	45	9	31+	48	12+	49	50	10	20+	50	18+
Can't Say	10+	8	4	9	12	9	5+	6	4	6	9	6
FBs are perceived as having												
More sugar than	79	77	7	12	55+	44	80	77	9	14	62+	43
Same sugar content as	3	6	17	36	12	22	3	6	20	38	10	26
Less sugar than	12	11	70	42	17	23	13	12	68	42	16	22
Can't Say	7	6	6+	10+	16	11	4	4	3+	6+	12	9
FBs are perceived as having												
More vitamins & minerals than	61+	62	79	15+	12+	74	70+	69	76	25+	25+	72
Same vitamins & minerals than	16+	18+	7	36	25	10	9+	12+	6	39	23	10
Less vitamins & minerals than	10	9	5+	36+	46+	5	11	11	10+	25+	32+	7
Can't Say	13	11	9	13	17	11	10	9	8	11	19	11

Q16 : Here are the drinks we showed you earlier. While you may not have tried all of these, we are interested in your general impressions. Would you say that these drinks are …?

Base : Those who have tried any Formulated Beverage brand in the Last 12 Months

\- Figure is less than 0.5%

\+ Difference significant between the two countries

Table 31: Comparison of Beverages against Formulated Beverages

By Age Group

	Australia						New Zealand					
	14 to 17	**18 to 24**	**25 to 34**	**35 to 44**	**45 to 54**	**55+**	**14 to 17**	**18 to 24**	**25 to 34**	**35 to 44**	**45 to 54**	**55+**
Base: Unweighted	*74*	*127*	*203*	*249*	*268*	*360*	*60*	*101*	*132*	*162*	*151*	*204*
Base: Weighted (in 000)	*1128*	*2016*	*2836*	*3012*	*2832*	*5003*	*253*	*404*	*536*	*640*	*555*	*876*
	%	%	%	%	%	%	%	%	%	%	%	%
FB vs. Tap Water												
More healthy than Tap Water	11	12	15	11	11	9*	23	13	15	18	20	13
As healthy as Tap Water	24	34*	21	26	21	16*	12*	28	25	27	29	28
Less healthy than Tap Water	59	47	50	52	45	50	60	53	55	50	42	42*
Can't Say	6*	7*	15	12*	23*	25*	5	7	5*	5*	9	17*
Has more sugar than Tap Water	75	77	76	77	70	64	73	83	85*	82	72	72*
Same sugar content as Tap Water	6	3	4	4	5	1*	4	3	1*	3	7*	2
Has less sugar than Tap Water	17	12	10	8	6*	10	17	8	12	11	9	9
Can't Say	2*	8*	9*	11*	18	25*	5	7	3*	4*	12	17*
More vitamins & minerals than Tap Water	40	52	57*	58*	49	44*	50*	66	72	76*	70	53*
Same vitamins & minerals than Tap Water	18	19	16	12	11	9*	11	10	8	8	9	11
Less vitamins & minerals than Tap Water	23*	14	8	8	9	6*	21*	11	14	8	9	8
Can't Say	19	15*	19*	22*	32	41*	18	14	6*	8*	13	28*
FB vs. Bottled Still Water												
More healthy than Bottled Still Water	5	5	7	8	8	6	18	5*	9	10	17*	10
As healthy as Bottled Still Water	29	37*	30	36*	25	22*	28	27	24	30	32	28
Less healthy than Bottled Still Water	56	51	50	45	41	43	44	62*	62*	55	40*	43*
Can't Say	10*	7*	13*	11*	26*	29*	9	7	4*	5*	11	19*
Has more sugar than Bottled Still Water	68	77	75*	72	66	63*	74	79	82*	81*	70	70*
Same sugar content as Bottled Still Water	13	6	9	8	7	2*	10	7	4	4	6	3

	Australia						New Zealand					
	14 to 17	**18 to 24**	**25 to 34**	**35 to 44**	**45 to 54**	**55+**	**14 to 17**	**18 to 24**	**25 to 34**	**35 to 44**	**45 to 54**	**55+**
Base: Unweighted	*74*	*127*	*203*	*249*	*268*	*360*	*60*	*101*	*132*	*162*	*151*	*204*
Base: Weighted (in 000)	*1128*	*2016*	*2836*	*3012*	*2832*	*5003*	*253*	*404*	*536*	*640*	*555*	*876*
Has less sugar than Bottled Still Water	15	10	9	6*	6	10	14	8	11	10	12	10
Can't Say	3*	7*	7*	15	20	25*	3*	6	3*	6	12	16*
More vitamins & minerals than Bottled Still Water	38*	52	55	56*	49	44*	46*	66	70	77*	66	55*
Same vitamins & minerals than Bottled Still Water	21	28*	18	15	13	8*	268	9	11	7*	12	9
Less vitamins & minerals than Bottled Still Water	21*	12	5	7	7	6	12	12	13	8	8	7
Can't Say	20	8*	22*	22*	31	41*	16	13	6*	8*	13	28*
FB vs. Soft Drinks												
More healthy than Soft Drinks	68*	77*	70*	62*	54	32*	66	83*	75*	72	63	52*
As healthy as Soft Drinks	16	9*	12*	16	18	23*	8	11	11	17	15	12
Less healthy than Soft Drinks	12	9	7	10	7	11	19	6*	10	8	12	13
Can't Say	3*	4*	12*	13*	21	34*	7	1*	3*	3*	9	23*
Has more sugar than Soft Drinks	15	7	6	7	6	8	11	3*	8	8	8	11
Same sugar content as Soft Drinks	17	13*	20	21	20	22	21	20	28	23	19	20
Has less sugar than Soft Drinks	64*	73*	65*	61*	46	29*	64	75*	62	65	63	46*
Can't Say	4*	6*	8*	11*	27*	41*	4*	2*	2*	4*	10	23*
More vitamins & minerals than Soft Drinks	68	82*	70*	69*	55	38*	59	87*	80*	80*	69	48*
Same vitamins & minerals than Soft Drinks	12	5*	7	10	10	11	8	5	7	5	11	10
Less vitamins & minerals than Soft Drinks	10	7	7	6	6	5	24*	2*	5	*5	8	12
Can't Say	10*	6*	16*	16*	30	46*	9	6*	8*	9*	12	30*
FB vs. Zero Sugar / Diet Soft Drinks												
More healthy than Zero Sugar / Diet Soft Drinks	53*	53*	47*	41	33	17*	42	59*	47	52*	48	24*
As healthy as Zero Sugar / Diet Soft Drinks	29	23	27	24	29	27	27	23	28	23	26	25
Less healthy than Zero Sugar / Diet Soft Drinks	14	13	9*	13	9*	19*	29	14	18	17	15	22

	Australia						New Zealand					
	14 to 17	**18 to 24**	**25 to 34**	**35 to 44**	**45 to 54**	**55+**	**14 to 17**	**18 to 24**	**25 to 34**	**35 to 44**	**45 to 54**	**55+**
Base: Unweighted	*74*	*127*	*203*	*249*	*268*	*360*	*60*	*101*	*132*	*162*	*151*	*204*
Base: Weighted (in 000)	*1128*	*2016*	*2836*	*3012*	*2832*	*5003*	*253*	*404*	*536*	*640*	*555*	*876*
Can't Say	4*	11*	17*	23	29*	37*	2*	4*	7*	8*	11	29*
Has more sugar than Zero Sugar / Diet Soft Drinks	45	35	39	45*	32	33	45	52*	42	49*	34	34*
Same sugar content as Zero Sugar / Diet Soft Drinks	24	23	22	22	16	14*	21	27	29	20	21	18
Has less sugar than Zero Sugar / Diet Soft Drinks	25	26*	21	17	14	9*	24	19	22	21	24	13*
Can't Say	6*	16*	17*	17*	38*	44*	10	2*	7*	11*	21	36*
More vitamins & minerals than Zero Sugar / Diet Soft Drinks	68*	74*	66*	60*	48	31*	57	84*	75*	73*	66	41*
Same vitamins & minerals than Zero Sugar / Diet Soft Drinks	13	6*	11	18*	13	14	13	6*	9	10	12	15*
Less vitamins & minerals than Zero Sugar / Diet Soft Drinks	8	6	6	4	3	4	15	4	6	5	5	8
Can't Say	11*	14*	16*	18*	36*	51*	15	6*	9*	11*	17	36*
FB vs. Fruit Juice												
More healthy than Fruit Juice	19	14	16*	12	7	3*	22	30	26	22	20	12*
As healthy as Fruit Juice	39	38	39*	37*	31	16*	42	50	44	52*	43	30*
Less healthy than Fruit Juice	39	38	29*	37*	39	55*	24	17*	25	22	27	39*
Can't Say	4*	9*	15	14	23*	25*	12	4*	5*	4*	10	20*
Has more sugar than Fruit Juice	14	16	11*	11*	17	23*	33*	7*	9*	15	10	15
Same sugar content as Fruit Juice	37	37	36*	30	26	21*	38	44	43*	35	31	27*
Has less sugar than Fruit Juice	38	39*	38*	42*	26	18*	20*	46	44	43	49*	31*
Can't Say	11*	8*	15*	17*	32*	38*	9	3*	5*	7*	10	27*
More vitamins & minerals than Fruit Juice	13	17	11	11	14	7*	17	30	23	31*	18	12*
Same vitamins & minerals than Fruit Juice	36	32	28	31*	20*	16*	44	34	39	36	34	27*
Less vitamins & minerals than Fruit Juice	37	41	41	38	29*	33	28	26	30	21*	28	32
Can't Say	13*	10*	20*	19*	37*	43*	12	11	7*	12	20	29*
FB vs. Milk												
More healthy than Milk	10	5	11*	8	5	4*	15	11	8	7	11	7
As healthy as Milk	34*	29*	22	20	19	12*	26	28	34*	31	28	14*

	Australia						New Zealand					
	14 to 17	**18 to 24**	**25 to 34**	**35 to 44**	**45 to 54**	**55+**	**14 to 17**	**18 to 24**	**25 to 34**	**35 to 44**	**45 to 54**	**55+**
Base: Unweighted	*74*	*127*	*203*	*249*	*268*	*360*	*60*	*101*	*132*	*162*	*151*	*204*
Base: Weighted (in 000)	*1128*	*2016*	*2836*	*3012*	*2832*	*5003*	*253*	*404*	*536*	*640*	*555*	*876*
Less healthy than Milk	49	55	51	56	52	61*	51	50	53	53	50	61*
Can't Say	7*	11*	17	17	25*	23*	8	11	6*	9	12	19*
Has more sugar than Milk	54	56	55	51	47	48	61	68	69*	59	58	54*
Same sugar content as Milk	14	11	9	12	10	5*	7	8	7	14*	7	8
Has less sugar than Milk	19	19	18	12	10*	14	22	10	13	13	17	14
Can't Say	13*	14*	18*	25	33*	33*	10	13	11*	13	18	24*
More vitamins & minerals than Milk	21*	14	12	7*	9	6*	22	24	33*	23	21	10*
Same vitamins & minerals than Milk	24	29*	19	18	13*	11*	23	24	22	27*	21	11*
Less vitamins & minerals than Milk	37	43	44	52*	38	39	35	32	31	28*	36	47*
Can't Say	18*	15*	25	23*	39*	44*	20	19	14*	22	22	32*

Q16 : Here are the drinks we showed you earlier. While you may not have tried all of these, we are interested in your general impressions. Would you say that these drinks are …?

Base : All Respondents

\- Figure is less than 0.5%

* Difference significant as compared to the total population for that country

APPENDIX ONE

TECHNICAL NOTES

Chi-Square Technical Notes

Chi-square tests were conducted on the age and location groups for both the New Zealand respondents and the Australian respondents compared to the New Zealand and Australian population patterns. Chi-square is a non-parametric test of statistical significance for bivariate tabular analysis. Statistical significance testing shows the degree of confidence you can have in accepting or rejecting a hypothesis.

Chi Square Calculation Australia												Pop	Survey	
	Brisbane	Reg QLD	Sydney	NSW/ACT	Melbourne	Reg Vic	TAS	Adelaide	Reg SA/NT	Perth	Reg WA	TOTAL	TOTAL	Chi Square
14-15	0.36320	0.36320	0.69007	0.53874	0.67191	0.21186	0.09685	0.18765	0.10896	0.30872	0.10896	3.65012	1.40000	1.38709
16-17	0.30266	0.32082	0.64165	0.45400	0.52058	0.21186	0.07264	0.16344	0.06659	0.21186	0.06659	3.03269	4.40000	0.61646
18-19	0.36320	0.40557	0.87167	0.49031	0.77482	0.29056	0.09685	0.23608	0.09685	0.30872	0.07869	4.01332	2.70000	0.42977
20-24	0.79903	0.82324	1.79782	1.00484	1.48910	0.49031	0.17554	0.46610	0.16344	0.65375	0.18160	8.04479	7.30000	0.06895
25-29	0.76271	0.79903	1.99153	0.87772	1.65254	0.41162	0.14528	0.42978	0.18160	0.58717	0.16344	8.00242	5.90000	0.55235
30-34	0.85351	0.90799	2.08232	1.18644	1.75545	0.56295	0.19976	0.47215	0.24818	0.65981	0.26029	9.18886	10.00000	0.07160
35-39	0.69007	0.81719	1.73123	1.02906	1.50121	0.50242	0.19370	0.41162	0.24213	0.61743	0.24818	7.98426	10.70000	0.92372
40-44	0.83535	0.98668	1.93099	1.31961	1.62833	0.61138	0.20581	0.49637	0.28450	0.65375	0.27240	9.22518	8.70000	0.02990
45-49	0.83535	1.02300	2.02179	1.30145	1.74334	0.71429	0.23002	0.56901	0.24818	0.71429	0.29056	9.69128	9.90000	0.00450
50-54	0.81114	0.88983	1.87651	1.23487	1.67676	0.58717	0.21186	0.55085	0.22397	0.67191	0.20581	8.94068	11.00000	0.47433
55-59	0.70823	0.78692	1.57385	1.07143	1.36199	0.57506	0.18765	0.44189	0.20581	0.57506	0.18160	7.66949	10.50000	1.04463
60-64	0.45400	0.68402	1.05932	0.91404	1.02300	0.39346	0.16949	0.36925	0.15133	0.40557	0.15133	5.77482	7.50000	0.51538
65-69	0.35714	0.53269	0.92010	0.79298	0.78692	0.39346	0.13317	0.26029	0.13923	0.33898	0.13923	4.79419	5.60000	0.13544
70+	0.70218	1.10169	1.96126	1.70702	1.58596	0.85351	0.28450	0.64165	0.29056	0.62954	0.23002	9.98789	4.50000	3.01535
TOTAL POP	8.83777	10.44189	21.15012	13.92252	18.17191	6.80993	2.40315	5.69613	2.65133	7.33656	2.57869	100	100	**9.26948**
FB SURVEY	10.10000	11.20000	14.30000	15.30000	17.60000	7.90000	3.70000	7.30000	3.40000	7.10000	2.20000	100	(22.362 at 13 degree of	
Chi-Square	0.18027	0.05504	2.21862	0.13629	0.01800	0.17449	0.69984	0.45161	0.21140	0.00763	0.05561	**4.20881**		

(18.307 at 10 degree of difference)

Chi Square Calculations New Zealand						POP	FB Survey	
	Auckland	Wellington	Other Northern	Canterbury	Other Southern	TOTAL	Total	Chi Square
14-15	1.11283	0.37094	1.36012	0.52550	0.43277	3.80216	1.50000	1.39393
16-17	1.14374	0.46368	1.29830	0.40185	0.46368	3.77125	5.90000	1.20161
18-19	1.48377	0.30912	1.51468	0.37094	0.37094	4.04946	3.30000	0.13871
20-24	2.62751	1.17465	2.50386	1.23648	1.02009	8.56260	9.10000	0.03373
25-29	1.94745	0.71097	1.85471	0.68006	0.46368	5.65688	4.90000	0.10127
30-34	3.61669	1.39104	3.27666	1.42195	1.17465	10.88099	11.40000	0.02476
35-39	2.56569	0.95827	2.75116	1.02009	0.95827	8.25348	9.50000	0.18826
40-44	2.93663	1.20556	3.40031	1.32921	1.11283	9.98454	10.50000	0.02661
45-49	3.09119	1.08192	3.24575	1.29830	1.20556	9.92272	8.50000	0.20399
50-54	2.10201	0.86553	2.87481	1.11283	0.86553	7.82071	10.10000	0.66428
55-59	2.07110	0.83462	2.16383	1.02009	0.95827	7.04791	10.60000	1.79022
60-64	1.63833	0.58733	2.22566	0.61824	0.74189	5.81144	5.70000	0.00214
65-69	1.57651	0.55641	2.10201	0.98918	0.83462	6.05873	4.90000	0.22161
70+	2.00927	0.92736	3.18393	1.14374	1.11283	8.37713	3.80000	2.50087
TOTAL POP	29.92272	11.43740	33.75580	13.16847	11.71561	100	100	**8.49198**
TOTAL FB Survey	38.30000	11.40000	26.20000	12.60000	11.50000	100	(22.362 at 13 degree of d	
Chi-Square	2.34534	0.00012	1.69127	0.02454	0.00397	**4.06523**		

(9.488 at 4 degree of freedom)

The tests showed that within both countries, for both age and location, the differences between the sample distribution and the population distribution were not statistically significant. .

Significance Testing Technical Notes

Statistical significance testing of the survey results has been conducted for individual cells within each country and between the two countries. Individual cells were compared with corresponding row totals for significance testing within each country. For significance testing between the two countries, individual cells from Australia were compared with corresponding cells from New Zealand.

Significance tests were conducted at the 95 percent confidence level using a two-tailed test. If significance occurs at the 95 percent significance level, it means that there is less than a 5 percent probability that a difference occurred by chance. The test applied is a simple large-sample two-tailed *z*-test. In the case of proportions this is equivalent to a 2×2 c^2 (chi-squared) test. Each cell was tested independently, which ensures consistency of testing.

APPENDIX TWO

FINAL QUESTIONNAIRE

Just to ensure we have a representative sample, in which of these age groups do you belong?

14-15	1
16-17	2
18-19	3
20-24	4
25-29	5
30-34	6
35-39	7
40-44	8
45-49	9
50-54	10
55-59	11
60-64	12
65-69	13
70+	14

Please indicate the area in which you live.

Brisbane	1
Regional Queensland	2
Sydney	3
Regional NSW/ ACT	4
Melbourne	5
Regional Victoria	6
Tasmania	7
Adelaide	8
Regional South Australia /Northern Territory	9
Perth	10
Regional Western Australia	11

Please indicate the area in which you live.

Auckland	1
Wellington	2
Other Northern	3
Canterbury	4
Other Southern	5

1. This question is about what you drink in a typical week. Which of the following types of non-alcoholic drinks would you normally drink?
SELECT ALL THAT APPLY

Tea / Coffee	1,
White milk (apart from milk in tea or coffee)	2,
Flavoured milk	3,
Soy drinks (e.g. So Good, Vitasoy etc)	4,
Tap water	5,
Filtered water	6,
Bottled still water (nothing added)	7,
Bottled still water (flavours and/or vitamins added)	8,
Bottled sparkling water (with or without flavour)	9,
Fruit juice / fruit drinks	10,
Cordials	11,
Energy drinks (e.g. Red Bull, Red Eye etc)	12,
Sports drinks (e.g. Powerade, Gatorade etc)	13,
Zero sugar / diet soft drinks	14,
Soft drinks (e.g. cola, lemonade etc)	15,
Other ($IT1Click here and enter in box below$IT2)	97,

2. In a typical week, which of the following would you drink the most of?
SELECT ONE ANSWER ONLY

Tea / Coffee	1
White milk (apart from milk in tea or coffee)	2
Flavoured milk	3
Soy drinks (e.g. So Good, Vitasoy etc)	4
Tap water	5
Filtered water	6
Bottled still water (nothing added)	7
Bottled still water (flavours and/or vitamins added)	8
Bottled sparkling water (with or without flavour)	9
Fruit juice / fruit drinks	10
Cordials	11
Energy drinks (e.g. Red Bull, Red Eye etc)	12
Sports drinks (e.g. Powerade, Gatorade etc)	13
Zero sugar / diet soft drinks	14
Soft drinks (e.g. cola, lemonade etc)	15
%O%68	97

3. After %69., which of the following would you drink the $UL1second$UL2 most of?
SELECT ONE ANSWER ONLY

Tea / Coffee	1
White milk (apart from milk in tea or coffee)	2
Flavoured milk	3
Soy drinks (e.g. So Good, Vitasoy etc)	4
Tap water	5
Filtered water	6
Bottled still water (nothing added)	7
Bottled still water (flavours and/or vitamins added)	8
Bottled sparkling water (with or without flavour)	9
Fruit juice / fruit drinks	10
Cordials	11
Energy drinks (e.g. Red Bull, Red Eye etc)	12
Sports drinks (e.g. Powerade, Gatorade etc)	13
Zero sugar / diet soft drinks	14
Soft drinks (e.g. cola, lemonade etc)	15
%O%68	97

4. After %69. AND %70., which of the following would you drink the $UL1third$UL2 most of?
SELECT ONE ANSWER ONLY

Tea / Coffee	1
White milk (apart from milk in tea or coffee)	2
Flavoured milk	3
Soy drinks (e.g. So Good, Vitasoy etc)	4
Tap water	5
Filtered water	6
Bottled still water (nothing added)	7
Bottled still water (flavours and/or vitamins added)	8
Bottled sparkling water (with or without flavour)	9
Fruit juice / fruit drinks	10
Cordials	11
Energy drinks (e.g. Red Bull, Red Eye etc)	12
Sports drinks (e.g. Powerade, Gatorade etc)	13
Zero sugar / diet soft drinks	14
Soft drinks (e.g. cola, lemonade etc)	15
%O%68	97

%55. %56.

5. New types of non-alcoholic water based beverages are now becoming more common. From the following please select all the drinks you have tried in the last 12 months ...
SELECT ALL THAT APPLY

Mizone	1,
G Force	2,
Thorpedo	3,
Play	4,
Temple Hydrotherapy	5,
Waterplus	6,
Aquashot	7,
E2	8,
Charlies Sportswater	9,
None of these	10,

%58.
6. You have tried %73. %74. .
How often do you drink %329,/these drinks (in total)/ this drink/ ?

Not a regular drinker, only tried them once or twice.....	1
Once every few months.....	2
Once a month.....	3
Once a fortnight.....	4
Once a week.....	5
Once every three or four days.....	6
Every second day.....	7
Once a day.....	8
Several times a day.....	9
Other ($IT1Click here and enter in box below$IT2).....	97

Has tried multiple drinks at q3, ask:

7. Which of these do you drink the most?
SELECT ONE ANSWER ONLY

Mizone 1,
G Force 2,
Thorpedo 3,
Play 4,
Temple Hydrotherapy 5,
Waterplus 6,
Aquashot 7,
E2 8,
Charlies Sportswater 9,
None of these 10,

if answer to Q6 is greater than or equal to once a fortnight, ask:

%58.
8. On a typical day when you drink %73. %74., how much would you drink of %362,/these drinks (in total)/ this drink/ ?
(A standard bottle is 600ml in size)

Less than one bottle..... 1

One bottle..... 2

Two bottles..... 3

Three bottles..... 4

More than 3 bottles ($IT1Click here and enter how many bottles in box below$IT2)..... 97

9. On a typical day when you drink %73. %74., what other non-alcoholic drinks would you also drink?
SELECT ALL THAT APPLY

Tea / Coffee..... 1,

White milk (apart from milk in tea or coffee)..... 2,

Flavoured milk..... 3,

Soy drinks (e.g. So Good, Vitasoy etc)..... 4,

Tap water..... 5,

Filtered water..... 6,

Bottled still water (nothing added)..... 7,

Bottled still water (flavours and/or vitamins added)..... 8,
<SHEAD>
Bottled sparkling water (with or without flavour)..... 9,

Fruit juice / fruit drinks..... 10,

Cordials..... 11,

Energy drinks (e.g. Red Bull, Red Eye etc)..... 12,

Sports drinks (e.g. Powerade, Gatorade etc)..... 13,

Zero sugar / diet soft drinks..... 14,

Soft drinks (e.g. cola, lemonade etc)..... 15,

Other ($IT1Click here and enter in box below$IT2)..... 97,

10. Thinking of your TOTAL non-alcoholic fluid consumption. On a typical day when you have drinks like %73. %74., what would be your total consumption of fluids?

Less than one litre	1
About one litre	2
More than one litre but less than two litres	3
About two litres	4
More than two litres but less than three litres	5
About three litres	6
More than three litres ($IT1Click here and enter how many litres in box below$IT2)	97

11. When you drink %73. %74., does it ...

Increase your total fluid consumption for the day, (but not replace some other drink)	1
Replace some other drink on the day, (but not increase your total fluid consumption)	2
Both increase your total fluid consumption, as well as replace some other drink	3

If answer to above is b or c, ask:

12. When you drink %73. %74., what other drink or drinks is it typically instead of?

SELECT ALL THAT APPLY

Tea / Coffee	1,
White milk (apart from milk in tea or coffee)	2,
Flavoured milk	3,
Soy drinks (e.g. So Good, Vitasoy etc)	4,
Tap water	5,
Filtered water	6,
Bottled still water (nothing added)	7,
Bottled still water (flavours and/or vitamins added)	8,
Bottled sparkling water (with or without flavour)	9,
Fruit juice / fruit drinks	10,
Cordials	11,
Energy drinks (e.g. Red Bull, Red Eye etc)	12,
Sports drinks (e.g. Powerade, Gatorade etc)	13,
Zero sugar / diet soft drinks	14,
Soft drinks (e.g. cola, lemonade etc)	15,
Other ($IT1Click here and enter in box below$IT2)	97,
None/ does not substitute anything	99,

13. Thinking about the last time you drank %73. %74., if %382,/these drinks/ this drink/ had not been available, what would you have drunk instead?
SELECT ALL THAT APPLY

Tea / Coffee	1,
White milk (apart from milk in tea or coffee)	2,
Flavoured milk	3,
Soy drinks (e.g. So Good, Vitasoy etc)	4,
Tap water	5,
Filtered water	6,
Bottled still water (nothing added)	7,
Bottled still water (flavours and/or vitamins added)	8,
Bottled sparkling water (with or without flavour)	9,
Fruit juice / fruit drinks	10,
Cordials	11,
Energy drinks (e.g. Red Bull, Red Eye etc)	12,
Sports drinks (e.g. Powerade, Gatorade etc)	13,
Zero sugar / diet soft drinks	14,
Soft drinks (e.g. cola, lemonade etc)	15,
Other ($IT1Click here and enter in box below$IT2)	97,
None/ does not substitute anything	99,

14. When you first tried %77., what were your reasons for trying this particular drink?
SELECT ALL THAT APPLY

I saw it advertised	1,
I was curious and wanted to try a new brand	2,
It was the only choice of this type of drink available	3,
It was a healthy drink	4,
It was good value for money	5,
Heard about the taste	6,
Other ($IT1Click here and enter in box below$IT2)	97,

15A. When you decide on something to drink, how important are the following in your decision?

Contains vitamins and minerals

Not important at all..... 1
A little important..... 2
Moderately important..... 3
Very important..... 4

Keeps me healthy

Not important at all..... 1
A little important..... 2
Moderately important..... 3
Very important..... 4

Is nutritious

Not important at all..... 1
A little important..... 2
Moderately important..... 3
Very important..... 4

Contains no additives

Not important at all..... 1
A little important..... 2
Moderately important..... 3
Very important..... 4

Contains natural ingredients

Not important at all..... 1
A little important..... 2
Moderately important..... 3
Very important..... 4

Contains no artificial ingredients

Not important at all..... 1
A little important..... 2
Moderately important..... 3
Very important..... 4

Is easily available in shops

Not important at all..... 1
A little important..... 2
Moderately important..... 3
Very important..... 4

Can be bought in shops close to where I live/ work

Not important at all..... 1

A little important..... 2

Moderately important..... 3

Very important..... 4

<SHEAD>

Is readily available at home

Not important at all..... 1

A little important..... 2

Moderately important..... 3

Very important..... 4

Smells nice

Not important at all..... 1

A little important..... 2

Moderately important..... 3

Very important..... 4

Looks nice

Not important at all..... 1

A little important..... 2

Moderately important..... 3

Very important..... 4

Tastes good

Not important at all..... 1

A little important..... 2

Moderately important..... 3

Very important..... 4

Has flavour

Not important at all..... 1

A little important..... 2

Moderately important..... 3

Very important..... 4

Is not expensive

Not important at all..... 1

A little important..... 2

Moderately important..... 3

Very important..... 4

Is good value for money

Not important at all..... 1

A little important..... 2

Moderately important..... 3

Very important..... 4

Is familiar to me

Not important at all..... 1

A little important..... 2

Moderately important..... 3

Very important..... 4

Is what I usually drink

Not important at all..... 1

A little important..... 2

Moderately important..... 3

Very important..... 4

Is a new product

Not important at all..... 1

A little important..... 2

Moderately important..... 3

Very important..... 4

Is the first time I've seen a product

Not important at all..... 1

A little important..... 2

Moderately important..... 3

Very important..... 4

A product so new that I'd be one of the first to try

Not important at all..... 1

A little important..... 2

Moderately important..... 3

Very important..... 4

It has a low sugar or zero sugar content

Not important at all..... 1

A little important..... 2

Moderately important..... 3

Very important..... 4

Is an energy "pick-me-up" drink

Not important at all..... 1

A little important..... 2

Moderately important..... 3

Very important..... 4

It re-hydrates my body quickly

Not important at all..... 1

A little important..... 2

Moderately important..... 3

Very important..... 4

Is a product that most of my friends drink

Not important at all	1
A little important	2
Moderately important	3
Very important	4

16. Here are the drinks we showed you earlier $RG1

$IM1 $IM2
%400,/ $IM3//%402,/ $IM4//%404,/ $IM5
//%406,/ $IM6
//%408,/ $IM7//%410,/ $IM8//%412,/ $IM9 //

$RG2 While you may not have tried all of these, we are interested in your general impressions. Would you say that these drinks are:

Tap Water

More healthy than	1
As healthy as	2
Less healthy than	3
Can't Say	4

Bottled Still Water

More healthy than	1
As healthy as	2
Less healthy than	3
Can't Say	4

Soft Drinks

More healthy than	1
As healthy as	2
Less healthy than	3
Can't Say	4

Fruit Juice

More healthy than	1
As healthy as	2
Less healthy than	3
Can't Say	4

Milk

More healthy than	1
As healthy as	2
Less healthy than	3
Can't Say	4

zero sugar / diet soft drinks

More healthy than	1
As healthy as	2
Less healthy than	3
Can't Say	4

Tap Water

Contain more sugar than	1
Contain the same amount of sugar as	2
Contain less sugar than	3
Can't Say	4

Bottled Still Water

Contain more sugar than..... 1

Contain the same amount of sugar as..... 2

Contain less sugar than..... 3

Can't Say..... 4

Soft Drinks

Contain more sugar than..... 1

Contain the same amount of sugar as..... 2

Contain less sugar than..... 3

Can't Say..... 4

Fruit Juice

Contain more sugar than..... 1

Contain the same amount of sugar as..... 2

Contain less sugar than..... 3

Can't Say..... 4

Milk

Contain more sugar than..... 1

Contain the same amount of sugar as..... 2

Contain less sugar than..... 3

Can't Say..... 4

zero sugar / diet soft drinks

Contain more sugar than..... 1

Contain the same amount of sugar as..... 2

Contain less sugar than..... 3

Can't Say..... 4

Tap Water

Contain more Vitamins & Minerals than..... 1

Contain the same amount of Vitamins & Minerals as..... 2

Contain less Vitamins & Mineralsthan..... 3

<SHEAD>

Can't Say..... 4

Bottled Still Water

Contain more Vitamins & Minerals than..... 1

Contain the same amount of Vitamins & Minerals as..... 2

Contain less Vitamins & Mineralsthan..... 3

Can't Say..... 4

Soft Drinks

Contain more Vitamins & Minerals than..... 1

Contain the same amount of Vitamins & Minerals as..... 2

Contain less Vitamins & Mineralsthan..... 3

Can't Say..... 4

Fruit Juice

Contain more Vitamins & Minerals than..... 1

Contain the same amount of Vitamins & Minerals as..... 2

Contain less Vitamins & Mineralsthan..... 3

Can't Say..... 4

Milk

Contain more Vitamins & Minerals than..... 1

Contain the same amount of Vitamins & Minerals as..... 2

Contain less Vitamins & Mineralsthan..... 3

Can't Say..... 4

zero sugar / diet soft drinks

Contain more Vitamins & Minerals than..... 1

Contain the same amount of Vitamins & Minerals as..... 2

Contain less Vitamins & Mineralsthan..... 3

Can't Say..... 4

%58.

19. THIS QUESTION IS ABOUT YOUR USUAL CONSUMPTION OF VEGETABLES, INCLUDING FRESH, FROZEN AND TINNED VEGETABLES.

Thinking about a serve as half a cup of cooked vegetables or 1 cup of salad vegetables. How many serves of vegetables do you usually eat each day?

One serve or less..... 1

Two serves..... 2

Three serves..... 3

Four serves..... 4

Five serves..... 5

Six or more serves ($IT1Click here and enter in box below$IT2)..... 97

Don't eat vegetables..... 98

20. THIS QUESTION IS ABOUT YOUR USUAL CONSUMPTION OF FRUIT, INCLUDING FRESH, FROZEN AND TINNED FRUIT.

Thinking about a serve as 1 medium piece or 2 small pieces of fruit or 1 cup of diced pieces. How many serves of fruit do you usually eat each day?

One serve or less..... 1

Two serves..... 2

Three serves..... 3

Four serves..... 4

Five serves..... 5

Six or more serves ($IT1Click here and enter in box below$IT2)..... 97

Don't eat fruit..... 98

21. In the last two weeks, how many times have you walked for sport, recreation or fitness or to get to or from places for at least 10 minutes continuously?

|__|__+

WARNING4

ArialRED Please check your response. You mentioned earlier that there were %172. occasions when you walked for at least 10 minutes continuously. Please review the page and answer questions..... 1,

If walked at least once, ASK:

%173.

<SHEAD>

22. IN TOTAL, how long would you estimate that you spent walking in the last two weeks on %446,/ this/ these/ %172. occasions?

PLEASE ENTER THE NUMBER OF HOURS IN THE FIRST BOX AND THE NUMBER OF MINUTES IN THE SECOND BOX BELOW

|__|__+

|__|__+

hours minutes

23. Thinking about moderate exercise excluding walking. By moderate exercise, we mean any exercise which caused a moderate increase in your heart rate or breathing. In the last two weeks, did you do any moderate exercise?

Yes..... 1

No..... 2

Can't say..... 3

if participate in moderate exercise, ask:

24. In the last two weeks, how many times have you done any moderate exercise?

|__|__+

If done moderate exercise, ASK:

%55.

25. IN TOTAL, how long would you estimate that you spent doing moderate exercise in the last two weeks on %454,/this/these/ %176. occassions?

PLEASE ENTER THE NUMBER OF HOURS IN THE FIRST BOX AND THE NUMBER OF MINUTES IN THE SECOND BOX BELOW

|__|__+

|__|__+

hours minutes

26. Thinking about vigorous exercise. By vigorous exercise , we mean any exercise which caused a large increase in your heart rate or breathing. In the last two weeks, did you do any vigorous exercise?

Yes..... 1

No..... 2

Can't say..... 3

if participate in vigorous exercise, ask:

27. In the last two weeks, how many times have you done any vigorous exercise?

|__|__+

If done vigorous exercise, ASK:

+----------+
| %55. |
+----------+

<SHEAD>

28. IN TOTAL, how long would you estimate that you spent doing vigorous exercise in the last two weeks on %462,/this/these/ %179. occasions ?

PLEASE ENTER THE NUMBER OF HOURS IN THE FIRST BOX AND THE NUMBER OF MINUTES IN THE SECOND BOX BELOW

|__|__+

|__|__+

+-----------------+
| hours minutes |
+-----------------+

29. Below are statements about buying food. Which of these best describes how you choose when buying food for your household?

I never deliberately choose the healthy or nutritious alternative	1
I seldom deliberately choose the healthy or nutritious alternative	2
I sometimes choose the healthy or nutritious alternative	3
I mostly deliberately choose the healthy or nutritious alternative	4
I always deliberately choose the healthy or nutritious alternative	5
I never purchase food for my household	6

30. Do you read the labels on bottles of drinks to check the ingredients/contents?

Yes, always	1
Yes, often	2
Yes, sometimes	3
Yes, the first time I buy a new product	4
No	5
Don't know	6

31. Please indicate if you are male or female

Male	1
Female	2

<SHEAD>

32. Please indicate your household's TOTAL approximate annual income from all sources, before tax?
IF YOU ARE NOT CERTAIN, PLEASE GIVE YOUR BEST ESTIMATE (WEEKLY EQUIVALENTS IN BRACKETS).

Nil income	1
$1 - $10,000 per year ($1-$192 per week)	2
$10,001 - $25,000 per year ($193-$480 per week)	3
$25,001 - $40,000 per year ($481-$769 per week)	4
$40,001 - $55,000 per year ($770-$1057 per week)	5
$55,001 - $70,000 per year ($1058-$1346 per week)	6
$70,001 - $85,000 per year ($1347-$1634 per week)	7
$85,001 - $100,000 per year ($1635-$1923 per week)	8
$100,001 or more per year ($1924 or more per week)	9
Prefer not to answer	10

33. What is the highest level of education you've reached?

Primary school	1
Secondary school up to year 10 (previously also called 4th form)	2
Secondary school up to year 11 or 12 (previously also called 5th form or 6th form)	3
Trade qualifications	4
Certificate (non-trade) and Diplomas	5
Bachelor Degree	6
Higher Qualifications/Postgraduate Degree	7
Other	8

END-OF-QUESTIONNAIRE

ATTACHMENT 4

Survey Sample Characteristics

Table A: Survey sample by country

Country	Count	Percentage
Australia	1281	61.3%
New Zealand	810	38.7%
Total	**2091**	**100%**

Table B: Survey sample by age and sex

Age groups	Male	Female	Total Sample
14 – 17	64 (7.6%[11])	70 (5.6%)	134 (6.4%)
18 – 24	67 (8.0%)	161 (12.9%)	228 (10.9%)
25 – 34	100 (11.9%)	235 (18.8%)	335 (16.0%)
35 – 44	148 (17.6%)	263 (21.0%)	411 (19.7%)
45 – 54	176 (21%)	243 (19.4%)	419 (20.0%)
55 +	284 (33.8%)	280 (22.4%)	564 (27.0%)
Total	**839 (40.1%[12])**	**1252 (59.9%)**	**2091**

Table C: Survey sample by highest formal education level attained

Formal education level attained	Count	Percentage
Primary school	7	0.3%
Secondary school to year 10/4th form	207	9.9%
Secondary school to year 11/5th form or year 12/6th form	515	24.6%
Trade qualifications	162	7.7%
Certificate (non-trade) and diplomas	453	21.7%
Bachelor Degrees	441	21.1%
Higher qualifications and postgraduate degrees	277	13.2%
Others	29	1.4%
Total	**2091**	**100%**

[11] Percentages in the body of the table are proportions of the column.
[12] Percentages in the "Total" row are proportions of the row.

Table D: Survey sample by household income

Household income levels (local currency)	Australia	New Zealand	Total Sample
Nil Income	12 (0.9%)	6 (0.7%)	18 (0.9%)
$1 - $10,000 p/y ($1-$192 p/w)	33 (2.6%)	27 (3.3%)	60 (2.9%)
$10,001 - $25,000 p/y ($193-$480 p/w)	144 (11.2%)	72 (8.9%)	216 (10.3%)
$25,001 - $40,000 p/y ($481-$769 p/w)	162 (12.6%)	109 (13.5%)	271 (13.0%)
$40,001 - $55,000 p/y ($770-$1057 p/w)	138 (10.8%)	112 (13.8%)	250 (12.0%)
$55,001 - $70,000 p/y ($1058-$1346 p/w)	166 (13.0%)	116 (14.3%)	282 (13.5%)
$70,001 - $85,000 p/y ($1347-$1634 p/w)	120 (9.4%)	82 (10.1%)	202 (9.7%)
$85,001 - $100,000 p/y ($1635-$1923 p/w)	113 (8.8%)	73 (9.0%)	186 (8.9%)
$100,001+ p/y ($1924 +p/w)	210 (16.4%)	140 (17.3%)	350 (16.7%)
No Answer	183 (14.3%)	73 (9.0%)	256 (12.2%)

Attachment 5

Estimated mean consumption for consumers of formulated beverages from the 1995 Australian and 1997 New Zealand National Nutrition Surveys

Country	Population Group	No. of Respondents	No. of Consumers (% consumers to respondents)	Estimated mean consumption of FBs* (g/day)
Australia	14-17 years	599	439 (73)	795
	18-24 years	1,195	808 (68)	800
	25-34 years	2,352	1,294 (55)	679
	35-44 years	2,173	924 (43)	601
	45-54 years	1,869	691 (37)	541
	55 years and above	3,397	969 (29)	416
New Zealand	15-17 years	187	104 (56)	691
	18-24 years	413	205 (50)	758
	25-34 years	971	362 (37)	612
	35-44 years	993	303 (31)	509
	45-54 years	673	186 (28)	425
	55 years and above	1,399	263 (19)	311

* Based on assumed substitution of 'like' beverages (fruit juice drinks, cordials, soft drinks, mineral waters, sports drinks and bottled waters)

ATTACHMENT 6

Revised Assessment of the Dental Health Risks Associated with the Consumption of Sugar-Containing and Acidic Beverages

Diet can play a significant role in the development of dental problems, by increasing the exposure of teeth to an acidic environment. Dental caries is the progressive destruction of the teeth by acids that are generated by bacteria in the mouth. This condition differs from dental erosion, which involves the chemical etching and irreversible loss of dental enamel by exposure to non-bacterial acids (Moynihan and Petersen, 2004; British Nutrition Foundation, 2005).

1. Assessment of the Evidence Base on Dental Caries

There is a well-established link between dental caries and sugar consumption. Dental caries is a multifactorial disease, influenced by tooth composition, exposure to fluoride and the type of bacteria in the mouth (Woodward and Walker, 1994). However, a regular and high intake of sugar from dietary sources remains one of several primary risk factors for the development of dental caries (Moynihan, 2002; World Health Organization, 2003).

Sugar-containing beverages are major contributors to the overall sugar intake that can contribute to dental caries (Levy *et al*., 2003; Moynihan and Petersen 2004). However, while there is good evidence on the association between sugar consumption and dental caries, there is little information on the influence of specific sugar-containing foods such as beverages.

FSANZ has been able to identify five studies that specifically examine the relationship between sugar-containing beverages and dental caries.

A prospective cohort study by (Marshall *et al*., 2003) on children (aged 1 to 5 years) who were followed over fours years showed that high intakes of sugar-containing beverages over this period produced significantly higher odds of caries experience compared to those with a low or nil intake (OR = 2.2, 95% CI = 1.4 -3.6). Another prospective cohort study of children (mean age = 7.1 years) showed that the daily intake of sugar containing beverages resulted in a greater risk of caries development compared to lower intakes of these beverages (OR = 1.24, 95% CI = 1.08 – 1.42, p = 0.0023) (Martens *et al*., 2004).

Three studies have also reviewed the cohort data from the first and third United States National Health and Nutrition Examination Surveys (NHANES), with the purpose of identifying any associations between sugar-containing (carbonated) beverage intake and dental caries (Ismail *et al*., 1984; Heller *et al*., 2001; Forshee and Storey, 2004). Significant positive associations ($p<0.05$) were found between the frequency and volume of consumption for these beverages and the 'decayed, missing or filled tooth score' of participants in both surveys, although Forshee and Storey (2004) identified this relationship in older NHANES III age groups only.

It can thus be concluded that the above data on sugar-containing beverages, although limited, shows that the association between total sugar intake and dental caries is also likely to extend to the consumption of sugar-containing beverages.

2. Assessment of the Evidence Base on Dental Erosion

Dental erosion has become a recent dental health issue, as its prevalence has increased over the last decade in developed nations. Emerging evidence based on observational studies has shown a strong association between acidic beverages – including the frequency of their consumption – and the development of dental erosion (Moynihan and Petersen 2004). The National Health and Medical Research Council notes that acidic drinks such as citrus-based and other juices, carbonated and uncarbonated drinks, sports drinks and herbal teas are likely to exacerbate dental erosion (NHMRC, 2003). The World Health Organization has also reviewed the evidence on soft drinks and fruit juice, and classified the strength of evidence linking these beverages to dental erosion as 'probable' (World Health Organization, 2003).

The aetiology of dental erosion depends on many factors including the requirement for an individual to be predisposed to the development of the condition, either through non-dietary behaviours or physiological characteristics (Moss, 1998). Other factors besides acidic beverage intake can contribute to the risk of developing dental erosion, and include:

- behavioural factors, such as the sipping of drinks during interrupted sleep, the use of medications that reduce the flow of saliva, and the use of chewable vitamin tablets; and

- biological factors, including saliva flow rate, oral buffering capacity, the composition of saliva, pellicle formation, tooth composition, dental and soft tissue anatomy (Australian Dental Association, 2002; Lussi *et al*., 2004).

2.1 Prevalence of Dental Erosion

FSANZ has been unable to identify any prevalence rates for dental erosion in Australia. One New Zealand study on children has been identified, which indicates that 82% of children may have some form of tooth wear (Ayers *et al*., 2002). However, this figure may not represent the prevalence of dental erosion in the study population, as the authors did not distinguish between dental erosion and other forms of tooth wear (Mahoney and Kilpatrick, 2003).

European 1990-1995 data (predominantly the UK) show that 5-50% of their populations experience some degree of dental erosion, with a 25-30% prevalence rate being the most widely cited figure (Gandara and Truelove, 1999; Moynihan 2002).

Although these data do not indicate the degree of the erosion experienced by those with the condition or the extent of predisposing factors, they do show that the dental condition exists at substantial levels within European populations, and therefore at potentially significant levels in developed nations such as Australia and New Zealand (assuming comparable conditions).

2.2 Results from Studies on Dental Erosion

A substantial proportion of this evidence base consists of *in vitro* exposure of enamel to soft drinks and other acidic beverages, demonstrating that acidic beverages have the potential to degrade tooth enamel at a greater rate than water or beverages with a more neutral pH (Rytomaa *et al*., 1988; Lussi *et al*., 1993; von Fraunhofer and Rogers, 2004; Jensdottir *et al*., 2005; von Fraunhofer and Rogers, 2005; Seow and Thong, 2005).

FSANZ has also reviewed evidence from human *in vivo* studies that examine the association between acidic beverage intake and dental erosion. Five cross-sectional, one case-control and one intervention study have been identified, and the details of these studies can be found in the Appendix of this Attachment. No cohort studies were identified.

Four of the five cross-sectional studies assessed the effects of beverage intakes on children (Millward *et al*., 1994; Al-Malik *et al*., 2001; Al-Dlaigan *et al*., 2001; Al-Majed *et al*., 2002), while one cross-sectional study assessed adult athletes (Sirimaharaj *et al*., 2002). All of these studies investigated the impact of carbonated drinks on the prevalence of dental erosion, with three studies including other acidic beverages such as fruit juices and sports drinks. The studies found highly significant associations ($p<0.01$) between the intake of acidic beverages and the prevalence of dental erosion, with odds ratios in the order of 1.2-1.5 (i.e. high consumers of acidic beverages were 1.2-1.5 times more likely to have some form of dental erosion than those with nil or low levels of consumption). However:

- most of the studies assessed beverage intake on the basis of intake frequency and found positive associations, although one study (Al-Majed et al., 2002) also assessed the volume of beverage intake as well, and found positive associations for this variable but not for the frequency of beverage intake; and

- the positive associations were identified for carbonated beverages and fruit juices, but not for other acidic drinks (e.g. sports drinks, wine).

The only case-control study (Jarvinen *et al*., 1991) found a positive association ($p<0.05$) between all of the different acidic beverage categories that were examined (carbonated beverages, apple cider, and sports drinks) and cases of dental erosion.

The intervention study identified by FSANZ (West *et al*., 2004) showed that there was a highly significant difference in the erosion of tooth enamel with regular acidic beverage consumption compared to regular water intake. This crossover trial was conducted over 15 days (for each beverage) using *in situ* enamel samples, so the results may not necessarily be applicable to long-term beverage intakes. Perhaps of greater importance than the association between acidic beverage intake and dental erosion was the effect of different pH levels in various beverages. As an intervention study, West et al. (2004) had full control over the acidity of test beverages consumed, and therefore is the only *in vivo* study identified by FSANZ that has been able to determine the impact of beverage acidity instead of volume/frequency of acidic beverage consumption. West et al. (2004) showed that the consumption of beverages with lower pH levels resulted in more pronounced dental erosion than regular intakes of higher pH beverages.

2.3 Quality of the Evidence on Dental Erosion

There are several limitations that were identified amongst the human *in vivo* studies:

- few studies were conducted on adult populations. Although children are more susceptible to dental problems, the long term impact of acidic beverage consumption on tooth enamel is more likely to be reflected in adult populations;

- the case-control study conducted by Järvinen et al., (1991) did not report how cases were matched against controls; and

- the intervention study used enamel samples *in situ* as a means of gauging the impact of acidic beverages on dental erosion. Although an intervention on the actual oral health of subjects would be unethical, the inability to undertake such an intervention is a limitation inherent in the available evidence base.

3. Findings from the Assessment of Dental Health Risks

The consumption of sugar-containing beverages represents a significant risk for dental health due to the strong association between total sugar intakes and dental caries. There is limited evidence showing that this association applies to sugar-containing beverage intakes, although further research is required before the evidence base can be said to be unequivocal on the association as it applies to beverages.

There are some *in vitro* and *in vivo* studies that show an association between the acidity of beverages and the development of dental erosion. However, the lack of longitudinal evidence on this association means that the intake of acidic beverages remains a probable risk factor for dental erosion. It is also recognised that dental erosion is multi-factorial and its development depends heavily other contributing factors besides acidic beverage intake.

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Appendix 1

Studies on the Intake of Acidic Beverages and Dental Erosion

Table A-1: Cross-Sectional Studies on Acidic Beverage Consumption and Dental Erosion

Study	Study Endpoint Type	Study Duration	Subjects	Subject Grouping	Subject number	Results
Al-Majed et al. (2002)	Volume, frequency and types of beverage intake compared to prevalence of pronounced dental erosion of palatal and primary maxillary incisors (as measured by food frequency questionnaire).	Single-timepoint (collected over 5 months)	46 males aged 5-6 years from 40 schools (random school sample)	No drinks at night or non-carbonated	n/a	• Carbonated beverage intakes (1+ serve/day) were significantly ($p<0.05$) associated with the prevalence of pronounced dental erosion. • The OR of this association was 1.29, with 95% CI of 0.59 and 2.87. • There was no significant ($p>0.05$) association between the frequency of carbonated beverages and dental erosion.
				1+ carbonated drinks at night	n/a	
Al-Malik et al. (2001)	Frequency and types of beverage intake compared to prevalence of pronounced dental erosion of primary maxillary incisors (as measured by food frequency questionnaire).	Single-timepoint	987 children aged 2-5 from 20 kindergarten schools (random school sample)	1-2 carbonated drinks a week or less	842	• The frequency of carbonated beverage intakes (1+ serve/day) were significantly ($p<0.01$) associated with the prevalence of dental erosion. • The OR between the two groups was 1.42 with 95% CI of 1.07 and 1.90.
				1+ carbonated drinks a day	145	
Al-Dlaigan et al. (2001)	Volume, frequency and types of beverage intake compared to prevalence of dental erosion on buccal and lingual surfaces (as measured by food frequency questionnaire).	Single-timepoint	418 children aged 14 years from 12 schools (random school sample)	Analysis was conducted on types of drinks (orange squash, apple juice, orange juice, cola, carbonated, milk, tea, coffee, spirits, wine, beer and sports drinks) and their frequency of serves		• The frequency and volume of apple juice, cola, carbonated, tea, spirits, and sports drinks had a significant positive association with the prevalence of dental erosion ($p<0.001$). • The other beverages also had a positive association, but to a lesser extent than the above beverages ($p<0.05$).

Study	Study Endpoint Type	Study Duration	Subjects	Subject Grouping	Subject number	Results
Millward et al. (1994)	Frequency and types of beverage intake compared to prevalence of dental erosion (beverage intake measured by food frequency questionnaire, and erosion by the Tooth Wear Index (TWI)).	Single-timepoint	101 children aged 4-16.5 years (median age of 9.8 years)	No/mild erosion (TWI ≤ 1)	21	• The frequency of carbonated drinks was 3.9 ± 5.5, 5.8 ± 6.6, 13.9 ± 14.9 per week in the no/mild, moderate and severe groups respectively. These differences were highly significant ($p<0.001$). • The frequency of fruit drinks was 10.3 ± 6.4, 16.4 ± 11.3, 18.3 ± 14.4 per week in the no/mild, moderate and severe groups respectively. These differences were significant ($p<0.05$). • No significant differences ($p>0.05$) were observed between the groups for the consumption of fruit juice, yoghurt or fresh fruit.
				Moderate erosion (at least one tooth with TWI = 2)	45	
				Severe erosion (at least one tooth with TWI > 2)	35	
Sirimaharaj et al. (2002)	Frequency and types of beverage intake compared to prevalence of dental erosion (beverage intake measured by food frequency questionnaire; measurement of dental erosion was not reported).	Single-timepoint	508 athletes aged 18-60 years.	Multivariate logistic regression analysis was conducted on types of drinks (yoghurt, fruit juices, carbonated drinks, wine and sports drinks) and their frequency of consumption.		• A significant association between beverage consumption and dental erosion was identified for fruit juice intake ($p<0.05$). The OR for fruit juice consumption = 1.2 for ≥ 2 fruit juice drinks per day to no intake (95% CI = 0.4-3.5). • No significant associations ($p>0.05$) were identified with the intake of other beverages.

Table A-2: Case-Control Study on Acidic Beverage Consumption and Dental Erosion

Study	Study Endpoint Type	Study Duration	Subjects	Subject Grouping	Subject number	Results
Järvinen *et al.* (1991)	Dental erosion associated with frequency and type of beverage intake (as measured by diet history).	Single-timepoint (collected over 1 year)	106 cases diagnosed with dental erosion matched with 100 controls (unreported matching). Case age = 13-73 years, controls = 17-83 years.	Multivariate logistic regression analysis was conducted on types of acidic drinks (carbonated drinks, apple vinegar and sports drinks) and their frequency of consumption.		• There was a positive association between the development of dental erosion and all categories of beverages. • The adjusted OR were 4, 10 and 4 for carbonated drinks, apple vinegar and sports drinks respectively.

Table A-3: Intervention Study on Acidic Beverage Consumption and Dental Erosion

Study	Study Endpoint Type	Study Design	Study Duration	Subjects	Subject Grouping	Subject number	Results
West *et al.* (2004)	*In situ* enamel erosion (subjects wore enamel samples in removable acrylic appliance) compared to supervised intakes of different beverages.	Randomised single-blinded controlled crossover trial	4 x 15 day trial periods (for each beverage type)	16 healthy subjects aged over 18 years	A) Blackcurrant juice diluted 1:4 with mineral water to 250 ml (pH =3.75)	16	• All acidic beverages eroded significantly greater amounts of the enamel samples than the –ve control. P-values were 0.004, 0.0001, and 0.0003 for A, B and C drinks compared to drink D respectively. • There was no significant difference ($p>0.05$) between drinks A and B, however these drinks eroded significantly lower amounts of the enamel samples than drink C ($p<0.05$). • A linear trend was observed for the amount of enamel lost over the 15 day periods for all drinks.
					B) Blackcurrant juice + calcium + xanthan gum diluted 1:4 with mineral water to 250 ml (pH =3.89)	16	
					C) Apple and blackcurrant juice diluted 1:4 with mineral water to 250 ml (+ve control) (pH =3.6)	16	
					D) 250 ml mineral water (-ve control) (pH =7.83)	16	