Food Standards Australia New Zealand.

Consumer research investigating the use of formulated supplementary sports foods.

FINAL REPORT

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1. Executive summary

1.1. Introduction

Colmar Brunton Research (CBR) was commissioned by Food Standards Australia New Zealand (FSANZ) in April 2010 to conduct research into the cognitive and behaviour approaches to purchasing and consuming sports foods and sports drinks to feed into the risk analysis processes required in a review of Standard 2.9.4 Formulated Supplementary Sports Foods.

The key objective for this qualitative research was to provide introductory exploratory qualitative consumer research to inform decision-making processes in the review of the regulation of formulated supplementary sports foods. The more specific objectives were to collect qualitative data on consumers':

1. knowledge and awareness of sports foods and drinks
2. perceptions and attitudes towards sports foods and drinks
3. purchase behaviours of sports foods and drinks
4. consumption behaviours relating to sports foods and drinks

1.2. Methodology

Colmar Brunton Social Research (CBSR), with assistance from The Research Agency (operating under Colmar Brunton Research (CBR)) undertook this qualitative research in a two-stage approach;

1. Phase 1: A scoping meeting between CBSR and FSANZ to determine research objectives for the qualitative research study; and
1. Phase 2: A series of ten 90 minute face-to-face focus groups with segmented groups: **people consuming sports foods and drinks and engaging in physical activity, people not engaging in physical activity and still consuming sports foods and sports drinks**, and **parents of children** (aged under 15 years) **consuming sports products.** Groups were conducted in Adelaide, Sydney, Brisbane, Wellington, and Auckland.

The research was conducted between **18 May** and **1 June 2010.**

This report presents the findings of this research.

This research uses a standard qualitative methodology. This type of study provides a wealth of information, both from breadth and depth perspectives, that a quantitative study – such as a survey – is unable to achieve. Consequently, the findings are exploratory and, while they are reflective of the respondents' use of the sports products, cannot be used to generalise about broader populations.

1.3. Key findings

In order to explore what respondents perceive to be a *sports food,* or a *sports drink*, these categories were purposefully left open and undefined for respondents to interpret in their own way. This was done to determine which products were felt to be similar, and which were felt to be dissimilar, from the respondents' perspectives.

1.3.1. Sports foods

Respondents generally interpreted *sports foods* as a broad food category comprising products such as powders or pre-made shakes (protein or protein/carbohydrate), bars (protein or protein / carbohydrate), gels and 'goos', through to liquids (some respondents included electrolyte drinks as a sports food).

A range of sports food brands and types featured in the respondents' repertoire, particularly for New Zealand respondents. Discussions elicited a greater variety of brands, product types, and flavours of sports foods from New Zealand respondents, compared to those from Australia.

In New Zealand, respondents reported high availability of sports foods in mainstream outlets, e.g. supermarkets. An increasing emergence and availability of sports foods was reported by Australian respondents; for example, respondents had noticed the presence of protein powders and bars in particular in supermarkets, health food stores and pharmacies, transitioning from original outlets such as gyms and workout stores (e.g. GNC, Planet Max, Workout World).

Sports food consumption varied from daily to monthly, depending greatly on the level of exercise and type of respondent (active vs sedentary), as well as intended goal. Intended goals (primary reasons for consumption) included:

1. *Performance enhancement* (active respondents),
2. *Muscle recovery from exercise* (active respondents),
3. *Weight loss or maintenance* (active and sedentary respondents), or
4. *Weight and muscle gain* (active and sedentary respondents).

Respondents tended not to eat multiple sports foods in the same eating occasion, but some had multiple eating occasions throughout a single day. Active respondents who were trying to achieve *performance enhancement*, *muscle recovery*, or *weight/muscle gain* goals, tended to eat sports foods in addition to their general diet. Both active and sedentary respondents who were trying to *lose or maintain weight* tended to substitute meals such as breakfast or lunch, and snacks, with sports foods. For this group of respondents, sports foods were seen as a healthy meal replacement in the morning or mid afternoon, or an alternative to a sugary or fattier snack food such as potato chips or a chocolate bar.

Australian respondents' sports food preferences tended to centre around *product type* (e.g. protein shake, protein bar), but brand loyalty was lower than in New Zealand (especially among sedentary respondents). Across both countries, motivations such as price, convenience, taste, flavour and texture, were key factors in purchase and consumption decisions, as well as taking recommendations from peers, coaches and trainers.

In general, respondents perceived sports foods to be healthy. They also believed sports foods delivered what they expected. For example, overall, respondents who consumed sports foods (e.g. protein powders, bars) had expectations that sports foods provide protein to the diet, as stated on the food packaging. Respondents consumed sports foods of this nature for specific supplementary nutrition purposes, not under any misconception of other health benefits of sports foods. This was the same for sports drinks: overall, respondents drinking electrolyte drinks did so for reasons such as thirst and hydration, and did not expect any other health benefits.

While all respondents who ate sports foods initially consumed these products in addition to exercise/sport, where the respondent had changed to a sedentary lifestyle the sports food consumption tended to continue.

Respondents reported looking at the back of the label on sports foods for first purchases of a new product, but not for repeat purchase. For first purchases, salient macronutrients such as protein and fat, as well as energy (kj), were considered by looking at the nutrition information panel (NIP) and comparing more than one product. However, respondents did not have a specific amount of desired nutrient in mind that would drive a purchase solely, but instead used this information to compare products and get the most value for money. The front of labels is looked at in repeat purchase for information on flavour.

1.3.2. Sports drinks

In general, respondents considered sports drinks to be:

1. Electrolyte drinks;
2. Having some similarities to formulated beverages (one participant considered “Vitamin water” to be a sports drink);
3. In a different category to formulated caffeinated beverages (FCBs) based on intended function (although there was acknowledgement that some people consume these drinks in the context of exercise);
4. Often a better alternative to water in delivering functional benefits such as hydration, energy and stamina, muscle recovery, and cramp-relief during or after intense exercise (by active respondents); and
5. Healthier than carbonated beverages when thirsty or lethargic (by sedentary respondents).

Respondents in Australia and New Zealand generally named Powerade or Gatorade as the preferred sports drinks they consumed.

Marketing of sports drinks was felt to have persisted for the last couple of decades. Australian respondents mentioned marketing of sports drinks via NRL games, all codes of football, sporting clubs, ads on TV, billboards in train stations, on the sides of buses and in ad shells at bus stops. Although originally marketed for elite athletes, respondents felt that marketing is aimed at the general public, and this is certainly supported by the prominence of sports drinks (e.g. vibrant colouring, labelling and substantial shelf coverage), and availability of sports drinks for purchase at many venues and outlets.

Respondents reported seeing sports drinks sold at supermarkets (aisle and point of sale), corner stores, sporting events, sports club houses, petrol stations, railway station vending machines, food

courts, sandwich shops and so on. There was a feeling that these products stand out next to other products due to their bright colours and packaging.

As in the case of sedentary respondents, many active respondents reported drinking sports drinks when “on the run” and thirsty, when hot or outdoors in the sun, or when needing energy due to feeling flat or lethargic. There was some mention of using drinks for hangovers, mainly among younger respondents. One participant reported drinking electrolyte drinks during pregnancy to relieve cramps.

Perceived health benefits in addition to functional benefits of sports foods mentioned by respondents included supplementing the diet for people needing sugars or carbohydrates, e.g. people with eating disorders, or potentially those with Type I diabetes.

There was a general wariness amongst some active Australian respondents about adolescents and children consuming sports drinks, but a general uncertainty as to why or what was in the drinks beyond electrolytes and sugar. Respondents also thought that people with Type II diabetes should not necessarily be drinking electrolyte drinks, and similarly people trying to lose weight, due to the high levels of sugar.

Respondents looked at labelling to differing degrees. Active and sedentary respondents tended to look only at the front of the label or the colour to choose flavour. In contrast to sports foods, (where price is seemingly a key driver of purchase decision), respondents reported to have higher brand loyalty, and this is often tied to taste or flavour/colour. The back of the label was not looked at prior to purchase for many respondents across both countries, but this was due to the established nature of the product in respondents’ diets.

With first purchase of new products, respondents expressed that they might consult the nutrition information panel to compare products regarding differences in nutrients; however, many noted their level of knowledge as to the drinks constituents was insufficient to allow meaningful interpretation and comparison. There was mention that the labelling of these drinks is generally too confusing with too much writing, which was patronising and frustrating.

1.3.3. Parents of children consuming sports drinks

Parent respondents with children under 15 years across New Zealand and Australia, discussed sports drinks their children drank. Children of these parents were aged between three years of age and 14 years of age.

Most parent respondents in Australia emphasised that their children consumed sports drinks in the context of sport and activity, or during hot weather or outdoors in the sun. Respondents reported that their children’s physical activity constituted intense sports such as school and club sports e.g. football, jogging or “training”, as well as playing in playgrounds. There was a general feel in these groups that children are very active and sports drinks are healthier than some other drink types such as sugary carbonated beverages.

Children under 15 years of age were introduced to the category via advertising and role modelling (from product endorsement of favourite famous athletes), school sports, and peer networks. Parent respondents in New Zealand believed sports drinks are now operating in what traditionally used to be the ‘orange juice occasion’, times to rehydrate and replenish lost vitamins post exercise, and are

endorsed by school sports coaches, but are not necessarily seen as designated sports drinks by children. There was a belief amongst these New Zealand parents that if a sporting coach says it will help, this is a credible source, prompting a purchase decision on this recommendation.

In both Australia and New Zealand, sports drinks were perceived by parent respondents to be prominent and available for purchase from a wide variety of venues and outlets.

Most parent respondents reported not looking at the back of labels on sports drinks, as requests for purchase were made by children based on brand, colour and flavour. Many respondents reported having faith in the scientific claims visible on the front of the label, and endorsements by credible sources such as sports coaches at their child's sporting venue, or athletes in advertisements.

When encouraged to look at the labels, parent respondents in both countries found it confusing and thought the printing was too small and they automatically defaulted to looking at sugar and salt content only. No one was able to discuss with confidence a perceived acceptable level of sugar or salt.

Parent respondents of children aged under 15 years were the audience most likely to view electrolyte drinks and FCBs as being two separate categories and having different original intended purposes. There was concern that children's consumption of sports drinks could be a precursor to FCB consumption.

1.4. Conclusions

This research suggests that New Zealand respondents were more aware of, and more familiar with, sports foods and sports drinks than were the Australia respondents.; New Zealand appears to have a higher level of availability of products and brands than in Australia.

Sports drinks in both countries are now seen to be available for purchase "everywhere", and they have had an underlying presence in the minds of respondents for the past one to two decades. Responses suggested it is acceptable to consume sports drinks as part of the general diet, and this is largely based on reasons ranging from very general taste motivations, through to hydration needs from exercise or hot weather. For some respondents sports drinks were considered to be a healthier option than soft drinks.

However, consumption of sports foods seems to be for more specific reasons (e.g. performance enhancement, weight loss, weight gain, muscle recovery) when compared with that of sports drinks (e.g. thirst), at least initially. Findings from sedentary respondents suggests that a sports food can become part of a general consumer's everyday diet if the product has been used previously as part of an active lifestyle. However, in contrast to sports drinks, sports foods are unlikely to be consumed based on taste alone.

In general, across sports foods and sports drinks, brand loyalty, product preferences, and consumption patterns were not related to age group, gender, or socioeconomic status (SES); respondents ate sports foods in variable patterns across countries, groups and demographics. Psychographic variables such as lifestyle, and goals (e.g. performance, muscle recovery, weight loss, and weight gain) seemed to better indicate consumption habits.

2. Introduction

2.1. Issue background

Food Standards Australia New Zealand (FSANZ) is conducting a review of the regulatory standard for formulated supplementary sports foods.[1]

There is very little data on the consumption of sports foods and sports drinks, and what consumers understand to constitute a "sports food" or "sports drink", and where and how this delineation is made. In order to begin to explore this issue, FSANZ commissioned Colmar Brunton Research (CBR) to conduct some initial qualitative exploratory research into who may eat sports foods and drink sports drinks, and how people may define "sports foods" and "sports drinks"; what products they may perceive to be in these categories.

A brief literature search revealed very little information about consumption of sports drinks and sports food products. Sales data from 1997-2006 has shown an increase in sales of sugar-sweetened sports and energy drinks.

Purchasers of sports drinks were likely to be young males.[2] Recent (confidential) marketing data for a leading sports drink brand reveals a small proportion of the overall population are heavy consumers (four or more times per week), generally young males who exercise at least twice a week.

Around two thirds of the population are medium to light consumers of sports drinks, of both genders, young to middle-aged, exercising two or three times per week. "Rejectors" of these drinks tend to be young to middle-aged females who exercise up to twice per week. Taste has been found to be a key motivator for consumption of sports drinks.[3]

2.2. Considerations of the research

When considering the focus of this qualitative research, it was hypothesised that sports foods and sports drinks may be viewed by consumers as being in different product categories, and consumers may have different purchase and consumption motivations for sports foods compared with sports drinks. This was hypothesised due to the apparent disparate nature of respective "intended purposes", seemingly different target audience and marketing strategies for sports drinks and sports foods. For example, sports drinks are marketed as providing hydration, which addresses an issue not

[1] A **Formulated supplementary sports food** as defined in the existing Standard 2.9.4 is *a food or mixture of foods specifically formulated to assist sports people in achieving specific nutritional or performance goals*. CBR understands these products to include food types such as protein bars, energy bars, carbohydrate bars, powders, gels, "goos" for example, and drinks to include electrolyte drinks (e.g. Gatorade, Powerade) as leaders in this product category. CBR will clarify with FSANZ a suite of products of interest to form the basis for focus group recruitment and discussions.

[2] Levy, G. (2007). Shifts in purchasing patterns of non-alcoholic, water-based beverages in Australia, 1997-2006. *Nutrition and Dietetics, 64*(4), 268-279.

[3] Confidential market data (Colmar Brunton Research)

necessarily exclusive to people engaging in sports activities; whereas sports foods (e.g. protein bars, energy “goos” tend to be promoted and marketed as “building muscle” or “replenishing energy”).

Thus, in considering the research, and the possibility that consumer groups may vary based on consumption motivations (acknowledging there may be some overlap between consumption of sports foods, and consumption of sports drinks), sports foods and sports drinks were treated as two product categories when talking to respondents; (methodology is discussed below).

2.3. Objectives of the research study

The objectives of this research study were to collect qualitative exploratory data on consumers’:

1. *Knowledge and awareness of sports foods and drinks:*
    a. How consumers originally became aware of sports foods and drinks;
    b. What advertising and marketing of these products consumers are aware of; and
    c. The prominence of these products and where consumers have seen these products;
2. *Perceptions and attitudes towards sports foods and drinks*:
    a. Perceptions and beliefs around health benefits attributed to sports products;
    b. Perceptions of health risks of the product; and
    c. Perceived segments of the population for which sports product consumption is not suitable;
3. *Purchase behaviours of sports foods and drinks*:
    a. Where consumers purchase these sports products;
    b. Consumer use of labelling of these sports products; and
    c. Purchase motivations for sports products;
4. *Consumption behaviours relating to sports foods and drinks*:
    a. Consumption patterns of sports products(frequencies, seasonal consumption, variations);
    b. Motivations behind consumption of these sports products;
    c. Context for consumption (frequency of physical activity, type and intensity of exercise, seasonal variations in exercise, e.g. football season);
    d. Potential substitution of other foods with sports products; and
    e. Addition of multiple sports products in diet.

3. Methodology in Brief

3.1. Focus group segmentation and recruitment

3.1.1. Respondents and qualitative design

Overall, CBR conducted ten focus groups divided into three distinct and separate categories (i.e. sports *food* consumers, sports *drink* consumers, and parents of children who consumed sports drinks).

A qualitative research methodology was employed for this project, with focus group methodology used to elicit information from groups of respondents. Groups were semi-structured using an approved discussion guide and lasted between 75 and 90 minutes. The agreed discussion guide was used to structure the analysis and reporting of the project.

It is standard practice in market and social research to pay an incentive to respondents in qualitative research to reimburse any costs or time costs associated with participating and as a way of thanking them for their contribution. All respondents in this study were paid $80 as a 'thank you' for their time and contribution to the project.

The ten focus groups conducted were as follows:

1. Eight focus groups (with the aim of interviewing eight respondents in each group) conducted with consumers of sports food and drink products (numbers of respondents achieved in each group are displayed in Table 5 of the Appendix).
    1. Groups were stratified by sports product type (sports food or drink), geographical location (NZ or Australia) consumption level of the product (self-reported "regular", or "occasional", at least monthly), context for consumption (physical activity-related, vs not related to physical activity), and socioeconomic status (using household income as a proxy), and included both current or past consumers of sports products.
2. Two focus groups were conducted with parents of children under 15 years of age who consume sports drinks.[4] See Table 1.

[4] Recruitment was aimed to gain a sample of parents of children aged under 15 years consuming either sports foods or sports drinks; however, it was not possible to find parents of children consuming sports foods, thus sports drinks were the topic of discussion in parents' groups in Australia and New Zealand.

3.1.2. Group Structure

Table 1 outlines the structure of the ten focus groups.

Table 1: Group structure and brief description by location

Product	Brisbane	Sydney	Adelaide	Auckland	Wellington
Sports foods	Regular consumption Physical activity-related usage Higher SES*	Any consumption (at least monthly) NOT related to physical activity Mixed SES	Parents of children (under 15 yrs) Consume any sports foods or drinks (at least monthly) Mixed SES	Regular consumers Physical activity-related usage Lower SES	Any other consumption (Occasional consumption: less than weekly but at least monthly) Physical activity-related usage Mixed SES
Sports drinks	Regular consumption Physical activity-related usage Mixed SES	Any consumption (at least monthly) NOT related to physical activity Lower SES	Any other consumption (Occasional consumption: less than weekly but at least monthly) Physical activity-related usage Mixed SES	Any consumption (at least monthly) NOT related to physical activity Higher SES	Parents of children (under 15 yrs) Consume any sports foods or drinks (at least monthly) Mixed SES

*Socio-economic status (SES)

3.1.3. Study Limitations

The sample of respondents gained for this study does not represent the full spectrum of users of sports products, e.g. elite and sub-elite level athletes were not specifically recruited. The study was not designed to represent key groups of sports people, or to be representative of the general population.

This study uses a qualitative methodology in order to gather detailed information on the use of sports products. This type of study provides a wealth of information, both from breadth and depth of perspectives, that a quantitative study – such as a survey – is unable to achieve. The study was not designed to gather quantitative information on consumption behaviour of sports foods and drinks.

Consequently, the findings are exploratory and cannot be used to generalise to other populations. The research provides us with information on what sports foods the respondents consume and how they use it, but does not answer questions around whether such behaviours are widespread or not. In keeping with the exploratory nature of this study, the research was designed to test the beliefs, attitudes and understanding respondents have of sports products. This type of research is not concerned with whether the beliefs, attitudes, and understandings are "right or "wrong" in a factual sense, the key goal of this research was to gather the range of the beliefs, attitudes, and understandings of respondents towards sports products, and the "lived experiences" of the respondents.

3.1.4. Data analysis and reporting of qualitative findings

The data analysis of the qualitative findings took the form of a thematic analysis and data-reduction process. CBSR formulated the reporting based on the discussion guide, and extracted key themes from the mass of verbal data noting major themes discussed by groups of respondents and individual respondents. Verbatim quotes were also extracted from revisiting the DVD recordings and these were reported to provide evidence of topics discussed.

Demographic details of respondents were reported where quotes were provided, and where major themes were discussed. Comparisons were made based on sample stratifications where they were observed. For example, common distinctions were reported between sedentary versus non-sedentary audiences, gender, age groupings, and SES, where observed. While the groups were stratified with respect to self-reported consumption level of sports products, ("regular" versus "occasional"), no differences were found for these two groups; consequently, findings presented are reported for consumers as a whole, irrespective of level of use.

The report contains a number of findings that are reported separately by country (Australia, New Zealand). While there may appear to be differences between consumers in these two countries, the qualitative methodology does not allow for any conclusions to be drawn. In addition, even if the differences appear logical and reasonable, the methodology does not allow any conclusions to be drawn on the reasons for such apparent differences.

The process of the qualitative data analysis consists of:

1. *Initial amalgamation and organisation of the data:* data from multiple interviews is collated. Organisation was based around the pre-agreed discussion guide and research objectives, which provided the structure for both the analysis and reporting.
2. *Data synthesis:* identifying the most common themes, how they relate and vary between sub-groups. This is the beginning of the interpretative process, when the researchers begin to hypothesise about possible linkages and structures in the data to inform likely conclusions.
3. *Preparation of an initial report structure and content:* this is where differences of interpretation emerge. These are further explored to ensure consistency with all the original data. At the end of this stage the conclusions are drawn against each research objective and finalised.
4. *Draft report preparation for client feedback and amendments where necessary.*
5. *Final report preparation for client approval and amendments where necessary.*

This qualitative research will provide preliminary information about who self-reported consumers of sports foods and sports drinks are, and their motivations for consuming these products. It may also provide details on dietary behaviours in relation to consumption of sports products. This initial qualitative study may inform further consumer research.

For the purpose of this report:

- *Active respondents* are defined as focus group members engaging in physical activity or sport at least monthly, and consuming sports drinks or sports foods;
- *Sedentary respondents* are defined as focus group members not engaging in physical activity or sport, and consuming sports drinks or sports foods;
- *Parent respondents* refers to the parents who were interviewed in two of the ten focus groups to talk about their children's consumption habits relating to sports drinks;
- When *children* are referred to, it is assumed that they are under 15 years of age (unless otherwise specified).

4. Findings

4.1. Sports foods

4.1.1. What are “sports foods”?

Definitions of product types that fall into the *sports foods* category were left open for respondents. This was done so that respondents could interpret this food category in their own way and inform FSANZ of what products they perceived to be in this category.

Respondents generally did not differentiate between different types of **powders or shakes** (e.g. protein or protein/carbohydrate). For example, a powder or shake classified by FSANZ as a *formulated supplementary sports food* (FSSF) was not differentiated by respondents from a protein shake FSANZ classifies as a *formulated supplementary food* (FSF). Respondents interpreted these foods to be in the same category. As a result, sports foods such as powders and shakes were discussed in Australia and New Zealand interchangeably. However, there was a general distinction made between FSSFs, FSFs and formulated meal replacements (FMRs) which respondents perceived to comprise mainly diet-specific products, e.g. Biggest Loser range, Optifast, Tony Ferguson; these were seen to be separate to sports foods.

This was a similar case for **bars** (e.g. protein or protein/carbohydrate); respondents in New Zealand and Australia did not distinguish between a bar FSANZ would classify as a FSSF or a bar FSANZ would classify as a FSF. However, again FMRs (e.g. diet-specific products such as the Biggest Loser range, Optifast, Tony Ferguson) were seen to be separate to sports foods.

Products such as carbohydrate **gels** and **‘goos’** were also viewed by respondents in Australia and New Zealand as constituting a sports food, but these foods were mentioned only briefly by active respondents engaging in intense physical activity (e.g. cycling).

The majority of respondents referred broadly to *food types*: protein powders, protein shakes and protein bars when discussing *sports foods*, and this is reflected in the reporting.

4.1.2. Awareness of sports foods

How did respondents first find out about sports foods?

When respondents were asked to think back to when they first heard about *sports foods* as a category, most recalled the introduction of protein powders and shakes to gyms, which were felt to be specifically targeted to people (predominantly men) who were looking to build or “bulk up” their muscles.

Protein powders were originally seen in New Zealand as very messy, time consuming to prepare and specifically targeted at this body building audience. However, it seems that perception of this food category may have changed, and hypotheses provided by respondents included:

1. The category has existed in New Zealand for a number of years (estimated for the past ten to fifteen years), gradually evolving to include better tasting and easier ways to consume the products;
2. Respondents have been educated about the benefits of these products beyond body building, (e.g. weight loss) by their peers, gym instructors and team mates;
3. The sports foods category is now seen as prominent in the mainstream market and targeted to mainstream consumers, as well as body builders. Some respondents spoke about protein bars being available at university tuck shops, dairies, corner stores and petrol stations.

In Australia, the sports foods category is still seen as a newer segment to the mainstream market (estimated over the past five to seven years), compared to sports drinks (the past ten to twenty years). In Australia, protein powders and protein bars seem to be the most prominent sports food types.

Australian respondents (both active and sedentary) reported being introduced to the use of sports foods through sports-related avenues such as recommendations via gyms, fitness expos, personal trainers, peers or family engaging in sport. For example, an older female participant was introduced to sports foods by her brother who was a triathlete, for weight loss reasons; another middle-aged female participant reported first trying a protein shake at her gym that was hosting a demonstration day.

Most sedentary respondents were made aware of these products through sporting channels originally, but continued consumption beyond playing sport or exercising. This was true for active respondents also, some of whom reported transition and inclusion of sports foods into their everyday diet, sometimes regardless of exercise.

These findings are suggestive of a gradual acceptance of sports foods as providing a benefit or fulfilling a need outside of an exercise context, and a blurring or broadening of intended purpose in the eyes of the respondents.

What advertising and marketing were respondents aware of?

Amongst Australian and New Zealand respondents, marketing for these products was felt to be more targeted for a specific purpose when compared to marketing of sports drinks. Sports foods were seen to provide designated physical benefits closely related to physical activity. Most recalled seeing them first at the gym, which further fuelled the idea that these foods are for “sports people” or athletes.

Sponsorship at sporting events was also seen by respondents as a key way in which they are marketed and advertised. However, unlike sports drinks, there is felt to be little in the way of television advertising around sports foods.

Marketing and advertising recall by Australian respondents included:

- Print magazines (e.g. Men’s Health magazine),
- T-shirt advertising,

- Television advertising during sporting events, e.g. Tour de France, US sports games;
- Internet advertising,
    - e.g. use of banners on social networking sites,
    - online shopping sites, and
    - US websites selling these products at a cheaper rate than in Australia.

Famous body-builders such as Ronnie Colbert were mentioned in the sedentary audience by younger male respondents who originally began drinking protein shakes when at the gym, (but continued to do so beyond gym attendance to gain weight).

There was mention of television advertising of meal replacement foods such as protein shakes, or bars, which respondents viewed as having some cross-over into the sports foods category if marketed in the context of physical activity (e.g. Biggest Loser formulated foods); however, this was generally accepted as a separate food category to *sports foods*.

Who are sports foods marketed at?

In Australia, respondents in general felt that sports foods were originally marketed for the specific purpose relating to exercise or body building activities. Active respondents held a view that these products were best used in exercise contexts, for people engaging in regular physical activity.

"They are marketed for people that go to the gym but targeted at people who do intense exercise."

(Older Male, Brisbane, Active, Higher SES)

Active Australian respondents were more inclined to believe that sports foods are still marketed towards healthy or for health-conscious people, engaging in exercise. However, there was a view from the sedentary audience that there was a cross-over of intended purpose of sports food products and similar weight loss products, and consequently a broadening of the intended audience for consumption of these types of products. That is, sports foods (e.g. protein shakes and bars) are being marketed in a more general sense, targeted not only at sports people, but the general consumer for use in everyday lifestyle activities and general diet.

Similarly, respondents felt that protein shakes and bars designated for weight loss could be considered to overlap into the sports foods market due to publicity of television shows such as The Biggest Loser (as discussed above), as well as branding of these foods, presenting them as part of an active lifestyle.

Package design (e.g. imagery, wording, colours) was noted by some Australian respondents to target different genders, e.g. the use of pink targeting women. Images such as "flames", and "dragons" on packages were viewed to be more oriented towards men. There was also mention of the use of "emotive" messages to appeal to different markets of consumers.

Where had respondents seen sports foods sold?

There was a general perception by respondents in Australia and New Zealand that sports foods are becoming more prominent in terms of availability for purchase, and are hence becoming more accepted for consumption in the general diet, not necessarily related to exercise.

Across both countries, this was thought to be due to the emerging presence of sports foods. Outlets where respondents had seen sports foods (e.g. protein powders, shakes and bars in particular) sold included:

- Supermarkets,
- Gyms,
- Workout stores, (e.g. GNC, Planet Max, Workout World),
- Health food stores,
- Pharmacies, and
- Internet online stores (Australian, New Zealand, US sites).

4.1.3. Perceptions of sports foods

What benefits do sports foods deliver?

In general, respondents reported eating sports foods to gain *functional benefits* (e.g. energy, recovery, stamina, weight loss, weight gain, muscle strength).

The functional benefits perceived from sports foods can be broken down into the following groups:

1. Performance enhancement

Providing energy to work hard; which is important when performing strenuous exercise, or when working in vocations requiring strenuous outdoor activity.

This was felt to be particularly true of the gels, which contain sugars and salts, and due to their liquid format are perceived to have greater, faster efficacy, and provide the consumer with energy required for short bursts of activity or endurance and stamina.

2. Recovery from exercise

This was important for extremely intense exercise (e.g. triathlons, sprints etc) when muscle recovery was necessary. Sports foods were perceived to be the fastest way the body can replenish lost nutrients needed for recovery.

3. Weight loss or maintenance

Sports foods were seen to deliver benefits as a meal replacement for people (particularly women) with a weight loss goal. Protein bars feature heavily in this space. There was also some mention amongst other respondents that protein bars were also used as a stop gap in between meals and were seen as a healthier alternative to other snacks.

Some respondents bought sports bars in bulk, for consumption as part of an everyday diet and snacking repertoire in place of foods such as muesli bars or chips.

"If I was feeling peckish or needed some energy I would have a Power Bar"

(Older Female, Brisbane, Active, Lower SES)

Of particular note amongst middle-aged to older women (both active and sedentary), protein shakes and protein bars were introduced into their diet later in life by personal trainers and other sports professionals as a means of weight control.

"I started eating the protein bars as a way to fill me up after the gym…my personal trainer recommended it as a way to lose weight"

(Female, Auckland, Active, Lower SES)

"I always thought they were fairly healthy because people in gyms eat them"

(Middle-aged Female, Brisbane, Active, Higher SES)

"Fills you up so much so that you don't feel like eating more."

(Middle-aged Female, Sydney, Sedentary)

In addition to active and sedentary women discussing consumption of sports foods in relation to weight loss goals, weight loss benefits of sports foods were also mentioned by two younger sedentary male respondents.

"With protein bars especially, protein breaks down slower than your carbohydrates so that's why people's hunger might be kept to a minimum...it's far more slow releasing."

(Younger male, Sydney, Sedentary, Lower SES)

4. Weight and muscle gain

Sports foods were seen as a good way to increase muscle mass and weight gain. Protein and whey powders were seen as the most effective way of doing this, mostly in conjunction with a high protein diet.

In general, respondents perceived sports foods to be healthy. They also believed sports foods delivered what they expected. For example, overall, respondents who consumed sports foods (e.g. protein powders, bars) had expectations that sports foods provide protein to the diet, as stated on the food packaging. Respondents consumed sports foods of this nature for specific supplementary nutrition purposes, not under any misconception of other health benefits of sports foods.

For example, there was a mention from one active New Zealand mother who reported giving her children whey protein powder when they were sick and found it difficult to eat and keep food down. One active New Zealand participant also reported the benefit of protein absorption for vegetarians.

These responses were provided by two respondents in the lower SES audience, but did not necessarily represent the views of the group.

Similarly, a key benefit identified in Australia was a focus on diet supplementation (not necessarily in the context of exercise).

"I always thought they were a supplement – you still need to eat healthy and drink …if you were taking 3 or 5 a day as replacement for your food that would be a worry but as a top up…if you don't use it it goes out your system"

(Older Female, Brisbane, Active, Higher SES)

"I think everybody needs a supplement no matter what you do"

(Older Male, Brisbane, Active, Higher SES)

"I think it is good that they do have minerals and vitamins in bars, 'cause some people are very divided on supplements...I just think it's an added benefit."

(Older Female, Sydney, Sedentary)

A small number of respondents in Australia (active and sedentary respondents) believed that protein shakes may be beneficial to vulnerable subgroups of the population when eaten *in addition to* foods in the general diet such as:

- Elderly people, and
- People with eating disorders or conditions requiring weight gain, e.g. anorexia, bulimia.

What other foods deliver the same benefits?

Formulated foods

As discussed at the start of this section, respondents did not differentiate between different classifications of protein powders, shakes or bars; that is, a protein shake classified as a *formulated supplementary sports food* (FSSF) was not differentiated by respondents from a protein shake classified as a *formulated supplementary food* (FSF); they were seen as the same types of foods.

However, the sedentary audience mentioned diet-specific products (formulated meal replacements; FMRs), e.g. Biggest Loser range, Optifast, Tony Ferguson as being separate to sports foods. FMRs were not viewed as sustainable, compared with sports foods.

“Natural” foods

Respondents in Australia did not generally see other formulated or “processed” food types as delivering equivalent benefits with what they perceived as sports foods. Generally, respondents tended to list “natural” whole foods generally of high protein content to provide similar benefits, such as energy, stamina, muscle strength. These foods mentioned by Australian respondents included:

- Meat, e.g. chicken, steak, tuna
- Eggs,
- Nuts,
- “filling foods” such as rolled oats and muesli,
- Brown rice,
- Dairy products,
- Pasta,
- “low GI foods”, and
- Fruit (e.g. bananas) and vegetables.

Caffeinated equivalents

In terms of caffeinated food equivalents, coffee “shots” were mentioned by New Zealand respondents as providing energy, for example before a big race.

The sedentary Australian audience also spoke about caffeinated sports foods such as “No Explode”. Younger respondents had a greater recognition for the use of caffeine-related products for physical activity compared with older respondents, who generally did not see value in caffeinated product consumption for physical activity and performance enhancement.

Other foods

Jelly beans were seen to provide a similar function as sports gels, for use in situations where a rapid or immediate energy boost is needed.

When probed about similar products outside of sports foods and meal replacements, muesli bars were mentioned by respondents in Australia and New Zealand as comparisons with sports bars as muesli bars provide some energy (from carbohydrates) and a “stop gap” between meals.

However, muesli bars were seen to lack the balanced levels of fat, carbohydrate and protein that sports bars have.

Perceived health risks: Is there anyone who should not eat sports foods?

In general, quantity of sports foods was a key factor in discussions around risk. Respondents in both Australia and New Zealand (active and sedentary) indicated that most foods (including sports foods) when consumed in moderation was a healthy perspective for diets.

For New Zealand respondents, there was little in the way of perceived health risk for the consumption of sports foods.

For active and sedentary Australian respondents, there was some concern over pregnant women and children consuming these products, but on the whole most respondents across all groups could not see why or how how pregnant women or children would consume these products, as there was no recognised functional need for these groups.

"It wouldn't be needed for younger kids."

(Younger Male, Sydney, Sedentary, Lower SES.)

In addition, Australian respondents mentioned that people with a medical condition who want to eat sports foods should get medical advice prior to consuming. One active Australian man stated that sports foods would not be suitable for people who may have difficulties processing protein. A sedentary female respondent mentioned potential kidney problems as a consequence to eating too much of a sports food.

A sedentary younger male reported products such as "No Explode" and "Beta-alanine" as sports foods which caused him to "bounce off the walls", and may not be appropriate for all, including himself in this evaluation.

"I don't understand why it [beta-alanine] was sold to me."

(Younger Male, Sydney, Sedentary, Higher SES.)

There was a small concern amongst a minority in Australia about the accumulated effects of consumption of sports foods, but this concern was not sufficient to prevent further consumption of sports foods.

What words were used to describe sports foods?

Words used to describe sports foods by active Australian respondents included:

- Filling,
- Tasty,
- Healthy,
- Convenient,
- Efficient, and
- Attractive.

Sedentary Australian respondents used the words:

- Quick fix,
- Filling,
- Convenience,
- Good taste,
- High carbs,
- High protein,
- Reputable,
- Nutritious, and
- Timing.

Words used to describe sports foods by active New Zealand respondents included:

- Effective,
- Convenient, and
- Easy.

These product descriptions were all positive; indicative of a level of satisfaction with these foods. Again, there were no obvious patterns of responses according to demographic variables such as age group, gender, or socioeconomic status (SES).

4.1.4. Purchase behaviours

Why did respondents buy sports foods?

Respondents were asked to complete a written activity (Appendix C) to provide their evaluation criteria in terms of importance for their first purchase of a sports food, compared to their current purchasing of sports food. This aimed to capture purchase motivations within the broad context of a purchase environment. Table 2 displays results for New Zealand and Australian respondents.

Reasons for *first* versus *current* purchase were very similar. Taste, convenience and price were the most commonly mentioned reasons for purchase (among active and sedentary respondents), and these were followed by functional benefits, such as energy and stamina, and general perceived "healthiness" of the products.

Table 2: Top purchase drivers (first and current) for sports foods

	First purchase reasons	Current purchase reasons
Australian respondents (N=14)	**Taste / texture / flavour** (n=11) **Convenient and easy to use** (n=7) **Price** (n=6) **Ingredients e.g. protein, carbs, fats** (n=6) **Health and other perceived benefits** (n=4) **Energy and stamina** (n=4)	**Convenience / availability** (n=9) **Taste** (n=8) **Price** (n=5) **Health and other perceived benefits** (n=5) **Meal replacement / supplement / filling** (n=5)
New Zealand respondents (N=13)	**Increased performance, helped sustain, gave results** (n=7) **Healthy option** (n=6) **Meal/snack replacement** (n=5) **Convenience** (n=5) **Ingredients** e.g. protein, carbs (n=5)	**Meal/ Snack Replacement** (n=5) **Supplement** e.g. Protein (n=5) **Convenience** (n=5) **Taste/Enjoyment** (n=5) **Healthier Option** (n=4) **Improved performance / results** (n=4)

Discussion following the self-complete activity revealed that the most common reason respondents *first* purchased a sports food (and continued to purchase sports foods) is related to the food delivering a *functional benefit* that the respondent had recognised a need for, e.g. performance enhancement, muscle recovery, weight gain, weight loss (as discussed above).

Respondents aiming to *enhance their exercise performance*, *gain weight or muscle* or *eat for muscle recovery* (categories 1, 2, and 4 above) generally had a decided set of products they selected amongst. This was generally based on recommendations by personal trainers, coaches and friends, and factors such as nutrient balance (e.g. protein vs carbohydrate levels), price, convenience and taste were important in choosing the product. Respondents reported that when they recognised a need (e.g. weight loss, weight gain), and decided to purchase a sports food to fulfil this need, their primary purchase reasons were *price, taste* (flavour) *and texture*, and *convenience*.

Price was reported as a key driver of purchase of sports foods, particularly by the Australian respondents who were not necessarily driven by brand, but purchased sports foods based on what was on special or what was cheapest at the time. This led to trialling of new brands and new flavours; price was more important than brand loyalty for a large number of Australian respondents.

"I change brands depending on what's cheapest"

(Young Male, Sydney, Sedentary, Higher SES)

Convenience was mentioned as a purchase driver of sports foods for active as well as sedentary respondents. Both male and female respondents in Australia reported that it was easy to eat a protein bar as a healthy snack, when on the go, or if time poor.

"I prefer berry and chocolate, but it just depends where I am. If I'm at a Pilates studio, they may only have one type so I'll just grab that one, but if I'm walking past a health food store I'll choose what I want and then it's just price, so whatever, if they have berry on special I'll grab three or four bars and keep them for the week."

(Older Female, Sydney, Sedentary, Higher SES)

New Zealand respondents mentioned the easy storage of sports foods (e.g. protein bars) was a key purchase reason. They are often placed in glove compartments, handbags and desk drawers for what was perceived as a 'better snack' than fattier alternatives such as potato chips or chocolate bars.

New Zealand respondents also mentioned the low melting point and longer use by date on these products, indicating that they were an ideal thing to eat whilst exercising, on the go, even on a hot day.

Taste was another key driver of purchase across both countries, especially for those with a *weight loss or maintenance* goal. As promotions and specials across different brands dictated a brand-switching purchase style, particularly in Australia, respondents had a large flavour repertoire they had tasted. Australian respondents mentioned personal preferences for various flavours of shakes or bars, as well as preferred texture.

Respondents from both countries also seemed open to innovation and reported trialling new products based on novelty of different flavours.

Some active New Zealand respondents also mentioned purchasing whey and protein powders as a way to replace depleted nutrients in the diet, e.g. for vegetarianism. These consumers are specifically looking for products that deliver protein in high volume faster than they can via traditional meal consumption.

Where did respondents buy sports foods from?

In New Zealand, supermarkets were the most mentioned outlet active respondents bought sports foods from, as the discounts were reportedly greater than at any other outlets. Additionally, supermarkets in New Zealand were reported to stock large varieties of brands, products and flavours of sports foods. New Zealand respondents perceived sports foods as expensive (even those of higher SES), but indicated they are willing to pay a premium for them as the benefits outweigh the costs. There was some mention of buying in bulk to receive a discount, waiting for special offers or promotions, and stocking up or buying from PAK ‘n SAVE.

One New Zealand respondent reported importing products from the United Kingdom, which worked out considerably cheaper.

Australian respondents reported seeing more of a presence of sports foods in supermarkets (as mentioned by New Zealand respondents); however, it seemed that the variety of brands, product types and flavours was not as broad in Australia. Mainly, Australian respondents bought sports foods from gyms, specialty sports stores (e.g. Planet Max), health food stores, and pharmacies. There was mention of buying sports foods from a particular discount pharmacy chain in Sydney, known for offering low prices on sports foods.

Some sedentary respondents (both older and younger ages) reported purchasing sports foods online in bulk. A few sedentary Australian respondents similarly reported purchasing sports foods from the United States as this was cheaper and the range was larger than in Australia. There was a level of interest in this from other respondents, which suggests the appetite for saving money on these products is high as this is something many respondents consume daily.

In general, respondents agreed that diet advice was more personalised and credible when given by personnel in specialist sports stores and gyms. Many respondents reported receiving guidance and advice on their *first* purchase of a sports food in smaller establishments, and additional purchases were repeated in supermarkets or online.

Two sedentary women reported buying sports foods wherever is convenient at the time, for example, a health food store, or wherever they can purchase some when the need arises.

Did respondents use labels on sports foods?

For many active Australian and New Zealand respondents, the front of the label on sports foods do little to attract them to the product as most reported buying sports foods based on recommendations from a sports professional (gym instructor, coach etc). When the front of packaging attracted respondents, it was generally to look at flavour. Claims were not seen as very important in swaying a purchase decision, as credibility was already delivered by the person they had received advice from. Another younger sedentary Australian male mentioned a diabetic friend who conducted research into sports foods and comparisons between different brands, types and flavours for himself, of which his friends followed also.

The majority of sedentary Australian respondents reported looking most at protein content (vs other nutrients such as sugar/carbohydrates) and flavour, and repeat purchase being based on taste.

"It's just like a quick glance. You can normally tell if they're a protein or a weight-gainer. Yeah I'll have a quick glance but they all seem to be relatively within the same margin, but I don't tend to be too picky."

(Younger Male, Sydney, Sedentary, Lower SES.)

The back of the package is often looked at when a respondent initially purchases a new product, but once they have assessed that it meets their personal requirements, they reported not looking at it again.

Key macronutrients such as protein, and fat, as well as energy (kj) were considered to be of most importance for most respondents when purchasing a product for the *first* time. This was assessed by looking at the nutrition information panel (NIP) rather than the ingredients list, as *levels* of key salient nutrients (e.g. protein, sugar/carbohydrates, fat) were attended to. Some respondents reported comparing more than one product by using the nutrition information panel, but admitted they did not have a specific amount of a desired nutrient in mind that would drive a purchase alone. Instead, when comparing more than one product, the product with the highest level of protein or the lowest level of fat (or both) would be considered optimal. The importance of this in influencing a purchase would depend also on the importance of price, taste, and texture (and sometimes brand) to the respondent.

"I just look for the protein content; it's the only thing I'm interested in."

(Male, Active, Auckland, Lower SES)

"I never used to look at any nutritional information, but now I do less exercise I just look at the fat."

(Female, Active, Wellington)

There was a mention that there is so much information on packages that it is too time consuming to read all of it. Differences in label use were not clearly defined by factors such as age, gender or SES. Psychographic factors such as lifestyle, attitudes towards products, and goals or identified need highlighted differences in label use. In order to achieve goals such as weight gain, key salient nutrients are sometimes attended to on packages, e.g. in the NIP, but flavour and price were also very important in driving purchase. Depending on goal achievement, combinations of evaluative criteria such as key macro-nutrient composition, price, taste, texture and convenience may contribute to product selection.

Some respondents acknowledged there were ingredients sports food contained that they did not know anything about, but there was a level of trust associated with products of this nature sold in Australia, and there was mention of standards associated with the sale of these products.

"*I started reading the back of mine…there was a few things I recognised and a lot of things I didn't recognise so …I don't know if any testing has been done with it …in 20 years' time if any of that is going to be good for you or not but I think, you know, as long as you're not having it for the next 50 years, there's probably no need for that. I think it's probably ok but I don't know if it's particularly safe or anything….I thought I'm not going to do this forever, it seems to be working so, I haven't heard any bad publicity but I haven't researched if it's good bad or indifferent to you. Figured everyone else is using it so…"*

(Older Female, Brisbane, Active, Higher SES).

"Because it's been so accepted you just grab it and don't worry"

(Older Female, Brisbane, Active, Higher SES)

"I'm sure those products would be legitimate, well I would hope."

(Older Female, Sydney, Sedentary)

Unprompted discussion of advisory statements showed that some respondents had a vague idea of the content of an advisory statement (e.g. not suitable for children), but many were not sure what products these statements appeared on. Many respondents in both Australia and New Zealand did not notice the advisory statement until it was explicitly pointed out in the discussion.

Some respondents mentioned recommended dosage information as part of the advisory statement

"I think it's even more important if you don't know what's in it, yeah you do need to read that in case you shouldn't have it within half an hour of having coffee or whatever, you don't know. At least if you're eating an apple, you know it's not going to hurt you, you can do whatever you like."

(Older Female, Brisbane, Active, Higher SES)

On further examination, across both countries there was some concern that the advisory statement on sports foods was difficult to find and lost in other text due to positioning and small print in many cases, and should be larger and more prominent so that parents can see they are inappropriate for children. In spite of this discussion, most respondents did not perceive any importance in advisory statements as they felt it did not apply to them and they would not change their consumption due to the statement, and these products are designed for a "specific purpose".

4.1.5. Consumption of sports foods

Which sports foods were preferred by respondents?

A range of sports food brands featured heavily in the New Zealand respondents' repertoire. Lists of sports foods below suggest that New Zealand respondents (active) may be aware of more brands and product types than their Australian respondent counterparts. Australian respondents tended to refer to product *types*, rather than by brand.

Lists below present the brands and product types consumed in the different sports food focus groups:

Wellington and Auckland, New Zealand, active respondents

- Aussie Bodies Whey Protein Isolate, Aussie Bodies extreme muscle gainer
- Balance muscle Technology fuel plus, Balance muscle technology ultra ripped protein, Balance Muscle Technology Mass gainer protein
- Bodyscience evolution WPI
- Dymatize elite liquid protein
- Endure CoQ10, Endura energy bar, Endura energy gel
- EAS Whey Protein
- GNC Leucine powder
- GU energy gel
- Horleys Protein shake, Horleys Creatine
- International Protein Extreme Carbs
- Max's Muscle Meal
- Musashi protein drink with carbs, Musashi P40 milk drink
- Powerbar protein plus bar, Powerbar ride bar, Powerbar gel blasts
- Sculpt protein bars and protein shakes
- Ultimate Nutrition Pure muscle carbs

Brisbane, Australia, active respondents

- Balance protein powders
- Dymatize Elite protein powders
- Musashi protein powders
- Protein bars – no brands mentioned
- Whey protein powder – no brands mentioned

Sydney, Australia, sedentary respondents

- Musashi protein bars
- Musashi protein whey powder
- Protein powders – no brands mentioned
- Protein plus bar – no brands mentioned
- Max's Muscle Meal
- Weight-gainer protein shakes – Optimum Nutrition, Musashi, Aussie Bodies
- Other protein bars (full-size and mini) – berry, chocolate, peanut butter

Why did respondents eat sports foods? Was this related to exercise?

Active respondents

For active respondents, sports foods consumption varied from daily all the way through to once a month, depending greatly on the level and type of exercise, which was closely related to the intended goal (discussed above in section 5.1.3; e.g. *performance enhancement, muscle recovery, weight loss / control, weight gain*).

To highlight these reasons for consumption of sports foods, respondents discussed the following perceived benefits and need delivery by sports foods:

1. Performance enhancement

The most cited reason for the consumption of sports food was a way to offer extra fuel when needed. The recognised need was clear: sports foods provide energy to work hard and are important for strenuous exercise, or when working in vocations requiring strenuous outdoor activity.

This is particularly true of the gels, as well as electrolyte drinks, which contain sugars and salts, and due to their liquid format are perceived to have greater, faster efficacy, and provide the consumer with energy required for short bursts of activity or endurance and stamina.

This group consisted of people engaging in long or intense exercises requiring stamina, e.g. jogging, cycling, triathlon.

2. Recovery from exercise

The second most cited reason for those consuming sports foods was to allow the body to recover from the trauma of exercise. Sports foods were perceived to be the fastest way the body can replenish lost nutrients needed for recovery.

This was seen as particularly important for intense exercise (e.g. triathlons, sprints etc).

3. Weight loss or maintenance

Sports foods were eaten by some respondents as a meal replacement for respondents with a weight loss goal (in particular women of varying ages); protein bars featured heavily in this area.

Other respondents also acknowledged that protein bars are seen as a healthier alternative to other snacks.

A few middle-aged and older female respondents reported consumption of multiple product types (e.g. protein bars, and protein shakes) in conjunction with other slimming products. Sports bars are often used in this instance to fill them up right before heading to the gym.

For weight loss, sports foods were also consumed by young to middle-aged active women when attending the gym; however, for some active respondents eating occasions and context for some transferred into the general diet over time.

A pregnant woman reported consuming sports foods on a regular basis around 12 months ago; she preferred eating protein bars and shakes when attending the gym, as well as eating these foods as a meal replacement for weight loss.

"I started eating the protein bars as a way to fill me up after the gym…my personal trainer recommended it as a way to lose weight"

(Female, Auckland, Active, Lower SES)

4. Weight and muscle gain

For a small number of active respondents across Australia and New Zealand, sports foods were seen as a good way to increase muscle mass and weight gain.

Protein and whey powders were seen as the most effective way of doing this, mostly in conjunction with a high protein diet.

Respondents in Australia and New Zealand reported engaging in body building or toning (e.g. weight lifting) activities at the gym, mostly weekly.

For example, one man of higher SES in his late forties wanted to build muscle mass and strength so consumed protein powders, specifically before running and weight lifting.

Sedentary respondents

1. Weight loss or maintenance

The sedentary respondents in Australia with weight loss goals consisted mainly of middle-aged to older women who had started consuming sports foods (mainly protein bars) in conjunction with exercise and gym attendance (some recommended by personal trainers). However, their consumption of sports foods continued beyond gym attendance or exercise for the same reason of weight loss.

One young male reported that his wife was a naturopath and recommended he eat protein bars for weight loss reasons.

These respondents reported eating sports foods as replacements for meals such as breakfast and lunch, as well as snacks in between meals.

2. Weight and muscle gain

Two younger sedentary males, one of whom had discontinued exercise due to injury, had begun to consume sports foods when attending the gym to do weights on a weekly basis, but had since stopped exercise. However, they both continued to consume protein powders for weight gain reasons, unrelated to physical activity.

Did respondents eat multiple sports foods?

Multiple products in the sports foods category were consumed by both active and sedentary respondents (e.g. protein shake in the morning, protein bar during the day). For example, for females in the Australian groups, protein shakes tended to be consumed in the morning, and protein bars at lunch time or for a snack.

"I was using Musashi and a couple of other brands in terms of protein bars 'cause they were easy, you just grab it and run. And shakes... I always used to wake up too late in the morning"

(Older Female, Sydney, Sedentary)

There were no respondents who reported eating multiple sports foods on the same eating occasion; consumption of sports foods occurred across different eating occasions depending on need or routine.

"I'd do the protein drink in the morning, then I've got weights at home – I'd do some weights – then I go for a run, and then I'd have an energy drink. Then in the afternoon just a protein drink in the gym"

(Older Male, Brisbane, Active, Higher SES)

Did respondents eat sports foods instead of other foods?

Across both Australia and New Zealand, food substitution or addition habits were variable, based on consumption motivation.

Respondents with a *weight loss goal* (generally women) who were active as well as sedentary tended to snack on sports foods in *substitution* for other snack foods, or eat them as a substitute to breakfast or lunch. This was generally for convenience, energy and instead of higher fat and carbohydrate snacks (e.g. chocolate bars, other muesli bars), as protein was seen to be a more efficient and longer lasting energy source providing more stamina throughout the day.

"It's definitely something I use it as a healthier alternative to some of the things I could be having."

(Younger Male, Sydney, Sedentary, Lower SES)

"My wife said to me 'Instead of eating all of this junk food, why don't you try some of this?'"

(Middle-aged Male, Sydney, Sedentary, Higher SES)

Respondents eating sports foods to *gain weight* or for *muscle recovery*, ate sports foods throughout the day *in addition to* meals; they did not substitute meals and continued to snack on other foods constituting what they perceived as a healthy diet, e.g. meat, fruit, vegetables. (This was true for both active and sedentary respondents who were consuming sports foods for weight gain reasons.)

Some active Australian respondents reported a preference for protein shakes instead of protein bars, as they perceived the bars as not "natural", and ate fruit and vegetables in addition to protein shakes. One active Australian participant mentioned the protein content of eggs, but preferred protein shakes

as they were more “palatable”. Some active Australian respondents also mentioned taking dietary supplements such as glucosamine, fish oil, and multi-vitamin tablets in addition to sports foods.

How long will respondents continue to eat sports foods?

Respondents reported intentions to consume sports foods for the foreseeable future as they meet their need and generally do not foresee see themselves changing their consumption patterns unless their physical exercise levels change and consumption may mirror this for some.

One older sedentary female expressed her need to consume sports foods to a greater extent in future to accelerate her weight loss goal achievement.

As there were no definitive brand preferences (particularly in Australia), new brands might be trialled depending on price and flavour. They were generally seen as effective in meeting needs and expectations.

In general, brand loyalty, product preferences, and consumption patterns were not related to age group, gender, or socioeconomic status (SES); respondents ate sports foods in variable patterns across groups and demographics. Psychographic variables such as lifestyle, and goals (e.g. performance, muscle recovery, weight loss, and weight gain) seemed to better dictate consumption habits.

4.2. Sports drinks

4.2.1. What are “sports drinks”?

Definitions of product types that fall into the *sports drinks* category was left open for respondents. This was done so that respondents could interpret this product category in their own way and inform FSANZ of what drinks they perceived to be in this category.

Respondents in Australia and New Zealand had discrete definitions of what a sports drink was, and this included mainly electrolyte drinks or electrolyte drink bases. Respondents talked about electrolyte drinks as brands, such as Powerade, Gatorade, Staminade, Lucozade and Musashi (electrolyte drink base). New Zealand respondents also mentioned Mizone (defined by Mizone as a “formulated sports water”).

Shakes were seen as a separate category to *sports drinks*. Additionally, formulated beverages (e.g. “Vitamin water”) and formulated caffeinated beverages (e.g. “Red Bull”) were seen by the majority of respondents as separate categories (discussed further below).

For the purposes of this report, the terms “sports drink” and “electrolyte drink” are used interchangeably unless otherwise specified.

4.2.2. Awareness of sports drinks

How did respondents first find out about sports drinks?

In Australia, respondents agreed that there has been a baseline level of awareness of sports drinks for the past one to two decades, but were hesitant to place a date on when they first became aware of sports drinks. Older respondents remembered Lucozade and Staminade being present for purchase for the past two decades.

Respondents remembered Gatorade’s original advertising campaign relating to US football and American basketball in the 1980s. There was mention of a big barrel of Gatorade featuring on US sports games at half time.

“That was the name of the team “the Gators” it helps the Gators – Gator-aid”

(Older Male, Brisbane, Active)

One middle-aged active man worked in Texas and was introduced to Gatorade when working in the sun, instead of water. One older active man reported hearing about Gatorade in a rock song which spurred his curiosity to taste it.

Free drinks, promotional activities and sports sponsorship in Australia and New Zealand had also prompted respondents to try electrolyte drinks, which in some cases lead to purchase.

What advertising and marketing were respondents aware of?

In general, advertising was thought to have played a big part in making sports drinks more prominent in the general market place. In particular, TV and radio was seen as the main way in which people were introduced to the category, through sponsorship of football games.

Marketing of sports drinks is felt to be everywhere and has persisted for a long time, but unlike sports foods, gyms were mentioned far less frequently as a place for purchase. In terms of current visibility of marketing through sports sponsorship, Australian respondents mentioned television advertising during sports games (e.g. NRL games, all codes of football), sponsorship at sporting clubs, general advertisements on TV, billboards in train stations, on the sides of buses and in ad shells at bus stops.

There was agreement in the active groups that electrolyte drinks have more of a focus on athletes at the elite level due to various marketing campaigns and product endorsements. Marketing of electrolyte drinks is seen to cleverly use athletic endorsement as a key differentiator between these drinks and other drinks. Respondents agreed that athletic endorsement can be seen to create credibility and a belief around the efficacy of the drink. Some respondents (mainly males) discussed the need for hydration and associated this with the elite level of exercise and sport presented in advertising. However, opinion was divided as there was a tendency for middle-aged female respondents to mention that the use of electrolyte drinks by active but non-elite level athletes may not be necessary.

Although electrolyte drinks are seemingly marketed towards elite athletes, respondents felt that marketing is really aimed towards the general public, and this is certainly supported by the prominence of electrolyte drinks and availability for purchase via many outlets.

In Australia, sports drinks are very prominent within many venues and outlets. Respondents reported seeing sports drinks sold at supermarkets (both aisle and point of sale), corner stores, sporting events, sports club houses, petrol stations, railway stations vending machines, food courts, sandwich shops and so on. There was a feeling that these products are now ubiquitous in the marketplace, and stand out next to other products due to the brightly coloured liquids and packaging.

4.2.3. Perceptions of sports drinks

What benefits do sports drinks deliver?

Active respondents viewed electrolyte drinks as delivering **functional benefits** such as hydration, energy and stamina, muscle recovery, and cramp-relief. Other benefits mentioned were that they taste good, and are refreshing when consumed cold.

Potential **health benefits** thought of by active respondents included the benefit of providing sugars or carbohydrates, for example for people with eating disorders, or potentially for people with Type I diabetes.

There were two older male respondents (one active and one sedentary) in the Australian groups who had medical conditions (no details disclosed), and mentioned their doctors had endorsed and directed their consumption of electrolyte drinks to assist with their conditions.

Health benefits of drinking electrolyte drinks were thought to exist only during or immediately after exercise, and no long term benefits were perceived to be delivered from these products.

Powerade was mentioned as something healthcare professionals have recommended as a way to cure ailments such as sunstroke.

"When I went to the doctors he suggested I drink Powerade because I had sunstroke…the electrolytes are like those in those powder."

(Older Male, Auckland, Sedentary)

There was also a mention from one sedentary female in New Zealand who said her friend was told by her mid-wife to freeze Powerade into ice-cube trays to suck on to help induce labour. No one else in the group had heard of this or could offer an explanation for how it worked.

There was a perception in Australia and New Zealand that electrolyte drinks may contain vitamins. Respondents felt that sports drinks are not seen as the best way to ensure your body gets vitamins, they do see it as an added bonus. There was the general belief that some vitamins, no matter how small the quantity, are better than no vitamins, which may help rationalise the heavy consumption of electrolyte drinks.

What other drinks deliver the same benefits?

In general, respondents did not view other beverage products on the market as delivering the same functional benefits as electrolyte drinks, apart from water. Water was seen to provide hydration, but for some it was seen as "a bit boring".

One sedentary younger Australian female mentioned low fat flavoured milk as having equivalent benefits for muscle recovery. Oranges were mentioned also as providing energy and sugars during sports games, e.g. football.

Soft drinks or carbonated drinks were viewed by the majority of respondents as being in a different drink category; electrolyte drinks were seen to be healthier than soft drinks.

"I think it's more of a healthy drink. You know more healthy than Coke."

(Older Male, Brisbane, Active)

"Vitamin water" (a formulated beverage) was given as an example by a sedentary younger female participant as a designated sports drink which had no difference from electrolyte drinks in the mind of this respondent. Other sedentary respondents discussed the difference between drinks such as "Vitamin water" and "Nutrient water" as being distinct from sports drinks.

In terms of caffeinated beverages, active Australian respondents did not tend to classify formulated caffeinated beverages (FCBs) in the same category as sports drinks, but saw these as very different. FCBs were consumed by some respondents but generally not in an exercise setting. However, there was acknowledgement by active and sedentary respondents that FCBs could be consumed in conjunction with exercise, and a small number of respondents reported having either done this in the past, or seen friends or gym attendees do this. In general, it was the younger Australian respondents

(three males and one female) who acknowledged this cross-over between drinking FCBs during exercise, to enhance energy levels. Middle-aged to older respondents tended to view FCBs as a completely different product type.

Two active Australian male respondents (one younger, one older) reported drinking coffee when cycling in order to gain more energy.

In New Zealand, electrolyte drinks were seen as distinctive products due to the salt and electrolyte content. Reasons for this included not only the composition of the drinks, but also the packaging (shape of the bottle and labelling) differentiating them from carbonated beverages, FCBs and water.

The closest comparisons New Zealand respondents provided were juice (e.g. Aloe Vera juice) and flavoured water drinks (formulated beverages), which were perceived to have some form of positive effect on the body. Ginseng was mentioned as delivering a potentially similar benefit in terms of supplementing the diet.

Perceived health risks: Is there anyone who should not drink sports drinks?

There was general agreement across the active groups that there was not a need for sedentary people to drink electrolyte drinks, and that they are intended for physical activity only.

For some active Australian respondents (higher SES) there was an underlying level of scepticism about electrolyte drinks and what they contained. There was a general wariness by these respondents about adolescents and children consuming these drinks, but an uncertainty as to why. However, this was not considered to apply to their own consumption of electrolyte drinks.

> *"I wouldn't give them to my kids, probably not until they're in high school. At that age they're not trying to break world records but about having fun."*
>
> (Middle-aged Male, Brisbane, Active, Higher SES)

In both active and sedentary audiences in Australia, high sugar levels were a focus for some. Respondents thought that people with diabetes should not necessarily be drinking electrolyte drinks, and similarly people trying to lose weight, due to the high levels of sugar.

Sedentary individuals were also first to name children (particularly children under five years or ten years old) as not being suitable to drink these drinks.

There was also mention by three sedentary men (two middle-aged and one older) that electrolyte drinks may have the potential to cause heart palpitations when consumed in excess, high blood pressure, more work on kidneys, and the risk of imbalance of potassium and sodium. Again, the issue of consumption of electrolyte drinks in moderation was central to this discussion.

In New Zealand, there was mention of some articles in the news about the risk of *energy drinks*, but on the whole there was little concern around the area of sports drinks within this audience.

What words were used to describe sports drinks?

Active respondents in Australia described sports drinks using the words:

- Replenish,
- Rejuvenate,
- Revitalise,
- Refresh,
- Scientific.

Sedentary respondents in Australia used the words:

- Healthy,
- Energising,
- Revitalising,
- Quick rehydration,
- Refreshing,
- Thirst-Quenching,
- Delicious,
- Orange.

These words were mainly positive evaluations of electrolyte drinks, provided by Australians.

Sedentary respondents in New Zealand described electrolyte drinks with positive words as well as words showing more scepticism:

- Trendy,
- Very expensive,
- Rip-off,
- Colourful.

Despite the price of these drinks being seen as expensive, New Zealand respondents still indicated they would continue to purchase and consume them.

4.2.4. Purchase behaviours of sports drinks

Why did respondents buy sports drinks?

The self-complete activity revealed the primary reasons respondents *first* purchased a sports drink, and why respondents continue to currently purchase sports drinks.

Reasons given by Australian respondents for first purchase were similar to reasons given for current purchase of sports drinks: Thirst and hydration, taste and flavour, and other health benefits.

Reasons given by New Zealand respondents for first purchase were again very similar to reasons given for current purchase of sports drinks: Taste, functional (health) benefit, hydration, and brand.

Table 3: Top purchase drivers (first and current purchase) for sports drinks

	First purchase reasons	Current purchase reasons
Australian respondents (N=19)	**Thirst / Hydration** (n=15) **Taste / Flavour / Colour** (n=11) **Health / functional benefits e.g. reduce cramps, replace salts and electrolytes, energy** (n=10) **Price** (n=8)	**Taste / Flavour** (n=16) **Thirst / Hydration** (n=12) **Health / functional benefits e.g. reduce cramps, replace salts and electrolytes and energy** (n=9) **Brand / Packaging** (n=7) **Convenience / Availability** (n=7)
New Zealand respondents (N=8)	**Flavour/taste** (n=6) **Health / Nutrition benefits** (n=5) **Brand association / Look** (n=5) **Hydration / Refreshing** (n=3) **Size / volume** (n=3)	**Taste** (n=6) **Health / Nutrition benefits** (n=6) **Value for money** (n=6) **Hydration / Refreshing** (n=4) **Brand association / Look** (n=4)

In the following discussion, purchase reasons revolved around *function* for active respondents (i.e. hydration, energy and stamina, cramp-relief/muscle recovery). For sedentary respondents, everyday rehydration was a key reason for purchase, as well as taste, convenience, and health.

In contrast to sports foods, where price is a key driver of purchase decision, it is not as important for most sports drink respondents. Sports drinks seem to have high brand loyalty, and this is often tied to taste or flavour. For sedentary respondents in particular who may have started drinking electrolyte drinks for exercise, these respondents seem to have established a more habitual consumption routine

and a brand relationship (with mainly Powerade or Gatorade), and reported purchase motivations of taste, price and convenience.

"I don't know what it is about the blue one, maybe it's the colour, but it feels more flavoursome."

(Male, Auckland, Sedentary, Higher SES)

"I just drink Powerade because I like the taste, everything is bad for you."

(Male, Auckland, Sedentary, Higher SES)

Where did respondents buy sports drinks from?

Sports drinks are available and prominent at many different venues and outlets (discussed above), and this may have contributed to the status of these drinks in the minds of respondents. They are often associated with promotional offers, increasing the cues to purchase.

"It's hard to avoid them really."

(Middle-aged Female, Auckland, Sedentary, Higher SES)

Active respondents reported purchasing sports drinks at:

- Sporting venues, at the kiosk or from a vending machine (e.g. during playing a netball game);
- Supermarkets – both buying in bulk or buying electrolyte drink bases in supermarket aisle, and at the point of sale;
- Corner stores or petrol stations (e.g. when on a bike ride);

Sedentary respondents reported purchasing sports drinks at:

- Supermarkets – generally at the point of sale when buying other groceries;
- Corner stores or petrol stations (e.g. when thirsty);
- University tuck shops (e.g. when studying);
- Food courts, sandwich shops (e.g. when thirsty).

Did respondents use labels on sports drinks?

Regarding label use, respondents looked at labelling to differing degrees. In general, female respondents tended to report reading the backs of labels (e.g. nutrition information panel, NIP) more than their male counterparts (this was across age groups). Also, women from households with higher SES tended to read the backs of labels more than those from lower SES households. However, this was not assessed in a quantitative manner.

Regarding *first purchase* of sports drinks, respondents expressed that they may have consulted the NIP when they purchased their favourite sports drink on the first occasion; however, this was a very long time ago for most to remember. Respondents also reported that they might consult the NIP to

compare any *new* products in future. When looking at the NIP, levels of nutrients are compared between products; however, there was a general degree of confusion as to what these drinks constitute to know what to look at in the table, as well as a lack of awareness about nutrients to know what a desired level would be. Sugar and kilojoules were the primary components of sports drinks respondents reported looking at when they referred to the NIP on rare occasions.

Regarding *current purchase* of sports drinks, in general, the NIP and rest of the back of the label was not looked at prior to purchase for most respondents across both countries. Active and sedentary respondents both tended to look only at the front of the label or the colour to choose flavour. The overall discussions suggest this may be due to the established nature of this product in the diet, as well as in the marketplace. Sedentary respondents across both countries reported they rarely look at the label and tend to purchase sports drinks based on their perceived need or want at the time, e.g. thirst, lethargy, taste, price promotion.

One Australian active older female participant reported looking at the "%DI" claim on the front of the label, but could not provide an explanation as to how she used this and what it meant to her. This point confused other respondents also. There was mention by other active respondents (of both genders and across age groups) that the labelling of these drinks is generally too confusing, too much writing, which was patronising and frustrating.

One active older man (lower SES) in Australia reported paying attention to the word "scientific" on the front of Powerade bottles, whereas an active middle-aged female (higher SES) in the same group reported that this word and others such as "isotonic" made her wary of drinking electrolyte drinks due to not knowing what was in them or what these words meant. This was echoed by another younger active male and two females (higher SES) who reported a tendency to want to research and understand ingredients in food and drinks, to purchase more "natural" sports foods and drinks when possible. Again, this difference in SES was fairly consistent across groups, but this was not quantified in any way, and caution must be exercised when reporting this finding.

With reference to advisory statements, there was discussion that when these are required on foods and drinks, they are generally too small or hidden. Respondents were provided with examples of packaging for electrolyte drinks, a formulated beverage and an FCB, and reported the advisory statement on the FCB was too obscured and difficult to find, let alone notice without prompting. Most respondents stated that advisory statements would need to be bigger to command attention.

There was also a suggestion that because the advisory statement is easy to filter out or miss due to close proximity to other information (e.g. the NIP), it may be better suited in a more prominent area, e.g. on the front of the label. However, in terms of the content of the advisory statement, most respondents also reported an advisory statement would not prompt a change in their purchase behaviours as they did not fall into the categories (e.g. pregnant women or children), thus not needing to pay attention here.

In terms of labelling of recommended volume for daily consumption, most respondents did not pay attention to this label component, and tended to drink electrolyte drinks on the basis of recognised personal need, i.e. thirst and need for hydration, convenience, energy, and so on.

4.2.5. Consumption of sports drinks

Which sports drinks were preferred by respondents?

In Australia there was widespread mention of either Powerade or Gatorade (pre-mixed beverages) as the favoured sports drink. Older male respondents reported using electrolyte drink bases (such as powdered Staminade and Gatorade) either exclusively, or in addition to pre-mixed electrolyte drinks.

Broadly, younger active and sedentary respondents tended to prefer Powerade, whereas older respondents preferred Gatorade and mentioned previous consumption of Staminade and Lucozade. Powerade was also the dominant sports drink mentioned in New Zealand discussions.

Interestingly, one Australian younger female sedentary participant was a consumer of “Vitamin water” and labelled this a sports drink.

Across both countries preference was most often driven by the flavour and colour of the products, with blue Powerade being the clear favourite. Purchase and consumption behaviour of sports drinks seem to be habitual and routine, based on taste first and foremost, followed by brand.

Why did respondents drink sports drinks? Was this related to exercise?

Active respondents

For active respondents, reasons for consuming sports drinks were for hydration, stamina and cramp-relief during or after physical activity.

Active respondents in Australia reported drinking electrolyte drinks:

- During and after *intense exercise occasions*, such as:
    - cycling,
    - netball games,
    - volleyball games,
    - touch football games,
    - jogging, and
    - working out at the gym.

- During and after *moderate or recreational exercise occasions* such as:
    - walking outdoors
    - walking on the treadmill, and
    - golf.

One older active male participant in Australia drank electrolyte drinks because of an undisclosed medical condition necessitating he consume it when engaging in physical work outdoors.

Exercise events were reported to occur *weekly to monthly* for active respondents.

The majority of respondents reported drinking water prior to exercising, and drinking electrolyte drinks either *during* intense exercise when needing hydration or an energy boost, or *after* exercise to hydrate and replenish salts lost in sweat.

Some active respondents also reported drinking electrolyte drinks outside of exercise occasions.

"Sometimes I will just drink a Powerade. It doesn't have to be related to sport."

(Younger Female, Brisbane, Active, Lower SES)

However, most had a strong view that electrolyte drinks should be consumed in an exercise-related context, or at least by people who participate in exercise.

Sedentary respondents

For sedentary respondents in both countries, sports drinks were seen as a way to rehydrate and deliver some extra energy, which was not just confined specifically to sports activity. Reasons for consumption may have originated from sport, but were now due to taste, energy and stamina (e.g. an exam), and as a thirst-quencher in hot weather.

Sedentary respondents reported drinking electrolyte drinks when they:

- were "on the run",
- were hot and/or thirsty,
- needed energy,
- had a hangover, and
- were feeling flat or lethargic.

One participant reported drinking electrolyte drinks during pregnancy to relieve cramps.

Hangovers were seen as a key occasion across both countries whereby sports drinks assist: they were seen as an effective way to replenish lost salts and nutrients after a night of drinking alcohol. New Zealand respondents also reported they were consumed in conjunction with daytime drinking in the summer, alternated between beers to keep rehydrated whilst drinking alcohol in the sunshine.

"I drink Powerade on a Sunday morning when hungover."

(Younger female, Auckland, Sedentary, Higher SES)

In New Zealand, sports drinks dominate 'heavy rehydration' drinking occasions, as the size of the drinks were considered to offer value for money compared with other accessible drinks such as carbonated beverages. In New Zealand, when sports drinks enter the consumption repertoire, they may tend to migrate into non-physical activity related occasions as well.

Did respondents drink sports drinks instead of other drinks?

Water was mentioned by all Australian respondents engaging in physical activity as being a key drink consumed before, during and after exercise. However, electrolyte drinks were consumed by these respondents when extra energy and hydration was needed.

Sedentary individuals reported choosing to drink electrolyte drinks instead of soft drinks (carbonated beverages), if purchasing for thirst reasons, as they were seen to be healthier than soft drink.

New Zealand sedentary respondents reported replacing their fruit juice consumption during sport with consumption of electrolyte drinks. These respondents spoke about how they viewed electrolyte drinks as an alternative to water and a way to ensure they get enough fluids in their systems.

Within both countries, across both active and sedentary respondents, consuming enough water was identified as a problem for some respondents who mentioned they did not like the taste of water, and electrolyte drinks are consumed instead in some cases. Some active Australian respondents also reported water was “a bit boring”, and electrolyte drinks were seen as flavoursome and preferred for these respondents.

4.3. Children's consumption of sports drinks

4.3.1. What do parents think are "sports drinks"?

In order to explore what respondents perceived to be a *sports drink,* interpretation of what product types fall into this category was left open for parent respondents of children aged under 15 years to provide their own interpretation.

Parent respondents, like other respondents in Australia and New Zealand, had discrete definitions of what a sports drink was, and this included electrolyte drinks. Respondents referred to electrolyte drinks using their brand names, such as Powerade and Gatorade in Australia, and Mizone in New Zealand.

For the purposes of this report, the terms "sports drink" and "electrolyte drink" are used interchangeably unless otherwise specified.

4.3.2. Awareness of sports drinks

How did parent respondents and their children first find out about sports drinks?

Parent respondents reported knowing about sports drinks for a very long time, in most cases between one and two decades. Lucozade and Staminade were discussed as the first brands to introduce electrolyte drinks to the market. Parent respondents had a real understanding about the brands that exist as they often see the new products in store before their children do, for example in the case of new electrolyte drinks such as Mizone in New Zealand, and Musashi electrolyte drink base in Australia.

Parent respondents reported that their children were aware of Powerade primarily, as this seemed to be the product of choice, and some were also aware of Gatorade.

The primary ways in which children became aware of electrolyte drinks included:

1. *Sports coaches introducing children to sports drinks*
   There was a belief amongst New Zealand parent respondents that if a sporting coach says it will help, this is a credible source, prompting a purchase decision on this recommendation.

2. *Via television advertising by athletes endorsing the product*
   Parent respondents in Australia talked a lot about the power of advertising (particularly on television) in influencing their children's requests for sports drinks.

3. *School friends and peers drinking sports drinks*
   Parent respondents in Australia discussed the influence of peers and other children on their own children drinking sports drinks.

"Pester power" of children was also reported to encourage and influence parental purchase occasions: when parents purchase sports drinks to appease their children. New Zealand parent respondents in particular reported their children would often reinforce their argument with either their own scientific claim or use something their coach said.

"My kids will talk to me about the science of the drink to get me to buy it."

(Mother of son under 15 years, Wellington, Higher SES)

What advertising and marketing were parent respondents aware of?

Marketing of sports drinks is felt to be everywhere and has persisted for a long time. Parent respondents discussed the high prominence of television advertising during sports games (e.g. NRL games, all codes of football), as well as sponsorship and promotion at their children's sporting clubs.

"You can't escape it."

(Father of daughter under 15 years, Adelaide, Higher SES)

There was some agreement that the primary target market for sports drink advertising and marketing is young children through to late teens. Parent respondents in both countries thought that sports drink marketing is very aggressively targeted at children with a range of channels being used including TV, print, billboard and even on social networking sites such as Facebook.

"It's World War 3 if you don't let them have it!"

(Mother of three daughters, Adelaide, Higher SES)

Parent respondents discussed that the way their children were introduced to the sports drinks category was via advertising and role modelling, school sports, and peer networks. Parent respondents in New Zealand believed sports drinks are now operating in what traditionally used to be the 'orange juice occasion', times to rehydrate and replenish lost vitamins post exercise, and are endorsed by school sports coaches, but are not necessarily seen as designated sports drinks by children.

"My son is like, mum I need this Powerade, coach told me."

(Mother of son under 15 years, Wellington, Higher SES)

Marketing of sports drinks is seen to use athletic endorsement which may be seen to create credibility and a belief around the efficacy of the drink. Powerade has a strong dominance in the New Zealand market which has often been attributed to their sponsorship of the All Blacks rugby team. Parent respondents reported that their children often aspire to be like certain elite athletes who may be role models for them, so consuming these drinks may be seen as a way of achieving that dream.

Where have parent respondents seen sports drinks sold?

In Australia, sports drinks are very prominent in many venues and outlets. Parent respondents reported seeing sports drinks sold at supermarkets (aisle and point of sale), corner stores, sporting events, sports club houses, petrol stations, railway stations vending machines, food courts, sandwich shops and so on.

"You go to the supermarket, and every checkout has a fridge with Powerade. Now if that's not mass 'here it is come get it', well..."

(Father of two sons under 15 years, Adelaide, Lower SES)

Parent respondents reported that sports drinks stand out to their children when next to other drink products due to their brightly coloured liquids and packaging.

4.3.3. Parents' perceptions of sports drinks

What benefits do sports drinks deliver?

For parent respondents in Australia, sports drinks were seen to assist with rehydration and replenishment of salts and sugars in children engaging in high levels of sport or when playing outdoors in the sun.

One father mentioned his 10 year old son had more energy after drinking electrolyte drinks particularly after intense games of football on weekends and the drink would prevent him from "collapsing on the couch after a game".

Two mothers mentioned that their children have less cramps during and after sport when they drink Powerade.

"It makes a big difference compared with water, where cramps are concerned."

(Mother of three daughters, Adelaide, Higher SES.)

One father reported that his wife was an athlete and encourages their young daughter to drink Lucozade when she drinks it when they are at the playground playing in the sun or when the weather is hot.

What other drinks deliver the same benefits?

When asked what other drinks (or foods) would deliver similar benefits, water was mentioned by parent respondents first and foremost as a drink their children consume before, during and after sport, in addition to electrolyte drinks. Parent respondents also mentioned fruit such as oranges at half time in sports games, and fruit juice.

Amongst Australian parent respondents, there was a division in opinion about the healthiness and nutrition of fruit juice. One father (higher SES) with a young daughter felt that fruit juice was more natural and better than sports drinks, but a mother of three daughters (SES not disclosed) reported that her doctor informed her family that fruit juice is very high in sugar. There was debate about the "healthiness" of electrolyte drinks in relation to fruit juice. Generally, in a sport-related context it was agreed that electrolyte drinks were preferred to fruit juice.

Australian parent respondents of younger children (children five years of age or less) reported that their children viewed these drinks as very similar to cordial; some asking for an electrolyte drink and cordial interchangeably.

In terms of other types of drinks, parent respondents in both Australia and New Zealand believed that electrolyte drinks were 'better' for their children than other drinks such as sugary carbonated beverages, e.g. Coca Cola.

"Everything you pick up has something wrong with it, you can't win!"

(Mother of children under 15 years, Wellington)

When asked about an example of a formulated beverage ("Vitamin Water") and whether parent respondents viewed this to be in the same category as electrolyte drinks, parent respondents in Australia commented on the "conservative" packaging and believed this drink would have less sugar than electrolyte drinks, but was not designed for exercise-related consumption.

Perceived health risks: Is there anyone who should not drink sports drinks?

Parent respondents in Australia also listed unsuitable groups of people such as:

- People not engaging in physical activity,
- People with diabetes, and
- Hyperactive people / children.

The only concern New Zealand parent respondents had about electrolyte drink consumption was around the sugar content. In terms of their children drinking electrolyte drinks, the concern was raised around teeth and cavities. However, this was outweighed by the other benefits around hydration and replenishment of electrolytes.

There was very little concern around the artificial colour of the products across both countries.

What words did parents use to describe sports drinks?

When asked to describe sports drinks, parent respondents in Australia used the words:

- Convenient,
- For professional athletes,
- Made to appeal to young people,
- Marketing,
- Overpriced,
- Overrated,
- Overmarketed,
- High in sugar, and
- Excessive.

At least five of these descriptors connote negative perspectives of the drinks; however, these parent respondents still believed that electrolyte drinks were suitable for their children during sport or physical activity and indicated they would continue to buy them for their children under 15 years of age.

4.3.4. Purchase behaviours of parents buying sports drinks

Why did parent respondents buy sports drinks for their children?

Parent respondents in Australia completed a short written activity within the focus group, which revealed the primary reasons respondents *first* purchased a sports drink, and why they continue to currently purchase sports drinks.[5]

The key reasons Australian parent respondents gave for *first* buying sports drinks for their children was initially for sports and exercise-related reasons. These parents believed electrolyte drinks have *functional benefits* for their children, e.g. hydration, energy and electrolyte replacement; a way for their children to have the extra stamina they needed during intense games of sport or during playing in the sun or hot weather. The next main reason provided was related to *appeasing their children* with the purchase of an electrolyte drink. For example, there were several mentions in the latter discussion that children are exposed to a large degree of advertising of electrolyte drinks on television, and through school networks and from peers, which leads to requests to parents to purchase these drinks.

These reasons were the same for *current purchase*; functional benefits of electrolyte drinks are still the most common current purchase reason for buying these drinks for children under 15 years of age.

An interesting point noticed by both Australian and New Zealand parent respondents, was that as their children have gotten older, they have started being more and more specific about the brands they request their parents to purchase. For example, Powerade seemed to be the most requested brand of electrolyte drink, and children had particular flavours or colours they preferred within the brand.

[5] New Zealand parents did not fully complete this exercise, and data was not able to be amalgamated for meaningful results here.

New Zealand parent respondents viewed electrolyte drinks as an “expensive luxury”, but continue to purchase them due to prompting from their children. Some New Zealand parent respondents introduced their children to the sports drink and energy drink categories as they drink them as adults, and therefore have their home fridges stocked with these drinks. Some younger children have learned to ask for these drinks as they see other family members drinking them.

Table 4: Top purchase drivers (first and current purchase) for sports drinks

	First purchase reasons	Current purchase reasons
Australian parent respondents (N=6)	**Functional benefits e.g. children’s thirst, hydration, energy and salts replacement** (n=5) **Appease children** (n=4) Other reasons stated included; price, curiosity, taste and colour, recommendation and convenience	**Functional benefits e.g. children’s thirst, hydration, energy and salts replacement** (n=5) **Appease children** (n=4) 3 stated price (one parent mentioned 2 for the price of 1 at service stations)

Where did parent respondents buy sports drinks from?

Parent respondents in both countries echoed the same sentiments expressed by adult sports drink consumers in the other groups, that sports drinks are available almost everywhere, and are prominently displayed for purchase at a variety of venues and outlets (discussed in more depth in earlier section above).

Parent respondents in Australia and New Zealand reported purchasing sports drinks for their children at:

- Sporting venues at the kiosk or from a vending machine (e.g. during or after a Saturday morning sports game their child is playing);
- Supermarkets – both buying in bulk from the supermarket aisle to stock the fridge, or at the point of sale when children request them after sport;
- Corner stores or petrol stations (e.g. usually when on the way to or way home from a sports game).

Did parent respondents use labels on sports drinks?

Parent respondents looked at labelling to differing degrees. Parent respondents stated that they did not look at the back of the label prior to purchasing sports drinks as they have established purchasing patterns for their children, and much of the time they are appeasing their children, who are most concerned with brand, flavour and colour.

"Not me... I basically just go for the colour, I like the blue one."

(Father of son under 15 years, Adelaide, Higher SES)

There was mention about the brightness of the packaging, and the endorsement by sports organisations and sports committees which are displayed on labels. These components of the labels are thought to attract children to the packaging, and are seen to be credible endorsements which may increase purchase.

In Australia, there was an underlying recognition by parent respondents that they were not confident that they knew what was in electrolyte drinks, and that brands could have possibly reformulated the electrolyte drink composition over the many years they have been available for purchase, unbeknownst to parents.

"I remember initially looking at the label and thinking there's not much wrong with this, but if you asked me what was in there now, I couldn't tell you. They could've changed it and put all sorts of horrible things in there and I wouldn't know, 'cause I haven't checked."

(Father of two sons under 15 years, Adelaide, Lower SES)

Most New Zealand parent respondents reported never looking at the label of sports drinks. They reported having faith in the scientific claims, and endorsements by credible sources such as sports coaches or athletes endorsing the product. Responsibility seems to be deferred to these sources as to whether sports drinks are beneficial to their child.

"The All Blacks endorse the drinks right? They would never endorse it if it was that bad for you."

(Mother with child under 15 years, Wellington)

When encouraged to look at the labels, parent respondents in both countries found it confusing and thought the printing was too small and they automatically defaulted to looking at sugar and salt content only. No one in the groups was able to discuss with confidence what they perceived to be an acceptable level of sugar or salt for an electrolyte drink. Percent daily intake information was not well understood in terms of how to reconcile consumption of all key nutrients (e.g. sugar) per person over a day.

With reference to advisory statements that occur on drinks such as formulated caffeinated beverages, (FCBs) there was discussion that these are generally too small or difficult to see. Parent respondents in both countries viewed electrolyte drinks as precursors to FCBs (discussed below).

4.3.5. Children's consumption of sports drinks

Which sports drinks are preferred by children?

Parent respondents in Australia and New Zealand indicated they had children under 15 years who drank sports drinks. The children of these groups of parents were aged between three years of age, to 14 years of age.

Parent respondents talked about their children having a large repertoire of drinks in their diet, across many different categories, including fruit juice, cordial, formulated beverages, and sports drinks. In terms of sports drinks, across both Australia and New Zealand Powerade was the key brand requested of parents by their children to buy.

In New Zealand, Mizone is seen as a slightly less sugary sports drink, and it's something parents in the group reported trying to prompt their children to drink instead of more sugary sports drinks.

Why did children drink sports drinks?

The majority of parent respondents in Australia emphasised that their children consumed sports drinks *in the context of sport and physical activity*, with a small minority mentioning consumption in the context of hot weather.

Children's physical activity mentioned by parent respondents included:

- Intense sports such as school and club sports:
    - football,
    - jogging, or
    - "training",
- Playing in playgrounds,
- Playing during hot weather.

A middle aged father with two young sons reported they drank Powerade every weekend after football games to prevent post-game fatigue. A mother with three daughters mentioned that her daughters were only allowed to drink electrolyte drinks when they are playing sport.

"I have three girls... They're very sporty kids. I only let them have it when they're playing sport. They'd have it 24/7 if I let them."

(Mother of three daughters under 15 years, Adelaide, Higher SES.)

One Australian father mentioned that his young son consumed sports drinks in hot weather, and this was acceptable to him as young children have a lot of energy and burn a lot of energy due to their high levels of activity.

"I have a son...he's three, and you could say he's just starting off on drinking this stuff, Powerade, in the hot weather, but mainly water."

(Father of son under 15 years, Adelaide, Higher SES.)

New Zealand parent respondents also talked about their children being introduced to electrolyte drinks through sport, and their coaches encouraging consumption here.

Motivations for consumption that may have emerged within an exercise-related context, may have extended to children requesting electrolyte drinks based on taste and flavour.

"If my kids had their way they would just drink these all the time."

(Mother of son under 15 years, Wellington, Ligher SES)

"They would drink it for breakfast if they were allowed to."

(Father of two sons under 15 years, Adelaide, Lower SES)

Even though parents were in general strict on children consuming electrolyte drinks in the context of sports and physical activity, parents across Australia and New Zealand were conscious that their children (generally over 5 years of age and at school) drank electrolyte drinks for image-related reasons. This may be due to role-modelling of celebrated athletes (e.g. the All Blacks). A mother in Adelaide said that her daughter used to keep empty Powerade bottles and fill them with coloured cordial to pretend she had a Powerade at school.

Parent respondents in New Zealand spoke of their children spending their pocket or lunch money on electrolyte drinks such as Powerade, and often this was purchased with friends as well when 'two for five-dollar' deals were in store.

Did children drink sports drinks instead of other drinks?

Parent respondents in Australia spoke about their children drinking electrolyte drinks in addition to water when playing sport and being active; but instead of drinks such as cordial, fruit juice and carbonated beverages. In New Zealand, parent respondents reported seeing sports drinks as bridging a gap between water and a carbonated beverage; such that sports drinks offer flavour, with less sugar and no carbonation a soft drink has, plus the hydration of water, appropriate for sports and related physical activity.

Interestingly, in terms of children's preferences, parent respondents reported young teens see sports drinks as differentiating them from younger counterparts.

"It is like something they can only have. They say 'I'm big so I am allowed to drink this drink'…it's like the drink they have before they get to alcohol and then they mix that with their energy drinks."

(Mother with children under 15 years, Wellington)

It was also seen by some to be a drink which is a precursor or introduction to other drinks such as FCBs.

"I'm scared that my kids will now be heading into the 'V' and 'Mother' phase – once they hit high school it'll be all these energy drinks."

(Father of two sons under 15 years, Adelaide, Lower SES)

"I reckon in five years time there won't be much Powerade around, it'll all be Mother and Red Bull."

(Mother of three daughters under 15 years, Adelaide, Higher SES)

It was clear in Australia that parent respondents believed that electrolyte drinks should be consumed by their children (under 15 years of age) in exercise of physical activity situations. They recognised that their children preferred the taste of certain flavours and colours of particular brands, but reported being strict with their children that electrolyte drinks were always consumed in conjunction with water in the context of sport or physical activity, especially in hot weather.

Parents in both countries accepted that their children see electrolyte drinks as a status symbol, consuming these for image-related reasons, and purchasing them at school with their pocket money.

There was general agreement by parents that sports drinks are healthier than carbonated beverages, and replacement of these drinks with electrolyte drinks (predominantly related to sport or in hot weather) was accepted by parent respondents in New Zealand and Australia.

5. Summary & Conclusions

In order to explore what consumers perceive to be a *sports food,* or a *sports drink*, definitions of what product types fall into these categories were purposefully left open for respondent interpretation. This enabled respondents to inform FSANZ of what product types people perceived to fall into these categories, and why.

Participant definitions of sports foods and drinks

In terms of sports foods, respondents generally interpreted *sports foods* as being a broad category mainly comprising powders, pre-made shakes, bars, gels and 'goos', and in some cases liquids (some respondents included electrolyte drinks in the category). For Australian respondents, protein powders and protein bars seem to be the most commonly consumed sports foods.

Sports drinks were perceived in New Zealand as a large category incorporating electrolyte drinks, e.g. *Powerade, Gatorade*, some formulated beverages, e.g. *Nutrient Water*, and having the potential to include formulated caffeinated beverages (FCBs), e.g. *Red Bull, Mother*. For Australian respondents, electrolyte drinks were seen as a separate and distinct product category to FCBs; however, respondents acknowledged that there could be overlap in perceived functional benefit of both types of beverage, such that FCBs could be and had been in some cases consumed in the context of physical activity.

On the whole, after initial discussions there was general agreement across all groups that electrolyte drinks and FCBs have different original intended purposes and should be used differently; this was particularly noted amongst parent respondents (respondents with children aged under 15 years consuming sports drinks). However, there was concern that children's consumption of sports drinks could be a precursor to FCB consumption.

Sports food and drink availability and marketing

Responses from respondents suggested that New Zealand offers a greater variety of sports food brands, product types, and flavours, compared to Australia. However, there was a general perception amongst Australian respondents that sports foods are gaining more prominence and tending towards becoming accepted into mainstream venues and outlets. This was thought to be due to a perceived emerging presence and availability for purchase of sports foods (e.g. protein powders and bars in particular).

Respondents reported seeing sports foods sold at venues and outlets such as supermarkets, health food stores and pharmacies, transitioning from original outlets such as gyms and workout stores (e.g. GNC, Planet Max, Workout World).

Sports drinks in both countries are already seen as available for purchase “everywhere”, even in non-sports or exercise-related venues and outlets, e.g. supermarkets, petrol stations, cafes, and food courts.

Marketing of sports drinks was perceived to be “everywhere” also, including main media sources, e.g. television, radio, print, internet, as well as on buses, and billboards. Australian and New Zealand respondents felt that the marketing of sports drinks targeted the general public (including children), as well as athletes and people who engage in exercise.

There was a widely acknowledged perception that marketing and advertising using sporting role models endorsing sports drinks was a clever way in which to raise awareness of sports drinks amongst children, in order for them to request parents to purchase these products.

Marketing and advertising efforts for sports foods were felt to be much lower, with most respondents only recalling seeing the occasional print advertisement in specific magazines or internet advertising.

Purchase motivations for sports foods and drinks

Respondents reported purchasing sports drinks not only due to the identified functional benefit the drink delivers (e.g. hydration or energy and stamina in an exercise context), but also due to motivations such as taste, and convenience. Active and sedentary respondents reported consuming sports foods and drinks outside of sporting contexts also.

There were very strong brand relationships with electrolyte drinks within both countries, such that brand, followed by colour/flavour of sports drinks were very important in driving purchases across both countries, all age groups, socioeconomic status, and across genders. Many respondents (active and sedentary) reported purchasing sports drinks outside of exercising occasions, often for general thirst reasons.

Parents reported being strict believers that electrolyte consumption by their children was to occur in relation to sport or physical activity, especially in hot weather. Parent respondents purchased electrolyte drinks for their children much of the time to appease them, as well as provide them with energy and hydration during sport and exercise. In relation to other drinks their children requested, parent respondents believed electrolyte drinks to be healthier than sugary carbonated drinks, but not as healthy as water, and reported encouraging consumption of sports drinks in conjunction with water, during, or after sport.

Parent respondents in New Zealand believed sports drinks are now replacing fruit juice consumption during sports games, and are endorsed by school sports coaches. Amongst Australian parent respondents, there was a division in opinion about the healthiness and nutrition of fruit juice, with discussion around high sugar content, and naturalness. There was debate about the “healthiness” of electrolyte drinks in relation to fruit juice. Generally, in a sport-related context it was agreed that electrolyte drinks were preferred to fruit juice.

Children across both countries preferred Powerade, and most had strong preferences for certain colours and flavours. Parent respondents reported a strong brand relationship with certain electrolyte drinks, such that these drinks were consumed at school for reasons such as image and status.

The key differentiator observed for sports foods (and not sports drinks) was *intended goal*, which formed the primary reason for consumption of sports foods within each country. Across Australia and New Zealand, respondents reported that their intended goals driving their consumption of sports foods included *performance enhancement*, *muscle recovery*, *weight loss or maintenance*, and *weight or muscle gain*. Demographic similarities were observed within two segments in particular: middle-aged and older females were the primary respondents who ate sports foods to achieve a *weight loss or maintenance goal* (sedentary and active); and younger and middle-aged males were the primary respondents who ate sports foods to achieve a *weight or muscle gain goal* (sedentary and active).

Respondents who reported buying sports foods to satisfy a *weight/muscle gain* or *recovery* goal reported selecting products based on key ingredients such as protein or carbohydrate level (e.g. to provide energy or stamina), followed by brand, price and taste. Whereas, respondents with a *weight loss* goal reported purchasing products primarily based on price, taste/texture and convenience.

In general, across all groups across countries, respondents could clearly articulate a personal need, which they believed a sports food or drink would fulfil beyond what other foods could offer. In general, respondents both perceived sports foods to be healthy and believed sports foods delivered what they expected; for example, providing protein to the diet, as stated on the food packaging. Respondents consumed sports foods of this nature for specific supplementary nutrition purposes, not under any misconception of other health benefits of sports foods. This was the same for sports drinks: overall, respondents drinking electrolyte drinks did so for reasons such as thirst and hydration, and did not expect any other health benefits. There were no recognisable differences based on demographic variables for perceptions of health benefits of sports foods or drinks, or consumption patterns of these products, and there were no obvious or quantifiable differences in responses based on socioeconomic status (SES), age, or gender *within* groups.

Labelling use

Labelling of sports foods and sports drinks in general was not attended to greatly by respondents (including parent respondents) in Australia and New Zealand for repeat purchases. Labelling on the front of sports foods and drinks were looked at in order to choose brand and flavour. The back of labels were looked at for *first purchase*: nutrition information was used in product comparisons, using a key salient macronutrient such as protein (in purchases of sports foods).

The reverse side of labels on sports drinks were not attended to at all, as these drinks had a significant history of prolonged purchase in Australia and New Zealand. Brand and flavour, and to a lesser extent price, were more important in purchase decisions.

Discussion of advisory statements showed that some respondents had a vague idea of the content of an advisory statement (e.g. not suitable for children), but many were not sure what products these statements appeared on. Many respondents in New Zealand did not notice the advisory statement until it was explicitly pointed out in the discussion.

There was acknowledgement that sports food contained unfamiliar ingredients, but there was a level of trust associated with food sold in Australia, and there was mention of regulation of these products.

Consumption of sports foods and drinks

For those consuming sports drinks, the majority of active respondents drank them for hydration purposes during physical activity or exercise occasions, e.g. netball, touch football, volleyball, cycling, jogging, triathlon, and this crossed over into general context also. Sedentary respondents had began to drink these associated with exercise and activity, but had continued to consume them in general settings also. This was true for active respondents also.

Parent respondents reported that their children (aged under 15 years) consumed sports drinks in relation to exercise or physical activity (e.g. playing in the sun), and reported being rather strict in allowing their children to drink electrolyte drinks only in the context of sport (during or after). They encouraged consumption of electrolyte drinks in conjunction with water, to provide their children with necessary hydration and energy lost and expended during intense physical activity. However, they reported that their children liked the taste of electrolyte drinks, some likening them to cordial, and asking parents to purchase them for general consumption (outside of sports or physical activity; something parents did not report doing).

A larger range of sports food brands featured heavily in the New Zealand respondents' repertoire, compared to that of Australian respondents. Responses suggested that active New Zealand respondents may be more aware of brands and product types than their active Australian counterparts. Australian respondents tended to refer to product *types*, rather than brands of products. Consumption of sports foods and related context (e.g. exercise versus no exercise) was linked to personal goals and need identified by respondents consuming these foods. For example, people with a *performance enhancement* goal tended to consume sports foods and engage in intense exercise or physical activity involving endurance. Those with a *muscle recovery goal* who ate sports foods tended to be engaging in similar intense activities. Respondents with a *weight loss or maintenance* goal who ate sports foods tended to be active as well as sedentary respondents; and respondents with a *weight gain or muscle gain* goal who ate sports foods tended to be both people engaging in gym and weight lifting activities as well as sedentary respondents.

Overall, personal goals and the needs which sports foods fulfil (e.g. performance enhancement, muscle recovery, weight loss, and weight gain) tended to be more specific to individuals exercising, compared with the more generic needs which sports drinks seem to fulfil (e.g. thirst, taste). This suggests that a sports food may not ever become part of a *general consumer's* everyday diet in the same way sports drinks seem to have become. However, these qualitative findings suggest that sports foods may continue to be used by *general consumers*, for reasons such as *weight loss* or *weight gain*, as well as by *active people* for reasons such as *exercise performance*, *muscle recovery*, and so on. These findings also suggest that sports foods may not ever be consumed based on convenience or taste alone, as sports drinks tend to be.

Appendix A: Technical notes

Research Approach

The research was split into two key stages:

1. A scoping meeting with Food Standards Australia New Zealand; and
2. Qualitative research with a selection of appropriate respondents according to recruitment criteria (discussed below in 3.2).

The scoping meeting between FSANZ and CBR highlighted the need for exploratory qualitative consumer research into the area of *sports foods* and *sports drinks*, and the need for flexibility in the proposed recruitment approach for the qualitative research.

The nature of the product (formulated supplementary sports foods, and electrolyte drinks) and current regulation of similar foods (e.g. formulated supplementary foods, and formulated beverages), presented a need for consumer-driven qualitative research to uncover how consumers classify these foods. That is, which foods are accepted in general as “sports foods”, and which drinks are seen as “sports drinks”, and who are the consumers of these products?

Qualitative research was conducted using ten focus groups of consumers. Focus groups were selected as the suitable methodology by which to explore these issues, as they are:

1. Representative of a broad range of people with similar/different socio-demographics / attitudes / behaviours of interest for stimulating diverse discussion;
2. Exploratory of different opinions enabled whilst allowing synergies;
3. Able to include and introduce stimuli;
4. Able to utilise creativity in questioning;
5. Economical; interviewing people simultaneously in groups;
6. Conducted by skilled moderators guiding the discussion and engaging each person to achieve the research objectives;
7. Able to draw out comparisons between points of view, by which to compare and contrast different ideas in the group.

Group Structure

Table 5 demonstrates the structure of each group achieved during auditing of recruitment phase of the qualitative research. Ethnicity was captured by standard New Zealand auditing procedures but this was not required to be captured as part of the Australian auditing procedures.

In terms of age breakdown, “Younger” was classified as 18-34 years; “Middle-aged” was classified as 35-54 years; and “Older” was classified as 55 years plus.

Table 5: Demographic structure of groups by location

Time	Brisbane	Sydney	Adelaide	Auckland	Wellington
Earlier session (~6pm)	**Sports foods** 4 females 3 males 2 younger 5 middle-aged *Higher SES*	**Sports foods** 4 females 3 males 2 younger 2 middle-aged 3 older *Mixed SES:* 4 higher SES 1 lower SES 3 refused income	**Sports drinks** 4 females 3 males 3 younger 2 middle-aged 2 older *Mixed SES:* 5 higher SES 2 lower SES	**Sports foods** 4 females 4 males 5 younger 3 middle-aged 5 NZ European background 1 NZ Indian-Asian background 1 NZ Italian background 1 NZ Maori background *Lower SES*	**Sports foods** 4 females 2 males 1 younger 5 middle-aged 3 NZ European background 1 Pacific Samoan 1 English background *Mixed SES:* 4 higher SES 2 lower SES
Later session (~8pm)	**Sports drinks** 2 females 4 males 1 younger 4 middle-aged 1 older *Mixed SES:* 5 higher SES 2 lower SES	**Sports drinks** 5 females 3 males 3 younger 3 middle-aged 2 older *Lower SES*	**Parents of child sports drink consumers** 3 females 3 males 6 middle-aged with children ranging from 3-14 years Mixed SES: 4 higher SES 2 refused income	**Sports drinks** 4 females 4 males 4 younger 4 middle-aged/older 6 NZ European background 1 NZ Maori background 1 NZ Indian background *Higher SES*	**Parents of child sports drink consumers** 6 females with Children aged 8-14 years 4 NZ European background 1 NZ Maori 1 Tongan background *Mixed SES:* 2 higher SES 4 lower SES

Rationale behind segmentation

CBR adopted a research approach which sought to investigate *who* consumers of these sports products are, and what the drivers of this consumption are. Thus, the primary focus was on current consumers (and past consumers) of these sports products.

Focus groups were segmented as per Table 1, according to the following reasons.

Overall stratification by product type

Consumption of sports foods and sports drinks was considered to involve different motivations, because:

1. Sports drinks appear to be marketed to wider groups of people than sports foods due to the specific nature sports foods are produced to serve. Sports drinks are marketed as providing hydration, which addresses an issue not necessarily exclusive to people engaging in sports activities; whereas sports foods (e.g. protein bars, energy gels or “goos”) are promoted and marketed as “building muscle” or “replenishing energy”. Thus, it can be hypothesised that different motivations drive consumption of these two different products, and the consumer groups may vary (acknowledging there may be some overlap).

2. Sports drinks seem to be available for purchase via a larger degree of channels than sports foods, e.g. they are sold in convenience stores and petrol stations, and by food stalls and temporary food vendors. In contrast, sports foods have traditionally only been sold in gyms and specific health food stores, and it seems that only recently have they moved into mainstream channels such as supermarkets.

Stratification by geographical location of consumers

Different regulatory requirements exist for manufacture and import of sports products for Australia compared to New Zealand (under the Trans-Tasman Mutual Recognition Agreement). Six focus groups were conducted in Australia, and four in New Zealand based on differences in population numbers between Australia and New Zealand to adequately represent views of populations of people exposed to these products.

Stratification by level of consumption

This type of stratification is aimed to capture information about “appropriateness” of levels of consumption of these products.

“Regular” and “occasional” consumption of sports foods (with consumption at least monthly) and sports drinks was attempted during recruitment, and due to the arbitrary nature of assigning numbers to eating occasions and what constituted “regular” or “occasional” the research team decided on allowing self-selection by respondents in recruitment. Within the groups, there appeared to be variation of levels of consumption due to this self-assignment to groups; however, all respondents in all groups consumed sports drinks and sports foods at least monthly.

Stratification by context (motivation) in which product is consumed

Sports foods and sports drinks are specifically formulated to assist people engaged in sports or physical activity to achieve specific nutritional or performance goals (target population). This however, may not prevent people who are *not* engaging in physical activity from consuming these products outside of an exercise setting, without a recognised exercise or sports-related need (non-target population).

FSANZ is interested in capturing responses from people consuming sports products in this context, and exploring consumption motivations of people in this “non-target” audience.

This qualitative research should illuminate motivations for why consumers may consume sports products. It may also provide details on dietary behaviours in relation to consumption of sports products. For example, questions relating to **sports food** consumption may include: Do consumers substitute nutritious foods in their diet / replace meals with these sports food products? Is there a potential risk for overconsumption of a certain supplement due to an additive consumption behaviours?

In the case of **sports drinks**, the issue may be slightly different to that of foods. Due to the marketing of these drinks (discussed above), non-target populations may be consuming these drinks for reasons other than sports-related motivations. What are these reasons? Are people who play moderate levels of sport led to believe these drinks are healthier and have a higher hydration capacity than water? Do sports drink consumers understand there are high levels of sugars in these products?

Consideration of socio-economic status

In order to gain feedback from different consumers of varied socio-economic backgrounds, information on household income was gathered where possible to categorise consumers across groups. Socio-economic status was classified using household income; higher or lower than the median level of household income collected in the most recent census (in each respective country). This however, is a very blunt measure and any differences in SES should be interpreted with caution, and not generalised.

This was planned to investigate potential issues related directly to disadvantaged or SES-advantaged groups, e.g. are there any differences in attitude, perception, consumption, etc. for higher SES background compared with their lower SES counterparts?

Assumptions

1. At the scoping meeting, definitions of sports foods and sports drinks were discussed. FSANZ and CBR agreed that an open and exploratory approach to defining what a “sports food” and what a “sports drink” was would best suit this review. Using this approach, consumers of sports products were able to self-classify. Respondents were asked if they consumed a “sports food” or a “sports drink” and they were allocated to groups accordingly, based on their self-reported consumption.
2. Based on respondents contacted in recruitment, the most popular food types were protein powders, and protein bars, and the most popular drink types were electrolyte drinks.
3. Frequency of consumption was determined first and foremost by a self-classified measure. Respondents included in the focus groups self-classified their consumption level as *Regular* or *Occasional*.

The qualitative discussion guide can be seen in Appendix B.

Interpreting This Report

The following terms or abbreviations have been utilised throughout this report.

Table 6: Definitions

Term of abbreviation	Definition
Formulated Supplementary Sports Food (FSSF)	A food or mixture of foods specifically formulated to assist sports people in achieving specific nutritional or performance goals.
Formulated Supplementary Food (FSF)	A food specifically designed as a supplement to a normal diet to address situations where intakes of energy and nutrients may not be adequate to meet an individual’s requirements.
Formulated Meal Replacement (FMR)	A single food or pre-packaged selection of foods that is sold as a replacement for one or more of the daily meals but not as a total diet replacement.
Electrolyte Drink	A drink formulated and represented as suitable for the rapid replacement of fluid, carbohydrates, electrolytes and minerals.
Electrolyte Drink Base	An electrolyte drink base is a solid or liquid which when made up, makes an electrolyte drink.
Formulated Beverage (FB)	A non-carbonated ready to drink, water-based flavoured beverage that contains added vitamins and/or minerals, prepared from one or more of the following – (a) water; and (b) fruit juice; and (c) fruit purée; and

	(d) concentrated fruit juice; (e) concentrated fruit purée; and (f) comminuted fruit; and (g) orange peel extract; and (h) mineral water; and (i) sugars
Formulated Caffeinated Beverage (FCB)	A non-alcoholic water-based flavoured beverage which contains caffeine and may contain carbohydrates, amino acids, vitamins and other substances, including other foods, for the purpose of enhancing mental performance.
Respondents	*Respondents* refer to people who formed the focus groups (focus group members) and discussed sports foods or sports drinks. Active respondents: Focus group members engaging in physical activity or sport at least monthly, and consuming sports drinks or sports foods. Sedentary respondents: Focus group members not engaging in physical activity or sport, and consuming sports drinks or sports foods. Parent respondents: This refers to the parents who were interviewed in two of the ten focus groups to talk about their children's consumption habits relating to sports drinks.
Children	For the purposes of this report, when children are referred to, it is assumed that they are under 15 years of age (unless otherwise specified).

Appendix B: Discussion guides

Discussion guide #1

Sports FOODS

Date:

Location:

Introductions and welcome

Today we're talking about sports foods (and drinks)... [Do not announce who research is for, until end if requested.]

[Confidentiality and anonymity.]

Note to interviewer: *PROBE ABOUT EACH PRODUCT FOR EACH PARTICIPANT, ESPECIALLY WHERE MULTIPLE PRODUCTS ARE CONSUMED BY ONE PERSON.*

Consumption behaviours

Which foods / product types do you prefer?

How often do you eat these foods?

Do you eat multiple foods / drinks?

Prompts:

All at once? One occasion? Over a day?

Do you alternate which products you consume?

When do you eat them?

Prompts:

Exercise / sport-related? Different types of sports requiring different products? Intensity of sport a factor?

General consumption?

Describe a normal situation where you eat these foods...

Do you eat these instead of other foods? ...other meals?

Prompts:

Which foods replace which meals?

When?

Why?

How long do you think you'll continue to eat these foods for?

Perceptions of sports foods

When you first heard about the product(s) you're consuming, what were your thoughts?

Why did you start eating this product?

Prompts:

Current consumers: Do you still eat them for this reason?

Past consumers: Why did you stop eating this product?

What do you get out of this/these food(s) after you eat them?

Prompts:

What are the benefits of eating these foods? ...directly after? ...a while after? ...long-term?

Are there any (other) **health benefits**?

What other foods do people eat to get these benefits?

Prompts:

Formulated foods?

"Natural" foods?

Are there any disadvantages to NOT eating these foods?

Do you think there are any **health risks** of eating these?

Is there anyone who wouldn't get these benefits?

Is there anyone who shouldn't eat these foods?

What words would you use to describe these products?

Do/did these products meet your expectations? Did they deliver what you expected from them?

Awareness of products

How did you find out about these foods?

Where have you seen these foods sold?

What marketing of these foods are you aware of?

Prompts:

TV advertising? Which channels? Which shows?

Online? Which sites?

Magazines? Which?

Word of mouth? Friends?

Gym?

Who are these products marketed at? Who should they be marketed at?

Can you tell me of other similar products to these?

Prompts:

Other FSF, FMR, Therapeutic goods, Dietary supplements, etc.?

Would you consider consuming any of these products? Why / why not? In addition to...? Instead of...?

How do you think these food products differ from *[insert other FSF, FMR products not intended for sport]*?

Purchase behaviours of sports foods

Why did you buy this product?

[SELF-COMPLETE RANKING EXERCISE FOR IMPORTANCE OF DIFFERENT FACTORS CONTRIBUTING TO PURCHASE OF PRODUCT]??

Where do you buy these products from?

Do you think they're easy enough to find?

What do you think about the prices on these foods?

Take me through the first time you ever purchased one of these foods...

Unprompted: Do you ever look at labelling on these foods before you buy a sports food?

Prompts:

When? Every purchase? New purchases only?

What parts of the label do you look at? Why?

Prompted (refer to stimuli – packages brought by respondents):

Do you look at the front of the package first? Which bits do you take notice of? Why? *[refer to claims]*

Prompts:

Colours, designs, words, layout?

Do you look at the nutrition information panel? Which part?

Do you look at the ingredients list? Which ingredients are you interested in?

Do you look at the advisory statements? What do you think about these statements?

Do these foods do what they say they do (e.g. on the label / in ads)?

Revisit product description: What (other) words would you use to describe these products?

How long do you think you'll continue to eat these foods?

Do you think you'll ever change your consumption of these foods? Why?

Wrap up and thank you.

Give incentives.

Discussion guide #2

Sports DRINKS

Date:

Location:

Introduction

Today we're talking about sports drinks (and foods). [Do not announce who research is for, until end if requested.]

[Confidentiality and anonymity.]

Note to interviewer: *PROBE ABOUT EACH PRODUCT FOR EACH PARTICIPANT, ESPECIALLY WHERE MULTIPLE PRODUCTS ARE CONSUMED BY ONE PERSON.*

Consumption behaviours

Which drinks / product types do you prefer?

How often do you consume these drinks?

Do you consume multiple drinks / types of drinks?

Prompts:

All at once? One occasion? Over a day?

Do you alternate which types you consume?

When do you drink them?

Prompts:

Exercise / sport-related? Different types of sports requiring different products? Is intensity of sport a factor?

General consumption?

Describe a normal situation where you consume this drink...

Do you consume these instead of other drinks? E.g. water?

Prompts:

Which of these drinks replace other drinks?

When?

Why?

How long do you think you'll continue to consume these drinks for?

Perceptions of sports drinks

When you first heard about this product, what were your thoughts?

Why did you start drinking these products?

Prompts:

Current consumers: Do you still drink them for this reason?

Past consumers: Why did you stop drinking these products?

What do you get out of these drinks after you consume them?

Prompts:

What are the benefits of consuming these drinks? ...directly after? ...a while after? ...long-term?

Are there any (other) **health benefits**?

What other drinks do people consume to get these benefits?

Prompts:

Formulated drinks?

"Natural" drinks?

Are there any disadvantages to NOT consuming these drinks?

Do you think there are any **health risks** of drinking these?

Is there anyone who *wouldn't* get these benefits?

Is there anyone who *shouldn't* consume these drinks?

What words would you use to describe these products?

Do/did these products meet your expectations? Did they deliver what you expected from them?

How do these drinks in general compare to other drinks, e.g. water?

Prompt:

Is there sugar in these products? Very much sugar?

Awareness of products

How did you find out about these drinks?

Where have you seen these drinks sold?

What marketing of these drinks are you aware of?

Prompts:

TV advertising? Which channels? Which shows?

Online? Which sites?

Magazines? Which?

Word of mouth? Friends?

Gym?

Who are these products marketed at? Who should they be marketed at?

Can you tell me of other similar products to these?

Prompts:

Other FB, FCB, Waters, carbonated beverages, etc.?

Would you consider consuming any of these products? Why / why not? In addition to...? Instead of...?

How do you think these drink products differ from *[insert other FBs, FCBs]*?

Purchase behaviours of sports drinks

Why did you buy this product?

[SELF-COMPLETE RANKING EXERCISE FOR IMPORTANCE OF DIFFERENT FACTORS CONTRIBUTING TO PURCHASE OF PRODUCT]??

Where do you buy these products from?

Do you think they're easy enough to find?

What do you think about the prices on these drinks?

Take me through the first time you ever purchased one of these drinks...

Unprompted: Do you ever look at labelling on these drinks?

Prompts:

When? Every purchase? New purchases only?

What parts of the label do you look at? Why?

Prompted (refer to stimuli – packages brought by respondents):

Do you look at the front of the package first? Which bits do you take notice of? Why? *[refer to claims]*

Prompts:

Colours, designs, words, layout?

Do you look at the nutrition information panel? Which part?

Do you look at the ingredients list? Which ingredients are you interested in?

Do you look at the advisory statements? What do you think about these statements?

Do these drinks do what they say they do (e.g. on the label / in ads)?

Revisit product description: What (other) words would you use to describe these products?

How long do you think you'll continue to consume these drinks?

Do you think you'll ever change your consumption of these drinks? Why?

Wrap up and thank you.

Give incentives.

Discussion guide #3

Parents of children consuming sports products

Date:

Location:

Introduction

Today we're talking about the sports foods / drinks your son/daughter eats/drinks.). [Do not announce who research is for, until end if requested.]

[Confidentiality and anonymity.]

Consumption behaviours

Which foods/drinks / product types does your child prefer?

How often do they consume these products?

Do they consume multiple products / types of products?

Prompts:

All at once? One occasion? Over a day?

Do you alternate which types they consume?

When do they eat / drink them?

Prompts:

Exercise / sport-related? Different types of sports requiring different products? Is intensity of sport a factor?

General consumption?

Describe a normal situation where your child consumes this product / a product like this...

Do they consume these instead of other meals / drinks? E.g. proper meal / water?

Prompts:

Which of these drinks /foods replace other drinks / meals?

When?

Why?

How long do you think you'll continue to consume these products for?

Perceptions of sports drinks

When you first heard about this product, what were your thoughts?

What do you think of their consumption of these products?

Do you know why your child started consuming these products?

Do they still consume them for this same reason?

What do they get out of these drinks after they consume them?

Prompts:

What do you think are the benefits of consuming these products? ...directly after? ...a while after? ...long-term?

Are there any (other) **health benefits**?

What other products do kids consume to get these benefits?

Prompts:

FSF, FMR, FB, FCB, DS?

"Natural" foods / drinks / vitamins?

Do many kids consume these products?

Are there any disadvantages to NOT consuming these products?

Do you think there are any **health risks** of consuming these?

Is there anyone who *wouldn't* get these benefits?

Is there anyone who *shouldn't* consume these products?

What words would you use to describe these products?

Do/did these products meet your expectations as a parent? Did they deliver what you and your child expected from them?

For drinks group: How do these drinks in general compare to other drinks, e.g. water?

Prompt:

Is there sugar in these products? Very much sugar?

Awareness of products

How did you find out about these products? Did you find out before your child? Did they tell you?

Where have you seen these products sold?

What marketing of these products are you aware of?

Prompts:

TV advertising? Which channels? Which shows?

Online? Which sites?

Magazines? Which?

Word of mouth? Friends?

Gym?

Who are these products marketed at? Who should they be marketed at?

Can you tell me of other similar products to these?

Prompts:

Food group: Other FSF, FMR, Therapeutic goods, Dietary supplements, etc.?

Drinks group: FB, FCB, carbonated drinks, mineral water, etc.?

Does your child consume these also? In addition to...? Instead of...?

Would you consider consuming any of these products? Why / why not?

How do you think these drink products differ from *[insert other FBs, FCBs]*?

Purchase behaviours of sports drinks

Are you the main purchaser of these products for your child? Does your child also buy them for themselves?

Why did you buy this product?

[SELF-COMPLETE RANKING EXERCISE FOR IMPORTANCE OF DIFFERENT FACTORS CONTRIBUTING TO PURCHASE OF PRODUCT]??

Where do you buy these products from?

Do you think they're easy enough to find?

What do you think about the prices on these products?

Take me through the first time you ever purchased one of these products for your child...

Unprompted: Do you ever look at labelling on these products?

Prompts:

When? Every purchase? New purchases only?

What parts of the label do you look at? Why?

Prompted (refer to stimuli – packages brought by respondents):

Do you look at the front of the package first? Which bits do you take notice of? Why? *[refer to claims]*

Prompts:

Colours, designs, words, layout?

Do you look at the nutrition information panel? Which part?

Do you look at the ingredients list? Which ingredients are you interested in?

Do you look at the advisory statements? What do you think about these statements?

Do these drinks do what they say they do (e.g. on the label / in ads)?

Revisit product description: What (other) words would you use to describe these products?

Does your child ever look at any of the packaging or labelling of these products?

How long do you think your child will continue to consume these products / this product?

Do you think your child will ever change their consumption of these products? Why?

Wrap up and thank you.

Give incentives.

Appendix C: Within groups self-complete activities

Short self-complete activity – SPORTS FOODS

Date and time:

Gender *(please circle)*: M / F

Age *(years)*: _____ years

Think about when you buy a sports food...

Write down the ***five main factors*** that affected your purchase decision when buying a sports food the very ***first time***, compared to ***now***. *(These could include **anything** that you factored into your decision, e.g. price, taste, colour, type of protein, amount of fat, brand, etc.)*

	Why did you first buy one?	Why do you currently buy them?
1 (Most important factor)		
2		
3		
4		
5		

Thank you!

Short self-complete activity – SPORTS DRINKS

Date and time:

Gender *(please circle)*: M / F

Age *(years)*: _____ years

Think about when you buy a sports drink...

Write down the ***five main factors*** that affected your purchase decision when buying a sports drink the very ***first time***, compared to ***now***. *(These could include **anything** that you factored into your decision, e.g. price, taste, colour, type of protein, amount of fat, brand, etc.)*

	Why did you first buy one?	Why do you currently buy them?
1 (Most important factor)		
2		
3		
4		
5		

Thank you!

Short self-complete activity – PARENTS

Date and time:

Child's gender *(please circle)*: M / F

Child's age *(years)*: _____ years

Think about when you buy a sports food or sports drink for your child...

Write down the ***five main factors*** that affected your purchase decision when buying a sports food or drink the very ***first time for you child***, compared to ***now***. *(These could include **anything** that you factored into your decision, e.g. price, taste, colour, type of protein, amount of fat, brand, etc.)*

	Why did you first buy one?	Why do you currently buy them?
1 (Most important factor)		
2		
3		
4		
5		

Thank you!