Consumers' awareness, attitudes and behaviours towards food fortification in Australia and New Zealand

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Terms used in this report

American Association for Public Opinion Research (AAPOR)	An organisation of survey research professionals. The AAPOR has developed a set of standard definitions and formulae for calculating response, cooperation, refusal and contact rates for surveys. Using these formulae ensures response rates can be compared across different surveys.
AUSEI06 score	A value derived using the Australian Socioeconomic Index 2006 and information on respondents' work status and their occupation. Scores range from 0 to 100.
Australian Bureau of Statistics (ABS)	Australia's national statistical agency.
Australia New Zealand Food Standards Code (the Code)	The Code lists requirements for food sold in Australia and New Zealand. It includes standards for food additives, food safety, labelling and foods that need pre-approval such as genetically modified foods.
Australia and New Zealand Food Regulation Ministerial Council (the Ministerial Council)	See the Legislative and Governance Forum on Food Regulation (the Forum). The Ministerial Council was replaced by the Forum in 2011.
Australian Health Ministers' Advisory Council (AHMAC)	A council of Commonwealth, State, Territory and New Zealand Ministers with responsibility for health matters, and the Commonwealth Minister for Veterans' Affairs. The role of the AHMAC is to support the Australian Health Ministers' Conference by providing strategic advice on health issues and by acting as a forum for planning, information sharing and innovation.
Australian Institute of Health and Welfare (AIHW)	An Australian Government agency set up to provide statistics on Australia's health and welfare.
Body Mass Index (BMI)	A weight to height ratio calculated by dividing a person's weight in kilograms by their height in metres squared.
Computer assisted telephone interviewing (CATI)	A method of conducting interviews over the telephone. Interviewers are guided by a computerised questionnaire which automatically routes to relevant questions based on the responses entered to previous questions.
Folic acid	Folic acid, also referred to as pteroylmono-glutamic acid (PGA), is the most common synthetic form of folate and is the form used in fortification and in the majority of supplements.[1]
Fortification	Fortification is the addition of vitamins and minerals to food including for reasons of equivalence or restoration.[2]
Iodised salt	In the Code, iodised salt is a mixture of salt and: either potassium iodide or potassium iodate, or sodium iodide or sodium iodate. Iodised salt must contain the equivalent of between 25 and 65 mg/kg of iodine.
Legislative and Governance Forum on Food Regulation (the Forum)	The Forum is responsible for the development of domestic food regulatory policy and policy guidelines for setting domestic food standards. The Forum is also able to adopt, amend or reject standards, or to request that a standard be reviewed.
Mandatory fortification	When food manufacturers are required to add certain vitamins or minerals to a specified food or foods.

[1] Definition from (Food Standards Australia New Zealand 2006)
[2] Definition from (Australia and New Zealand Food Regulation Ministerial Council 2004)

National Health and Medical Research Council (NHMRC)	The NHMRC is an Australian Government authority responsible for supporting health and medical research; for developing health advice for the Australian community, health professionals and governments; and for providing advice on ethical behaviour in health care and in the conduct of health and medical research.
Neural tube defects (NTDs)	NTDs are severe congenital malformations of the central nervous system and result from the failure of the neural tube to close during early embryonic development. The two major types of NTDs are anencephaly and spina bifida.[3]
Policy guideline	The Forum hands down food policy guidance to FSANZ in the form of policy guidelines. FSANZ is required to have regard to relevant policy guidelines when developing food standards.
Random Digit Dialling (RDD)	A method of sampling which uses a list of all possible telephone numbers. Telephone numbers are randomly selected from the list for inclusion in the sample.
Recommended Dietary Intake (RDI)	The RDI is the average daily dietary intake level that is sufficient to meet the nutrient requirements of nearly all (97–98%) healthy individuals in a particular life stage and gender group.[3]
Response rate	The response rate is the proportion of people invited to participate in a survey who answer the survey. There are a variety of methods for calculating response rates. This report uses formulae developed by the American Association for Public Opinion Research. See Appendix C for further details.
Statistics New Zealand	New Zealand's national statistical agency.
Women of childbearing age	Women aged 16 to 44 years.
Voluntary fortification	When food manufacturers choose whether to add vitamins and minerals to food, following the permissions in the Code.

[3] Definitions from (Food Standards Australia New Zealand 2006)

Executive Summary

Overview

- FSANZ commissioned a population survey of Australians and New Zealanders aged 16 years and over to understand their awareness, attitudes and behaviours toward food fortification.

What do consumers know about the addition of vitamins and minerals to food?

- Australians and New Zealanders have a high level of awareness of voluntary fortification. Just over 75 per cent of Australians and New Zealanders were aware that foods sometimes contain vitamins or minerals that have been added by the manufacturer.
- In contrast, relatively few Australians (19.2 per cent) and New Zealanders (23.1 per cent) thought their respective governments mandated the addition of a particular vitamin or mineral to some foods.

What do consumers know about the current mandatory fortifications?

- Awareness that bread is mandatorily fortified was low in both Australia and New Zealand. Only 34.2 per cent of New Zealanders and 24.0 per cent of Australians thought that bread was mandatorily fortified.
- When prompted by being asked whether bread was required to contain particular vitamin(s) or mineral(s), 31.5 per cent of Australians indicated that it was true that bread must contain folic acid. Women, a key target group, were more likely than men to indicate that folic acid was added to bread (34.9 per cent compared to 28.2 per cent).
- More New Zealanders thought it was true that iodised salt was mandatory in bread than Australians (33.2 per cent of all New Zealanders compared to 24.9 per cent of all Australians)[4]. However, neither Australian nor New Zealand women were more likely to given this response than men.
- Despite Australia being the only country with mandatory folic acid fortification, more New Zealanders than Australians were aware of the purpose of folic acid fortification (42.4 per cent compared to 31.7 per cent). The target group, women, were also more aware (42.9 per cent compared to 23.4 per cent of men). However, women's knowledge was not related to whether the women were of childbearing age (16-44 years) or older.
- As with their knowledge of folic acid, more New Zealanders (32.9 per cent) were aware of the intended benefits of mandating iodine fortification, compared to 18.5 per cent of Australians.

What are consumers' attitudes towards the mandatory iodine and folic acid fortifications?

- Among Australians, 42.7 per cent supported mandatory folic acid fortification, compared to 37.4 per cent preferring that the fortification be optional (16.4 per cent provided a no opinion response). A smaller proportion of New Zealanders (29.4 per cent) favoured mandatory fortification, with 54.2 per cent thinking fortification should be optional (16.4 per cent gave a no opinion response).

[4] All differences reported in this executive summary are statistically significant at the 0.05 level.

- Australians and New Zealanders favoured mandatory iodine fortification at a similar level to one another (49.5 and 47.3 per cent, respectively). Among Australians 32.6 per cent favoured optional iodine fortification, compared to 39.1 per cent of New Zealanders. No opinion responses were provided by 18.0 per cent of Australians and 13.6 per cent of New Zealanders.
- Respondents who thought there was too little regulation to reduce risks from food (both immediate and long term) were more likely to favour mandating both folic acid and iodine fortification.

What do consumers know about voluntary fortification?

- Food packaging, and in particular claims, was the main way that respondents had learned that a good they had previously bought or consumed was fortified (67.1 to 85.4 per cent of respondents).
- In contrast, when thinking about how they would determine if a food had added vitamins or minerals, New Zealanders said they would check the nutrition information panel (58.3 per cent) or the ingredient list (49.4 per cent). Australians tended to say they would check the ingredient list (75.2 per cent) or the nutrition information panel (73.9 per cent).

What are consumers' attitudes towards voluntary fortification?

- Similar proportions of Australians (41.3 per cent) and New Zealanders (41.9 per cent) believed that there were some foods that should not have vitamins or minerals added to them. A small proportion, 25.0 per cent of Australians and 17.6 per cent of New Zealanders, believed that there was no need for restrictions on the types of foods that manufacturers should be allowed to add vitamins or minerals to, so long as the presence of added vitamins or minerals was clear on the label.
- There were a range of foods which respondents said should not be allowed to have vitamins or minerals added to them, none of which were mentioned by more than 10 per cent of respondents. The four most common foods mentioned were milk products, vegetables, natural foods and meat or fish products.

How do consumers use fortified foods?

- Added vitamins and minerals do not necessarily increase Australians' or New Zealanders' intentions of buying a product. When asked what they would do if they found a food they were thinking of buying or consuming contained added vitamins or minerals, 57.8 per cent of Australians and 56.9 per cent of New Zealanders reported that it would depend on the type of food or drink as to whether this would make them more or less likely to buy the product. Less than 10 per cent of Australians and New Zealanders thought it would make them more likely to buy the product.
- Among New Zealanders, 62.0 per cent reported buying or consuming one or more foods for their added vitamins and minerals. This compared to 54.0 per cent of Australians. The four food categories most commonly bought or consumed for their vitamin or mineral content were dairy products, breakfast cereals, fruit juice and bread.
- Reasons for choosing foods with added vitamins or minerals varied widely. Some respondents focused on the presence of vitamins or minerals, while others talked about general health benefits from the products.
- The proportion of Australians and New Zealanders eating fortified bread was high. Of Australians, 88.7 per cent reported eating a type of bread that is required to contain folic

acid and similar results were found for consumption of iodine fortified bread among Australians (91.4 per cent) and New Zealanders (93.5 per cent).

Introduction

This report details the findings of a survey commissioned by Food Standards Australia New Zealand (FSANZ) to examine consumers' awareness of, and attitudes and behaviour toward food fortification. This introduction to the report describes how food fortification is regulated in Australia and New Zealand, the history of mandatory fortification, how the recent folic acid and iodine fortifications came into place and how the report is structured.

For the purpose of this report, 'fortification' will be used to mean "all additions of vitamins or minerals to food including for reasons of equivalence or restoration"(Australia and New Zealand Food Regulation Ministerial Council 2004). The phrase "added vitamins and minerals" will be used when referring to the survey questions as this was the language used in the survey.

Regulatory background

For the purpose of fortification, vitamins and minerals can be added to food only if permissions exist in the *Australia New Zealand Food Standards Code* (the Code), which is developed and administered by FSANZ.

The addition of vitamins and minerals to foods in Australia or New Zealand can occur in one of two ways. The first is that a food manufacturer voluntarily adds vitamins or minerals to a food in accordance with the permissions outlined in Standard 1.3.2 – Vitamins and Minerals of the Code. This is known as 'voluntary fortification'. Standard 1.3.2 sets out the food categories that may have vitamins and minerals added to them and the levels at which the vitamins and minerals may be added. Standard 1.1.1 Preliminary Provisions – Application, Interpretation and General Prohibitions of the Code details the permitted forms of vitamins or minerals that can be added to foods. For example, selenium may be added in the form of selenomethionine, sodium selenate, or sodium selenite. Most vitamin and mineral fortification in Australia and New Zealand occurs through voluntary addition by manufacturers.

The second way that vitamins and minerals can be added to fortify a food is where the manufacturer is required to add a vitamin or mineral at a certain minimum level or within a prescribed range to particular food categories to meet the requirements of the Code. This is known as 'mandatory fortification'. For example, Standard 2.4.2 – Edible Oil Spreads requires that table edible oil spreads (such as table margarine) sold in Australia contain "no less than 55 µg/kg of vitamin D".

The Legislative and Governance Forum on Food Regulation (the Forum)[5] provided a Policy Guideline *Fortification of Food with Vitamins and Minerals* to FSANZ in 2004 (revised in 2006 and 2009) on the assessment of mandatory and voluntary fortification (Australia and New Zealand Food Regulation Ministerial Council 2004). Under the section 18 objectives of the Food Standards Australia New Zealand Act 1991, FSANZ must give regard to any written policy guidelines formulated by the Forum, including when assessing proposed changes to both mandatory fortification requirements and voluntary vitamin and mineral permissions in the Code.

[5] Previously called the Australia and New Zealand Food Regulation Ministerial Council (Ministerial Council)

The Policy Guideline uses the section 18(1) and section 18(2) objectives from the FSANZ Act 1991 as the basis for the guidelines. These act as higher order policy principles[6]. The Policy Guideline then details specific order policy principles which should be considered within the framework provided by the higher order principles.

The Policy Guideline includes the following specific order policy principles for 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). 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.
- 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."

The specific order policy principles for mandatory fortification are:
"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."

The Forum initiates the process of considering a mandatory fortification requirement by asking for advice from the Australian Health Ministers' Advisory Council (AHMAC), or the

[6] Under Section 13(A) of the FSANZ Act, policy guidelines developed by the Forum must not be inconsistent with the section 18(1) objectives.

New Zealand equivalent. In response, the AHMAC provides advice on whether there is a demonstrated significant population health need, and whether a mandatory fortification requirement would be the most effective public health strategy to address the problem. Based on the AHMAC advice, the Forum then decides whether to request that FSANZ raise a proposal to consider the mandatory fortification.

History of mandatory fortification

The Code currently requires the following mandatory fortifications in Australia:

- fortification of wheat flour for making bread with thiamin and folic acid (Standard 2.1.1)
- mandatory replacement of non-iodised salt with iodised salt[7] in bread (Standard 2.1.1)
- fortification of table edible oil spreads (such as table margarine) with vitamin D (Standard 2.4.2).

In New Zealand the only mandatory fortification currently required is the mandatory replacement of non-iodised salt with iodised salt in bread.

The mandatory fortification of wheat flour for bread-making with 6.4 mg/kg of thiamin came into place in Australia in 1991 (Connelly and Price 1996)[8].

Before the joint *Australia New Zealand Food Standards Code*, Food Standards G2 – Margarine and G5 – Table Spreads (Australian) required manufacturers to fortify edible oil spreads so that they contained no less than 55 µg/kg of vitamin D (Australia New Zealand Food Authority 1999). When Australia and New Zealand adopted harmonised food regulations the requirement was continued for edible oil spreads sold in Australia and fortification of edible oil spreads with vitamin D in New Zealand remained voluntary (Nowson and Margerison 2002).

The mandatory iodine fortification came into place in 2009 in Australia and New Zealand. In the same year, it became mandatory for wheat flour for bread-making to contain 2–3 mg/kg of folic acid in Australia.

The New Zealand Government considered mandatory folic acid fortification of bread in 2009 and decided in August 2012 that the existing voluntary folic acid fortification of bread was sufficient to meet the New Zealand public health objectives (Office of the Minister for Food Safety 2012). In August 2012, the New Zealand Government revoked the New Zealand (Mandatory Fortification of Bread with Folic Acid) Food Standard 2007 and replaced this with the New Zealand (Permitted Fortification of Bread with Folic Acid) Food Standard 2012, which permitted the continued voluntary fortification of bread with folic acid (Ministry for Primary Industries 2012).

In this report the phrases used to describe the mandatory fortifications will be simplified for brevity and simplicity. Replacement of non-iodised salt with iodised salt in bread will be referred to as 'iodine fortification' and the fortification of wheat flour for bread-making will be referred to as 'folic acid fortification'.

[7] Standard 2.10.2 – Salt and Salt Products of the Code includes the following requirement for iodised salt:
"Iodised salt must contain potassium iodide or iodate, or sodium iodide or iodate equivalent to –
(a) no less than 25 mg/kg of iodine; and
(b) no more than 65 mg/kg of iodine."

[8] Thiamin fortification was introduced to address the high rate of Wernicke-Korsakoff syndrome in the Australian population (Truswell 2000), a condition generally associated with alcoholism (Connelly and Price 1996).

Purpose of the mandatory fortification

Folic acid (Australia only)

FSANZ developed a standard requiring the mandatory folic acid fortification in response to a request from the Forum. The fortification aims to reduce the incidence of neural tube defects (NTDs) – a group of birth defects that can occur in early pregnancy. Studies have shown that increased intakes of folic acid prior to and immediately following conception can reduce the incidence of NTDs (Czeizel and Dudás 1992; Berry et al. 1999). Although folic acid is added to bread-making flour rather than directly to the bread during manufacture, the questions in the survey referred to folic acid being added to bread as this was simpler for respondents to understand.

Iodised salt (Australia and New Zealand)

FSANZ also prepared a standard to mandate iodine fortification of bread in response to a request from the Forum to address emerging iodine deficiency in the Australian and New Zealand populations. Iodine deficiencies affect the functioning of the thyroid gland, thereby affecting metabolism. Iodine is particularly important for pregnant and breastfeeding women, as foetuses and exclusively breastfed babies are dependent on their mothers for the mineral.

Bread was chosen as the vehicle for fortification with folic acid and iodine due to:

- being widely consumed by the target populations,
- being technically feasible, and
- available overseas experience demonstrating that fortification of flour with folic acid resulted in reductions in NTDs.

Monitoring

The Policy Guideline *Fortification of food with vitamins and minerals* requires monitoring of both voluntary and mandatory fortification:

> "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."
>
> "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."

Consequently, when FSANZ developed the standards for mandatory folic acid and iodine fortification, the Forum requested the development of a monitoring framework for mandatory fortification. In 2007, the AHMAC endorsed the Monitoring Frameworks for Mandatory Fortification of Food with Folic Acid and Iodine (Food Regulation Secretariat 2008). State, Territory and Commonwealth food regulatory and health authorities agreed to a wide range of data being collected and reported to monitor mandatory folic acid and iodine fortification. Pre-fortification data was published by the Australian Institute of Health and Welfare (AIHW) in three reports; a baseline report, a supplementary data report, and a report on monitoring neural tube defects (AIHW National Perinatal Statistics Unit 2011; Australian Institute of Health and Welfare 2011a; Australian Institute of Health and Welfare 2011b). Further

information on the monitoring of folic acid and iodine fortifications is available on the FSANZ website[9].

FSANZ committed to monitoring consumers' awareness, understanding, attitudes and behaviour toward fortified food in the assessment reports for iodine and folic acid fortification (FSANZ 2007; FSANZ 2008a; FSANZ 2008b). In addition, monitoring of food consumption patterns, food purchase patterns and supplement consumption was to be conducted.

FSANZ also committed to examining consumer perceptions and reactions to fortified foods in response to the Ministerial Council's request for a second review of Application A424 – Fortification of Foods with Calcium. The application sought to amend Standard 1.3.2 – Vitamins and Minerals to permit the addition of calcium to fruit- and vegetables juices and drinks, soups and savoury biscuits. FSANZ committed in October 2005 to review the impact of this and future voluntary permissions over the following five years. It was noted that this would include consumer perceptions and reactions to fortified foods.

In 2009, prior to the implementation of mandatory fortification, FSANZ commissioned a research consultant, Ipsos Eureka, to conduct qualitative research to gain an understanding of the range of consumer awareness of, attitudes to and understanding of food fortification. This research used focus groups and accompanied shopping trips with participants to discuss their perceptions of both voluntary and mandatory fortification, with a particular focus on folic acid and iodine fortification. This research has been completed and has provided a detailed view of consumers' perceptions of food fortification. Importantly, it provided insight into consumers' awareness, attitudes and understanding of food fortification that informed the development of this quantitative study.

In November 2010, FSANZ met with jurisdictions to discuss the fortification research. The findings of the 2009 qualitative study were discussed and the jurisdictions provided input on the research questions.

FSANZ's Social Science Expert Advisory Group[10] (SSEAG) provided input on the qualitative and quantitative research at a number of points, including the research method and data analysis approach.

Labelling of fortified foods

Vitamins or minerals that have been added to a food must be listed in the ingredient list in accordance with Standard 1.2.4 – Labelling of Ingredients, unless exempted from the requirement to carry an ingredient list[11], or where the vitamin or mineral is a component of a compound ingredient[12]. In addition, manufacturers may choose to list the vitamin or mineral in the nutrition information panel, or in a claim on the package. Standard 1.2.7 – Nutrition, Health and Related Claims outlines the types of nutrition content and health claims that can be made about foods under certain conditions. If a nutrition content claim or health claim is made about a food, the name and average quantity of the claimed vitamin or mineral must be declared in the nutrition information panel.

[9] Monitoring of folic acid fortification:
http://www.foodstandards.gov.au/science/monitoringnutrients/monitoringfort/pages/default.aspx
Monitoring of iodised salt fortification:
http://www.foodstandards.gov.au/consumer/nutrition/iodinefort/pages/default.aspx

[10] Now the FSANZ Social Sciences and Economics Advisory Group.

[11] Standard 1.2.1 –Application of Labelling and Other Information Requirements lists these exemptions. Exemptions are included for unpackaged foods, food made and packaged on the premises from which it is sold, and food packaged in the presence of the purchaser.

[12] Under Standard 1.2.4 – Labelling of Ingredients, the ingredients of compound ingredients may be exempt from the requirement to be declared in the ingredient if they make up less than 5 per cent of the product.

On products which do not carry a nutrition content claim or a health claim, including where listed in the nutrition information panel, the ingredient list is the only label element in which the presence of added vitamins or minerals will be declared. Manufacturers may choose to accompany the name of the vitamin or mineral with the words ‘vitamin’ or ‘mineral’.

Structure of the report

The body of this report is organised into five sections: research objectives, method, response, mandatory fortification, voluntary fortification and conclusions. Details on the weights applied to the data, calculation of response rates, data preparation, coding of free text questions and a copy of the questionnaire are included in the appendices.

Research objectives

The research objectives section details FSANZ’s research objectives and research questions for the project. It also lays out which parts of the questionnaire addressed each research objective.

Method

The method section details how the research was designed and how the data were collected. It describes some of the data preparation that was undertaken.

Response

The response section outlines the characteristics of the survey respondents and, where relevant, how they compare to the New Zealand and Australian populations.

Mandatory fortification

The mandatory fortification section includes the analysis and reporting on respondents’ knowledge of and attitudes toward the mandatory folic acid and iodine fortifications.

Voluntary fortification

The voluntary fortification section includes the analysis and reporting on consumers’ knowledge of voluntary fortification, their attitudes toward voluntary fortification and how they use fortified foods.

Conclusion

The conclusion is the integrated findings from the report.

Research Objectives

This part of the report sets out the research objectives that FSANZ developed for the project, and the research questions that were then developed based on these. It then details which parts of the questionnaire addressed particular research questions and the respondent characteristics that FSANZ decided to explore.

Research objectives

The specific objectives of the research are to gain an understanding of and quantify:

- consumers' awareness of food fortification, and specifically whether they are aware of mandatory fortification and voluntary fortification,
- consumers' awareness and understanding of the mandatory folic acid and iodine fortifications in Australia and New Zealand,
- consumers' acceptance of the mandatory fortifications in Australia and New Zealand,
- consumers' awareness and attitudes towards the fortification of foods of low nutritional value with vitamins and minerals,
- consumers' understanding of voluntary fortification, including their ability to identify fortified foods,
- whether, and to what extent, consumers make purchasing decisions based on the presence of added vitamins and minerals in food, and
- how consumers use foods fortified with vitamins and minerals in their diet.

Research questions

Based on the research objectives, the following research questions were developed:

1 Identify what consumers think about vitamins and minerals (generally), including:
   a Knowledge of the potential to consume not enough / too much of a vitamin or minerals.
   b Knowledge of how to obtain sufficient vitamins and minerals.
   c Beliefs about efficacy of added and naturally occurring vitamins and minerals.
2 Identify what consumers know about the addition of vitamins and minerals to foods generally, including:
   a Knowledge that vitamins and minerals are added to foods by manufacturers.
   b Knowledge that the Government mandates addition of vitamins and/or minerals to certain foods.
3 Identify what consumers know about folic acid and iodine, including:
   a Awareness of current fortifications.
   b Knowledge of target groups and intended outcomes of the fortification.
   c Knowledge of sources of iodine and folic acid.
4 The level of acceptance of folic acid and iodine fortifications among consumers.
5 Identify what consumers know about voluntary fortifications, including:
   a Understanding of how to determine whether a vitamin or mineral is added.
   b Knowledge of government regulation of voluntary fortification.
   c Knowledge of the types of foods that can have vitamins and minerals added (including those of low nutritional value).
6 Identify what consumers believe about voluntary fortification, including:
   a Acceptance of voluntary fortification generally.
   b Acceptance of fortification of foods of low nutritional value.
   c Belief in the safety of consuming fortified foods.
7 Identify consumers' behaviours in relation to vitamins and minerals, including:

a Estimates of the influence of added vitamins and minerals on consumers' food choices, including food purchases
b Identify how consumers use fortified foods in their diets.
c Estimate how many consumers use vitamin and mineral supplements.

The research questions were refined in collaboration with the research consultants. FSANZ decided to use the survey as an opportunity to also gather data on sports drink use for another project. This, as well as the need to keep the questionnaire to a reasonable length to minimise respondent burden, meant it was necessary to reduce the number of research questions addressed. The final questionnaire addressed the following research questions:

	Research question	Corresponding questions in final questionnaire
2.	a. Knowledge that vitamins and minerals are added to foods by manufacturers.	B1
	b. Knowledge that the Government mandates addition of vitamins and/or minerals to certain foods.	D1, D2
3.	a. Awareness of current fortifications (folic acid and iodine).	D2, D3
	b. Knowledge of target groups and intended outcomes of the fortification.	E1 (AU only), E4 (NZ only), F1
4.	The level of acceptance of folic acid and iodine fortifications among consumers.	E2 and E3 (AU only); E5 and E6 (NZ only), F2, F3
5.	a. Understanding of how to determine whether a vitamin or mineral is added.	B5, B6, B7
6.	b. Acceptance of fortification of foods of low nutritional value.	C1
7.	a. Estimates of the influence of added vitamins and minerals on consumers' food choices, including food purchases	B2, B4
	b. Identify how consumers use fortified foods in their diets.	B3, I3

Respondent attributes

In addition to examining the research questions listed above, FSANZ was interested in exploring how responses differed by respondent attributes (such as gender and age). In the 'Questions used for comparing respondents' section the following respondent attributes are described and the reasons they were of interest are discussed:

- age
- gender
- main grocery buyer status
- fruit and vegetable intake
- body mass index
- education level
- ethnicity
- household income
- occupational status.

Method

Population surveys administered through computer assisted telephone interviewing (CATI) were used to collect data from Australians and New Zealanders aged 16 years and over. FSANZ developed the questionnaire and refined it through an iterative process with the consultant, Newspoll. Newspoll was responsible for data collection. Data collection in New Zealand was outsourced by Newspoll to Consumer Link. See Appendix A for the full questionnaire used in the survey.

Questionnaire design

FSANZ used the findings from the 2009 qualitative study in developing the questionnaire for this research. In particular, the 2009 study revealed that consumers were unfamiliar with the term 'fortification', but understood the phrase 'added vitamins and minerals'. Consequently, the word 'fortification' was replaced with phrases such as 'foods with added vitamins and minerals'. As noted in the section on research objectives, time constraints meant that some the original research questions could not be addressed.

The phrasing of some questions differed between the Australian and New Zealand surveys. In some cases this was due to differences in food regulations between the countries, in others this was due to differences in the standard demographic questions used in census questionnaires. Where possible, the demographic questions used were from censuses or representative surveys, so that the representativeness of the sample could be determined.

Where a question had response categories that did not need to be read to respondents in a particular order, the order in which these were read out was randomised to ensure no ordering effect occurred.

A range of question formats was included in the survey. These were:

- single response (only one response could be chosen from a predetermined set),
- multiple response (one or more responses from a predetermined set),
- open-ended (respondent provides a response in their own words, which the interviewer types in), and
- open-ended with simultaneous coding (respondent provides a response in their own words which the interviewer then assigns to a code from a predetermined set).

Newspoll conducted cognitive testing of the draft questionnaire using six face to face cognitive depth interviews with Australians aged 16 years and over. The questionnaire was amended based on the results of the cognitive testing.

Following cognitive testing, the questionnaire was pilot tested with 20 interviews in Australia and 21 interviews in New Zealand. Pilot testing was conducted using CATI. Further amendments were made to the questionnaire resulting in the final questionnaire used for the field work (see Appendix A for the final questionnaire). The questionnaire took an average of 18 minutes to complete.

Questions used for comparing respondents

Age and gender

The target population for mandatory folic acid fortification is women of childbearing age (16–44 years) (Australian Institute of Health and Welfare 2011a). The Australian National Health and Medical Research Council (NHMRC) and the Ministry of Health (New Zealand) recommend that women take a folic acid supplement for at least 1 month before and for 3 months after conceiving, in addition to eating foods that are naturally rich in folate or are fortified with folic acid (National Health and Medical Research Council 2013a). As well as folic acid, the NHMRC recommends that all women who are pregnant, breastfeeding or considering pregnancy take an iodine supplement daily (2013a). In New Zealand, the Ministry of Health also recommends that women planning a pregnancy or who are in the early stages of pregnancy take iodine tablets (2006). Therefore, women of childbearing age in the sample had their responses to questions on mandatory fortification and bread consumption compared with the rest of the sample. FSANZ was interested in whether women of childbearing age had greater awareness or knowledge of the mandatory fortification of bread than men or than older respondents (aged 45 years and over).

Main grocery buyer

Respondents were asked how much of the food and grocery shopping they do for their household. This question has previously been used in other FSANZ consumer research, such as the 2009 nutrition content claims research (Roy Morgan Research 2009). Respondents who reported doing half or more of the shopping for their household were classified as main grocery buyers. FSANZ was interested in whether main grocery buyers had greater knowledge of food and food labels than respondents who were not main grocery buyers.

Fruit and vegetable intake

Respondents were asked about their usual fruit and vegetable intake to give a very approximate indication of diet quality. The purpose of the fruit and vegetable questions was to create a proxy measure of diet quality for respondents that would create two groups, one with a healthier diet and a second with a less healthy diet.

The fruit and vegetable intake questions were based on questions used in the Australian 2007–08 National Health Survey (Australian Bureau of Statistics 2009), and incorporated information on serving sizes from the 2008–09 New Zealand Adult Nutrition Survey (University of Otago and Ministry of Health 2011a). Respondents were asked how many serves of fruit and vegetables they usually eat each day. The NHMRC recommends adults consume five or more servings of vegetables per day and two or more serves of fruit (2013b). Similarly, the New Zealand Ministry of Health recommends that adults eat at least three servings of vegetables and two servings of fruit per day (2013).

Cognitive testing[13] revealed that respondents were unsure as to whether fruit juice and vegetable juice should be included in the number of servings they reported. Fruit and vegetable juices were not explicitly mentioned in the Australian National Health Survey, but

[13] This result was from cognitive testing for another survey which was run in parallel to the fortification survey, and which contained the same questions on fruit and vegetable intake

the user guide for the survey advised that these should be excluded. The New Zealand Health Survey fruit and vegetable questions both instructed respondents to not include fruit and vegetable juices in the servings they report. To maintain consistency with the Australian survey, while also keeping the question concise, respondents who asked about juices were advised not to include them in the servings of fruit and vegetables they reported.

The New Zealand Health Survey excluded dried fruit, but the user guide to the Australian National Healthy Survey advised to include dried fruit. Respondents in the cognitive testing did not raise the question of whether dried fruit counted as a serve. However, to maintain consistency with the Australian National Health Survey, it was decided to include dried fruit explicitly in the question.

FSANZ was interested in whether lower fruit and vegetable intake, as a proxy for lower diet quality, was related to consumption or purchasing of voluntarily fortified foods.

Weight and height information

Respondents were asked to provide their weight and height in the survey so that their body mass index (BMI) could be calculated. Weight and height questions were adapted from those used in the 2007–08 Australian National Health Survey. Responses provided in imperial measures (stones, feet and inches) were converted to kilograms by interviewers.

Respondents were also asked whether they considered themselves to be underweight, about the right weight or overweight.

FSANZ was interested in whether BMI was related to consumption or purchasing of voluntarily fortified foods.

Education level

Respondents were asked the highest educational qualification they had completed. FSANZ was interested in whether respondents with higher levels of educational attainment would have a greater understanding of mandatory fortifications, or how foods with added vitamins and minerals could be identified.

Ethnicity/ancestry

The Australian ancestry question was based on the 2006 census ancestry question but using fewer categories. Some ancestry categories were collapsed for analysis. For example, Italian, German, Greek and Dutch ancestries were combined into an ‘Other European’ category.

The New Zealand ethnicity question was adapted from the New Zealand 2011 census.

FSANZ reported on the ethnicity of respondents to describe the sample of Australians and New Zealanders that were included in the survey.

Household income

Respondents were asked to report which of six bands their household's annual pre-tax income fell within. The same bands were used for respondents in both countries. The income question was based on the 2006–07 New Zealand Health Survey.

FSANZ reported on the household income of respondents to describe the sample of Australians and New Zealanders that were included in the survey.

Occupational status

The survey included a series of questions (questions K4 through K6) that were used to determine occupational status on the Australian Socioeconomic Index 2006 (McMillan et al. 2009).

The questions create a score for all respondents who have a full-time or part-time job, except for those engaged only in unpaid work that is not for a family business. The scores range from 0 to 100, with a higher score indicating higher occupational status. For analysis, respondents were split into those with scores of less than fifty, and those with fifty or more.

FSANZ was interested in whether respondents' knowledge of fortification was related to their occupational status

Sampling

Sample frame

The target population for the survey was all people in Australia and New Zealand aged 16 years and over at the time of the survey (June–July 2011). The sample frame used was households with landlines telephones in June–July 2011.

Sample design

In Australia, landline phone numbers were randomly selected from SamplePages, a database of Australian landline phone numbers linked to postcodes. In New Zealand, Random Digit Dialling (RDD) was used. New Zealand phone numbers were linked to a region by the area code and the first four digits of the phone number.

The sample design was a random survey stratified by area to reduce the effect of varying response rates. To select a respondent from within the household, interviewers asked to talk to the person (16 years and over) in the household that had the most recent birthday.

Sample weighting

The resulting sample was weighted using a weighting matrix of age within gender within area for each country (see Appendix B for weighting matrices).

The Australian weights were based on Australian Bureau of Statistics (ABS) proportions from the 2006 Census of Population and Housing. The most recent projected data for the Australian population from December 2010 were used.

The New Zealand weights were based on Statistics New Zealand data on the Estimated Resident Population by Specified Age Group and Sex as at 30 June 2010, by area.

Data presented in the report is generally weighted, except where overall responses to questions are presented in the section on Response. Whether analysis was conducted using weighted or unweighted data is noted under each table.

Data preparation

Missing data

Missing data (where no response was recorded) were excluded from analysis.

'Don't know' responses

'Don't know' responses are included in the overall reporting of results (i.e. where the overall proportions of Australian and New Zealand respondents providing each answer are shown). For further analysis of knowledge questions 'don't know' responses are retained. However for further analysis of self-reports of behaviour or for attitude questions, they are generally excluded from analysis unless they comprise a large proportion of responses. Where 'don't know' responses are included in tables in the report, this is abbreviated to 'DK'.

Refused responses

Refused responses (where a respondent has declined to provide a response) are included in the overall reporting of the responses to the question. Further analysis using demographic questions does not included refused responses.

Open-ended questions

Several open-ended questions were included in the survey. For some, responses were transcribed verbatim into the database by interviewers as they were provided by respondents. FSANZ then created response categories for post-hoc coding of the responses. For other open-ended questions simultaneous coding into pre-determined response categories was carried out by interviewers. As the questions were open-ended, the recorded responses could be coded to multiple response categories.

Further information on how responses to open-ended questions were coded is included in Appendix E.

Analysis approach

Data analysis involved calculating the proportion of respondents who gave each response. Where national population figures are available for variables (such as gender and age),

results are compared against these to assess representativeness. Following overall reporting of responses by country, results are also compared by the following respondent variables (described above in Questions used for comparing respondents) as relevant:

- age and gender
- main grocery buyer status
- fruit and vegetable intake
- BMI
- household income
- occupational status
- attitude to food regulation.

Testing for statistically significant differences between groups was conducted using chi-square tests.

Study limitations

The mode of the survey, CATI using landline phone numbers, means individuals not living in a household with a landline could not be included in the sample. A growing proportion of Australian and New Zealand households are becoming 'mobile phone only'. The Australian Communications and Media Authority (ACMA) has reported that the number of Australians aged 18 years and over with a landline has reduced from 89 per cent in 2008 to 81 per cent in 2011 (Australian Communications and Media Authority 2011). Surveys of households with landlines tend to have a higher proportion of the following types of respondents than surveys of mobile phone only individuals (Pennay 2010):

- older individuals, aged 55 years and over
- women
- respondents born in Australia
- respondents not living in capital cities.

As with any voluntary survey, respondents who choose to participate in a survey may differ from those who do not. Appendix C details the techniques used by Newspoll, such as multiple call backs, allowing eligible participants to schedule interviews at times that were convenient to them, and so on, to encourage participation in the survey. The refusal rate for the survey, calculated using the American Association for Public Opinion Research's (AAPOR) Refusal Rate 2 calculation was 58.3 per cent in Australia and 41.5 per cent for New Zealand. This refusal rate uses as a base the number of phone numbers called which were estimated to be eligible. See Appendix C for further details on the refusal rate.

Response

The response rate[14] was 9.0 per cent for Australia and 11.1 per cent for New Zealand (See Appendix C for more details).

Demographics

Gender

Men were under-represented in both the Australian and New Zealand samples relative to the respective national populations (see Table 1). Only 39.6 per cent of the Australian sample was men, compared with 49.4 per cent of the Australian population aged 16 years and over. Similarly, men made up only 36.2 per cent of New Zealand respondents, compared to 48.6 per cent of men aged 16 years and over in New Zealand.

Table 1. Gender of respondents compared with national figures

Gender	AU (%)		NZ (%)	
	Respondents (n=800)	Population	Respondents (n=802)	Population
Male	39.6	49.4	36.2	48.6
Female	60.4	50.6	63.8	51.4

NB: Without weights. Percentages by column. Population estimates from the Australian Bureau of Statistics (2011) and Statistics New Zealand (2011).

Age

In the Australian sample, younger age groups (16–19, 20–29, 30–39) tended to be under-represented compared to the population (see Table 2). A similar trend was evident amongst the New Zealand sample, with under-representation in the younger age groups, and over-representation of 50 year olds and over.

Table 2. Age of respondents compared with national figures

Age (years)	AU (%)		NZ (%)	
	Respondents (n=800)	Population	Respondents (n=802)	Population
16 to 19	3.6	6.7	3.7	7.4
20 to 29	6.8	18.5	9.0	17.9
30 to 39	11.5	17.5	14.0	16.3
40 to 49	18.4	17.5	17.6	18.3
50 to 59	20.1	15.8	21.1	16.1
60 to 69	20.3	12.2	16.5	12.1
70 +	19.1	11.9	18.0	11.8
Refused	0.3		0.3	

NB: Without weights applied. Percentages by column. Population estimates from the Australian Bureau of Statistics (2011) and Statistics New Zealand data (2011).

[14] Calculated using Response Rate 3 from the AAPOR calculator. This uses as a base the number of phone numbers called which were estimated to be eligible.

As noted earlier (in the Method section) and in Appendix B, the frequency weights used in the data analysis are based on gender, age, and region. This weights the responses of respondents to reflect the population.

Age and gender comparison

Respondents were collapsed into four groups by age and gender for analysis:

- Women 16–44 years (women of childbearing age)
- Women 45 years and over
- Men 16–44 years
- Men 45 years and over.

The under-representation of younger age groups in the survey, as mentioned above, was reflected in the proportion of 16–44 year old men and women in the sample (Table 3). Men aged 16–44 years comprised only around 13 per cent of the sample, despite making up around a quarter of the population in both Australia and New Zealand. The same trend was shown for women aged 16–44 years, but with a smaller gap between their proportions in the population and in the sample.

Table 3. Gender and age, by country

		AU (%)		NZ (%)	
		Respondents (n=798)	Population	Respondents (n=800)	Population
Men	16–44 years	13.2	26.0	13.4	25.1
	45+ years	26.3	23.4	22.9	23.5
Women	16–44 years	18.4	25.5	22.1	25.7
	45+ years	42.1	25.1	41.6	25.8

NB: Without weights applied. Percentages by column. Population estimates from the Australian Bureau of Statistics (2011) and Statistics New Zealand (2011).

Main grocery buyers

Around 80 per cent of respondents in both Australia and New Zealand were classified as main grocery buyers (i.e. were responsible for half or more of the grocery shopping in their household) (see Table 4). Due to their greater experience with purchasing groceries, main grocery buyers may have better knowledge of food labelling and other food issues. Being the main grocery buyer for a household may also increase motivation to interact with food labels and learn about food issues.

Table 4. Main grocery buyer status, by country

	AU (%) (n=800)	NZ (%) (n=802)
Main grocery buyer	80.8	80.2
Not main grocery buyer	19.3	19.8

NB: Without weights applied. Percentages by column.

Fruit and vegetable intake

Around 13.0 per cent of the Australians and New Zealanders reported eating five or more servings of vegetables and two or more servings of fruit per day (the Australian guidelines, see Table 5). This compares with 6 per cent of the people aged 19 years and over in the 2007–08 Australian National Health Survey (Australian Bureau of Statistics 2012). However, 40.0 per cent achieved the New Zealand guidelines of at least 3 serves of vegetables and 2 serves of fruit. New Zealand population figures for the proportion of people meeting both the 3 serves of vegetables as well as the 2 serves of fruit per day are not available (University of Otago and Ministry of Health 2011b).

Table 5. Number of combined serves of fruit and vegetables per day, by country

	AU (%) (n=793)	NZ (%) (n=792)
0–4 serves	55.7	45.7
5+ serves	44.3	54.3
Total	100.0	100.0

NB: With weights applied. Percentages by column.

Weight and height

Among Australians, 56.9 per cent were classified as either overweight or obese based on the height and weight information they provided (see Table 6). This was similar to the figures from the 2011–12 Australian National Health Survey, in which 63.4 per cent of participants were either overweight or obese (Australian Bureau of Statistics 2013).

In contrast, the data from New Zealanders, which showed 50.8 per cent were overweight or obese, differs from New Zealand population data from the 2008–09 New Zealand Adult Nutrition Survey which found 64.8 per cent of New Zealanders were overweight or obese. The New Zealand population data included participants aged 15 years and over in results whereas respondents in the fortification survey under the age of 18 were removed from BMI analysis.

Table 6. Weight category determined using self-reported BMI

	AU (%)		NZ (%)	
	Respondents (n=741)	Population	Respondents (n=758)	Population
Underweight (BMI<18.5)	2.1	1.5	2.4	1.2
Normal weight (BMI 18.5–24.9)	41.7	35.2	46.0	34.1
Overweight (BMI 25–29.9)	36.1	35.0	33.1	37.0
Obese (BMI ≥30)	20.1	28.3	18.5	27.8

NB: With weights applied. Percentages by column. Missing data excluded.

Australian population data from 2011–2012 Australian National Health Survey(Australian Bureau of Statistics 2013). Australian population figures for 18 year olds and over. New Zealand population data from 2008–09 New Zealand Adult Nutrition Survey (University of Otago and Ministry of Health 2011b). New Zealand population figures for 15 year olds and over.

As well as self-reported height and weight, respondents were asked whether they considered themselves to be “about the right weight, underweight or overweight?” (see Table 7). A higher proportion of Australians and New Zealanders reported themselves to be

"about the right weight" than were categorised as normal weight using the BMI calculation (49.1 to 57.8 per cent, compared to 41.7 to 46.0 per cent using BMI). This appears to be due to misperception of overweight, as only 35.5 to 44.2 per cent identified themselves as "overweight", despite 51.6 to 56.2 per cent of the sample being categorised as overweight or obese by the BMI calculation.

Table 7. Self-reported weight

	AU (%) (n=800)	NZ (%) (n=802)
Underweight	6.3	5.8
About the right weight	49.1	57.8
Overweight	44.2	35.5
Refused	0.3	0.8

NB: With weights applied. Percentages by column.

Ethnicity

The majority of Australian respondents described their ethnicity as 'Australian' (62.8 per cent), with around half describing their ethnicity as 'British' (see Table 8).

Table 8. Ethnicity of Australian respondents

	AU (%) (n=800)
Australian	62.8
British (including English, Scottish, Welsh)	51.9
Irish	13.6
New Zealand (including Maori)	2.5
Aboriginal or Torres Strait Islander	1.0
Other European	12.8
Other ancestry	12.9
Refused	0.4

NB: Without weights applied. Percentages may add to more than 100 as multiple responses were allowed.

"Other ancestry" includes Chinese, Indian, Lebanese and Vietnamese and other. "Other European" includes Italian, German, Greek, and Dutch.

'New Zealand European' was the most common ethnic group that New Zealand respondents reported belonging to (91.9 per cent), followed by 6.9 per cent for 'Maori', and 5.2 per cent for 'Asian'. The proportion of New Zealand European respondents in the survey is higher than found in the 2006 New Zealand Census, in which around 59.1 per cent of respondents identified as New Zealand European (Statistics New Zealand 2006).

Table 9. Ethnicity of New Zealand respondents

Ethnicity	NZ (%) (n=802)
New Zealand European	81.9
Maori	6.9
Asian	5.2
Other European	5.5
Pacific Peoples	2.7
Other ethnicity	1.9
Refused	0.6

NB: Without weights applied. Percentages may add to more than 100 as multiple responses were allowed.

"Other ethnicity" includes African, Middle Eastern, Latin American peoples and New Zealander, Kiwi.

Education

As shown in Table 10, over half of Australians (58.4 per cent) and New Zealanders (60.5 per cent) had completed post-secondary qualifications (for example, trade qualifications or university degrees).

Table 10. Post-secondary school education of respondents

	AU (%) (n=787)	NZ (%) (n=774)
No post-secondary school qualification	41.6	39.5
Post-secondary school qualification	58.4	60.5

NB: With weights applied. Percentages by column.

Household income

Household incomes were similar between the two countries, with a slightly higher proportion of Australian than New Zealand respondents in the higher income brackets (see Table 11). For both countries, household incomes of $30,000 or less were the most common income category reported.

Table 11. Household income, by country (without weights applied)

Household income, pre-tax	AU (%) (n=800)	NZ (%) (n=802)
≤$30,000	22.1	25.8
$30,001 to $50,000	15.0	18.7
$50,001 to $70,000	13.4	14.6
$70,001 to $100,000	14.5	15.2
$100,001 to $150,000	13.5	10.5
>$150,000	9.5	6.6
Refused	4.4	3.9
DK	7.6	4.7
Total	100.0	100.0

NB: Without weights applied.

NB: Same response categories were used for Australia and New Zealand. So Australian sample is for $AUD and New Zealand sample is for $NZD.

Occupational status

Over half of respondents in both Australia and New Zealand had a lower occupational status (Less than 50 out of 100). No statistically significant difference was found in the proportion of Australians and New Zealanders with an AUSEI06 score in the low status or high status category $\chi^2(1, N=876) = 0.43, p=.513$.

Table 12. Occupational status of respondents

AUSEI06 score	AU (%) (n=435)	NZ (%) (n=441)
Low status (<50)	55.4	57.6
High status (>=50)	44.6	42.4

NB: Without weights applied. Percentages by column.

Attitudes to food regulation

The survey included two questions on attitudes towards government regulation of food and drink. These were included to determine whether there was a link between general attitudes to food regulation and to attitudes towards mandatory food fortification. The first question asked respondents whether they thought there was too much or too little regulation to reduce immediate food risks, such as food contamination or food poisoning, in their country. In the second, respondents were asked whether they thought there was too much or too little regulation to reduce long term risks, such as obesity and diet-related diseases, in their country.

The most frequent response expressed towards the regulation of immediate food risks was that there was "about the right amount" of regulation (see Table 13). Of those respondents who considered that there was not enough or too much regulation, a greater proportion of respondents considered there was too little (37.8 per cent in Australia, 31.0 per cent in New Zealand) than those who considered there was too much regulation of immediate food risks (6.1 per cent in Australia, 5.8 per cent in New Zealand).

Table 13. "Do you think there is too little regulation, about the right amount, or too much regulation of immediate food risks in Australia/New Zealand?"

	AU (%) (n=800)	NZ (%) (n=802)
Way too little	11.0	7.7
Somewhat too little	26.8	23.3
About the right amount	37.3	46.3
Somewhat too much	4.6	3.6
Way too much	1.5	2.2
DK	18.8	16.9

NB: With weights applied. Percentages by column.

In contrast to attitudes regarding regulation of immediate food risks, both Australians and New Zealanders tended to believe there was too little regulation of long term food risks. Fifty five per cent of Australians and 56 per cent of New Zealanders said that there was "way too little" or "somewhat too little" regulation of long term food risks (see Table 14).

Table 14. "Do you think there is too little regulation, about the right amount, or too much regulation of long term risks in Australia/New Zealand?"

	AU (%) (n=800)	NZ (%) (n=802)
Way too little	21.8	22.4
Somewhat too little	33.6	33.6
About the right amount	24.3	26.7
Somewhat too much	4.3	3.8
Way too much	1.6	2.1
DK	14.4	11.5

NB: With weights applied. Percentages by column.

Mandatory Fortification

Awareness of mandatory fortification

D1 Do you think the Government in (Australia/New Zealand) does or does not make it compulsory for food manufacturers to add vitamins or minerals to some types of food?

This question was included to examine whether consumers are aware that, for some food categories, the Australian and New Zealand Governments require manufacturers to add particular vitamins or minerals to them. The qualitative research conducted in 2009 suggested that, although consumers were aware of voluntary fortification, there was less awareness of mandatory fortification.

Around half of Australians and New Zealanders believed no addition of vitamins or minerals by food manufacturers was mandatory in their country (53 per cent of Australians and 46 per cent of New Zealanders), see Table 15. Only 19.2 per cent of Australians and 23.1 per cent of New Zealanders were aware that some types of food were required to contain added vitamins or minerals. These results suggest that the majority of Australians and New Zealanders are unaware that some foods are required by government to contain added vitamins or minerals. New Zealanders were more likely than Australians to be aware of mandatory fortification $\chi^2(2, N=1602) = 9.21, p= .010$.

Table 15. Awareness of mandatory fortification, by country

	AU (%) (n=800)	NZ (%) (n=802)
Yes, the government does make it compulsory	19.2	23.1
No, the government does not make it compulsory	53.0	46.0
DK	27.8	31.0

NB: With weights applied. Percentages by column.

A higher proportion of men than of women were aware that some foods are required to have added vitamins or minerals in both Australia and New Zealand $\chi^2(2, N=1602) = 9.02, p= .011$ (see Table 16). Older people (45 years and over) were more likely to provide a 'don't know' response to the question, but did not otherwise differ from those of younger people $\chi^2(2, N=1598) = 3.65, p= .161$.

Table 16. Awareness of mandatory fortification, by gender and age

			Aware	Not aware	DK
AU	Men	16–44 years (n=105)	24.5	51.8	23.7
		45+ years (n=210)	19.3	51.2	29.5
	Women	16–44 years (n=147)	18.1	58.6	23.3
		45+ years (n=336)	15.1	50.5	34.5
NZ	Men	16–44 years (n=107)	26.9	45.7	27.5
		45+ years (n=183)	26.2	48.3	25.5
	Women	16–44 years (n=177)	17.2	50.2	32.6
		45+ years (n=333)	22.5	40.1	37.4

NB: With weights applied. Percentages by row.

Main grocery buyers and non-main grocery buyers did not differ in awareness that some foods must contain added vitamins or minerals (see Table 17) $\chi^2(2, N=1602) = 0.13$, $p= .935$.

Table 17. Awareness of mandatory fortification, by main grocery buyer status

	Aware	Not aware	DK
Main grocery buyer (n=1289)	19.4	52.6	28.0
Not main grocery buyer (n=313)	21.1	49.8	29.1

NB: With weights applied. Percentages by row.

People with higher levels of education were more likely to be aware that some foods must have added vitamins or minerals compared with those with lower levels of education (see Table 18) $\chi^2(2, N=1561) = 11.23$, $p= .004$, although the difference was small.

Table 18. Awareness of mandatory fortification, by education level

	Aware	Not aware	DK
No post-secondary qualification (n=669)	15.7	53.4	30.9
Post-secondary qualification (n=892)	22.9	50.6	26.5

NB: With weights applied. Percentages by row.

Awareness of food categories for which fortification is mandatory

D2 We now want to ask whether you think the Government in (Australia/New Zealand) currently makes it compulsory for food manufacturers to add vitamins or minerals to some foods. Is it true or false or are you unsure if vitamins or minerals must be added to...?

- *Confectionery or lollies*
- *Breakfast cereal*
- *Bread*
- *Margarine or similar spreads*
- *Fruit juice*
- *Salt*
- *Milk substitutes, such as soy or rice milks*

The survey examined whether people were aware of the foods which are required to be fortified in Australia and New Zealand. When FSANZ outlined the monitoring activities it would undertake in relation to the folic acid fortification, it committed to monitoring consumers' awareness of products that have been mandated to contain folic acid. In question D2, interviewers listed some food categories and asked respondents to indicate which they thought had to have vitamins and minerals added and which did not.

Table 19 shows which food categories from question D2 require fortification in Australia and New Zealand, as outlined in Chapter 2 of the Code.

Table 19. Fortification requirements for food categories from question D2

	Requires fortification?	
	In Australia	In New Zealand
Confectionery or lollies	No	No
Breakfast cereal	No	No
Bread*	**Yes**	**Yes**
Margarine or similar spreads[#]	**Yes**	No
Fruit juice	No	No
Salt	No	No
Milk substitutes, such as soy or rice milks	No	No

**Fortification requirements for bread in Australia and New Zealand are outlined in Standard 2.1.1 – Cereals and Cereal Products of the Code.*

[#]Fortification requirements for margarine in Australia are outlined in Standard 2.4.2 – Edible Oil Spreads of the Code.

As shown below in Table 20, awareness of the mandatory fortifications was low. Given the low proportion of Australians and New Zealanders who were aware of mandatory fortification at all, as discussed for question D1, this result is not surprising. Australians and New Zealanders were most likely to believe (correctly) that bread was required to have vitamins or minerals added. New Zealanders were more likely to be aware that bread was required to contain some added vitamins or minerals than Australians, $\chi^2(2, N=1602) = 14.33$, $p=.001$. New Zealanders were also more likely to believe (incorrectly) that salt must contain some added vitamins or minerals $\chi^2(2, N=1602) = 38.30$, $p<.001$. Only 14.4 per cent of Australians thought that margarine was required to contain added vitamins or minerals. The same proportion of New Zealanders believed margarine was fortified $\chi^2(2, N=1602) = 1.58$, $p=.453$, despite margarine requiring fortification in Australia, but not New Zealand.

Table 20. Foods believed to be mandatorily fortified

	AU (%) (n=800)	NZ (%) (n=802)
Bread	24.0	34.2
Salt	13.6	24.4
Breakfast cereal	16.9	17.9
Fruit juice	14.0	17.4
Margarine#	14.4	15.9
Milk substitutes*	11.5	16.1
Confectionery or lollies	8.3	7.4

NB: With weights applied. Percentages by column.

 # Or similar spreads.

** Such as soy and rice milks.*

In part, the relatively low proportion of people correctly identifying foods that require fortification is due to the high proportion of 'unsure' responses. This ranged from 49.1 per cent (for bread) to 63.1 per cent for milk substitutes such as soy milk. Just under half of people did not provide a 'true' response to any of the food categories mentioned (i.e. they only selected 'unsure' or 'false').

The higher level of awareness of mandatory bread fortification among New Zealanders may have been due to the media coverage of folic acid fortification in 2009. As shown in Figure 1, below, media stories about folic acid fortification peaked in Australia and New Zealand in mid-2009. However, in New Zealand many more stories were published than in Australia in that time period.

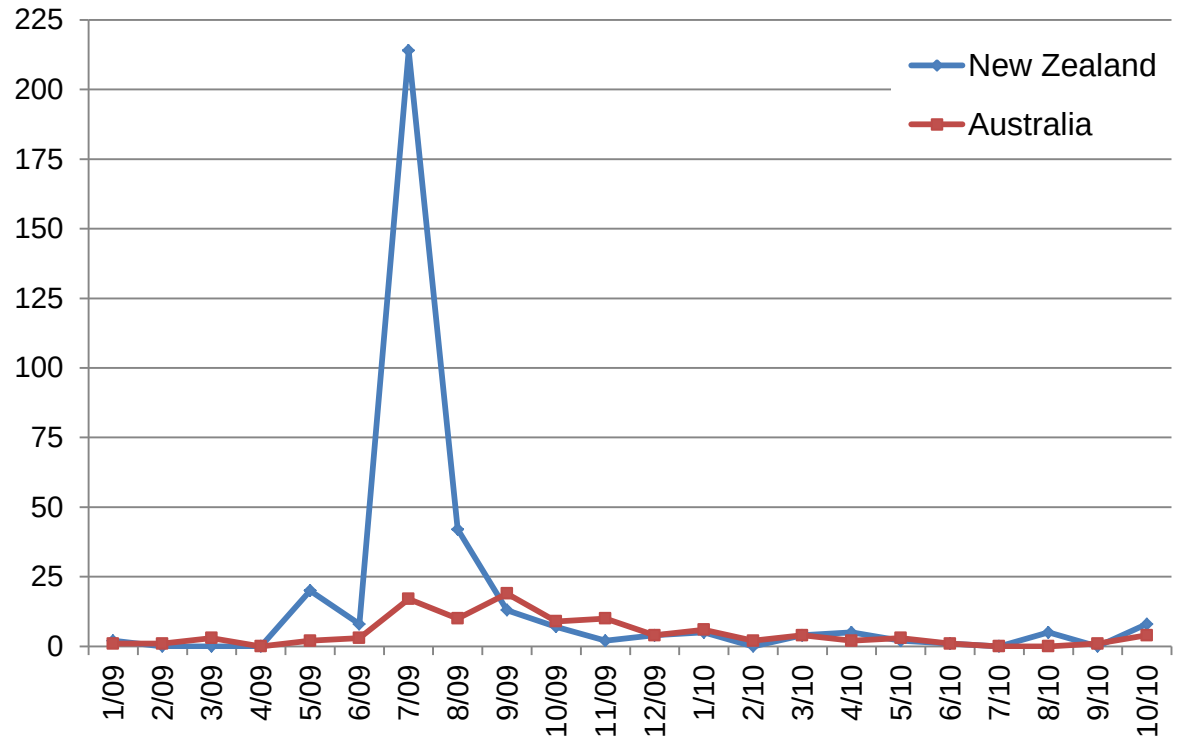

Figure 1. News stories from Australia and New Zealand which include the terms 'folic acid' and 'bread'.[15]

[15] Data in figure are from searches conducted using Factiva. Separate searches were conducted for each month from January 2009 to July 2011. Results were limited to those from Australian and New Zealand news

Table 21 shows knowledge of bread fortification by gender and age. Older people (45 years and over) were more likely to correctly identify bread as being required to contain added vitamins or minerals $\chi^2(2, N=1598) = 7.51$, $p= .023$ than younger people. There was no statistically significant difference in responses to the question on bread between men and women $\chi^2(2, N=1602) = 0.55$, $p=.759$.

Table 21. Knowledge of bread fortification, by age and gender

Country	Gender	Age	% correct
AU	Men	16–44 years (n=105)	16.4
	Men	45+ years (n=210)	26.2
	Women	16–44 years (n=147)	24.7
	Women	45+ years (n=336)	28.9
NZ	Men	16–44 years (n=107)	30.4
	Men	45+ years (n=183)	42.3
	Women	16–44 years (n=177)	31.7
	Women	45+ years (n=333)	32.6

NB: With weights applied. Percentages by row.

For Australian and New Zealand respondents, answering 'True' to bread being a food category that must have vitamins or minerals added was a correct response.

Among Australians, neither age $\chi^2(2, N=1598) = 2.19$, $p= .335$ nor gender $\chi^2(2, N=1602) = 2.83$, $p= .243$ was related to awareness that margarine is required to contain added vitamins or minerals.

Being a main grocery buyer was not associated with correctly identifying bread as requiring added vitamins or minerals $\chi^2(1, N=1602) = 0.02$, $p= .875$.

Table 22. Knowledge of bread fortification, by main grocery buyer status

Main grocery buyer status	AU (%)	NZ (%)
Main grocery buyer (n=1289)	24.1	34.6
Not main grocery buyer (n=313)	23.6	34.8

NB: With weights applied. Percentages by row.

Among Australians, main grocery buyer status was not associated with awareness that margarine is required to have vitamins or minerals added $\chi^2(1, N=800) = 0.07$, $p=.787$.

sources which included the terms 'folic acid' and 'bread'. Where an article is carried in multiple publications, this is counted as multiple articles.

Awareness of fortificants that must be added to bread in Australia and New Zealand

D3 Currently in (Australia / New Zealand), bread must have one or more particular vitamins or minerals added. Is it true or false or are you unsure if bread must have the following added to it…?

- *Vitamin D*
- *Iron*
- *Folic acid which is sometimes known as folate*
- *Thiamin which is sometimes known as Vitamin B1*
- *Calcium*
- *Iodine or iodised salt*

Related to knowledge of which foods must be fortified is knowledge of the vitamins or minerals that must be added to them. Respondents were informed that bread must have one or more particular vitamins or minerals added to it. Interviewers then listed some vitamins and minerals and asked respondents to indicate which they thought were added to bread.

The questionnaire included a range of vitamins and minerals, some of which must be added to bread and some of which are not required. In Australia, bread must be made using iodised salt in place of non-iodised salt, and it must include minimum amounts of folic acid and thiamin. In New Zealand, bread must be made with iodised salt in place of non-iodised salt. In the questionnaire, folic acid was described as "Folic acid which is sometimes known as folate". Iodine was described as "Iodine or iodised salt". This was to aid respondents who might be aware of one form of a vitamin or mineral, but not the other form in which it can be found.

By far the most common response for each of the vitamins or minerals included in this question was 'unsure'. The proportion of responses that were 'unsure' ranged from 53.8 per cent (for folic acid) to 68.5 per cent (for vitamin D). Around 40 per cent did not provide any 'true' responses to the vitamins and minerals that interviewers listed in the question (i.e. they only provided 'unsure' or 'false' responses).

Among both Australians and New Zealanders, folic acid was the vitamin or mineral that was most commonly believed to be mandated, despite folic acid being mandated only for bread in Australia. New Zealanders were more likely than Australians to correctly identify iodine or iodised salt as a bread fortificant $\chi^2(1, N=1602) = 16.91$, $p<.001$.

Table 23. Fortificants believed to be used in bread)

	AU (%) (n=800)	NZ (%) (n=802)
Folic acid	31.5*	36.9
Iodine or iodised salt	24.9*	33.2*
Thiamin	28.4*	22.2
Iron	21.8	26.0
Calcium	23.9	23.5
Vitamin D	12.9	13.6

NB: With weights applied. Percentages by column.

***Indicates the vitamin or mineral is compulsory in bread in that country.*

Among Australians, gender was related to awareness of folic acid fortification $\chi^2(1, N=800) = 5.21$, $p=.022$. Compared to men, women had a higher rate of awareness (34.9 per cent) than men (28.2 per cent). Age among Australians was not related to knowledge $\chi^2(1, N=798) =$

0.01, p=.905. For New Zealanders, neither gender $\chi^2(1, N=802) = 2.64$, p=.104, nor age $\chi^2(1, N=800) = 2.02$, p=.155 influenced knowledge that folic acid is not required in bread in New Zealand.

Table 24. Knowledge of folic acid fortification, by age and gender

		AU (%) correct (n=798)	NZ (%) correct (n=800)
Men	16–44 years	31.0	32.8
	45+ years	25.4	37.2
Women	16–44 years	31.9	37.6
	45+ years	37.7	40.0

NB: With weights applied. Percentages by rows.

For Australian respondents, answering 'True' to folic acid being mandatory in bread was a correct response. For New Zealand respondents, a 'False' response was required.

Knowledge of folic acid fortification was not related to whether participants were main grocery buyers or not among Australians $\chi^2(1, N=800) = .01$, p=.934.

Similarly, among Australians there was no relationship between education level and knowledge of folic acid fortification $\chi^2(1, N=787) = 1.42$, p=.234.

Table 25. Knowledge of folic acid fortification, by demographics

		AU (%) correct	NZ (%) correct
Main grocery buyer status	Main grocery buyer (n=1289)	31.8	20.3
	Not main grocery buyer (n=313)	31.0	18.5
Education level	No post-secondary qualification (n=669)	29.1	15.6
	Post-secondary qualification (n=892)	33.0	22.6

NB: With weights applied. Percentages by row.

For Australian respondents, answering 'True' to folic acid being mandatory in bread was a correct response. For New Zealand respondents, a 'False' response was required.

There was no difference in the knowledge of folic acid fortification by attitude to government regulation of immediate food risks $\chi^2(3, N=800) = 6.56$, p=.087 among Australians.

Australians who responded 'don't know' to the question on regulation of long term food risks were less likely to be aware of folic acid fortification $\chi^2(3, N=800) = 10.68$, p=.014.

Awareness of iodine fortification was not related to gender among Australians $\chi^2(1, N=800) = 1.79$, p=.181, nor among New Zealanders $\chi^2(1, N=802) = 3.74$, p=.053. Age was not related to awareness of iodine fortification $\chi^2(1, N=1598) = 0.25$, p=.616.

Table 26. Knowledge of iodine fortification, by age and gender

		AU (%) correct (n=798)	NZ (%) correct (n=800)
Men	16–44 years	22.6	29.3
	45+ years	21.7	31.3
Women	16–44 years	30.6	32.3
	45+ years	24.6	39.5

NB: With weights applied. Percentages by rows.

For both Australian and New Zealand respondents, answering 'True' to iodine or iodised salt being mandatory in bread was a correct response.

Main grocery buyers were more likely than non-main grocery buyers to be aware of iodine fortification in Australia and New Zealand $\chi^2(1, N=1602) = 5.33$, $p=.021$.

Knowledge of iodine fortification was not related to education $\chi^2(1, N=1561) = 0.86$, $p=.354$.

As shown below, in Table 27, around a quarter of Australian men and a third of Australian women were aware that bread is required to contain thiamin. The difference between the genders was statistically significant $\chi^2(1, N=800) = 5.76$, $p=.016$. There was no difference between age groups in knowledge of thiamin fortification $\chi^2(1, N=798) = 2.91$, $p=.088$.

Table 27. Knowledge of thiamin fortification, by age and gender

		AU (%) correct (n=798)
Men	16–44 years	22.7
	45+ years	25.6
Women	16–44 years	30.1
	45+ years	35.3

NB: With weights applied. Percentages by rows.

For Australian respondents, answering 'True' to thiamin being mandatory in bread was a correct response.

Knowledge of the purpose of folic acid fortification

E1 In Australia the Government makes it compulsory for all bread made from wheat, except for organic bread, to have folic acid, sometimes known as folate, added to it by the manufacturer. What do you think the intended benefit of this is?

E4 The New Zealand Government has been considering whether to make it compulsory for all bread made from wheat, except for organic bread, to have folic acid added to it by the manufacturer. What do you think is the intended benefit of this?

Questions E1 and E4 were included to explore respondents' knowledge of the reasons for the mandatory folic acid fortification. As discussed in the introduction to this report, the aim of the Australia-only standard was to reduce the incidence of NTDs.

Respondents provided open-ended answers to the question, which were transcribed verbatim by interviewers. FSANZ coded the responses to the following categories:

- specific and correct – mentions of specific functions or outcomes of folic acid fortification or specific groups (such as pregnant women)
- vague health responses – responses that didn't mention parts of the body, functions or outcomes that would be affected

- deficiency responses – suggesting fortification would result in broad population reductions in folic acid/folate deficiency
- non-health responses – suggesting other benefits to fortification, such as economic or consumer benefits
- incorrect health responses – where body parts, functions or outcomes were mentioned that would not result from folic acid fortification
- don't know.

Further information on how the answers were coded by FSANZ is available in Appendix E.

The most common response among Australians to the question was 'don't know' (45.6 per cent), while among New Zealanders a specific and correct response was the most common (42.2 per cent). New Zealanders were more likely to provide a correct answer on the intended benefit of folic acid fortification than Australians $\chi^2(1, N=1602) = 19.76$, $p<.001$.

Table 28. Knowledge of the intended benefit of folic acid fortification

	AU % (n=800)	NZ % (n=802)
Specific and correct	31.7	42.2
Vague health responses	8.0	9.1
Deficiency responses	6.5	8.1
Non-health	2.2	2.2
Incorrect	13.0	10.3
DK	45.6	34.7

NB: With weights applied. Percentages by column. Percentages may add to over 100 as multiple responses could occur.

Women were more likely to provide a specific and correct response than men $\chi^2(1, N=1602) = 71.14$, $p<.001$. Among women, 42.9 per cent gave a correct response compared to 23.6 per cent of men. There was no difference in the rate of these responses between those 16–44 years and 45 years and over $\chi^2(1, N=1598) = 1.02$, $p=.313$.

Table 29. Knowledge of the intended benefit of folic acid fortification, by age and gender

			Specific and correct
AU	Men	16–44 years (n=105)	24.0
	Men	45+ years (n=210)	20.4
	Women	16–44 years (n=147)	37.7
	Women	45+ years (n=336)	43.8
NZ	Men	16–44 years (n=107)	30.0
	Men	45+ years (n=183)	30.0
	Women	16–44 years (n=177)	53.9
	Women	45+ years (n=333)	53.6

NB: With weights applied. Percentages by row. Percentages may add to over 100 as multiple responses could occur.

Main grocery buyers were more likely to provide a specific and correct response than non-main grocery buyers $\chi^2(1, N=1602) = 28.39, p<.001$.

People with a post-secondary school qualification were more likely to provide a specific and correct response than those with lower levels of education $\chi^2(1, N=1561) = 27.35, p<.001$, see Table 30, below.

Table 30. Knowledge of the intended benefit of folic acid fortification, by main grocery buyer status and education level

		Specific and correct
Main grocery buyer status	Main grocery buyer (n=1289)	38.5
	Not main grocery buyer (n=313)	19.4
Education level	No post-secondary qualification (n=669)	24.0
	Post-secondary qualification (n=892)	40.2

NB: With weights applied. Percentages by row.

In summary, a high proportion of Australians and New Zealanders were not aware of the intended benefit of the folic acid fortification. However, women, main grocery buyers and people with higher levels of education had higher levels of awareness of the intended benefit.

Attitude toward mandatory folic acid fortification

Australia
E2 The reason bread must have folic acid added to it is to reduce the risk of babies being born with neural tube defects like spina bifida. Knowing this would you say…?

- *It should be compulsory for manufacturers to add folic acid to all bread*
- *It should be optional for manufacturers to add folic acid to bread*
- *It's difficult to decide either way*
- *Or, you don't care either way*

Is the strength of your opinion on this:..?

- *very strong*
- *somewhat strong*
- *or, not at all strong*

New Zealand
E5 The reason bread would have folic acid added to it is to reduce the risk of babies being born with neural tube defects like spina bifida. Knowing this, would you say…?

- *It should be compulsory for manufacturers to add folic acid to all bread*
- *It should be optional for manufacturers to add folic acid to bread*
- *It's difficult to decide either way*
- *Or, you don't care either way*

Is the strength of your opinion on this:..?

- *very strong*
- *somewhat strong*
- *or, not at all strong*

FSANZ was also interested in how Australians' and New Zealanders' attitudes toward the mandatory fortifications, particularly as the qualitative research suggested some consumers were concerned that the mandatory fortification removed their choice to consume unfortified foods.

Australians and New Zealanders differed in their opinion on folic acid fortification. Of Australians, 42.7 per cent selected "It should be compulsory for manufacturers to add folic acid to all bread" (either very strongly, somewhat strongly or not at all strongly). In contrast, only 29.4 per cent of New Zealanders provided one of these responses. Around half (54.2) of New Zealanders indicated that "It should be optional for manufacturers to add folic acid to bread" (either very strongly, somewhat strongly or not at all strongly), compared to 37.4 per cent of Australians.

Table 31. Attitudes to mandatory folic acid fortification, by country

		AU (%) (n=800)	NZ (%) (n=802)
It should be compulsory for manufacturers to add folic acid to all bread	**Very strong**	21.0	14.8
	Somewhat strong	20.4	13.8
	Not at all strong	1.3	0.8
	It's difficult to decide either way	12.9	13.6
	Or, you don't care either way	6.9	2.8
It should be optional for manufacturers to add folic acid to bread	**Not at all strong**	8.1	8.6
	Somewhat strong	21.2	30.5
	Very strong	8.1	15.1

NB: With weights applied. Percentages by column.

Response categories were collapsed into the following three categories for analysis:

- It should be compulsory for manufacturers to add folic acid to all bread
- It should be optional for manufacturers to add folic acid to bread
- No opinion (It's difficult to decide either way/don't care either way).

Using the above response categories, the two countries were compared. This showed that the tendency for Australians to favour compulsory fortification more than the New Zealanders was statistically significant $\chi^2(2, N=1602) = 38.47$, $p < .001$.

It was hypothesised that women of childbearing age may have more favourable attitudes toward the mandatory folic acid fortification. However, a chi square test found the reverse, that men were more likely than women to believe folic acid fortification should be compulsory $\chi^2(2, N=1602) = 9.24$, $p = .010$. Comparing age categories, participants aged 45 years and over were more likely to favour compulsory fortification than younger respondents $\chi^2(2, N=1598) = 10.24$, $p = .006$.

Table 32. Attitude toward mandatory folic acid fortification, by age and gender

			Folic acid fortification should be		
			Compulsory	Optional	No opinion
AU	Men	16–44 years (n=105)	45.7	34.0	20.4
		45+ years (n=210)	47.8	30.4	21.8
	Women	16–44 years (n=147)	37.0	45.6	17.5
		45+ years (n=336)	40.8	39.2	20.0
NZ	Men	16–44 years (n=107)	26.5	56.4	17.1
		45+ years (n=183)	37.8	46.8	15.4
	Women	16–44 years (n=177)	24.3	60.3	15.4
		45+ years (n=333)	30.1	52.5	17.5

NB: With weights applied. Percentages by row.

Peoples' attitudes toward the regulation of immediate food risks was related to their attitude toward folic acid fortification $\chi^2(6, N=1602) = 38.12$, $p<.001$. Those who considered there was too little regulation of immediate food risks were more likely to say that fortification should be compulsory than those who considered there was too much regulation of immediate food risks.

Similarly, people who indicated that there was too little regulation of long term food risks had a greater tendency to say that folic acid fortification should be compulsory than those who thought there was too much regulation $\chi^2(6, N=1602) = 53.51$, $p<.001$. That is, those who considered there was a need for more regulation of food to reduce both short and long term risks were also likely to support mandatory fortification with folic acid.

Table 33. Attitude toward mandatory folic acid fortification, by attitude to food regulation

		Folic acid fortification should be		
Attitude to government regulation		Compulsory	Optional	No opinion
Immediate food risks	Too little regulation (n=562)	46.7	35.0	18.3
	About the right amount (n=653)	37.9	46.7	15.4
	Too much regulation (n=103)	28.0	49.9	22.2
	DK (n=284)	38.2	33.6	28.3
Long term food risks	Too little regulation (n=866)	45.8	37.7	16.5
	About the right amount (n=408)	33.4	49.9	16.7
	Too much regulation (n=101)	38.9	36.7	24.4
	DK (n=227)	33.4	34.1	32.5

NB: With weights applied. Percentages by row.

Main grocery buyers were less likely to think folic acid fortification should be compulsory than non-main grocery buyers $\chi^2(2, N=1602) = 7.53$, $p=.023$. There was no difference in attitudes to folic acid fortification by education level $\chi^2(2, N=1561) = 2.57$, $p=.278$.

Table 34. Attitude toward mandatory folic acid fortification, demographics.

		Folic acid fortification should be		
		Compulsory	Optional	No opinion
Main grocery buyer status	Main grocery buyer (n=1289)	38.7	42.1	19.1
	Not main grocery buyer (n=313)	45.6	34.8	19.7
Education level	No post-secondary qualification (n=669)	43.6	37.1	19.3
	Post-secondary qualification (n=892)	38.4	42.6	19.0

NB: With weights applied. Percentages by row.

Chi square analysis was conducted to test whether people who were aware of the intended benefit of folic acid fortification were more likely to believe that the fortification should be compulsory. Analysis showed that there was a relationship between awareness of the intended benefit of folic acid fortification and attitude toward compulsory fortification with folic acid $\chi^2(2, N=1602) = 21.97$, $p<.001$. It appears this is due to respondents who were aware of the intended benefit of folic acid fortification being less likely to provide a no opinion response than respondents who did not know the intended benefit of the fortification.

Knowledge of the purpose of iodine fortification

F1 In (Australia/New Zealand) the Government makes it compulsory for all bread made from wheat, except for organic bread, to be made with iodised salt, instead of normal salt. What do you think the intended benefit of this is?

Question F1 was included to explore respondents' knowledge of the reasons for the mandatory iodine fortification. As discussed in the introduction to this report, the aim of the standard was to address emerging iodine deficiency in the Australian and New Zealand populations. Iodine deficiencies affect the functioning of the thyroid gland, thereby affecting metabolism. Iodine is particularly important for pregnant and breastfeeding women, as foetuses and exclusively breastfed babies are dependent on their mothers for the mineral.

Respondents provided open-ended answers to the question, which were transcribed verbatim by interviewers. FSANZ coded the responses to the following categories:

- specific and correct – mentions of specific functions, body parts and groups (such as pregnant women) that would benefit from iodine fortification
- vague health responses – responses that didn't mention parts of the body, functions or outcomes that would be affected
- deficiency responses – suggesting fortification would result in broad population reductions in iodine deficiency
- non-health responses – suggesting other benefits to fortification, such as economic or consumer benefits
- incorrect health responses – where body parts, functions or outcomes were mentioned that would not result from iodine fortification
- don't know

Further information on how the answers were coded by FSANZ is available in Appendix E. The most common response to the question was 'don't know', with around a third of New Zealanders providing this answer, and almost half of Australians. The proportion of 'don't know' responses was very similar to those from the same question on folic acid fortification.

The proportion of people providing correct respondents was lower than for the question on the intended benefit of folic acid fortification. Among Australians, only 18.5 per cent were able to mention a specific and correct response, compared to 45.6 per cent of Australians to the question on folic acid. Similarly, only 32.9 per cent of New Zealanders gave a specific and correct response compared to 42.2 per cent in the question on folic acid. New Zealanders were more likely to provide a specific and correct response than Australians $\chi^2(1, N=1602) = 56.77$, $p<.001$. Just under 20 per cent of people were able to link the iodine fortification with the intended benefit of addressing a iodine deficiency in the population.

Table 35. Knowledge of the intended benefit of mandatory iodine fortification

	AU % (n=800)	NZ % (n=802)
Specific and correct	18.5	32.9
Vague health responses	20.4	18.4
Deficiency related	17.8	16.9
Non-health	4.1	4.7
Incorrect health responses	12.5	11.6
DK	46.2	36.6

NB: With weights applied. Percentages by column. Percentages may add to over 100 as multiple responses could occur.

Women were more likely to provide a specific and correct response to the question on the intended benefit of iodine fortification than men $\chi^2(1, N=1602) = 23.15$, $p<.001$. Knowledge of the benefits of iodine fortification was also related to age $\chi^2(1, N=1598) = 116.43$, $p<.001$, with people aged 45 years and over more likely to provide a specific and correct response than younger people.

Table 36. Knowledge of intended benefits of mandatory iodine fortification, by age and gender

			Specific and correct	Deficiency related
AU	Men	16–44 years (n=105)	5.7	14.9
		45+ years (n=210)	20.5	14.2
	Women	16–44 years (n=147)	16.0	20.2
		45+ years (n=336)	31.3	21.8
NZ	Men	16–44 years (n=107)	12.7	10.0
		45+ years (n=183)	45.7	15.6
	Women	16–44 years (n=177)	16.9	19.5
		45+ years (n=333)	56.4	22.0

NB: With weights applied. Percentages by row. Percentages may add to over 100, as multiple responses could occur.

The relationship between age and knowledge of the intended benefits of iodine fortification are shown below in Figure 2. People aged 70 years and over were most likely to provide a specific and correct response on the intended benefits of iodine fortification.

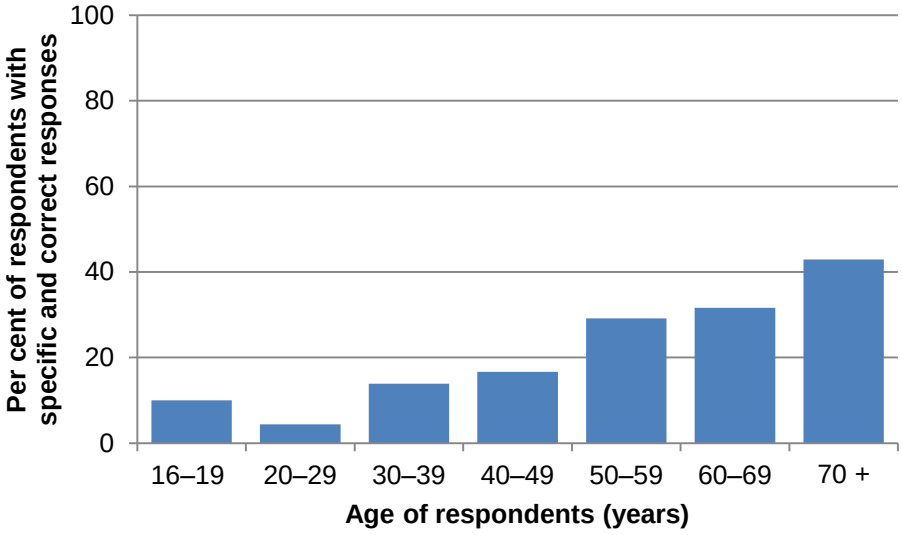

Figure 2. Relationship between age and proportion of specific and correct responses.

NB: With weights applied.

Main grocery buyers were more likely to provide specific and correct responses than those who were not main grocery buyers $\chi^2(1, N=1602) = 20.88$, $p<.001$.

Respondents with post-secondary qualifications were more likely to provide a specific and correct response to the question than those with lower levels of education $\chi^2(1, N=1561) = 24.87$, $p<.001$.

Table 37. Knowledge of the intended benefit of mandatory iodine fortification, by main grocery buyer status and education level

		Specific and correct	Deficiency related
Main grocery buyer status	Main grocery buyer (n=1289)	23.8	19.2
	Not main grocery buyer (n=313)	12.4	13.5
Education level	No post-secondary qualification (n=669)	14.4	12.2
	Post-secondary qualification (n=892)	24.9	21.5

NB: With weights applied. Percentages by row.

In summary, a high proportion of Australians and New Zealanders were not aware of the intended benefit of the mandatory iodine fortification. However, New Zealanders, women, older respondents, main grocery buyers and respondents with higher levels of education had higher levels of awareness.

Attitude toward mandatory iodine fortification

F2 The reason bread must be made with iodised salt instead of normal salt is to help address iodine deficiency in (Australia/New Zealand) population. Iodine helps to regulate the body's metabolism and aids physical and mental development, especially in unborn babies and young children. Knowing this, would you say...?

- *It should be compulsory for manufacturers to make all bread with iodised salt instead of normal salt*
- *It should be optional for manufacturers to make bread with iodised salt instead of normal salt*
- *It's difficult to decide either way*
- *Or, you don't care either way.*

Is the strength of your opinion on this:..?

- *very strong*
- *somewhat strong*
- *or, not at all strong.*

Overall, 49.1 per cent of Australians and New Zealanders indicated that iodine fortification should be compulsory (including very strongly, somewhat strongly and not at all strongly responses). This contrasts with attitudes to folic acid fortification, in which only 40.6 per cent of people were in favour. Around one third (33.7 per cent) of Australians and New Zealanders considered that iodine fortification should be optional. This compared to 40.2 per cent of said that the folic acid fortification should be optional.

Table 38. Attitudes to mandatory iodine fortification, by country

		AU (%) (n=800)	NZ (%) (n=802)
It should be compulsory for manufacturers to make all bread with iodised salt instead of normal salt	Very strong	19.0	19.7
	Somewhat strong	28.3	24.8
	Not at all strong	2.2	2.8
	It's difficult to decide either way	11.0	9.7
	Or, you don't care either way	7.0	3.9
It should be optional for manufacturers to make bread with iodised salt instead of normal salt	Not at all strong	8.6	7.0
	Somewhat strong	18.3	22.4
	Very strong	5.7	9.7

NB: With weights applied. Percentages by column.

Response categories were collapsed into the following three categories for analysis:

- It should be compulsory for manufacturers to make all bread with iodised salt instead of normal salt
- It should be optional for manufacturers to make bread with iodised salt instead of normal salt
- No opinion (It's difficult to decide either way/don't care either way).

Using the above response categories, the two countries were compared. Around half of respondents (49.5 per cent of Australian respondents and 47.3 per cent of New Zealand respondents) were in favour of compulsory iodine fortification. Approximately one third of respondents considered that the fortification should be optional for manufacturers (32.6 per

cent of Australians and 39.1 per cent of New Zealanders). Analysis showed that the country of respondents and their opinion of iodine fortification was not independent $\chi^2(2, N=1602) = 7.87$, $p=.020$. Among people who were not in favour of compulsory fortification, it appears that New Zealanders were more likely to select "it should be optional" and Australians were more likely to pick a no opinion response.

It was hypothesised that women of childbearing age may have more favourable attitudes toward the mandatory iodine fortification. There was no statistically significant difference between men and women in their attitude to iodine fortification $\chi^2(2, N=1602) = 1.91$, $p=.386$. There was also no difference between people aged 44 years and under and those aged 45 years and over $\chi^2(2, N=1598) = 4.43$, $p=.109$.

Table 39. Attitude toward mandatory iodine fortification, by age and gender

			Iodine fortification should be		
			Compulsory	Optional	No opinion
AU	Men	16–44 years (n=105)	46.4	37.6	15.9
		45+ years (n=210)	49.1	30.7	20.2
	Women	16–44 years (n=147)	53.1	29.9	17.0
		45+ years (n=336)	49.1	32.0	18.9
NZ	Men	16–44 years (n=107)	44.6	45.7	9.6
		45+ years (n=183)	47.3	37.5	15.2
	Women	16–44 years (n=177)	43.5	37.1	19.4
		45+ years (n=333)	53.6	36.0	10.4

NB: With weights applied. Percentages by row.

As for folic acid fortification, people who thought there was too little regulation of immediate food risks were more likely to favour compulsory iodine fortification than those who felt there was too much regulation $\chi^2(6, N=1602) = 45.26$, $p<.001$.

A similar result was found in attitudes to the regulation of long term food risks, with people who felt there was not enough regulation more likely to believe fortification should be compulsory $\chi^2(6, N=1602) = 27.74$, $p<.001$.

Table 40. Attitude toward mandatory iodine fortification, by attitude to food regulation

Attitude to government regulation		Iodine fortification should be		
		Compulsory	Optional	No opinion
Immediate food risks	Too little regulation	54.5	30.1	15.4
	About the right amount	48.8	37.6	13.6
	Too much regulation	32.5	43.3	24.2
	DK	44.3	29.5	26.2
Long term food risks	Too little regulation	53.3	32.6	14.1
	About the right amount	45.1	37.5	17.4
	Too much regulation	46.2	32.1	21.7
	DK	40.6	31.9	27.6

NB: With weights applied. Percentages by row.

There was no difference in opinions of mandatory iodine fortification between main grocery buyers and other respondents $\chi^2(2, N=1602) = 0.55$, $p=.759$. This contrasts with the findings on folic acid fortification in which main grocery buyers were less likely to favour compulsory fortification. Responses did differ somewhat by level of education $\chi^2(2, N=1561) = 6.26$, $p=.044$. A check of the observed and expected frequencies suggested this is likely to be caused by respondents with no post-secondary qualifications being more likely to provide a no opinion response than those with higher levels of education.

Table 41. Attitude toward mandatory iodine fortification, by demographics.

		Iodine fortification should be		
		Compulsory (%)	Optional (%)	No opinion (%)
Main grocery buyer status	Main grocery buyer (n=1289)	47.6	35.2	17.2
	Not main grocery buyer (n=313)	53.1	29.5	17.4
Education level	No post-secondary qualifications (n=669)	49.4	29.9	20.6
	Post-secondary qualifications (n=892)	48.8	36.4	14.8

NB: With weights applied. Percentages by row.

Chi square analysis was conducted to test whether knowledge of the intended benefit of iodine fortification was related to attitudes toward compulsory fortification. Analysis showed that people who were aware of the intended benefit of iodine fortification were more likely to be in favour of compulsory fortification than respondents who were not aware $\chi^2(2, N=1602) = 37.81$, $p<.001$. This differed from the folic acid fortification results in which knowledge of the intended benefit of folic acid fortification was not related to peoples' attitudes towards compulsory fortification.

Type of bread consumed

FSANZ was interested in the proportion of consumers that were likely to be consuming fortified and unfortified breads, as well as consumers who do not usually eat bread.

Respondents were asked the following question about the bread they usually eat:

I3 Thinking now about the type of bread you usually eat, included sliced bread, rolls, and flatbreads. Which one of the following types of bread do you eat most often?

- *organic bread*
- *gluten free or wheat free bread*
- *white bread*
- *wholemeal or wholegrain bread*
- *some other type of bread (specify)*
- *or, do you not usually eat bread.*

Not all types of bread in Australia and New Zealand are required to be fortified with iodised salt or (in the case of Australia) folic acid. Manufacturers are not required to use iodised salt in organic breads, bread mixes for making bread at home or salt-free breads; although they can voluntarily use iodised salt in bread mixes.

In Australia, manufacturers of organic breads and breads not made with wheat flour are not required to add folic acid to their products, but may add it if they wish. However, bread mixes and wheat flour sold for making bread at home are required to contain folic acid.

Because of this, consumers who usually eat organic bread or salt-free bread will generally not be consuming iodine-fortified bread. Consumers who make their own bread at home from a bread mix may also be avoiding iodised salt, but (in Australia) they will be receiving folic acid through their bread consumption. Consumers of salt-free breads will also not be influenced by the use of iodised salt in bread-making, and consumers (in Australia) of wheat-free or gluten-free breads will not be consuming additional folic acid. Table 42, below, outlines which types of bread require folic acid and iodine fortification.

Table 42. Types of bread that are and are not fortified in Australia and New Zealand

	Folic acid fortified? (AU only)	Iodine fortified? (AU and NZ)
Wholemeal or wholegrain bread	Yes	Yes
White bread	Yes	Yes
Organic bread	No	No
Gluten-free or wheat-free bread	No	Yes
Bread made from bread mix	Yes	No
Salt-free bread	Yes	No

Table 43, below, shows the breads that were included in the survey and whether they are required to be folic acid- or iodine-fortified.

Table 43. Bread categories included in the survey and whether they are fortified in Australia and New Zealand

	Folic acid fortified? (AU only)	Iodine fortified? (AU and NZ)
Wholemeal or wholegrain bread	Yes	Yes
White bread	Yes	Yes
Organic bread	No	No
Gluten-free or wheat-free bread	No	Yes

A comparison of breads consumed by country is shown below in Table 44. The most common bread type consumed by both Australian and New Zealand respondents was wholemeal/wholegrain bread.

Table 44. Type of bread usually consumed, by country

	AU (%) (n=800)	NZ (%) (n=802)
Wholemeal or wholegrain bread	55.6	65.5
White bread	25.3	22.1
Organic bread	3.5	2.4
Gluten-free or wheat-free bread	2.7	1.8
Some other type of bread	7.7	3.9
Or, do you not usually eat bread	5.1	4.1
DK	0.1	0.1

NB: With weights applied. Percentages by column.

The Australia and New Zealand data were then transformed to create a variable which indicated whether a respondent consumed iodine-fortified bread. In the Australian database, a second variable was created which indicated whether the respondent consumed folic acid-fortified bread. 'Other' responses were categorised, where possible, into the above categories. For example, a respondent in the Australian database who responded that they usually ate 'homemade' bread would be categorised as consuming folic acid-fortified bread.

See Appendix D for details on how "other" responses were coded to the new variable.

Among Australians, 88.7 per cent reported consuming a type of bread that would be fortified with folic acid.

Similarly, 91.4 per cent of Australians and 93.5 per cent of New Zealanders were found to usually consume a bread that would be iodine fortified.

Women of childbearing age are the main target of the folic acid fortification (and are also a target of the iodine fortification). Table 45 compares consumption of folic acid-fortified bread between age and gender categories. Australian women were less likely than men to be consuming a folic acid-fortified $\chi^2(1, N=799) = 23.46$, $p<.001$. This may be due to a higher proportion of women reporting that they did not usually eat bread (8.0 per cent of Australian women, compared to 2.2 per cent of Australian men). Despite this, more than 80% of women do consume bread fortified with folic acid.

Table 45. Proportion of Australian respondents consuming folic acid-fortified bread, by gender and age

		Consumes folic acid-fortified bread?	
		Yes	No
Men	16–44 years (n=105)	95.3	4.7
	45+ years (n=209)	93.8	6.2
Women	16–44 years (n=147)	83.2	16.8
	45+ years (n=336)	82.6	17.4

NB: With weights applied. Percentages by row.

Consumption of bread iodine-fortified bread was high across all of the age and gender categories, see Table 46, below. At least 86.0 per cent of respondents in each category reported consuming a bread type that would contain iodised salt.

Table 46. Proportion of respondents consuming iodine fortified-bread, by gender and age

			Consumes iodine fortified-bread?	
			Yes	No
AU	Men	16–44 years (n=105)	95.3	4.7
		45+ years (n=209)	96.3	3.7
	Women	16–44 years (n=147)	86.0	14.0
		45+ years (n=336)	88.1	11.9
NZ	Men	16–44 years (n=106)	92.4	7.6
		45+ years (n=183)	96.7	3.3
	Women	16–44 years (n=177)	89.8	10.2
		45+ years (n=332)	95.2	4.8

NB: With weights applied. Percentages by row.

Voluntary Fortification

Awareness of fortification

B1 Do you think it is true or false or are you unsure whether foods and drinks also sometimes contain vitamins or minerals that have been added to them by the manufacturer?

The qualitative fortification research conducted in 2009 suggested that most consumers were aware that manufacturers were able to voluntarily add vitamins and minerals to some foods.

Around 3 in 4 Australians and New Zealanders were aware that food manufacturers sometimes add vitamins or minerals to food or drink products (see Table 47, below). There was no statistically significant difference in awareness of voluntary fortification between the two countries $\chi^2(2, N=1602) = 2.94$, $p=.230$.

Table 47. Awareness of voluntary fortification, by country

	AU (%)	NZ (%)
Believes voluntary fortification exists	76.2	78.6
Does not believe that voluntary fortification exists	4.3	3.4
Unsure	19.5	18.0

NB: With weights applied. Percentages by column.

Awareness of voluntary fortification was compared by age and gender (Table 48, below). There were no differences in awareness between men and women $\chi^2(2, N=1602) = 0.36$, $p=.835$. Nor was there any difference by age $\chi^2(2, N=1598) = 0.60$, $p=.739$.

Table 48. Awareness of voluntary fortification, by gender and age

			Does voluntary fortification exist?		
			Yes	No	Unsure
AU	Men	16–44 years	75.5	3.5	21.1
		45+ years	73.4	4.0	22.6
	Women	16–44 years	79.9	4.8	15.3
		45+ years	75.7	5.1	19.2
NZ	Men	16–44 years	80.6	4.9	14.5
		45+ years	80.4	2.0	17.7
	Women	16–44 years	74.4	3.3	22.3
		45+ years	79.2	3.4	17.4

NB: With weights applied. Percentages by row.

There was no difference in awareness of voluntary fortification between main grocery buyers and non-main grocery buyers in the sample $\chi^2(2, N=1602) = 0.38$, $p=.825$ (see Table 49, below). Awareness of voluntary fortification and education level were related $\chi^2(2, N=1561) = 23.74$, $p<.001$. A check of the observed and expected frequencies suggested this is likely to be caused by respondents with no post-secondary qualifications being more likely to provide an unsure response than respondents with higher levels of education.

Table 49. Awareness of voluntary fortification, by demographics

		Does voluntary fortification exist?		
		Yes	No	Unsure
Main grocery buyer status	Main grocery buyer	76.7	4.2	19.2
	Not main grocery buyer	76.3	4.3	19.4
Education level	No post-secondary qualification	71.7	4.2	24.1
	Post-secondary qualification	80.1	4.2	15.7

NB: With weights applied. Percentages by row.

Effect of fortification on self-reported purchase intention

B2 If you found that the food or drink you were thinking of buying or consuming did have vitamins or minerals added by the manufacturer, would this make you…?

- *More likely to buy or consume it*
- *Less likely to buy or consume it*
- *Would it make no difference*
- *Or, does it depend on the type of food or drink, or the vitamin or mineral that was added.*

Over half of Australians and New Zealanders said that their likelihood of buying a food with added vitamins or minerals would depend on the type of food or drink to which it was added (see Table 50, below), and around a quarter thought that it would make no difference to their purchasing. Less than 1 in 10 respondents thought the added vitamins or minerals would make them more likely to buy the product. There was no difference between Australians and New Zealanders' answers to the question $\chi^2(4, N=1602) = 3.66, p=.454$.

Table 50. Effect of added vitamins or minerals on likelihood of purchase

	AU (%) (n=800)	NZ (%) (n=802)
More likely	5.7	6.6
Less likely	8.2	9.6
Would make no difference	26.8	26.1
Depends on the type of food or drink	57.8	56.9
DK	1.5	0.8

NB: With weights applied. Percentages by column. From here on 'don't know' responses are excluded.

The effect of added vitamins or minerals on likelihood of purchase did not differ by BMI $\chi^2(12, N=1499) = 19.56, p=.076$; nor did it differ between those who were main grocery buyers and those who were not $\chi^2(4, N=1602) = 5.94, p=.204$. Respondents with higher fruit and vegetable intakes were more likely to answer that added vitamins or minerals in a product would make them less likely to buy a food than those with lower levels of fruit and vegetable intake $\chi^2(4, N=1585) = 16.85, p=.002$. People with post-secondary qualifications were more likely than others to say that it would depend on the type of food or drink that the vitamin or mineral was added to $\chi^2(3, N=1540) = 9.73, p=.021$.

Women in the sample were less likely than men to choose the response 'would make no difference' $\chi^2(4, N=1602) = 28.83, p<.001$. But there was no difference in responses between people aged 16–44 years and 45 years and over $\chi^2(4, N=1598) = 8.63, p=.071$.

Food and drinks that respondents purchase for added vitamins and minerals

B3 For each of the following food or drink categories, are there any brands that you buy or consume because they have added vitamins or minerals?

- *Breakfast cereals*
- *Margarines or similar spreads*
- *Dairy products such as yoghurt or milk*
- *Milk substitutes, such as soy or rice milk*
- *Bread*
- *Salt*
- *Pasta*
- *Fruit juice*
- *Flavoured or smart waters such as Vitamin Water, Nutrient Water or G-Force*
- *Some other type of food or drink*

Respondents were read a list of food categories by interviewers and asked to indicate for which categories there were particular products they bought or consumed because of their added vitamin or mineral content (see Table 51, below). The most common response to the question was 'none', in other words, there were no food or drink products that the respondent bought or consumed because they contained added vitamins or minerals. Australians were more likely to report that they did not buy or consume any food products for their added vitamins or minerals than New Zealanders $\chi^2(1, N=1602) = 12.44$, $p<.001$.

Of the food and drink categories listed, dairy products were the most commonly mentioned by both Australians and New Zealanders, followed by breakfast cereal (Australia) and fruit juice (New Zealand). Australians and New Zealanders did not differ in the rate at which they mentioned bread products $\chi^2(1, N=1602) = 2.04$, $p=.153$, but a greater proportion of New Zealanders mentioned salt as a product type they bought or consumed for added vitamins or minerals $\chi^2(1, N=1602) = 34.11$, $p<.001$.

Table 51. Foods purchased because of added vitamins or minerals

	AU (%) (n=800)	NZ (%) (n=802)
Dairy products	22.2	30.0
Breakfast cereal	20.2	21.9
Fruit juice	17.9	23.1
Bread	16.6	17.6
Margarine	17.0	16.9
Salt	10.6	19.0
Flavoured or smart waters*	11.5	16.9
Milk substitutes^	6.4	9.8
Pasta	4.3	7.7
Other	3.8	6.1
None	44.5	37.6
DK	3.2	1.3

**"such as Vitamin Water, Nutrient Water or G-force"*

^ *"such as soy or rice milk"*

NB: With weights applied. Percentages by column. This was a multiple choice question, so percentages add to over 100. Food categories listed from most to least commonly mentioned by respondents

The proportion of people who mentioned bread as a food they buy or consume for added vitamins or minerals did not differ by gender $\chi^2(1, N=1602) = 2.81$, $p=.093$, nor by age $\chi^2(1, N=1598) = 1.17$, $p=.279$.

Further analysis on question B3 was conducted with collapsed categories. Respondents were split into two groups, those that:

- reported buying or consuming one or more foods because they have added vitamins or minerals
- reported not buying or consuming foods with added vitamins or minerals.

The proportion of New Zealanders (62.0 per cent) who reported buying or consuming one or more foods for its (or their) added vitamins or minerals was higher than among the Australians (54.0 per cent) $\chi^2(1, N=1562) = 15.38$, $p<.001$.

Women were more likely to report buying or consuming one or more food products because of added vitamins or minerals than men $\chi^2(1, N=1562) = 5.38$, $p=.020$. There were also differences by age, with respondents aged 16–44 years more likely to report buying or consuming fortified foods than respondents aged 45 years and over $\chi^2(1, N=1558) = 21.73$, $p<.001$.

Table 52. Proportion of respondents who buy or consume particular foods because they have added vitamins or minerals, by gender and age

			Buys/consumes fortified foods?	
			Yes (%)	No (%)
AU	Men	16–44 years (n=105)	59.6	40.4
		45+ years (n=210)	41.4	58.6
	Women	16–44 years (n=147)	62.6	37.4
		45+ years (n=336)	51.6	48.4
NZ	Men	16–44 years (n=107)	66.6	33.4
		45+ years (n=183)	52.3	47.7
	Women	16–44 years (n=177)	66.9	33.1
		45+ years (n=333)	61.5	38.5

NB: With weights applied. Percentages by row.

Respondents did not differ in their buying or consuming of fortified foods by BMI $\chi^2(1, N=1462) = 1.45$, $p=.695$.

Whether respondents were main grocery buyers or not was not related to whether they reported buying or consuming foods with added vitamins or minerals $\chi^2(1, N=1562) = 1.43$, $p=.231$. Nor was it related to education level $\chi^2(1, N=1522) = 2.81$, $p=.094$, fruit and vegetable intake $\chi^2(1, N=1547) = 0.64$, $p=.424$, nor occupational status $\chi^2(1, N=860) = 0.06$, $p=.804$.

Reasons for buying or consuming fortified foods

B4 What are the reasons you buy or consume foods of (food type) with added vitamins or minerals? What other reasons?

Respondents who reported buying or consuming foods containing added vitamins or minerals in question B3 of the survey were then asked the reason they purchased that particular product[16]. Interviewers coded participants' open-ended responses into the categories shown in Table 53, below.

General mentions of vitamins and minerals (i.e. not mentioning a particular vitamin or mineral) were common, along with non-specific health responses (for example, "for health", "for a balanced diet"). Many of the responses did not appear to relate to the vitamin or mineral content of the food. For example, 10.2 per cent of New Zealanders and 15.5 per cent of Australians mentioned taste and flavour as the reasons they purchased the particular product with added vitamins or minerals. Some respondents mentioned specific vitamins or minerals, such as calcium and vitamin C. Others mentioned the absence of particular nutrients as their motivation for purchasing or consuming the product (e.g. less sugar, no cholesterol in the food).

[16] Where respondents provided more than one product type that they purchased because of added vitamins or minerals in question B3, interviewers randomly selected one of the product types mentioned to ask them about in question B4.

Table 53. Reasons for buying or consuming particular foods with added vitamins or minerals

	AU (%) (n=388)	NZ (%) (n=474)
Healthy option / better for health / balanced diet	15.7	17.5
Vitamins / minerals that you / kids need	15.0	14.6
Taste / flavour	15.5	10.6
Healthier / more nutritious / not like others	10.2	9.7
Added calcium	6.9	10.3
Kids / children mentions	8.0	7.4
Assist bodily function / general well-being	1.3	13.5
Iodine / iodised salt	5.3	8.4
Cost / price	3.9	6.5
Better / good for you NFI	4.3	4.2
Vitamin c / ascorbic acid / safe preservative	3.4	5.1
Fibre / roughage	4.0	3.7
Energy boost / pep up	1.4	6.2
Less fat	2.0	4.2
Iodine deficiency / thyroid problems	1.2	4.8
Make bones stronger / other bone mentions / osteoporosis	1.9	4.0
Preferred brand	2.7	2.8
Lactose intolerant / don't drink dairy	2.1	3.2
Food lowers cholesterol	4.5	0.6
Probiotics / good bacteria	1.9	2.3
Other specific health conditions / diseases	1.9	1.9
Iron mentions	1.9	1.8
Convenience / easy /easy to use	1.4	2.2
It is natural	1.5	2.0
Less sugar	0.8	2.6
Digestive/bowel health	1.5	1.9
Salt reduced	1.8	1.5
Other specific vitamins and minerals	2.0	1.2
No cholesterol in the food	1.1	1.8
Vitamin D	1.7	1.2
Re-hydration	0.6	2.2
Have omega 3 / omega	2.0	0.5
Better than not having / seems like a good idea	2.5	0.0
Folic acid / folate	0.7	1.7
Other allergy / intolerance	1.7	0.6
Vitamin B (not folic acid)	0.4	1.3
Habit / been brought up with it	0.3	1.0
No other preservatives	0.6	0.7
Body needs salt / replace salt / minerals lost	0.8	0.0
Other	10.0	9.4
DK	3.9	5.2

NB: With weights applied. Percentages by column. Percentages may add to more than 100, as multiple responses were allowed. Only includes respondents who selected a food category from Q B3.

Only 11 respondents mentioned folic acid or folate as a reason for purchasing or consuming a particular food product. Eight of these were New Zealanders. Due to the small number of folic acid or folate responses, further analysis was not conducted.

There were 85 mentions of iodine, iodised salt, iodine deficiency and thyroid problems in the survey, 58 of which were from New Zealanders. The higher proportion of iodine related responses from New Zealanders was statistically significant $\chi^2(1, N=862) = 6.69$, $p=.010$. Women were also more likely to mention iodine than men $\chi^2(1, N=862) = 7.83$, $p=.005$. Respondents aged 45 years and over were more likely to mention iodine related responses

$\chi^2(1, N=861) = 14.50, p<.001$. The higher rate of iodine responses from older respondents may be due to their better understanding of the function of iodine, as shown in their responses to the question on the intended benefit of mandatory iodine fortification.

Table 54. Proportion of respondents who mentioned iodine as a reason for purchasing or consuming particular food products

			Iodine (%)
AU	Men	16–44 years (n=60)	3.5
		45+ years (n=81)	4.1
	Women	16–44 years (n=91)	4.4
		45+ years (n=156)	10.3
NZ	Men	16–44 years (n=70)	4.8
		45+ years (n=90)	10.1
	Women	16–44 years (n=116)	6.2
		45+ years (n=197)	18.7

NB: With weights applied. Percentages by row. Includes combined responses "Iodine / iodised salt" and "Iodine deficiency / thyroid problems". Only includes respondents who selected a food category from Q B3.

Responses to Question B4 were then collapsed into the following five categories:

- general healthy / better for you statements
- vitamins and minerals (specific or general mentions of vitamins and minerals)
- non-health, non-nutrition related reasons
- specific health functions
- mentions of other nutrients (added or reduced)
- natural, no preservatives

Please see Appendix E for how categories were collapsed. In further analysis the 'don't know' and 'other' responses were not included.

The dominant category of responses was the general healthy/better for you category. New Zealanders were more likely to mention general health reasons for purchasing foods with added vitamins and minerals than Australians $\chi^2(1, N=859) = 5.39, p=.020$.

New Zealanders were also more likely to mention vitamins or minerals (either specific or general) as a reason for buying fortified foods $\chi^2(1, N=859) = 4.18, p=.041$.

There was no difference between countries in mentions of non-health reasons $\chi^2(1, N=859) = 2.22, p=.135$, specific health functions $\chi^2(1, N=859) = 0.134, p=.714$, other nutrients $\chi^2(1, N=859) = 0.153, p=.695$, or natural/no preservative responses $\chi^2(1, N=859) = 0.35, p=.555$ by country.

Table 55. Reasons for buying or consuming particular foods with added vitamins or minerals, with categories collapsed

	AU % (n=388)	NZ % (n=471)
Healthy / better for you	34.5	43.0
Vitamins and minerals	32.4	40.3
Non-health, non-nutrition	29.0	27.7
Specific health functions	15.5	18.9
Mentions of other nutrients (add or reduced)	11.8	13.3
Natural, no preservatives	2.1	2.6

NB: With weights applied. Percentages by column. Only includes respondents who selected a food category from QB3. Percentages may add to more than 100, as multiple responses were allowed.

Chi square analysis was conducted for responses relating to vitamins and minerals by age and gender. Women were more likely than men to have provided a vitamin or mineral response $\chi^2(1, N=859) = 12.70$, $p<.001$. There was no difference in the proportion of vitamin and minerals responses between those aged 45 years and over and younger respondents $\chi^2(1, N=858) = 1.97$, $p=.160$.

Table 56. Reasons for consuming particular foods with added vitamins and minerals, by gender and age

			Reasons for buying/consuming particular foods with added vitamins and minerals					
			Healthy / better for you	Vits and mins	Non-health	Specific health	Other nutrients	Natural[#]
AU	Men	16–44 years (n=60)	46.6	18.0	35.5	6.4	4.0	3.4
		45+ years (n=81)	20.8	39.5	16.9	25.1	21.3	5.3
	Women	16–44 years (n=91)	34.2	36.8	36.9	13.5	10.1	0.0
		45+ years (n=156)	30.8	38.6	20.5	21.6	16.3	1.0
NZ	Men	16–44 years (n=68)	56.2	26.4	21.1	22.1	7.2	2.5
		45+ years (n=90)	37.2	38.6	24.1	18.2	13.2	3.0
	Women	16–44 years (n=116)	45.2	48.2	37.2	11.0	16.4	1.7
		45+ years (n=196)	32.0	46.8	26.4	24.8	16.2	3.3

NB: With weights applied. Percentages by row. Percentages may add to over 100 per cent as multiple responses were allowed.

[#] *Natural, no preservatives*

People with higher levels of education were more likely to provide vitamin and minerals responses than those with lower levels of education $\chi^2(1, N=831) = 16.73$, $p<.001$.

Table 57. Reasons for consuming particular foods with added vitamins and minerals, by education level

Reasons for buying/consuming particular foods with added vitamins and minerals	No post-secondary school qualification (n=339)	Post-secondary school qualification (n=492)
Healthy / better for you	33.5	39.8
Vitamins and minerals	24.7	39.3
Non-health	30.1	28.3
Specific health	15.4	16.6
Other nutrients	11.1	12.6
Natural	2.9	1.8

NB: With weights applied. Percentages by column. Percentages may add to over 100 per cent as multiple responses were allowed.

The proportion of vitamin and minerals responses did not vary by occupational status $\chi^2(1, N=497) = 3.08$, $p=.079$.

Table 58. Reasons for consuming particular foods with added vitamins and minerals, by occupational status

	AUSEI06 score	
Reasons for buying/consuming particular foods with added vitamins and minerals	Low status (<50) (n=277)	High status (>=50) (n=220)
Healthy / better for you	40.5	37.9
Vitamins and minerals	24.3	39.8
Non-health	35.9	24.2
Specific health	14.4	15.3
Other nutrients	12.0	11.9
Natural	2.7	1.3

NB: With weights applied. Percentages by column.

Main grocery buyers were more likely to mention vitamins or minerals in their responses than respondents who were not main grocery buyers $\chi^2(1, N=859) = 7.34$, $p=.007$.

Table 59. Reasons for consuming particular foods with added vitamins and minerals, by main grocery buyer status

Reasons for buying/consuming particular foods with added vitamins and minerals	Main grocery buyer (n=702)	Not main grocery buyer (n=157)
Healthy / better for you	33.6	43.9
Vitamins and minerals	37.7	21.2
Non-health	26.3	36.8
Specific health	16.8	13.7
Other nutrients	13.7	6.8
Natural	1.6	4.3

NB: With weights applied. Percentages by column. Percentages may add to over 100 per cent as multiple responses were allowed.

Australians' and New Zealanders' reasons for choosing foods with added vitamins or minerals were then analysed by the type of food product they were discussing. The reasons provided by respondents varied by product type. Healthy / better for you was the most common response type for people who were discussing why they chose fortified breakfast cereals, margarine and bread.

For people discussing dairy products, the presence of vitamins and minerals was the most common response. Of dairy product responses, 34.3 per cent mentioned calcium and 16.9 per cent mentioned bone or tooth health as a reason for purchasing the product.

Respondents who were discussing their reasons for buying or consuming milk substitutes (such as soy milk) tended to provide specific health responses as reasons. For example, 30.8 per cent mentioned lactose intolerance and 11.5 per cent mentioned another type of intolerance or an allergy.

Reasons for buying or consuming salt with added vitamins or minerals tended to be related to a specific vitamin or mineral. Of the respondents who provided reasons for buying or consuming fortified salt, 80.8 per cent of these related to added iodine or iodine deficiency/thyroid problems.

People who discussed reasons for buying or consuming pasta tended to cite non-health reasons such as their children, price or taste.

Of the respondents who were asked about their reasons for buying or consuming fruit juice, just over half gave vitamin or minerals as a reason. The most common vitamin or mineral reason was a general mention of vitamins or minerals (i.e. not mentioning a specific vitamin or mineral), mentioned by 25.6 per cent of all fruit juice respondents. Also, 24.8 per cent of the fruit juice respondents mentioned vitamin C as a reason for buying or consuming fruit juice.

Non-health reasons were the most common response type for respondents discussing flavoured or smart waters. The most common non-health reason for smart water respondents was taste or flavour (33.7 per cent).

Table 60. Reasons for consuming particular foods with added vitamins and minerals, by product type

	Reasons for buying/consuming particular foods with added vitamins and minerals					
	Healthy / better for you	Vits and mins	Non-health	Specific health	Other nutrients	Natural
Breakfast cereals (n=123)	40.7	25.9	30.7	5.4	17.7	2.7
Margarine (n=93)	36.6	10.9	25.5	28.6	21.2	0.2
Dairy products (n=172)	29.5	47.1	23.0	20.5	17.8	1.2
Milk substitutes* (n=52)	18.5	23.9	23.7	49.2	4.0	0.3
Bread (n=88)	51.7	27.1	29.1	6.5	20.2	3.7
Salt (n=104)	5.9	77.4	8.1	27.5	2.2	2.2
Pasta (n=19)	37.7	1.8	54.3	11.4	1.6	0.0
Fruit juice (n=125)	43.7	51.1	28.9	2.4	4.2	6.4
Flavoured or smart waters (n=83)	44.9	16.5	49.7	11.2	0.4	0.6

NB: With weights applied. Percentages by row.

**Such as soy and rice milk.*

How do consumers identify fortified foods?

Respondents who indicated in question B3 that there were particular foods or drinks that they bought or consumed for their added vitamins and minerals were asked about how they knew that the product contained added vitamins or minerals.

B5 Thinking about the last time you bought or consumed (food type) with added vitamins or minerals. How did you know it had vitamins or minerals added by the manufacturer?

- *Read it on the pack/container*
- *From a TV/newspaper/magazine ad*
- *Read it in an article*
- *Heard from friends/family*
- *Other (specify).*

Respondents who said that they buy or consume particular brands of products because they have added vitamins and minerals (question B3) were asked about how they knew the product had vitamins or minerals added by the manufacturer.

This question was included to determine whether consumers were using information on food packaging to find added vitamins and minerals in products. In Australia and New Zealand, vitamins and minerals added by manufacturers to a product are listed in the ingredient list. Consumers may also learn that a food is fortified by the manufacturer using a claim such as “with added calcium” on the package or in advertising.

The food package was the most common source of information on added vitamins or minerals for Australians and New Zealanders (see Table 61, below). There was no

difference between Australians and New Zealanders in the likelihood of them providing this response $\chi^2(1, N=862) = 3.36, p=.067$.

Table 61. How added vitamins and minerals are identified

	AU (%) (n=388)	NZ (%) (n=474)
Read it on the pack / container	90.8	83.1
From a TV / newspaper / magazine ad	4.9	4.6
Read it in an article	1.1	1.2
Hear from friends / family	0.5	1.7
Other	4.5	7.1
DK	3.4	7.5

NB: With weights applied. Percentages by column. Percentages may add to more the 100, as multiple responses were allowed.

'Don't know' and other responses are not included in analyses from this point on for question B5.

Responses were fairly similar across age and gender categories; amongst all age groups packaging was the most common source of information on added vitamins or minerals. Women were more likely than men to have used packaging $\chi^2(1, N=862) = 4.21, p=.040$. In contrast, there was no difference between respondents over 45 years or age and those 16–44 years old $\chi^2(1, N=861) = 3.33, p=.068$.

Main grocery buyers were more likely to use package information to determine whether their food product had added vitamins or minerals than non-main grocery buyers $\chi^2(1, N=862) = 6.70, p=.010$.

Respondents with post-secondary school qualifications were more likely than other respondents to indicate that they had read the information on added vitamins or minerals on the package $\chi^2(1, N=834) = 19.65, p<.001$.

There was no statistically significant difference between higher and lower occupational status respondents in their use of package information to determine whether foods had added vitamins or minerals $\chi^2(1, N=498) = 1.22, p=.269$.

Which part of the label do consumers use to identify added vitamins and minerals?

Respondents who had indicated in question B3 that there were particular foods or drinks that they bought or consumed for their added vitamins and minerals, and then indicated in question B5 that they knew about the added vitamins or minerals because of information on the package were asked the following question:

B6 Where on (food type) pack did you see it had added vitamins or minerals? Was it…?

- *A statement on the front, such as "added calcium" or something similar*
- *On the nutrition information panel*
- *In the ingredient list*
- *Or somewhere else on the pack (specify).*

Respondents who provided a different response to question B5, or who didn't answer B5 were asked this question:

B7 If you were buying or consuming a food product and you wanted to see whether it had vitamins or minerals added to it by the manufacturer, where on the pack would you look? Would you look…?

- *On the front of the pack, to see if there was a statement such as "added calcium" or something similar*
- *On the nutrition information panel*
- *In the ingredient list*
- *Or somewhere else on the pack*

As noted in the introduction to this report, vitamins and minerals added to a food by a manufacturer are listed in the ingredient list on the food package.

Results for responses to questions B6 and B7 were analysed separately as question B6 asks respondents to recall a previous behaviour whereas question B7 is a hypothetical question and does not necessarily reflect behaviour. Question B7 can be seen as a knowledge testing question as it asks respondents to consider where would be the most logical place to find vitamin and mineral information.

Both questions allowed multiple responses. Australians tended to give more responses to each question than New Zealanders. Of those who provided a substantive response (i.e. not a 'don't know' response) to question B6, Australians gave an average of 1.86, 95 per cent CI (1.77, 1.95), responses, compared to 1.38, 95 per cent CI (1.31, 1.45), for New Zealanders. Similarly, when responding to question B7, Australians provided an average of 2.32, 95 per cent CI (2.24, 2.41), responses compared to 1.53, 95 per cent CI (1.46, 1.61), for New Zealanders.

For question B6 (where respondents were discussing a product they had bought or consumed) the responses from both countries followed a similar pattern. Claims were the most popular part of the package used in both countries followed by the nutrition information panel and then the ingredient list.

When thinking about how they would determine if a food had added vitamins or minerals (question B7), New Zealanders said they would check the nutrition information panel (58.3 per cent) or the ingredient list (49.4 per cent). Australians tended to say they would check the ingredient list (75.2 per cent) or the nutrition information panel (73.9 per cent). The high number of respondents providing multiple responses to this question and the proportion of respondents indicating they would check the nutrition information panel suggests that some consumers would have difficulty in determining definitively whether a food contained added vitamins or minerals.

The high number of However, for question B7 the most popular part of the package differed between the countries. New Zealanders were most likely to select the nutrition information panel, whereas Australians were most likely to select the ingredient list.

People who reported seeing the information 'somewhere else' in question B6 on the package in question were asked to specify where they had seen vitamin or mineral information. Most of the 'somewhere else' responses mentioned either a position on the package (e.g. 'on the back') or that it was clear from the brand name (e.g. 'It's called CalciMilk'). Similarly, the side or back on the pack was mentioned in 'somewhere else' responses to question B7.

Table 62. Where respondents look for information on added vitamins and minerals

	Question B6 (%)		Question B7 (%)	
	AU (n=342)	NZ (n=397)	AU (n=458)	NZ (n=405)
Claim on the front of the pack	85.4	67.1	60.2	32.3
Nutrition information panel	49.6	33.5	73.9	58.3
Ingredient list	40.4	24.0	75.2	49.4
Somewhere else	10.5	6.5	13.6	7.2
DK	0.1	5.0	4.1	4.1

NB: With weights applied. Percentages by column. Percentages may add to greater than 100 as multiple responses were allowed.

'Don't know' and 'somewhere else' responses were excluded from further analysis.

Men and women did not differ in their likelihood of selecting 'ingredient list' as their response to question B6 $\chi^2(1, N=739) = 1.27$, $p=.260$. Age was also not related to whether respondents selected the ingredient list $\chi^2(1, N=738) = 2.72$, $p=.099$.

Table 63. Where respondents look for information on added vitamins and minerals, by age and gender

			Claims	NIP	Ingredient list
AU	Men	16–44 years (n=55)	84.8	50.3	30.9
		45+ years (n=69)	82.7	53.6	52.3
	Women	16–44 years (n=85)	90.5	40.8	38.1
		45+ years (n=133)	81.4	57.4	46.9
NZ	Men	16–44 years (n=52)	68.3	28.6	22.9
		45+ years (n=72)	56.6	31.9	27.6
	Women	16–44 years (n=106)	76.1	35.6	23.0
		45+ years (n=166)	63.3	36.5	23.4

NB: With weights applied. Percentages by row. Percentages may add to over 100 per cent as multiple responses were allowed.

Fruit and vegetable intake was not related to whether respondents reported using the ingredient list to determine whether the food contained added vitamins or minerals $\chi^2(1, N=736) = 0.09$, $p=.760$.

Table 64. Where respondents look for information on added vitamins and minerals, by fruit and vegetable intake

	0–4 serves per day (n=331)	5+ serves per day (n=405)
Claims	83.8	80.5
NIP	43.3	51.3
Ingredient list	38.8	36.0

NB: With weights applied. Percentages by column. Percentages may add to over 100 per cent as multiple responses were allowed.

Use of the ingredient list was also not related to the BMI of respondents in question B6 $\chi^2(3, N=689) = 3.92$, $p=.271$.

Table 65. Where respondents look for information on added vitamins and minerals, by BMI

	Body mass index (%)			
	Underweight (BMI <18.5) (n=16)	Normal weight (BMI 18.5–24.9) (n=306)	Overweight (BMI 25–29.9) (n=237)	Obese (BMI ≥30) (n=130)
Claims	83.6	85.5	81.0	76.1
NIP	68.3	42.1	49.2	55.4
Ingredient list	26.5	36.6	36.9	49.3

NB: With weights applied. Percentages by column. Percentages may add to over 100 per cent as multiple responses were allowed.

Main grocery buyers and non-main grocery buyers did not differ in their likelihood of providing the ingredient list as an answer to question B6 $\chi^2(1, N=739) = 3.73$, $p=.054$.

Table 66. Where respondents look for information on added vitamins and minerals, by main grocery buyer status

	Main grocery buyer (n=613)	Not main grocery buyer (n=126)
Claims	82.4	81.9
NIP	47.9	43.4
Ingredient list	41.4	25.1

NB: With weights applied. Percentages by column. Percentages may add to over 100 per cent as multiple responses were allowed.

Respondents with higher levels of education did not differ from lower education respondents in providing ingredient list as a response to the question $\chi^2(1, N=714) = 1.27$, $p=.260$.

Table 67. Where respondents look for information on added vitamins and minerals, by education level

	No post-secondary qualification (n=269)	Post-secondary qualification (n=445)
Claims	80.0	83.7
NIP	52.0	43.7
Ingredient list	38.9	37.2

NB: With weights applied. Percentages by column. Percentages may add to over 100 per cent as multiple responses were allowed.

In summary, claims on packages were the most common source of information on added vitamins or minerals used by Australians and New Zealanders when discussing products they had previously bought or consumed for their added vitamin and mineral content. The proportion of respondents selecting the ingredient list as their source of the information was not related to any of the respondent attributes tested: gender, age, fruit and vegetable intake, BMI, main grocery buyer status or education level.

There was no difference between men and women in providing the ingredient list as a response to question B7 $\chi^2(1, N=863) = 0.34$, $p=.536$. Nor did respondents differ by age category $\chi^2(1, N=860) = 1.26$, $p=.261$.

Table 68. Where respondents would look for information on added vitamins and minerals (B7), by age and gender

			Claims	NIP	Ingredient list
AU	Men	16–44 years (n=50)	69.6	77.0	88.2
		45+ years (n=141)	52.8	73.2	68.9
	Women	16–44 years (n=62)	57.5	70.3	66.0
		45+ years (n=203)	62.7	75.6	77.9
NZ	Men	16–44 years (n=55)	38.3	61.7	43.5
		45+ years (n=111)	25.8	49.8	56.7
	Women	16–44 years (n=71)	34.6	69.6	45.2
		45+ years (n=165)	31.5	54.9	50.5

NB: With weights applied. Percentages by row. Percentages may add to over 100 per cent as multiple responses were allowed.

Fruit and vegetable intake was not related to whether respondents reported that they would look for added vitamins or minerals on the ingredient list $\chi^2(1, N=849) = 3.16$, $p=.075$.

Table 69. Where respondents would look for information on added vitamins and minerals (B7), by fruit and vegetable intake

	0–4 serves per day (n=389)	5+ serves per day (n=460)
Claims	58.3	53.0
NIP	71.2	72.2
Ingredient list	68.2	74.9

NB: With weights applied. Percentages by column. Responses may add to over 100 per cent as multiple responses were allowed.

Respondents' BMI was not related to their likelihood of reporting that they would use the ingredient list to find added vitamins or minerals in question B7 $\chi^2(3, N=810) = 1.14$, $p=.768$.

Table 70. Where respondents would look for information on added vitamins and minerals (B7), by BMI

	Body mass index (%)			
	Underweight (BMI <18.5) (n=23)	Normal weight (BMI 18.5–24.9) (n=348)	Overweight (BMI 25–29.9) (n=265)	Obese (BMI ≥30) (n=174)
Claims	39.9	46.5	43.5	41.6
NIP	80.0	65.7	76.9	75.1
Ingredient list	65.9	68.8	76.7	72.0

NB: With weights applied. Percentages by column. Responses may add to over 100 per cent as multiple responses were allowed.

Main grocery buyers were no more likely than non-main grocery buyers to say that they would check the ingredient list for added vitamins or minerals $\chi^2(1, N=863) = 0.66$, $p=.416$.

Table 71. Where respondents would look for information on added vitamins and minerals (B7), by main grocery buyer status

	Main grocery buyer (n=676)	Not main grocery buyer (n=187)
Claims	53.6	61.3
NIP	74.0	65.8
Ingredient list	71.5	70.5

NB: With weights applied. Percentages by column. Responses may add to over 100 per cent as multiple responses were allowed.

The likelihood of mentioning the ingredient list as where they would look for added vitamins or minerals did not differ by education level $\chi^2(1, N=847) = 0.09$, $p=.767$.

Table 72. Where respondents would look for information on added vitamins and minerals (B7), by education level

	No post-secondary qualification (n=400)	Post-secondary qualification (n=447)
Claims	60.3	52.6
NIP	68.2	74.0
Ingredient list	72.4	70.4

NB: With weights applied. Percentages by column. Responses may add to over 100 per cent as multiple responses were allowed.

In summary, New Zealanders were most likely say that they would check the nutrition information panel if they were trying to determine if a food had added vitamins or minerals, whereas the most common response from Australians was the ingredient list (followed closely by the nutrition information panel). As for question B6, no relationships were found between the proportion of respondents saying they would check the ingredient list (the correct response) and respondent attributes, including: gender, age, fruit and vegetable intake, BMI, main grocery buyer status and education level.

Which foods or drinks do consumers believe should not have vitamins or minerals added to them?

C1 What foods or drinks, if any, do you think should not have vitamins or minerals added to them?

Respondents provided open-ended responses to this question. Responses were then concurrently coded by interviewers into the categories, show in Table 73.

As the question was open-ended, respondents would have provided 'top of mind' food categories as responses. Responses may have differed if pre-defined food categories had been read out to respondents.

Table 73. Foods respondents think should not have vitamins or minerals added

	AU (%) (n=800)	NZ (%) (n=802)
Milk products	9.7	8.8
Vegetables (incl. tinned)	7.0	8.2
Foods called natural^	7.0	8.1
Meat / fish products	8.8	6.0
Fruit (incl. tinned)	7.1	7.4
Fruit juice / drinks	6.6	6.3
Bread	3.9	6.8
Water	5.6	5.0
Dairy products	3.6	4.5
Soft drinks	3.4	3.3
Baby food	2.4	2.6
Children's' food / drinks	3.0	1.9
Junk food / unhealthy food	1.8	2.5
Breakfast cereal	2.5	1.3
Fresh food	1.3	2.0
Energy drinks	1.2	1.3
Processed food	1.3	0.9
Pasta	0.5	1.1
Tea / coffee	0.2	1.4
Lollies / sweets	0.7	0.4
Flour	0.2	0.8
Eggs	0.4	0.3
Condiments / sauces	0.3	0.4
Desserts / ice cream	0.3	0.0
Other food	4.1	7.6
No foods should have vitamins or minerals added	6.1	6.8
No restrictions, so long as labelled#	25.0	17.6
No opinion / don't think it matters	3.5	7.3
DK / unsure	24.2	26.5

NB: With weights applied. Percentages by column. Percentages may add to over 100 as multiple responses were allowed. Foods are in descending order from most to least frequently mentioned.

^Where respondents have either mentioned that natural foods products should not be fortified (e.g. 'Natural foods, fruit juice, yoghurt') or the respondent has said foods marketed as 'natural' should not have added vitamins or minerals.

 # No restrictions on which foods could have vitamins or minerals added, so long as added vitamins or minerals are clearly labelled.

The mean number of foods mentioned by respondents was 0.84 with 95 per cent CI (0.78, 0.90). Around 60 per cent of respondents did not mention any categories of food that they believed should not be fortified (see Table 74, below). However, of those who named foods which should not have vitamins or minerals added, many provided multiple responses.

Only 3.9 per cent of Australians and 6.8 per cent of New Zealanders mentioned bread as a food that they would not want fortified (see Table 74, below). Question C1 was asked before the questions on mandatory fortification of bread, so respondents were not primed to be thinking about bread specifically. As noted above, this question was open-ended and so only gives an indication of which foods come to mind for respondents when they're asked about foods that should not have vitamins or minerals added to them.

Table 74. Respondents who do not want bread to have vitamins or minerals, by gender and age

			Respondents mentioning bread (%)
AU	Men	16–44 years (n=105)	0.7
		45+ years (n=210)	7.4
	Women	16–44 years (n=147)	4.1
		45+ years (n=336)	3.5
NZ	Men	16–44 years (n=107)	4.2
		45+ years (n=183)	5.4
	Women	16–44 years (n=177)	8.5
		45+ years (n=333)	8.7

NB: With weights applied. Percentages by row.

For subsequent analysis the responses were collapsed into the following categories:

- no foods should have vitamins or minerals added
- no restrictions on which foods can have them added, so long as added vitamins and minerals are labelled
- some foods should not have vitamins or minerals added (where respondent has specific food categories that should not have vitamins or minerals added)
- no opinion / don't know.

Where respondents had provided responses that fell into two or more of the response categories listed above, the following prioritisation was used so that each respondent had only one response. Respondents were coded into the highest category of the following:

- no foods should have vitamins or minerals added
- no restrictions on which foods can have them added, so long as added vitamins and minerals are labelled
- some foods should not have vitamins or minerals added
- no opinion / don't know.

Results between Australian and New Zealand respondents were similar. Around 40 per cent of both Australians and New Zealanders believed that some (i.e. one or more food) categories should not be able to have vitamins or minerals added to it. However Australian respondents were more likely to say that there should be no restrictions on which foods could have vitamins or minerals added to them, so long as the vitamins and minerals are labelled $\chi^2(3, N=1602) = 22.74, p<.001$.

Table 75. Respondents opinions of how addition of vitamins and minerals should be controlled

	AU (%) (n=800)	NZ (%) (n=802)
No foods should have vits or mins added	6.1	6.8
No restrictions, so long as labelled#	25.0	17.6
Some foods should not have vits or mins added	41.3	41.9
No opinion / DK	27.6	33.7

NB: With weights applied. Percentages by column.

 # No restrictions on which foods could have vitamins or minerals added, so long as added vitamins or minerals are clearly labelled.

Main grocery buyers did not tend to differ from respondents who were not main grocery buyers $\chi^2(3, N=1602) = 2.41$, $p=.492$.

Table 76. Respondents opinions of how addition of vitamins and minerals should be controlled, by main grocery buyer status

	Main grocery buyer (n=1289)	Not main grocery buyer (n=313)
No foods should have vits or mins added	7.2	3.4
No restrictions, so long as labelled	25.2	19.9
Some foods should not have vits or mins added	41.0	42.4
No opinion / DK	26.5	34.3

NB: With weights applied. Percentages by column.

Responses to C1 did not tend to differ by fruit and vegetable intake $\chi^2(3, N=1585) = 7.07$, $p=.070$.

Table 77. Respondents opinions of how addition of vitamins and minerals should be controlled, by fruit and vegetable intake

	0–4 serves per day (n=720)	5+ serves per day (n=865)
No foods should have vits or mins added	4.04	8.2
No restrictions, so long as labelled	23.9	24.0
Some foods should not have vits or mins added	40.7	42.7
No opinion / DK	31.4	25.1

NB: With weights applied. Percentages by column.

Conclusions

Overall, the survey found that voluntary fortification of foods by manufacturers was a concept of which Australians and New Zealanders were well aware. In contrast, only a small proportion of respondents were aware that, for some foods, the government makes it compulsory for manufacturers to add particular vitamins or minerals.

Mandatory fortification

Australians and New Zealanders tended to differ from one another in their knowledge of mandatory fortification and in their attitudes toward it.

What do consumers know about the current mandatory fortifications?

After they were made aware of the concept of mandatory fortification, 34.2 per cent of New Zealanders and 24.0 per cent of Australians were able to identify bread as a food that is mandatorily fortified in their country. A higher proportion of New Zealanders were aware that bread was fortified compared to Australians.

New Zealanders were also more aware of mandatory iodine fortification than Australians. However, a 36.9 per cent of them also believed that folic acid was required to be added to bread in New Zealand, even though it is compulsory only in Australia. Around one third (31.5 per cent) of Australians were aware of mandatory folic acid fortification of bread in their country.

New Zealanders had better knowledge of the intended benefit from both the folic acid and iodine fortifications than Australians.

Those respondents who considered that more regulation was required to manage both immediate and long term risks from food were also more likely to support mandatory fortification of foods.

What are consumers' attitudes toward the mandatory iodine and folic acid fortifications?

Australians were more likely to favour mandatory folic acid fortification than New Zealanders (42.7 per cent of Australians, compared to 29.4 per cent of New Zealanders). Peoples' knowledge of the intended benefits of folic acid fortification were not associated with their attitude toward the fortification.

Just under half of Australians (49.5 per cent) and New Zealanders (47.3 per cent) thought that iodine fortification should be compulsory. People who were aware of the intended benefits of iodine fortification were more likely to be in favour of it.

Voluntary fortification

What do consumers know about voluntary fortification?

Australians and New Zealanders tend to use food packaging to find out about added vitamins and minerals in products. When discussing a food they had chosen for its added

vitamins or minerals, most Australians and New Zealanders found out about the added vitamins or minerals through a claim on the front of the package.

In contrast, when respondents were asked to think hypothetically about where they would look for information on added vitamins or minerals on a new food product, they reported they would use the ingredient list or the nutrition information panel.

Vitamins or minerals that are listed in the nutrition information panel may be naturally occurring in the food rather than added by the manufacturer, and manufacturers do not always place a claim on the front of the package when they have voluntarily fortified a food. This finding suggests that some Australians and New Zealanders would have difficulty accurately determining whether a product was fortified.

What are consumers' opinions of voluntary fortification?

Some New Zealanders (41.9 per cent) and Australians (41.3 per cent) indicated that some foods should not have vitamins or minerals added to them. However, 25.0 per cent of Australians and 17.6 per cent of New Zealanders were comfortable with fortification of any food type provided they were clearly labelled. Australians were more likely than New Zealanders to express this opinion.

As the question was open-ended, respondents mentioned a wide range of foods that they said should not be fortified. Milk products, vegetables, natural foods and meat and fish products were the food categories most often mentioned as products that should not have vitamins or minerals added to them.

Does fortification impact on consumer behaviours?

Respondents were asked what they would do if they found a product they were considering buying or consuming had vitamins or minerals added to it. Most Australians (57.8 per cent) and New Zealanders (56.9 per cent) thought that it would depend on the food product. Around a quarter (26.8 per cent of Australians and 26.1 per cent of New Zealanders) said it would make no difference in their food choice. Less than 10 per cent of Australians and New Zealanders said that the added vitamins or minerals would make them more likely to buy or consume or the product.

When asked about foods that they bought or consumed for added vitamins or minerals, 44.5 per cent of Australians and 37.6 per cent of New Zealanders said that there were no foods they chose for this reason. The most common type of food that respondents mentioned buying or consuming for added vitamins and minerals was dairy products, which were mentioned by 22.2 per cent of Australians and 30.0 per cent of New Zealanders.

When asked why they bought particular foods with added vitamins and minerals, many respondents gave general reasons, such as the food being a healthy option or having vitamins and minerals, without mentioning specific vitamins or minerals that motivated their choice. Of the vitamins and minerals that were specifically mention, calcium was the most common.

The reasons given by respondents for choosing particular fortified foods differed based on the food type. For example, people who bought dairy products with added vitamins and minerals tended to mention calcium and bone health as reasons for choosing the products. In contrast, respondents discussing breakfast cereal tended to mention more general benefits, such as that it was a healthy option or more nutritious.

A large majority, 91.4 per cent of Australians and 93.5 per cent of New Zealanders, reported eating a type of bread that would be iodine-fortified. Similarly, 88.7 per cent of Australians ate bread that would be folic acid-fortified.

Main messages from the research

Overall, Australians and New Zealanders respondents had low levels of awareness of the foods that currently require mandatory fortification. New Zealanders had higher levels of knowledge of the vehicle for mandatory iodine fortification (bread) than Australians. They also tended to have a better understanding of the reasons iodine fortification was introduced, and the reasons folic acid fortification was considered in New Zealand. Around half of Australians and New Zealanders favoured the mandatory bread iodine fortification . New Zealanders were less in favour of mandatory folic acid fortification than Australians.

Just over half of respondents, 54. 0 per cent of Australians and 62.0 per cent of New Zealanders, chose some foods for their added vitamins or minerals. The influence of added vitamins and minerals on buying or consuming foods depends on the product type. Dairy products were the most commonly mentioned products that were chosen based on added vitamins and minerals. Peoples' motivations in choosing fortified foods also tended to differ depending on the food type. Some fortified foods, such as breakfast cereals were bought for general health benefits that the respondents associated with them. Whereas fortified dairy products were often bought for their calcium content.

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APPENDIX A: QUESTIONNAIRE

NEWSPOLL
Fortification Study

NEWSPOLL JOB NO. (Aus)110627 \ (NZ)110628
To be fielded no later than
Sunday 17th July 2011

INTRODUCTION
Good morning \ afternoon \ evening. My name is .... (**NAME**) from (**INSERT** Newspoll in Sydney \ Consumer Link in New Zealand).

We are conducting an important survey on behalf of Food Standards Australia New Zealand, the government body responsible for food standards.

May I please speak to the person in your household **aged 16 years and over** who had the most recent birthday? (**RE-INTRODUCE IF NECESSARY**)

This survey will provide important information about people's attitudes and behaviour in relation to food, and we'd like to include the opinions of different types of people.

If you're willing to participate, could I please start with your first name? **INTERVIEWER PLEASE RECORD IN FIRST QUESTION**

Just to let you know this call may be monitored for quality and coaching purposes and we are **not** selling anything. Your responses are confidential and your answers will be used for research purposes only.

It will take 15 to 18 minutes depending on your answers (but I'll be as brief \ quick as I can).

INTERVIEWER RECORD RESPONDENT NAME FROM INTRODUCTION

A1(a) **RECORD COUNTRY**

PROG NOTE:
- SINGLE RESPONSE

1	Australia
2	New Zealand

A1(b) **RECORD AREA**

PROG NOTE:
- **SINGLE RESPONSE**

- SINGLE RESPONSE

1	Brisbane
2	Rest QLD
3	Sydney
4	Rest NSW ex ACT
5	ACT
6	Melbourne
7	Rest VIC
8	Adelaide
9	Rest SA
10	Perth
11	Rest WA
12	Tasmania
13	Northern Territory

14	Northland region
15	Auckland region
16	Waikato region
17	Bay of Plenty region
18	Gisborne region
19	Hawke's Bay region
20	Taranaki region
21	Manawatu-Wanganui region
22	Wellington region
23	Tasman region
24	Nelson region
25	Marlborough region
26	West Coast region
27	Canterbury region
28	Otago region
29	Southland region

A2 **RECORD SEX**

PROG NOTE:
- SINGLE RESPONSE

1	Male
2	Female

A3 What is your current age?

IF 98 OR OLDER RECORD AS '98'
IF REFUSED RECORD AS '99'

PROG NOTE:
- ALLOW FOR A TWO DIGIT RESPONSE
- ALLOW A RANGE FROM 16-99

Age ___ ___

PROG NOTE: ASK IF REFUSED CURRENT AGE IE CODE 99 IN A3. OTHERS GO TO A5

A4 Which age group do you belong to? **READ OUT**

PROG NOTE:
- SINGLE RESPONSE

1	16 to 17
2	18 to 19
3	20 to 24
4	25 to 29
5	30 to 34
6	35 to 39
7	40 to 44
8	45 to 49
9	50 to 54
10	55 to 59
11	60 to 64
12	65 to 69
13	70 years and over
99	**DO NOT READ** Refused

PROG NOTE: ASK ALL RESPONDENTS

A5 How much of the food shopping do you usually do for your household? Do you usually do....? **READ OUT**

PROG NOTE:
- SINGLE RESPONSE

1	All or most of it
2	About half of it
3	Less than half of it
4	Or, none of the food shopping
5	**DO NOT READ** Don't know

SECTION B **- PROG NOTE: ASK ALL RESPONDENTS**

B1 Some questions in this survey ask if you know about certain aspects of food, and some people will know and some won't, so please say if you're not sure, rather than guess. Thinking firstly about vitamins and minerals. As you may know, these occur naturally in foods and drinks. Do you think it is **true** or **false** or are you **unsure** whether foods and drinks also sometimes contain vitamins or minerals that have been added to them by the manufacturer? **DO NOT READ**

PROG NOTE:
- SINGLE RESPONSE

1	True
2	False
3	Unsure

B2 If you found out that the food or drink you were thinking of buying or consuming **did** have vitamins or minerals added by the manufacturer, would this make you …? **READ OUT**

PROG NOTE:
- SINGLE RESPONSE

1	More likely to buy or consume it
2	Less likely to buy or consume it
3	Would it make no difference
4	Or, does it depend on the type of food or drink, or the vitamin or mineral that was added
5	**DO NOT READ** Don't know

B3 For each of the following food or drink categories, are there any brands that you buy or consume **because** they have added vitamins or minerals? **READ OUT**

READ AS A SINGLE RESPONSE – DO NOT CLARIFY – ACCEPT MULTI RESPONSES

PROG NOTE:
- **MULTI RESPONSE ALLOWED**
- **RANDOMISE 1-9 THEN 10-12 LAST**
- **IF CODES 1-10 SELECTED THEN CANNOT SELECT CODES 11-12**

1	Breakfast cereals
2	Margarines or similar spreads
3	Dairy products such as yoghurt or milk
4	Milk substitutes, such as soy or rice milk
5	Bread
6	Salt
7	Pasta
8	Fruit juice
9	Flavoured or smart waters such as Vitamin Water, Nutrient Water or G-force
10	Some other type of food or drink (**SPECIFY**)
11	**DO NOT READ** None
12	**DO NOT READ** Don't know

PROG NOTE: ASK IF ANY CODE 1-9 IN B3. IF MORE THAN ONE CODE 1-9, CREATE AND STORE A VARIABLE TO RANDOMLY SELECT ONE OF THESE TO ASK ABOUT IN B4 / B5. IF ONLY CODE 10 OR CODE 11-12, GO TO B7

B4 **(IF MORE THAN ONE CODE 1-9 MENTIONED AT B3 INSERT** Thinking just about the (**INSERT RANDOMLY SELECTED FOOD TYPE FROM B3, IF CODE 9 INSERT "Flavoured or smart waters"**)). What are the reasons you buy or consume brands of **(REPEAT FOOD TYPE FROM B3, IF CODE 9 INSERT "Flavoured or smart waters")** with added vitamins or minerals? What other reasons? **PROBE FULLY**

PROG NOTE:
- OPEN TEXT FIELD

_____

B5 Thinking about the **last time** you bought or consumed **(INSERT FOOD TYPE FROM B3)** with added vitamins or minerals. How did you know it had vitamins or minerals added by the manufacturer? **DO NOT READ**

PROG NOTE:
- **MULTI RESPONSE ALLOWED**
- **IF CODES 1-5 SELECTED THEN CANNOT SELECT CODE 6**

1	Read it on the pack \ container
2	From a TV \ newspaper \ magazine ad
3	Read it in an article
4	Heard from friends \ family
5	Other (**SPECIFY**)
6	**DO NOT READ** Don't know

PROG NOTE: ASK IF READ IT ON PACK \ CONTAINER IE CODE 1 IN B5. OTHERS GO TO B7

B6 Where on the **(INSERT FOOD TYPE FROM B3, IF CODE 9 INSERT "Flavoured or smart waters")** pack did you see it had added vitamins or minerals? Was it ....? **READ OUT**

PROG NOTE:
- **MULTI RESPONSE ALLOWED**
- **RANDOMISE 1-3 THEN 4-5 LAST**
- **IF CODES 1-4 SELECTED THEN CANNOT SELECT CODE 5**

1	A statement on the front, such as "added calcium" or something similar
2	On the nutrition information panel
3	In the ingredient list
4	Or somewhere else on the pack (**SPECIFY**)
5	**DO NOT READ** Don't know

PROG NOTE: ASK IF <u>NOT</u> READ IT ON PACKAGING IE <u>NOT</u> CODE 1 IN B5. OTHERS GO TO C1

B7 If you **were** buying or consuming a food product and you wanted to see whether it had vitamins or minerals added to it by the manufacturer, where on the pack would you look? Would you look ....? **READ OUT**

PROG NOTE:
- **MULTI RESPONSE ALLOWED**
- **RANDOMISE 1-3 THEN 4-5 LAST**
- **IF CODES 1-4 SELECTED THEN CANNOT SELECT CODE 5**

1	On the front of the pack, to see if there was a statement such as "added calcium" or something similar
2	On the nutrition information panel
3	In the ingredient list
4	Or somewhere else on the pack (**SPECIFY**)
5	**DO NOT READ** Don't know

<u>SECTION C</u> **- PROG NOTE: ASK ALL RESPONDENTS**

C1 The government currently allows manufacturers to add particular vitamins and minerals to some types of foods or drinks during the manufacturing process. What foods or drinks, if any, do you think **should not** have vitamins or minerals added to them? **PROBE FULLY**

IF NONE / NO FOOD, CLARIFY So just to confirm, you believe manufacturers **should** be allowed to add vitamins or minerals to **any** food or drink? **IF YES, GO TO NEXT SECT. IF NO, DELETE ORIGINAL RESPONSE AND ASK** What foods or drinks, if any, do you think **should not** have vitamins or minerals added to them? **RECORD NEW RESPONSE.**

PROG NOTE:
- **OPEN TEXT FIELD**

SECTION D **- PROG NOTE: ASK ALL RESPONDENTS**

D1 Up until now we have mainly been talking about foods and drinks which manufacturers are **allowed** to add some vitamins and minerals to, but they don't have to. In some countries the government makes it compulsory for food manufacturers to add a particular vitamin or mineral to some foods or drinks.

Do you think the government in (**IF CODE 1 IN A1(a) INSERT** "Australia" **ELSE INSERT** "New Zealand") does or does not make it compulsory for food manufacturers to add vitamins or minerals to some types of food?
DO NOT READ

PROG NOTE:
- SINGLE RESPONSE

1	Yes \ government does make it compulsory
2	No \ government does **not** make it compulsory
3	Don't know

D2 We now want to ask whether you think the government in (**IF CODE 1 IN A1(a) INSERT** "Australia" **ELSE INSERT** "New Zealand") currently makes it compulsory for food manufacturers to add vitamins or minerals to some foods. Is it **true** or **false** or are you **unsure** if vitamins or minerals **must** be added to …
DO NOT READ

PROG NOTE:
- RANDOMISE A-G
- SINGLE RESPONSE REQUIRED FOR EACH ROW

		True	False	Unsure
A	Confectionery or lollies	1	2	3
B	Breakfast cereal	1	2	3
C	Bread	1	2	3
D	Margarine or similar spreads	1	2	3
E	Fruit juice	1	2	3
F	Salt	1	2	3
G	Milk substitutes, such as soy or rice milks	1	2	3

D3 Thinking now **just** about bread. Currently in (**IF CODE 1 IN A1(a) INSERT** "Australia" **ELSE INSERT** "New Zealand"), bread **must** have one or more particular vitamins or minerals added. Is it **true** or **false** or are you **unsure** if bread **must** have the following added to it …**READ SCALE AS NECESSARY**

PROG NOTE:
- RANDOMISE A-F
- SINGLE RESPONSE REQUIRED FOR EACH ROW

		True, bread must have it added	False, bread doesn't have to have it added	Unsure
A	Vitamin D	1	2	3
B	Iron	1	2	3
C	Folic acid which is sometimes known as folate	1	2	3
D	Thiamin (**PRON th-eye-ah-mine)** which is sometimes known as Vitamin B1	1	2	3
E	Calcium	1	2	3
F	Iodine **(PRON eye-oh-deen)** or iodised **(PRON eye-oh-dized)** salt	1	2	3

PROG NOTE: ROTATE ORDER OF SECTIONS E AND F

***SECTION E*- PROG NOTE: ASK ALL RESPONDENTS**

PROG NOTE: ASK IF AUSTRALIA ONLY IE CODE 1 IN A1(a). OTHERS GO TO E4

E1 In Australia, the government makes it compulsory for **all** bread made from wheat, except for organic bread, to have folic acid, sometimes known as folate, added to it by the manufacturer. What do you think the intended benefit of this is? **PROBE FULLY**

PROG NOTE:
- OPEN TEXT FIELD

_____

E2 The reason bread must have folic acid added to it is to reduce the risk of babies being born with neural tube defects like spina bifida **(PRON spy-ner-biffy-der)**. Knowing this, would you say…? **READ OUT**

PROG NOTE:
- SINGLE RESPONSE

1	It should be compulsory for manufacturers to add folic acid to **all** bread
2	It should be optional for manufacturers to add folic acid to bread
3	It's difficult to decide either way
4	Or, you don't care either way

PROG NOTE: ASK IF THINK SHOULD BE COMPULSORY \ OPTIONAL IE CODE 1-2 IN E2. OTHERS GO TO NEXT SECT

E3 Is the strength of your opinion on this…? **READ OUT**

PROG NOTE:
- SINGLE RESPONSE

1	Very strong
2	Somewhat strong
3	Or, not at all strong

PROG NOTE: ASK IF NZ ONLY IE CODE 2 IN A1(a). OTHERS GO TO NEXT SECT

E4 In New Zealand some bread manufacturers choose to add folic acid, sometimes known as folate, to bread made from wheat. The New Zealand Government has been considering whether to make it compulsory for **all** bread made from wheat, except for organic bread, to have folic acid added to it by the manufacturer. What do you think the intended benefit of this would be? **PROBE FULLY**

PROG NOTE:
- OPEN TEXT FIELD

_____

E5 The reason bread would have folic acid added to it is to reduce the risk of babies being born with neural tube defects like spina bifida **(PRON spy-ner-biffy-der)**. Knowing this, would you say…? **READ OUT**

PROG NOTE:
- SINGLE RESPONSE

1	It should be compulsory for manufacturers to add folic acid to **all** bread
2	It should be optional for manufacturers to add folic acid to bread
3	It's difficult to decide either way

4	Or, you don't care either way

PROG NOTE: ASK IF THINK SHOULD BE COMPULSORY \ OPTIONAL IE CODE 1-2 IN E5. OTHERS GO TO NEXT SECT

E6 Is the strength of your opinion on this…? **READ OUT**

PROG NOTE:
- SINGLE RESPONSE

1	Very strong
2	Somewhat strong
3	Or, not at all strong

***SECTION F*- PROG NOTE: ASK ALL RESPONDENTS**

F1 Still thinking about bread. In (**IF CODE 1 IN A1(a) INSERT** "Australia" **ELSE INSERT** "New Zealand") the government makes it compulsory for all bread made from wheat, except for organic bread, to be made with iodised **(PRON eye-oh-dized)** salt, instead of normal salt. What do you think the intended benefit of this is? **PROBE FULLY**

PROG NOTE:
- OPEN TEXT FIELD

_____

F2 The reason bread must be made with iodised **(PRON eye-oh-dized)** salt instead of normal salt is to help address iodine **(PRON eye-oh-deen)** deficiency in the (**IF CODE 1 IN A1(a) INSERT** "Australian" **ELSE INSERT** "New Zealand") population. Iodine helps to regulate the body's metabolism and aids physical and mental development, especially in unborn babies and young children. Knowing this, would you say...? **READ OUT**

PROG NOTE:
- SINGLE RESPONSE

1	It should be compulsory for manufacturers to make **all** bread with iodised salt instead of normal salt
2	It should be optional for manufacturers to make bread with iodised salt instead of normal salt
3	It's difficult to decide either way
4	Or, you don't care either way

PROG NOTE: ASK IF THINK SHOULD BE COMPULSORY \ OPTIONAL IE CODE 1-2 IN F2. OTHERS GO TO NEXT SECT

F3 Is the strength of your opinion on this…? **READ OUT**

PROG NOTE:
- SINGLE RESPONSE

1	Very strong
2	Somewhat strong
3	Or, not at all strong

***SECTION G* - PROG NOTE: ASK ALL RESPONDENTS**

G1 Thinking now about electrolyte drinks, which are a type of sports drink. These include ready to drink ones like Powerade and Gatorade, as well as powdered ones you make up yourself, such as Staminade. How often, if ever, do you **usually** use these sorts of drinks? Would it be... ? **READ OUT**

PROG NOTE:
- SINGLE RESPONSE

1	Every day
2	2 to 3 times a week
3	Once a week
4	Once a fortnight
5	Once a month
6	Less often
7	Or, never
8	**DO NOT READ** Don't know \ varies

PROG NOTE: ASK EVER USE IE CODE 1-6 IN G1. OTHERS GO TO G7

G2 On which of the following occasions do you usually use them? Is it when you're...? **READ OUT**

PROG NOTE:
- **MULTI RESPONSES ALLOWED**
- **RANDOMISE CODES 1-7, MAINTAINING ORDER OF 2-4, THEN 8-9 LAST**
- **IF CODE 1-8 SELECTED THEN CANNOT SELECT CODE 9**

1	Feeling thirsty at any time
2	Doing sport
3	Working out at the gym
4	Doing other physical activities
5	Hung over
6	In need of an energy burst
7	Dehydrated due to vomiting or diarrhoea
8	Or some other time (**SPECIFY)**
9	**DO NOT READ** Don't know

G3 When you are having one of these drinks, how long would you usually take to finish drinking it. Would it take ... ?
READ OUT

PROG NOTE:
- SINGLE RESPONSE

1	5 minutes or less
2	6 to 20 minutes
3	Or more than 20 minutes
4	**DO NOT READ** Don't know \ varies

G4 On a day when you're drinking these products, how much would you usually drink? **READ OUT**

PROG NOTE:
- SINGLE RESPONSE

1	Less than 1 cup or 250 mils a day
2	1 to 2 cups or 250 to 500 mils
3	2 to 4 cups or 501 mils to 1 litre
4	Between 1 and 2 litres
5	Or, more than 2 litres a day
6	**DO NOT READ** Don't know

G5 Do you generally drink these sport or electrolyte drinks …? **READ OUT**

PROG NOTE:
- SINGLE RESPONSE

1	Instead of other drinks
2	Or, in addition to other drinks
3	**DO NOT READ** Don't know \ varies

PROG NOTE: ASK IF DRINKS INSTEAD OF OTHER DRINKS IE CODE 1 IN G5. OTHERS GO TO G7

G6 Which of the following do the sports or electrolyte drinks usually replace? **READ OUT**

PROG NOTE:
- **MULTI RESPONSES ALLOWED**
- **RANDOMISE CODES 1-4, MAINTAINING ORDER OF 3-4, THEN 5-6 LAST**
- **IF CODE 1-5 SELECTED THEN CANNOT SELECT CODE 6**

1	Water
2	Fruit juice
3	Diet or low calorie soft drink
4	Other soft drink
5	Or, some other type of drink (**SPECIFY)**
6	**DO NOT READ** Don't know \ varies

PROG NOTE: ASK ALL RESPONDENTS

G7 What problems have you heard of, if any, that could be caused by drinking sports or electrolyte drinks? What other problems? **PROBE FULLY. DO NOT READ**

IF TOO MUCH SUGAR What problem does this cause?

PROG NOTE:
- **MULTI RESPONSES ALLOWED**
- **IF CODE 1-6 SELECTED THEN CANNOT SELECT CODE 7-8**

1	Weight gain
2	Tooth decay \ erosion
3	Hyperactivity \ hyper \ hypo
4	Gastro \ stomach ache \ diarrhoea \ constipation
5	Heart problems \ increased heart rate
6	Other (**SPECIFY)**
7	None \ not heard of any
8	Don't know

SECTION H **- PROG NOTE: ASK ALL RESPONDENTS**

H1 The next few questions are about government regulations placed on food and drink manufacturers. These are the laws and rules they must follow otherwise they could be prosecuted or fined.

Thinking about how much government regulation there currently is to reduce **immediate** food risks such as food contamination or poisoning. Do you think there is too little regulation, about the right amount, or too much regulation of immediate food risks in (**IF CODE 1 IN A1(a) INSERT** "Australia" **ELSE INSERT** "New Zealand")? **UNFOLD**

IF TOO LITTLE Is that **way** too little or **somewhat** too little?
IF TOO MUCH Is that **way** too much or **somewhat** too much?

PROG NOTE:
- **SINGLE RESPONSE**

1	Way too little
2	Somewhat too little
3	About the right amount
4	Somewhat too much
5	Way too much
6	Don't know

H2 Thinking about how much government regulation there currently is to reduce **long term** risks associated with food and drinks, such as obesity and diet-related diseases such as heart disease. Do you think there is too little regulation, about the right amount, or too much regulation of long term risks in (**IF CODE 1 IN A1(a) INSERT** "Australia" **ELSE INSERT** "New Zealand")? **UNFOLD**

IF TOO LITTLE Is that **way** too little or **somewhat** too little?
IF TOO MUCH Is that **way** too much or **somewhat** too much?

PROG NOTE:
- **SINGLE RESPONSE**

1	Way too little
2	Somewhat too little
3	About the right amount
4	Somewhat too much
5	Way too much
6	Don't know

SECTION I **- PROG NOTE: ASK ALL RESPONDENTS**

I1 This question is about the usual amount of **vegetables** you eat, including fresh, frozen and tinned vegetables. One serve is equal to half a cup of cooked vegetables or legumes (**PRON Leg-youms**), or 1 medium potato, or 1 cup of salad vegetables. How many serves of vegetables do you usually eat **each** day? **DO NOT READ**

IF REQUIRED SAY "Do **not** include vegetable juice**"**

PROG NOTE:
- SINGLE RESPONSE

0	Don't eat any vegetables
1	1 serve or less per day
2	2 serves
3	3 serves
4	4 serves
5	5 serves
6	6 serves or more per day
7	Don't know

I2 This question is about the usual amount of **fruit** you eat, including fresh, frozen, dried and tinned fruit. One serve is equal to 1 medium fruit, eg 1 apple, 2 small fruit eg 2 apricots, or 1 cup of chopped or canned fruit. How many serves of fruit do you usually eat **each** day? **DO NOT READ**

IF REQUIRED SAY "Do **not** include fruit juice**"**

PROG NOTE:
- SINGLE RESPONSE

0	Don't eat any fruit
1	1 serve or less per day
2	2 serves
3	3 serves
4	4 serves
5	5 serves
6	6 serves or more per day
7	Don't know

I3 Thinking now about the type of bread you personally usually eat, including sliced bread, rolls, and flatbreads. Which **one** of the following types of bread do you eat **most** often? **READ OUT**

PROG NOTE:
- SINGLE RESPONSE

1	Organic bread
2	Gluten free or wheat free bread
3	White bread
4	Wholemeal or wholegrain bread
5	Some other type of bread **(SPECIFY)**
6	Or, do you not usually eat bread
7	**DO NOT READ** Don't know

SECTION J **- PROG NOTE: ASK ALL RESPONDENTS**

J1 I would now like to ask you some questions about your height and weight. Do you consider yourself to be about the right weight, underweight or overweight? **DO NOT READ**

PROG NOTE:
- **SINGLE RESPONSE**

1	About the right weight
2	Underweight
3	Overweight
4	Refused

J2 Being as accurate as you can, please tell me your weight in kilograms.

IF UNSURE SAY "Approximately what do you think it would be, either in kilograms or stones?"
RECORD DON'T KNOW \ REFUSED AS 999.
IF RANGE GIVEN RECORD MIDPOINT
IF WEIGHT GIVEN IN STONES, CHECK CONVERSION CHART THEN RECORD AS KILOGRAMS

PROG NOTE:
- **ALLOW 3 DIGIT NUMERIC RESPONSE IN RANGE 30-300, 999**
- **UNLIKELY RANGE 140-300**

_ _ _ kilograms

J3 And please tell me your height without shoes in centimetres.

IF UNSURE SAY "Approximately what do you think it would be, either in centimetres or feet and inches?"
RECORD DON'T KNOW \ REFUSED AS 999.
IF RANGE GIVEN, RECORD MIDPOINT
IF HEIGHT GIVEN IN FEET \ INCHES, CHECK CONVERSION CHART THEN RECORD AS CENTIMETRES

PROG NOTE:
- **ALLOW 3 DIGIT NUMERIC RESPONSE IN RANGE 40-225, 999**
- **UNLIKELY RANGE 40-80, 215-225**

_ _ _ centimetres

***SECTION K (Australia only)* -** **PROG NOTE: ASK ALL RESPONDENTS**

K1 Which of the following **best** describe your ancestry? Please choose **up to two** of the following ancestries only. Firstly…? **READ OUT**

INTERVIEWER INFORMATION:
- **IF PROVIDE 3 OR MORE ANCESTRIES PROBE FOR 2 BEST ANSWERS**

PROG NOTE:
- **MULTIPLE RESPONSES ALLOWED**
- **MAXIMUM 2 CODES 1-14**
- **IF CODE 1-14 SELECTED THEN CANNOT SELECT CODE 15**

1	Australian Aboriginal or Torres Strait Islander
2	Australian
3	British, including English, Scottish or Welsh
4	Irish
5	Italian
6	German
7	Chinese, including Hong Kong
8	Greek
9	Dutch
10	New Zealander, including Maori
11	Indian
12	Lebanese
13	Vietnamese
14	Or, some other ancestry
15	**DO NOT READ** Refused \ don't know

K2 What is the highest educational qualification you have completed? **DO NOT READ**

ONLY READ OUT IF RESPONDENT QUERIES HOW MUCH DETAIL IS NEEDED

PROG NOTE:
- **SINGLE RESPONSE**

1	University degree or higher (including postgraduate diploma)
2	Undergraduate diploma or associate diploma
3	Certificate, trade qualification or apprenticeship eg TAFE
4	Highest level of secondary school
5	Did not complete highest level of school
6	Never went to school
7	Still at secondary school
8	Other (**SPECIFY**)
9	**DO NOT READ** Refused

K3 Is your household's combined annual income from all sources, before tax…? **READ OUT**

PROG NOTE:
- SINGLE RESPONSE

INTERVIEWER INFORMATION:
UNDER $30,000 PA IS UNDER $576 PER WEEK
$30,001-$50,000 PA IS $577-$961 PER WEEK
$50,001-$70,000 PA IS $962-$1,345 PER WEEK
$70,001-$100,000, PA IS $1,346-$1,923
$100,001-$150,000, PA IS $1,924-$2,884 PER WEEK
OVER $150,000 PA IS OVER $2,884 PER WEEK

1	Up to 30 thousand dollars
2	$30,001 to 50 thousand
3	$50,001 to 70 thousand
4	$70,001 to 100 thousand
5	$100,001 to 150 thousand
6	More than 150 thousand
7	**DO NOT READ** Refused
9	**DO NOT READ** Don't know

K4 Last week, did you have a full-time or part-time job of any kind? **UNFOLD**

IF YES Was that…? **READ OUT CODES 1-4**

PROG NOTE:
- SINGLE RESPONSE

	YES
1	Work for payment or profit
2	Absent on holidays, on paid leave, on strike, or temporarily stood down
3	Unpaid work in a family business
4	Or, other unpaid work
	NO
5	Did not have a job

PROG NOTE: ASK IF YES WORK BUT <u>NOT</u> 'OTHER UNPAID WORK' IE CODE 1-3 IN K4. CODE 4-5 IN K4 GO TO K7

K5 In your main job held last week, what was your occupation?

PROBE FOR FULL TITLE EG CHILDCARE AIDE, MATHS TEACHER, PASTRY COOK, TANNING MACHINE OPERATOR, APPRENTICE TOOLMAKER, SHEEP AND WHEAT FARMER

INTERVIEWER INFORMATION:
FOR PUBLIC SERVANTS PROVIDE OFFICIAL DESIGNATION AND OCCUPATION
FOR ARMED SERVICES PERSONNEL PROVIDE RANK AND OCCUPATION

PROG NOTE:
- OPEN TEXT FIELD

_____

K6 What are the main tasks you usually perform in that occupation? **PROBE FOR FULL DETAILS**

INTERVIEWER INFORMATION:
EXAMPLES INCLUDE LOOKING AFTER CHILDREN AT A DAY CARE CENTRE
TEACHING SECONDARY SCHOOL STUDENTS
MAKING CAKES AND PASTRIES
OPERATING LEATHER TANNING MACHINE
LEARNING TO MAKE AND REPAIR TOOLS AND DYES
RUNNING A SHEEP AND WHEAT FARM
FOR MANAGERS PROVIDE MAIN ACTIVITIES MANAGED

PROG NOTE:
- OPEN TEXT FIELD

_____

K7 If my supervisor finds any errors with my work, we may need to call you back. If we need to, may we contact you for other quality control purposes? **DO NOT READ**

PROG NOTE:
- SINGLE RESPONSE

1	Yes
2	No

CLOSE
Just to remind you, my name is ... (**NAME**) from Newspoll. This research was conducted on behalf of Food Standards Australia New Zealand in compliance with the Privacy Principles.
(PAUSE)
IF ASK ABOUT PRIVACY OR FOR MORE INFO ABOUT NEWSPOLL READ APPROPRIATE SCRIPT BELOW.
Thank you...**(RESPONDENT NAME)** for your time.

PRIVACY Your phone number was randomly selected from a computer. Your personal details will be removed from your responses in about **four** weeks. Within this time, however, you may request that your personal details be deleted.
MORE INFO ABOUT NEWSPOLL If you have a pen and paper handy, you can find more info about Newspoll from:
Newspoll toll free: 1800 646 526
Market Research Society: 1300 364 830
Newspoll website: www.newspoll.com.au

INTERVIEWER INFORMATION RE SAMPLE:

Phone numbers are obtained from a list provided by 'samplepages.com.au'. To comply with federal privacy legislation, numbers are provided **without** names or addresses.

IF RESPONDENT NOT SATISFIED WITH EXPLANATION If you want to know more about how your number was obtained then I can give you the number to contact 'samplepages.com.au' or their website address.

If you have a pen and paper handy, the number \ website is: (03) 9024 2413 \ www.samplepages.com.au\privacy.aspx

DID THE RESPONDENT WISH TO HAVE THEIR DETAILS REMOVED IMMEDIATELY?
PROG NOTE:
- SINGLE RESPONSE

1	Yes
2	No

I certify that this is a true, accurate and complete interview, conducted in accordance with industry standards and the AMSRS Code of Professional Behaviour (ICC\ESOMAR). I will not disclose to any other person the content of this questionnaire or any other information relating to this project.
PROG NOTE:
- SINGLE RESPONSE

1	Accept
2	Not accept

SECTION L (New Zealand only) **- PROG NOTE: ASK ALL RESPONDENTS**

L1 Which of these ethnic groups do you belong to? **READ OUT**

PROG NOTE:
- **MULTI RESPONSES ALLOWED**

1	New Zealand European
2	Maori
3	Samoan
4	Cook Island Maori
5	Tongan
6	Niuean
7	Chinese
8	Indian
9	Other **(SPECIFY)**
10	**DO NOT READ** Refused \ don't know

L2 What is the highest educational qualification you have completed?

ONLY READ OUT IF RESPONDENT QUERIES HOW MUCH DETAIL IS NEEDED

PROG NOTE:
- SINGLE RESPONSE

1	University degree or higher (including postgraduate diploma)
2	Undergraduate diploma or associate diploma
3	Certificate, trade qualification or apprenticeship eg Tech
4	Highest level of secondary school
5	Did not complete highest level of school
6	Never went to school
7	Still at secondary school
8	Other (**SPECIFY**)
9	**DO NOT READ** Refused

QUESTION L3-Z6 AS PER K3-K6 AUSTRALIA

CLOSE

Thank you very much for helping us with this survey. We really appreciate the time you have given, as your opinions are very important to us.

As I said earlier my name is *** from Consumer Link Market Research.

If you have any questions about this survey you can contact my supervisor on 0508 SURVEY (787 839)

CLICK NEXT TO CONTINUE

Declaration
I certify that I have conducted this interview in accordance with the guidelines set out in the Market Research Society Code of Practice in accordance with the instructions from Consumer Link.

APPENDIX B: WEIGHTING MATRICES

Australia: (000's)

NSW - INCL ACT	Male	Female	TOTAL
16-24	494	469	963
25-34	551	549	1100
35-49	792	807	1599
50-64	673	689	1362
65+	479	576	1055
Total	**2989**	**3090**	**6079**
VIC	**Male**	**Female**	**TOTAL**
16-24	370	348	718
25-34	411	405	816
35-49	587	600	1187
50-64	481	498	979
65+	344	416	760
Total	**2193**	**2267**	**4460**
QLD	**Male**	**Female**	**TOTAL**
16-34	618	602	1220
35-49	477	484	961
50-64	401	403	804
65+	266	302	568
Total	**1762**	**1791**	**3553**
SA / NT	**Male**	**Female**	**TOTAL**
16-49	448	434	881
50-64	174	177	351
65+	122	148	270
Total	**744**	**759**	**1503**
WA	**Male**	**Female**	**TOTAL**
16-49	583	550	1132
50-64	207	203	410
65+	129	148	277
Total	**919**	**901**	**1820**
TASMANIA	**Male**	**Female**	**TOTAL**
16-49	109	112	221
50+	87	95	182
Total	**196**	**207**	**403**
TOTALS			**17818**

New Zealand: (000's)

UPPER NORTH ISLAND= Northland + Waikato + BOP			
	Male	**Female**	**Total**
16-34	97	96	193
35-49	81	90	171
50-64	76	80	156
65+	58	67	125
	312	**333**	**645**
AUCKLAND	**Male**	**Female**	**Total**
16-24	103	100	203
25-34	106	112	218
35-49	157	170	327
50-64	115	120	235
65+	68	83	151
	549	**585**	**1134**
LOWER NORTH ISLAND= Gisborne + HB + Tara + Manawatu			
	Male	**Female**	**Total**
16-34	64	63	127
35-49	52	57	109
50-64	49	51	100
65+	37	45	82
	202	**216**	**418**
WELLINGTON	**Male**	**Female**	**Total**
16-34	66	68	134
35-49	51	56	107
50-64	40	42	82
65+	27	32	59
	184	**198**	**382**
CANTERBURY	**Male**	**Female**	**Total**
16-34	72	69	141
35-49	59	63	122
50-64	52	54	106
65+	37	45	82
	220	**231**	**451**
OTHER SOUTH ISLAND	**Male**	**Female**	**Total**
16-49	106	109	216
50-64	47	46	93
65+	33	38	71
	187	**193**	**380**
TOTAL			**3410**

APPENDIX C: RESPONSE RATES

The following text in Appendix C is from the Methodology Report provided by Newspoll to FSANZ.

To help maximise response rates interviewing was restricted to times when people were likely to be at home and therefore able to participate in the survey, summarised as follows:

- Australia: weeknights 5.00pm–8.30pm (local time) and weekends 9.30am–5.00pm (local time)
- New Zealand: weeknights 5.00pm–9.00pm (local time), Saturday 10.00am–2.30pm (local time), Sunday 4.00pm–8.30pm (local time)

To further ensure the sample included those people who tend to spend a lot of time away from home, a system of call backs and appointments was incorporated, using the following rules:

- No more than one call per phone number was made every 3 hours
- No more than one call was made to any number during the hours of 5pm to 7pm on any given night
- Up to four calls were made to each number

FSANZ requested at the analysis stage that the response rate be calculated using AAPOR's (American Association for Public Opinion Research) response rate calculator (http://www.aapor.org/AM/Template.cfm?Section=Standard_Definitions2&Template=/CM/ContentDisplay.cfm&ContentID=3152). While the categories for this calculator do not match exactly with Newspoll's standard call analysis categories which were collected during fieldwork, we have matched them as closely as possible.

The response rates for this survey are outlined in Table 78. They reflect the relatively long questionnaire length (refer to previous section) and also the relatively moderate level of consumer interest in the subject area. These response rates are comparable (if not slightly better) than those achieved in surveys of similar length and design (ie national population CATI surveys using the same types of sample frames).

It should also be noted that the differences between Australia and New Zealand reflect the different type of sample selection methods (i.e.SamplePages lists in Australia vs RDD in New Zealand). They also reflect different levels of willingness to participate in market research surveys. For example Australia has a much larger commercial market, and people tend to live in larger, busier cities than their counterparts in New Zealand. People's willingness to participate in research will be heavily influenced by the various time and other pressures they are faced with, which impinge on their ability to and / or attitude towards undertaking research surveys.

These factors are clearly reflected by the marked differences between the two countries in terms of the cooperation, refusal and contact rates as shown in Table 78.

Table 78. Response rates

AAPOR Outcome Rate Calculator Version 3.1 November, 2010	AU	NZ
Interview (Category 1)		
Complete	800	802
Partial	57	13
Eligible, non-interview (Category 2)		
Refusal	5212	2986
Respondent never available	159	384
Physically or mentally unable/incompetent	151	53
Language problem	256	155
Unknown eligibility, non-interview (Category 3)		
Always busy	42	227
No answer	1398	3926
Answering machine-don't know if household	974	1554
No screener completed	179	114
Not eligible (Category 4)		
Non-working number	681	12
Disconnected number	23	1263
Business, government office, other organizations	141	3405
Total phone numbers used	10073	14894
I = Complete Interviews (1.1)	800	802
P = Partial Interviews (1.2)	57	13
R = Refusal and break off (2.1)	5212	2986
NC = Non Contact (2.2)	159	384
O = Other (2.0, 2.3)	407	208
e[17]	0.887	0.484
UH = Unknown Household (3.1)	2414	5707
UO = Unknown other (3.2–3.9)	179	114
Response Rate 1 I/(I+P) + (R+NC+O) + (UH+UO)	8.7%	7.9%
Response Rate 2 (I+P)/(I+P) + (R+NC+O) + (UH+UO)	9.3%	8.0%
Response Rate 3 I/((I+P) + (R+NC+O) + e(UH+UO))	9.0%	11.1%
Response Rate 4 (I+P)/((I+P) + (R+NC+O) + e(UH+UO))	9.6%	11.3%

[17] Calculating e: e is the estimated proportion of cases of unknown eligibility that are eligible. It is based on the proportion of eligible units among all units in the sample for which a definitive determination of status was obtained (a conservative estimate).

Table 78. Response rates, continued

AAPOR Outcome Rate Calculator Version 3.1 November, 2010	AU	NZ
Cooperation Rate 1 I/(I+P)+R+O)	12.4%	20.0%
Cooperation Rate 2 (I+P)/((I+P)+R+O))	13.2%	20.3%
Cooperation Rate 3 I/((I+P)+R))	13.2%	21.1%
Cooperation Rate 4 (I+P)/((I+P)+R))	14.1%	21.4%
Refusal Rate 1 R/((I+P)+(R+NC+O) + UH + UO))	56.5%	29.3%
Refusal Rate 2 R/((I+P)+(R+NC+O) + e(UH + UO))	58.3%	41.5%
Refusal Rate 3 R/((I+P)+(R+NC+O))	78.6%	68.0%
Contact Rate 1 (I+P)+R+O / (I+P)+R+O+NC+ (UH + UO)	70.2%	39.4%
Contact Rate 2 (I+P)+R+O / (I+P)+R+O+NC + e(UH+UO)	72.5%	55.7%
Contact Rate 3 (I+P)+R+O / (I+P)+R+O+NC	97.6%	91.3%

The following explanations of the calculations are taken from the AAPOR Standard Definitions report (7th edition, 2011). Response Rate 1 is the minimum response rate. Response Rate 2 counts partial interviews as respondents. Response Rate 3 estimates what proportion of cases of unknown eligibility is actually eligible. Response Rate 4 allocates cases of unknown eligibility as in RR3, but also includes partial interviews as respondents as in RR2.

A cooperation rate is the proportion of respondents interviewed of all eligible people ever contacted. Cooperation Rate 1 is the minimum cooperation rate. Cooperation Rate 2 counts partial interviews as respondents. Cooperation Rate 3 defines those unable to do an interview as also incapable of cooperating and they are excluded from the base. Cooperation Rate 4 is the same as Cooperation Rate 3, but includes partials as interviews.

A refusal rate is the proportion of instances where a respondent refuses to do an interview, or breaks-off an interview of all potentially eligible phone numbers. Refusal Rate 1 is the number of refusals divided by the interviews (complete and partial) plus the non-respondents (refusals, non-contacts, and others) plus the cases of unknown eligibility. Refusal Rate 2 includes estimated eligible phone numbers among the unknown phone numbers. Refusal Rate 3 includes, in the base, only known eligible cases.

A contact rate is a measured at the house-hold level, and is the proportion of all cases where some responsible member of the housing unit was reached by the survey. Contact Rate 1 assumes that all cases of indeterminate eligibility are actually eligible. Contact Rate 2 includes, in the base, only the estimated eligible cases among the undetermined cases. Contact Rate 3 includes, in the base, only known eligible cases.

APPENDIX D: DATA PREPARATION

Main grocery buyer status

Around two thirds of Australian and New Zealand respondents reported that they were responsible for all or most of the food and grocery shopping in their household (see Table 79)

Table 79: Main grocery buyer status, by country

	AU (%) (n=800)	NZ (%) (n=802)
All or most of it	66.6	67.6
About half of it	14.1	12.6
Less than half of it	13.4	13.0
Or, none of the food shopping	5.9	6.9

NB: Without weights applied. Percentages by column.

For further analysis in the report, respondents were collapsed into two groups: those who are main grocery buyers and those who are not. Main grocery buyers were classified as respondents who were responsible for half or more of their household's grocery shopping. Around 80 per cent of respondents reported being responsible for at least half of the food and grocery purchasing for their household.

Fruit and vegetable consumption

Mean vegetable intake of respondents (see Table 80) was below the Australian and New Zealand government guidelines. The mean fruit intake of New Zealand respondents (2.1 serves per day) met Australian and New Zealand guidelines, but Australian respondents had lower intakes of around 1.7 serves per day.

Table 80. Mean fruit and vegetable intake, by country

Mean servings per day	AU	NZ
Mean vegetable intake	2.65 (2.55 – 2.74) (n=796)	2.82 (2.72 – 2.92) (n=795)
Mean fruit intake	1.73 (1.66 – 1.80) (n=797)	2.13 (2.04 – 2.22) (n=799)

NB: With weights applied. 95 % confidence intervals. 'Don't know' responses counted as missing.

Only 11.7 per cent of Australian respondents and 15.1 per cent of New Zealand respondents met the Australian dietary guidelines for vegetable intake (five or more serves per day). However, when New Zealand guidelines were used as the bench mark, 48.1 per cent of Australian respondents and 55.5 per cent of New Zealand respondents achieved the recommended three or more serves of vegetables per day.

Around half of Australian respondents (52.1 per cent) and 64.5 per cent of New Zealanders achieved the recommended two or more servings of fruit per day.

Based on their answers, respondents were split into two groups: low and high fruit and vegetable consumers. Combined fruit and vegetable intake of four servings or less was classified as low fruit and vegetable consumption, more than four servings was classified as

high fruit and vegetable consumption. This cut off was chosen as an effective way of separating the sample into two groups for comparison with fruit and vegetable consumption that was relatively high or low compared to the sample.

Where there were missing values for either the usual servings of fruit or of vegetables eaten per day, the overall score was recorded as missing, and these respondents were excluded from the comparisons between low and high fruit and vegetable consumers.

Body Mass Index

The weights in the sample ranged from 38 to 187 kilograms in Australian respondents, and from 40 to 165 kilograms among New Zealand respondents. For Australian respondents, height ranged from 96 to 200 centimetres, and for New Zealand respondents 99 to 210 centimetres. The median heights and weights for the sample are shown in Table 81, below.

Table 81: Medians of self-reported weights and heights of Australian and New Zealand respondents

	AU	NZ
Weight (kgs)	75 (n=761)	72 (n=774)
Height (cms)	168 (n=786)	168 (n=798)

NB: Without weights applied. Missing data excluded.

Body Mass Index (BMI) was calculated using height (in metres, squared) and weight (in kilograms) information from respondents. Responses that were provided in imperial measures were converted to metric. The formula is:

$$\frac{kg}{m^2}$$

BMI ranged from 15.04 to 104.17 kg/m^2 for the Australian sample, and from 14.83 to 101.01 kg/m^2 for the New Zealand sample. To determine which BMIs should be included in analysis, the first and 99th percentiles for BMI from the 2007–08 Australian National Health Survey were used. BMIs below the first percentile (10–14 kg/m^2) or above the 99th percentile (42–58 kg/ m^2) were excluded from analysis. Although respondents aged 16–17 years were included in the weight and height medians, above, they were coded as missing for BMI as percentiles for children are indexed by age[18].

The median BMIs (once respondents over 58 kg/m^2 and below 18 years were removed) was 25.74 kg/m^2 for Australian respondents, and 25.10 kg/m^2 for New Zealand respondents.

Education level

As shown in Table 82, around a third of Australian respondents (31.6 per cent) and a quarter New Zealand respondents (28.7 per cent) had a university degree or higher degree.

[18] See http://www.eduweb.vic.gov.au/edulibrary/public/earlychildhood/mch/bmi/summary2.pdf

Table 82: Education level of Australian and New Zealand respondents

Highest educational qualification	AU (%) (n=800)	NZ (%) (n=802)
University degree or higher	31.6	28.7
Undergraduate diploma or associate diploma	10.1	9.1
Certificate, trade qualification or apprenticeship	13.1	18.7
Highest level of secondary school	19.6	25.1
Did not complete highest level of school	23.5	13.6
Never went to school	0.0	0.4
Still at secondary school	0.4	1.0
Other	1.4	3.2
Refused	0.3	0.3

NB: Without weights applied. Percentages by column.

For simplicity, education categories were collapsed to create two groups for comparison – respondents who had completed post-secondary qualifications (certificate, trade qualification or apprenticeship; undergraduate diploma or associate diploma; university degree or higher) and those who had completed no further than the highest level of secondary school.

Occupational status

Around half of the respondents in each country reported working for payment or profit in the week prior to the survey (see Table 83)

Table 83. Work status (without weights applied)

	AU (%) (n=800)	NZ (%) (n=802)
Work for payment or profit	51.8	53.4
Absent*	3.3	1.1
Unpaid work in a family business	1.0	1.9
Or, other unpaid work	0.9	1.8
Did not have a job	43.1	41.9

NB: Without weights applied. Percentages by column.

** "Absent on holidays, on paid leave, on strike, or temporarily stood down"*

Respondents who reported being in 'other unpaid work' or not having a job in the past week were not asked further questions on the type of occupation they are engaged in. Consequently, the AUSEI06 occupational status applies only to the remainder of the sample. For analysis using occupational status: respondents were split into two occupational categories:

- low status (with an AUSEI06 score of less than 50); or
- high status (with an AUSEI06 score of 50 or more)

Attitude toward government regulation of food risks

The survey included two questions on attitudes towards government regulation of food and drink. These were included to determine whether there was a link between general attitudes to food regulation and to attitudes towards mandatory food fortification.

The first question asked respondents about regulation of immediate food risks:

"Thinking about how much government regulation there currently is to reduce immediate food risks such as food contamination or poisoning. Do you think there is too little regulation, about the right amount, or too much regulation of immediate food risks in Australia/New Zealand?".

Respondents who indicated that they thought there was too much or too little food regulation were then asked "Is that way too little/much or somewhat too little/much?". Their responses to the two components of the question were combined into one variable with five categories:

- way too little
- somewhat too little
- about the right amount
- somewhat too much
- way too much
- don't know

The second question related to broader risks to public health:
"Thinking about how much government regulation there currently is to reduce long term risks associated with food and drinks, such as obesity and diet-related diseases such as heart disease. Do you think there is too little regulation, about the right amount, or too much regulation of long term risks in Australia/New Zealand?". As with the question on immediate food risks, it was followed by "Is that way too little/much or somewhat too little/much?", and the responses were combined into one variable with the same five categories.

For analysis, the six possible responses to each of the questions on food regulation were collapsed into four:

- Too little regulation (combining way too little and somewhat too little responses)
- About the right amount
- Too much regulation (combining way too much and somewhat too much responses)
- Don't know

'Don't know' responses were retained for analysis due to the high proportion of respondents selecting it.

Table 84. Attitude to immediate and long term food risks

		AU (%) (n=800)	NZ (%) (n=802)
Immediate food risks	Too little regulation	37.8	31.0
	About the right amount	37.3	46.3
	Too much regulation	6.1	5.9
	DK	18.8	16.9
Long term food risks	Too little regulation	55.4	56.0
	About the right amount	24.3	26.7
	Too much regulation	5.9	5.9
	DK	14.4	11.5

NB: With weights applied. Percentages by column.

Type of bread consumed "other" responses

The following "other" responses were coded as containing folic acid (Australia only):

- bakery bread
- brand names mentioned (e.g. Burgen®)
- brown bread
- multigrain
- ciabatta
- chia
- high-fibre
- flat breads
- fruit bread
- homemade (as most flour and bread mixes in Australia are fortified with folic acid)
- Italian bread
- light
- low GI
- rye
- sourdough
- soy and linseed
- spelt
- Turkish bread

References to crackers and biological bread were coded as not containing folic acid.

APPENDIX E: CODING OF FREE TEXT RESPONSES

Coding for knowledge of the purpose of folic acid fortification

E1 In Australia the government makes it compulsory for all bread made from wheat, except for organic bread, to have folic acid, sometimes known as folate, added to it by the manufacturer. What do you think the intended benefit of this is?

E4 The New Zealand Government has been considering whether to make it compulsory for all bread made from wheat, except for organic bread, to have folic acid added to it by the manufacturer. What do you think is the intended benefit of this?

Australian and New Zealand respondents were asked different versions of this question to reflect that folic acid fortification of bread is currently mandatory in Australia but not in New Zealand.

Responses were coded into six categories, indicating the extent to which the answer was correct:

- specific and correct – mentions of specific functions or outcomes of folic acid fortification or specific groups (such as pregnant women)
- responses that suggested vague improvements in health (didn't mention parts of the body, functions or outcomes that would be affected)
- responses suggesting fortification would result in broad population reductions in folic acid/folate deficiency
- responses suggesting there may be non-health benefits to fortification, such as economic or consumer benefits
- incorrect health responses, where body parts, functions or outcomes were mentioned that would not result from folic acid fortification

Responses that were coded as functions or outcomes of folic acid fortification included those where the target group was correctly specified (pregnant women, unborn children), where the condition that is prevented was correctly specified (spina bifida, birth defects). Where the function of the fortification was more vague (e.g. "brain development"), it was only coded as being correct where the function was correctly paired with the target group (e.g. "babies' brain development").

Responses were coded as vague where they referred to very general health benefits (e.g. "it's good for you"), or referred to a vague group (e.g. "it would be for the health of the people who at the bread"). Where respondents mentioned women's health (but did not mention pregnancy, neural tube defects, etc.) this was coded as vague.

Responses that suggested the fortification would reduce the rate of nutritional deficiencies in the population and did not link this to the target population were coded to deficiency. This included statements such as "to boost the level of vitamin that's lacking in the diet", "for people who suffer from deficiencies", "not enough people getting the right amount of folic acid daily".

Non-health related responses included that the purpose of the fortification was to reduce the price of bread "help make it cheaper", to act as a preservative, commercial purposes "to sell it", and for flavour "to give it a better taste".

Incorrect health related responses were those where an incorrect target group was identified (e.g. "I think it is for children and elderly"), an incorrect part of the body was mentioned (e.g.

"dental health benefits like adding fluoride") or an incorrect disease/outcome was mentioned (e.g. multiple sclerosis). Incorrect nutritional deficiencies (e.g. "It would help with iron deficiency") were also coded as incorrect, as were mentions of "development" or "brain development" that were not linked to the correct target group (e.g. "I think folic acid is good for brains").

Responses such as 'don't know', 'not too sure' and 'I have no idea' were coded as 'don't know' responses. Where a response included both a don't know response and a substantive response (i.e. it was coded to any of the other codes), only the substantive response was retained. So, for example "Health benefits – couldn't say specifically perhaps digestive? I don't know" would be coded as vague ("health benefits") and incorrect ("digestive"), but not 'don't know'.

Coding for knowledge of the purpose of iodine fortification

Unlike folic acid, both Australia and New Zealand went ahead with the mandatory iodine fortification. Because of this, the questionnaire used the same question for respondents in both countries:

F1 In (Australia/New Zealand) the government makes it compulsory for all bread made from wheat, except for organic bread, to be made with iodised salt, instead of normal salt. What do you think the intended benefit of this is?

Responses were coded into the same six categories used for the question on knowledge of the purpose of mandatory folic acid fortification:

- specific and correct – mentions of specific functions, body parts and groups (such as pregnant women) that would benefit from the fortification
- responses that suggested vague improvements in health (didn't mention parts of the body, functions or groups that would be affected)
- responses suggesting fortification would result in broad population reductions in iodine deficiency
- responses suggesting there may be non-health benefits to fortification, such as economic or consumer benefits
- incorrect health responses, where body parts, functions or outcomes were mentioned that would not result from iodine fortification

As with responses to the folic acid questions, multiple codes could be applied (where relevant) to a response.

Responses that were coded as specific and correct included mentions of target groups (pregnant women, young children), where the condition or body part that is affected was (e.g. thyroid, goitre, brain function).

Responses were coded as vague where they referred to very general health benefits (e.g. "disease prevention", "it is better for you").

Responses that suggested the fortification would reduce the rate of nutritional deficiencies in the population and did not link this to a target population (e.g. young children) were coded to deficiency. This included statements such as "to give you more iodine because Australians don't have enough iodine", "it makes your people get appropriate amounts of iodine", "there are iodine deficient soils in Australia".

Non-health related responses included that the purpose of the fortification was to reduce the price of bread “it might be a little cheaper”, to act as a preservative “would be to kill germs”, commercial purposes “the producers would get more money from the iodised salt”, and for flavour “improves taste”.

Incorrect health related responses were those where an incorrect part of the body was mentioned (e.g. “stop clogging arteries”) or an incorrect disease or function was mentioned (e.g. “reducing blood pressure”, “to protect humans from radiation”), or other incorrect outcome (e.g. “lower your sodium level intake”). Incorrect nutritional deficiencies (e.g. “for people to get iron into their bodies”) were also coded as incorrect.

Responses such as ‘don’t know’, ‘not too sure’ and ‘I have no idea’ were coded as ‘don’t know’ responses. Where a response included both a ‘don’t know’ response and a substantive response (i.e. it was coded to any of the other codes), only the substantive response was retained. So, for example “I suppose to make it a little bit healthier/it might be a little bit cheaper I'm not sure” would be coded as vague (“to make it a little bit healthier”), and non-health (“it might be a little bit cheaper”), but not ‘don’t know’.

Where participants gave both a substantive response (e.g. a non-health related response) and a ‘don’t know’ response, only the substantive response was retained.

Coding for reasons for buying or consuming fortified foods

B4 What are the reasons you buy or consume foods of (food type) with added vitamins or minerals? What other reasons?

Respondents who identified a food that they buy or consume because it has added vitamins and minerals were asked why they bought that particular product. Where respondents had identified more than one food category for which they bought particular products with added vitamins and minerals, one of the product categories that they identified was randomly selected for this question. This was a free response question, with the interviewers probing respondents to try and capture all of the reasons that the respondent had for purchasing a particular product.

As respondents were providing their open-ended responses, interviewers transcribed these verbatim and assigned them to categories. FSANZ then refined these categories and created the following collapsed categories, as shown below.

Collapsing of categories for Question B4.

- general statements about healthy/ better for you
  - healthy option / balanced diet
  - assist bodily function / general well-being
  - healthier / better than others
  - better / good for you
  - energy boost / pep up
  - better than not having

- Vitamins and minerals
  - vitamin c / ascorbic acid
  - added calcium
  - iron mentions
  - iodine / iodised salt
  - folic acid / folate
  - vitamin D
  - vitamin B (not folic acid)
  - other specific vitamins and minerals
  - gets vits & mins you / kids need

- non-health/nutrition related reasons
  - taste / flavour
  - preferred brand
  - cost / price
  - kids / children mentions
  - convenience / easy / easy to use
  - habit / been brought up with it

- specific health functions
  - bone health / osteoporosis / teeth
  - food lowers cholesterol
  - iodine deficiency / thyroid problems
  - need salt / replace salts or minerals
  - re-hydration
  - lactose intolerant / don't drink dairy
  - other allergy / intolerances mentions
  - other specific health conditions / diseases
  - digest / bowel health

- Other nutrients mentioned (not vitamins or minerals)
  - provide fibre / roughage
  - no cholesterol in the food
  - have omega 3 / omega
  - less fat
  - salt reduced
  - less sugar
  - probiotics / good bacteria

- natural / lack of preservatives
  - no other preservative
  - it is natural
  -
- other
- don't know

Coding for which foods or drinks consumers believe should not have vitamins or minerals added to them

C1 What foods or drinks, if any, do you think should not have vitamins or minerals added to them?

This was a open-ended question which respondents could provide multiple responses to. As respondents were providing their open-ended responses, interviewers transcribed these verbatim and also assigned them to one of 25 food product categories, or to one of the following response categories:

- No foods should have fortification
- Want no restrictions, so long as labelled
- No opinion/ doesn't matter
- Don't know/ unsure