

AUSTRALIAN BEVERAGES COUNCIL

Submission to the Senate Select Committee into the Obesity Epidemic in Australia

July 2018



Executive Summary

It is the position of the Australian Beverages Council that:

- Obesity is a highly complex issue with multiple causes. The key determinants of obesity include, but are not limited to, complex interactions between genetic, metabolic, cultural, environmental, socioeconomic and behavioural factors.
- The role of the total diet in contributing to obesity should be considered, with a key issue the excess intake of energy from all discretionary (“treat”) foods and beverages, e.g. alcohol, cakes, pastries, biscuits, confectionery, sugar-sweetened beverages, etc.
- The Australian Beverages Council recognises the importance of preventing childhood obesity and the non-alcoholic beverage industry’s responsibility to encourage healthy lifestyles and balanced diets.
- As part of this responsibility, the non-alcoholic beverage industry has undertaken a range of voluntary initiatives to help improve the Australian diet, including:
 - Offering low- and no- sugar/kilojoule choice through sweeping product and portfolio innovation
 - Ensuring clear front-of-pack labelling of nutrition information
 - Reducing portion and pack sizes across the portfolio
 - Improving nutritional education and awareness
 - Responsible marketing and advertising practices
 - Adhering to the relevant School Canteen Policies
 - Investing in credible scientific research.
- These initiatives have contributed to a substantial decline in the intake of free sugars over 16 years from 1995 to 2011-12, with the largest declines in children and teenagers (23 per cent reduction). Almost all (94 per cent) of the decline in free sugars in children and teenagers is directly from the reduction in non-alcoholic beverages.
- More still needs to be done, and the beverage industry will further reduce sugar across the industry’s portfolio by an average of by 10 per cent by 2020 and 20 per cent by 2025.

The Australian Beverages Council recommends that:

1. The prevalence of childhood obesity can and should be reduced, with the strongest evidence supporting comprehensive, multi-faceted and system-wide intervention. There is evidence that these types of programs can be effective at improving diet and preventing obesity in both Australian children and in adolescent populations, and the effectiveness of systems-wide approaches likely reflects the highly complex and multifaceted nature of obesity.
2. A collaborative approach between all stakeholders, including governments, food and beverage industry players and non-government health organisations, is needed to deliver comprehensive, system-wide models.
3. A coordinated approach should focus on reducing energy intake from *all* discretionary foods and not exclusively from certain non-alcoholic beverages.
4. Existing Government policies and programs, including the Health Star Rating, Healthy Food Partnership, NSW Healthy Food Finder, and Healthy Weight Guide, should be continued and their funding secured.
5. Any assessments of a tax on sugar-sweetened beverages be comprehensive and, ultimately, lead to the rejection of proposals to introduce such a levy on the basis that there is limited and weak evidence that sugar-sweetened beverage taxes are effective in reducing obesity, with consistent global evidence suggesting such a tax has not any discernible impact on public health. There is further evidence to suggest such measures may have unintended consequences on the diet.
6. Recognition of the non-alcoholic beverage industry's public commitments be integrated as part of the holistic food supply solution to address obesity in Australia, particularly voluntary initiatives that have been undertaken to help reduce intake of sugars.
7. Future evidence-based initiatives that help reduce obesity in Australian children and adults be supported, after appropriate and comprehensive cross-sector consultation.

The focus of this submission will be on the Australian Beverages Council's responses, recommendations and initiatives in relation to **Terms of Reference b), e), f), g) and h)** of the Senate Select Committee into the Obesity Epidemic in Australia.

Table of Contents

EXECUTIVE SUMMARY	2
TABLE OF CONTENTS.....	4
ABOUT THE AUSTRALIAN BEVERAGES COUNCIL	6
B: THE CAUSES OF THE RISE IN OVERWEIGHT AND OBESITY IN AUSTRALIA	7
WHAT IS THE CAUSE OF OVERWEIGHT AND OBESITY?	7
OBESITY IS A COMPLEX, SYSTEMATIC AND MULTI-CAUSAL ISSUE	8
WHEN IT COMES TO FOOD, THE TOTAL DIET MUST BE CONSIDERED	8
ENERGY FROM DISCRETIONARY (“TREAT”) FOODS – A KEY CONCERN	9
1. <i>The Five “Core” Food groups:</i>	9
2. <i>“Discretionary” (or “extra”) foods:</i>	10
WHAT ARE THE FOOD GROUPS THAT CONTRIBUTE THE MOST DISCRETIONARY ENERGY INTAKE IN AUSTRALIA?	11
E: THE EFFECTIVENESS OF EXISTING POLICIES AND PROGRAMS INTRODUCED BY AUSTRALIAN GOVERNMENTS TO IMPROVE DIETS AND PREVENT CHILDHOOD OBESITY	13
WHAT POLICIES AND PROGRAMS INTRODUCED BY AUSTRALIAN GOVERNMENTS ARE LIKELY TO BE EFFECTIVE?	13
1. <i>Health Star Rating (HSR) System</i>	13
2. <i>Healthy Food Partnership</i>	17
3. <i>School Canteen Policy</i>	22
4. <i>NSW Healthy Food Finder</i>	22
5. <i>Healthy Weight Guide</i>	23
6. <i>Build participation in sport and physical activity</i>	24
F: EVIDENCED-BASED MEASURES AND INTERVENTIONS TO PREVENT AND REVERSE CHILDHOOD OBESITY, INCLUDING EXPERIENCES FROM OVERSEAS JURISDICTIONS	26
HOW CAN CHILDHOOD OBESITY BE REDUCED?	26
A COMPREHENSIVE, COLLABORATIVE, SYSTEMS-BASED APPROACH IS REQUIRED	26
CASE STUDIES OF EFFECTIVE INTERVENTIONS FOR REDUCING CHILDHOOD OBESITY	27
2. <i>The Dutch Obesity Intervention in Teenagers (DOIT) – Netherlands</i>	28
3. <i>The OPAL Program – South Australia</i>	28
4. <i>The US Healthy Weight Commitment and the 2025 Beverages Calorie Initiative</i>	29
G: THE ROLE OF THE FOOD INDUSTRY IN CONTRIBUTING TO POOR DIETS AND CHILDHOOD OBESITY IN AUSTRALIA	31
WHAT INITIATIVES HAVE THE BEVERAGE INDUSTRY UNDERTAKEN TO IMPROVE THE AUSTRALIAN DIET?	31
1. <i>Reducing sugar and kilojoules in drinks through introducing more lower and no-sugar/kilojoule options to market</i>	31
2. <i>Reducing pack size</i>	31
<i>Our Members have introduced smaller pack sizes for many products, for example, 300mL, 250mL and 200mL slimline cans for soft drinks, to offer consumers choice of portion size and reduce the intake of kilojoules from beverage products (see Appendix 2). In addition to this, portion sizes appropriate for children can be found in a wide variety of beverages. Research has indicated that the portion size of food and beverage products is an important determinant of energy intake (62-64).</i>	31

3. Providing clear nutrition Information on pack	32
4. Responsible Marketing	32
5. Complying with NSW Schools Canteen Policy	32
6. Building knowledge on the role of beverages in the Australian diet	33
WHAT IMPACT HAVE THESE INITIATIVES HAD?	33
1. There has been a long-term (16-year) decline in the population intake of SSB and their contribution to free sugar intake, particularly in children and teenagers.	33
2. The decline in the consumption of SSB has resulted in large decreases in the population intake of free sugars, particularly in children and teens.	35
3. At a population level, the contribution of sugar sweetened drinks to total energy intake is now relatively low.	38
HOW IS THE BEVERAGE INDUSTRY AND ITS MEMBERS PLANNING TO FURTHER IMPROVE THE AUSTRALIAN DIET?	38
H: ANY OTHER RELATED MEASURES: A SUGAR-SWEETENED BEVERAGE TAX	40
WHAT IS THE EVIDENCE FOR A SSB TAX IN REDUCING OBESITY?	40
1. Modelling studies	40
2. Real-world evidence	41
WHY MIGHT A SSB TAX BE INEFFECTIVE FOR REDUCING OBESITY?	42
1. A SSB tax can have unintended consequences on the total diet	42
2. SSBs are only small contributors to total energy intake and thus obesity risk	42
.....	44
CONCLUSION	45
GLOSSARY OF TERMS:.....	46
REFERENCES.....	47

About the Australian Beverages Council

The Australian Beverages Council is the leading peak body of the non-alcoholic beverages industry. We represent approximately 90 per cent of the industry's production volume and our Member companies are some of Australia's largest drinks manufacturers. We also represent many small and medium-sized companies across the country. Collectively, our Members contribute almost \$7 billion to the Australian economy and nationally our Members employ over 46,000 people.

We strive to advance the industry as a whole, as well as successfully representing the range of beverages produced by our Members. These include carbonated soft drinks, energy drinks, sports and electrolyte drinks, frozen drinks, bottled and packaged waters, juice and fruit drinks, cordials, iced teas, ready-to-drink coffees, flavoured milk products and flavoured plant milks.

The unified voice of the Australian Beverages Council offers our Members a presence beyond individual representation to promote fairness in the standards, regulations, and policies concerning non-alcoholic beverages. We play a role in educating people on making informed choices by encouraging balance, moderation and common sense. We are an advocate on issues such as portion sizes, nutritional labelling, industry marketing and advertising, and canteen guidelines. Our Members listen to consumers and adapt their products accordingly by making positive changes and standing by commitments to promote greater choice, smaller portions and more products with low or no kilojoules. The Australian Beverages Council is an important conduit between the non-alcoholic beverages industry and Government, supporting both the Australian Government and State/Territory initiatives.

The Australian Beverages Council introduced a dedicated juice division, **Fruit Juice Australia** (FJA), in 2009 and a dedicated water division, the **Australasian Bottled Water Institute** (ABWI), in 2011 to represent the unique interests of these categories.

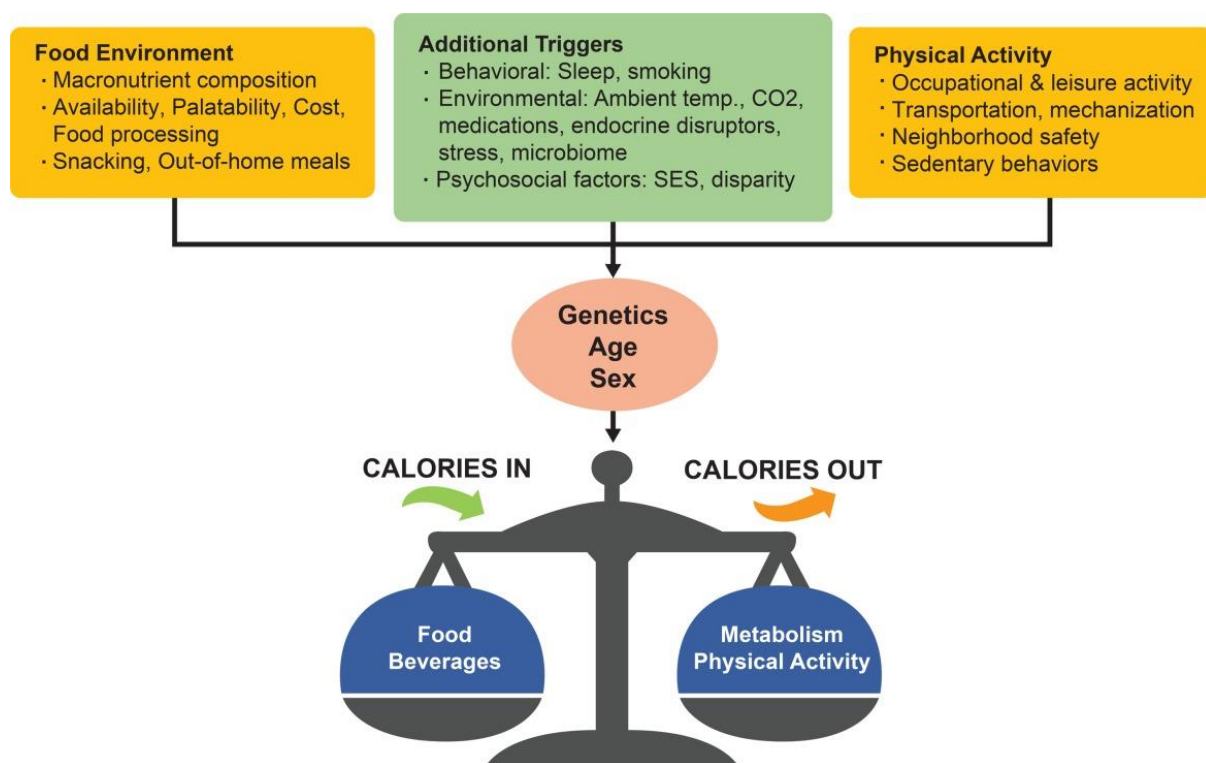
B: The causes of the rise in overweight and obesity in Australia

What is the cause of overweight and obesity?

Overweight or obesity has been increasing in Australia, with more than one in every two Australians (63.4 per cent) overweight or obese in 2014-15 (1). The cause of overweight and obesity is widely considered the result of an energy imbalance between intake and expenditure over a prolonged period, which arises from complex interactions between genetic, metabolic, cultural, environmental, socioeconomic and behavioural factors (2-10).

Some of these factors and their interactions are illustrated in Figure 1. Here, the increased prevalence of overweight and obesity is explained by many changes across the food environment, reductions in physical activity, and other environmental, behavioural and psychological factors, in addition to the genetic susceptibility, age and sex of individuals.

Figure 1. Causes of overweight and obesity



Source: Ravussin E, Ryan DH. Obesity (Silver Spring). 2018;26(1):9-10.

Obesity is a complex, systematic and multi-causal issue

Numerous models of obesity have been proposed to conceptualise, in more detail, the many factors that contribute to energy imbalance and how these interact (8, 9, 11, 12). The most comprehensive of these is considered to be the ‘obesity systems map’, published by the Foresight Programme of the Government Office for Science in the United Kingdom (Appendix 1) (9).

This model describes 108 different variables that can affect energy balance and, by extension, increase obesity risk. These variables extend across the following ten categories:

1. **Media** (e.g. media consumption, tv watching, exposure to food advertising);
2. **Social** (e.g. perceived lack of time, parental modelling of activity, sociocultural valuation of food);
3. **Psychological** (e.g. stress, self-esteem, conscious control of accumulation);
4. **Economic** (e.g. cost of physical exercise, dominance of sedentary employment, societal pressure to consumer);
5. **Food** (e.g. nutritional quality of food and drink, portion size, rate of eating, convenience of food offerings);
6. **Activity** (e.g. access to opportunities for physical exercise, level of occupational activity, opportunity for team-based activity);
7. **Infrastructure** (e.g. perceived safety of unmotorised transport, walkability of living environment, dominance of motorised transport);
8. **Developmental** (e.g. appropriateness of maternal body composition, quality and quantity of breastfeeding, appropriateness of embryonic and foetal growth);
9. **Biological** (e.g. resting metabolic rate, genetic and/or epigenetic predisposition to obesity, level of adipocyte metabolism); and
10. **Medical** (e.g. level of infections, reliance on surgical infections, reliance on pharma remedies).

When it comes to food, the total diet must be considered

While obesity is a result of many factors, the Australian Beverages Council notes the scientific evidence that recognises dietary intake is an important contributing factor. Many aspects of diet have been proposed to contribute to weight gain and obesity, including but not limited to:

- Increased calorie intake (13);
- High-fat or energy-dense foods (14);
- Refined starches (15);
- Sugars (16);

- Eating outside of the home (e.g. fast food) (17);
- Ultra-processed food products (18); and
- Increasing portion size of foods (19).

In an analysis of three separate prospective cohort studies of over 120,000 adult men and women from the U.S., Mozaffarian et al. (2011) reported that a diverse group of foods and beverages were independently associated with weight gain, including: potato chips, potatoes or fries, processed meats, unprocessed red meats, butter, sweets and desserts, refined grains, sugar-sweetened beverages (SSB) and 100 per cent fruit juice (20).

These findings demonstrate that the total diet must be considered alongside other factors when looking at the causes of weight gain and obesity. Crucially, a singular food or nutrient cannot be claimed to be responsible for weight gain and, by extension, obesity. As total diet should be considered in the context of obesity, a focus on an individual food or nutrient is unlikely to be an effective solution to reducing its prevalence.

Energy from discretionary (“treat”) foods – a key concern

One of the key aims of the Australian Dietary Guidelines (21), developed by the National Health and Medical Research Council, is to provide information to reduce the risk of diet-related conditions such as obesity. The Guidelines categorises foods into:

1. The Five “Core” Food groups:

- Fruits
- Vegetables and legumes/beans
- Grain (cereal) foods
- Milk, cheese, yoghurt and alternatives
- Lean meat and poultry, fish, eggs, tofu, nuts and seeds, and legumes/beans.

In addition to these Core Food groups, the Guidelines also recommends individuals ‘drink plenty of water’.

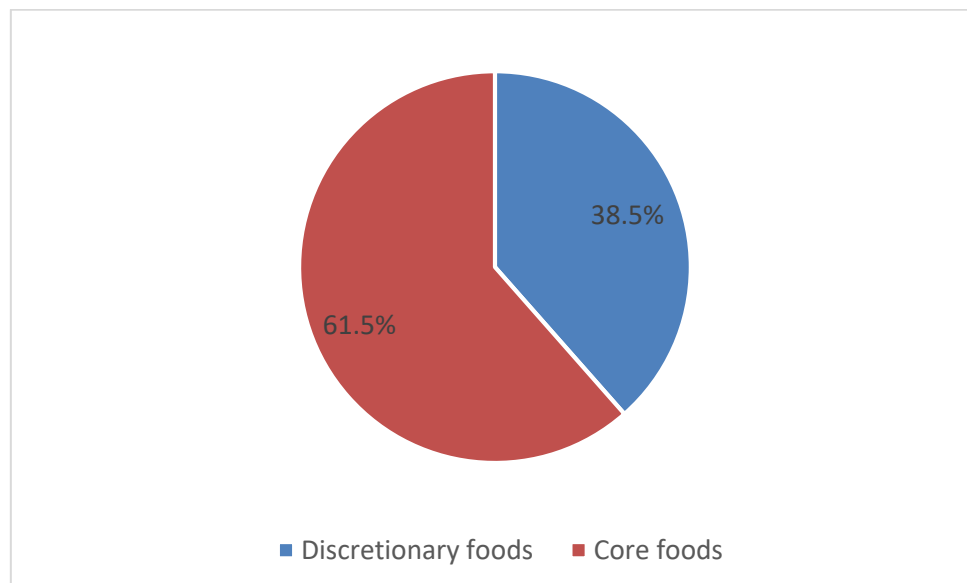
2. “Discretionary” (or “extra”) foods:

These foods and drinks are not necessary for a healthy diet and are high in saturated fat and/or added sugars, added salt or alcohol and low in fibre (22), e.g. alcohol, cakes, biscuits, confectionery, chocolate and some non-alcoholic beverages. In moderation, however, discretionary foods can be included to add variety to the diet.

A high consumption of discretionary foods and beverages, particularly excess consumption of these foods, is independently associated with a higher body mass index (BMI), an approximate measure of total body fat and used as a measure of obesity, in Australian adults (23). According to the most recent national nutrition survey of the Australian diet, the 2011-12 National Nutrition and Physical Activity Survey, Australian adults and children:

- **Under consumed core foods:** At least two in three Australians have usual intakes that do not meet the recommended serves for each of the Five Food Groups (24), and
- **Overconsumed/excess discretionary (“treat”) foods:** More than one-third (35 per cent) of the total energy intake come from discretionary foods. This is particularly high in children (38.5 per cent) (Figure 2) (25).

Figure 2. Proportion of energy from core and discretionary foods among Australian children (2-18 years)



Source: ABS. Australian Health Survey: Nutrition First Results - Foods and Nutrients, 2011-12

Given the high energy intake from discretionary foods in the diets of Australian adults and children, often caused by excessive consumption of discretionary foods, Australian researchers have advised that our efforts to reduce the prevalence of overweight and obese Australians should focus on this group of foods and beverages (26-28).

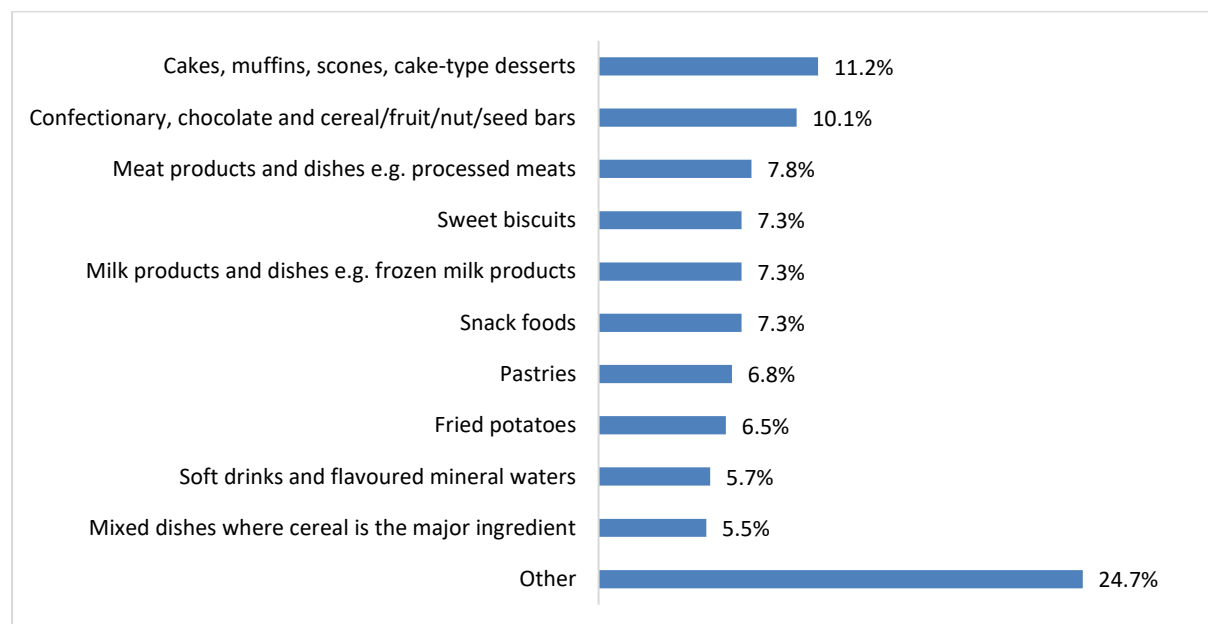
What are the food groups that contribute the most discretionary energy intake in Australia?

The Australian Bureau of Statistics (ABS) reported the food groups that contributed the most to discretionary energy in the 2011-12 National Nutrition and Physical Activity Survey.

The single largest contributor for all Australians two years and over was alcohol (13.6 per cent), followed by cakes, muffins, scones, and cake-type desserts (9.6 per cent) and confectionery, chocolate and cereal/fruit/nut/seed bars (7.9 per cent) (25).

The ten leading food groups contributing to the discretionary energy in the diet of Australian children are outlined in Figure 3.

Figure 3. Contribution of the top discretionary food categories to total discretionary energy intake in children (2-18 years)



Source: ABS. Australian Health Survey: Nutrition First Results - Foods and Nutrients, 2011-12.

Summary: The causes of the rise in overweight and obesity in Australia.

1. Obesity is a highly complex and multi-factorial issue. The key determinants of obesity include, but are not limited to, complex interactions between genetic, metabolic, cultural, environmental, socioeconomic and behavioural factors.
2. Multiple dietary factors may increase the risk of obesity and the total diet must be considered.
3. A key dietary issue in Australia is the excess intake of energy from all discretionary (“treat”) foods and beverages, including alcohol, cakes, confectionery and sugar-sweetened beverages, among others.

E: The effectiveness of existing policies and programs introduced by Australian governments to improve diets and prevent childhood obesity

What policies and programs introduced by Australian Governments are likely to be effective?

The Australian Beverages Council recognises the need to improve the current Australian diet and reduce childhood obesity, and supports the following Government policies and programs:

1. Health Star Rating (HSR) System



The HSR is a front-of-pack labelling system that rates the overall nutritional profile of packaged foods and assigns it a rating from ½ star to 5 stars. It provides a quick, easy, standard way to compare similar packaged foods (29).

Research has indicated that the current system:

- Closely aligns with the Australian Dietary Guidelines (30-34);
- Has high awareness and is well liked among the general public (35);
- Is effective at guiding consumer choice (36); and
- Can help to guide beneficial product reformulation (37, 38).

In December 2011, the Australia and New Zealand Ministerial Forum on Food Regulation (the Forum) agreed to support Recommendation 50 of Labelling Logic: Review of Food Labelling Law and Policy, namely that an interpretive front of pack labelling (FoPL) scheme should be developed. In March 2012, a FoPL Steering Committee was established by the Forum to lead the development process, comprising officials from each state/territory and a representative from the Australian Health Ministers' Advisory Council (AHMAC). A FoPL Project Committee was established to develop the system. It was comprised of Members from the FoPL Steering Committee and representatives from industry and public health and consumer organisations. The FoPL Project Committee developed the objectives and principles for the FoPL system known as the HSR system.

The initiative is a joint Australian, state and territory scheme in partnership with other key stakeholders. The initiative commenced in June 2014 and is being implemented over five years with regular, structured reviews (a five-year review is currently underway).

The Australian Beverages Council has supported the HSR from the outset. The development of the HSR system, including technical design, Style Guide and implementation framework, has been overseen by the collaborative efforts of:

- Australian Beverages Council
- Australian Chronic Disease Prevention Alliance
- Australian Food and Grocery Council
- Australian Industry Group
- Australian Medical Association
- Australian National Retail Association
- CHOICE
- Obesity Policy Coalition
- Public Health Association of Australia

In its support for the initiative, the Australian Beverages Council indicated that any FoPL scheme should be:

- Evidence-based and effective at achieving its well-defined objectives;
- Does not impose unjustifiable regulatory burdens on business;
- Is collaborative in nature; and
- Is capable of being enforced in an effective, proportionate and consistent manner.

A number of committees are involved in overseeing the implementation of the HSR system, including: the Australia and New Zealand Ministerial Forum on Food Regulation, Front-of-Pack Labelling Steering Committee and HSR Advisory Committee (HSRAC). These committees are comprised of government ministers, industry players, public health professionals and consumer groups.

Working in conjunction with industry, public health professionals and NGOs in a spirit of cooperation, evidence suggests that the HSR has achieved a significant degree of success. Awareness of the initiative has reached 75 per cent and this has had an appreciable effect on the community: of those

who are aware of the HSR, 35 per cent have bought a new product because of its higher HSR than their usual product (35).

A majority of grocery buyers state they would like the HSR on 'more' or 'all' packaged food products (35). The Australian Beverages Council continues to be an ardent advocate for the HSR and our Members have responded to positive feedback about the HSR from consumers. More than **70 per cent** of the non-alcoholic beverages industry's products use the HSR – from SSB through to fruit juice and flavoured milk (see Appendix 4).

In April 2018, the Heart Foundation presented further findings from their consumer awareness survey (39) on the Government led Health Star Rating system. They found:

- 67% of respondents reported being influenced by the HSR system in their purchasing decision, with 35% buying a product with more stars.
- 63% of respondents reported the HSR makes choosing food easier.
- When asked how to increase trust in the system, 38% indicated greater endorsement from Government would be beneficial, along with nutritionist and dietitian endorsement, and more information on stars calculation.

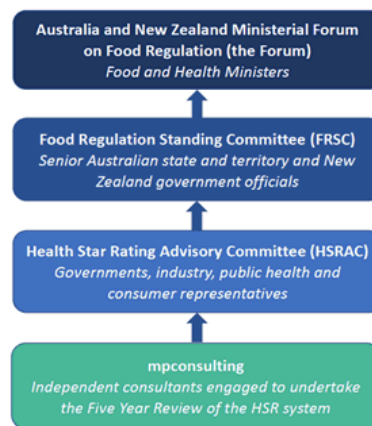
Five-year HSR review

On 20 November 2015, Members of the Australia and New Zealand Ministerial Forum on Food Regulation (Forum) agreed that a formal review of the system should also be carried out after five years of implementation.

The five-year review broadly considers:

- the impact of the system;
- whether the system has successfully met its objectives; and
- if necessary, how the system, including but not limited to the algorithm, could be improved.

The review was considered by the following bodies:



The Australian Beverages Council regularly sends representatives to consultation meetings as part of the five-year review of the HSR and encourages our Members to participate in these discussions. In addition, the Australian Beverages Council acts as a conduit between the reviewing bodies and non-alcoholic beverage companies, supplying key industry data and collating industry feedback on the initiative.

Most recently, the Australian Beverages Council submitted feedback on the use of Option 5, the HSR energy icon, and the place of fruit juice in the HSR.

The HSR, in supporting the Australian Dietary Guidelines, allows for water to score an automatic five stars to encourage consumers to drink plenty of water. The Australian Beverages Council recommends that potential, future amendments to the HSR algorithm be considered to encourage industry to continually innovate and develop new products that provide consumers with beverages (and foods) that offer varied consumer choice. This could include revisiting the star rating for packaged water that includes carbonation, as an example, or a product that is 99 per cent water with the addition of a low or no kilojoules sweetener, for example. Any future amendments to the HSR algorithm to encourage innovation would need to ensure that provisions within the current food law supported this process. The Australian Beverages Council will continue to work with existing and future key stakeholders on the HSR.

2. Healthy Food Partnership

The Australian Government, food industry bodies and public health groups have agreed to cooperatively tackle obesity, encourage healthy eating and empower food manufacturers to make positive changes to their product portfolios. The Healthy Food Partnership is a public-private partnership designed to cooperatively reduce obesity and encourage healthy eating, including strategies to educate consumers on consuming fresh produce, appropriate portion sizes, and to accelerate efforts to reformulate food to make it healthier.

The Healthy Food Partnership will focus on making achievements in the following areas:

- Continuing to support industry to reformulate their foods supported by the HSR system;
- Supporting consumers to eat appropriate levels of core foods such as fruit, vegetables, whole grains, meat, fish and dairy, and appropriate levels of energy intake;
- Educating consumers on appropriate portion and serve sizes, and
- Improving consumers' knowledge and awareness of healthier food choices, including through developing and publicising tools and resources to consumers and health professionals.

Of particular relevance to the Australian Beverages Council, the Healthy Food Partnership Program Logic has determined the role of the food and beverage industry in the scheme:

Core Activities for Food Supply and Industry

- Review the research and current initiatives and consider applicability to Australia;
- Understand complexity of the food service sector and identify best intervention points;
- Identify opportunities for reformulation and develop tools for use across the food industry, including retail and food service;
- Develop reformulation goals for key food categories based on latest nutrition survey, consumption data modelling of impact;
- Develop and disseminate on-pack recipe guidelines for the food industry;
- Develop a pledge scheme and support strategies for the food service sector;
- Define and recommend consistent terminology for portion size;
- Develop strategies for increasing availability and accessibility of healthier food and drinks served in appropriate portion sizes.

Outputs for Food Supply and Industry

- Evidence-based and appropriate strategies for retail and food service;
- Reformulation program and associated tools for uptake by whole of food industry, including retail and food service;
- On-pack recipe and food service guidelines for voluntary use by food industry;
- Strategies for food service, packaged food industry and retail to increase availability and accessibility of healthier, appropriately-portioned food and drinks.

Industry's role in the Healthy Food Partnership

The Australian Beverages Council, on behalf of the non-alcoholic beverages industry, actively participates in consultations as part of the Healthy Food Partnership.

Reformulation

One of the focus areas of the Healthy Food Partnership is reformulation: '...to support industry to reformulate their foods, supported by the HSR system.' The non-alcoholic beverages industry recognises its role in supporting healthy lifestyles and balanced diets. As such, a number of our Members have reformulated some of the nation's favourite drinks to make them lower in kilojoules (see Appendix 3).

The role of core foods

In supporting 'consumers to eat appropriate levels of core foods such as fruit, vegetables, whole grains, meat, fish and dairy, and appropriate levels of energy intake,' the Australian Beverages Council, through its dedicated juice division, Fruit Juice Australia, has highlighted the role of juice in the Australian diet, particularly in relation to the provision of micronutrients.

The latest 2011-12 National Nutrition Survey indicated fruit juice with no added sugar can contribute to the proportion of persons meeting the recommended daily intake for fruit:

- Only 31 per cent of Australians aged two years and over met the daily recommended serves for fruit (when fruit juice and dried fruit are included), falling to just 12 per cent based on whole fruit alone (fresh and canned);

- Around 1.5 serves of fruit (including fruit juice and dried fruit) were consumed on average by Australians two years and over, with fruit consumed fresh or canned contributing around 1 serve, and fruit juice and dried fruit 0.5 serve;
- Children on average consumed more serves of fruit than adults (1.7 compared with 1.5);
- The Australian Dietary Guidelines classify a serve of fruit as either 150g of fruit (fresh or canned with no added sugar); or occasionally 30g of dried fruit or 125mL of fruit juice (with no added sugar) (40).

The Australian Beverages Council commissioned the CSIRO to carry out a secondary analysis of the National Nutrition and Physical Activity Survey (NNPAS) (41), which demonstrated that removing juice from our diets may compromise total fruit intakes. Of the more than 12,000 children and adults whose diets were analysed, a very high percentage did not meet the required dietary intake recommendation for fruit: 81 per cent of children and 93 per cent of adults did not meet their daily fruit recommendations from eating fruit alone. For 14-18-year olds, when fruit juice is counted towards fruit intake the percentage who met their recommendation was greater by almost five times (5 per cent to 24 per cent).

The analysis conducted by the CSIRO also showed that total energy and sugar from fruit juice is small – about 1 per cent of energy and 3.5 per cent of sugar across the population. This is further reinforced by Food Standards Australia and New Zealand, which has recognised the role vitamin C plays in normal growth and development in children by allowing this health benefit to be claimed on packages of foods that are a good source of vitamin C, in accordance with Schedule 4 of the Food Standard Code.

The Australian Dietary Guidelines considers one serving of juice to be 125mL, and one serving of fruit as 150g (40). Using these criteria, Fruit Juice Australia has created the table below in order to compare nutrients provided by juice and whole fruit.

Table 1. Nutrition comparison of selected fruit juice vs. whole fruit

Nutrient	Orange juice 125mL	Orange, peeled, raw 150 g	Apple juice 125mL	Apple, unpeeled, raw 150 g	Grape juice 125mL	Grape, raw 150g
Energy (kJ)	145	231	158	368	291	483
Moisture (g)	115.5	132.5	115.8	126.2	112	121
Sugars (g)	7	10.4	9.1	18.2	17.6	24.5
Fibre (g)	0.4	3.5	0.3	3.6	-	5.3
Vit C (mg)	70	53	1.3	7.5	31.3	-
Folate (µg)	66.3	49.5	41.3	-	2.5	-

Source: NUTTAB. These fruits were selected as they were referred to in Shefferly et al. 2016⁸.

Despite concerns regarding the sugar content of fruit juice, Table 1 shows, for the fruit surveyed, per serving, whole fruit contains more sugar, though the dietary fibre of juice is significantly lower. Therefore, it is appropriate that, as the Australian Dietary Guidelines states, fruit juice can be, on occasion, considered as a substitute for a serving of whole fruit.

Findings from a re-analysis of the National Children's Nutrition and Physical Activity Survey (ANCNPAS), by Flinders University revealed that when fruit juice was consumed, the diet was found to be significantly lower in total and saturated fat, and significantly higher in total carbohydrates and magnesium, as well as providing:

- 56 per cent of the vitamin C;
- 20 per cent of the folate;
- 14 per cent of the potassium;
- 10 per cent of pro-vitamin A.

The juice industry has seen greater innovation, particularly in vegetable juice. More vegetable and fruit juice blends are now found on the market than five years ago. It is important to note the vital contribution of fruit and vegetable juices to the intake of fruit and vegetables in the diet as a Core food group.

Portion sizes

The Healthy Food Partnership recognises education as a key plank under the Partnership: 'educating consumers on appropriate portion and serve sizes.'

The Australian Beverages Council has worked with its Members over a number of years to introduce smaller pack sizes across (see Appendix 2) the industry to support other initiatives that encourage healthy lifestyles and balanced diets. Smaller pack sizes, particularly in the SSB category, promote balanced diets and recognise that these beverages can be consumed in moderation as a discretionary food item (see Appendix 2). It is also important to note the wide variety of beverages in portion sizes, that are appropriate for children, are available on the market – a move by the industry as it has recognised the need to encourage portion control.

Nutritional education

Another important part of the Healthy Food Partnership is its focus on ‘improving consumers’ knowledge and awareness of healthier food choices, including through developing and publicising tools and resources to consumers and health professionals.

Members of the Australian Beverages Council recognise the responsibility they have to Australians who consume a range of the industry’s products every day. In supporting and empowering consumers to make healthier choices, Australian Beverages Council’s Members have agreed to:

- Restrict availability of SSBs in schools;
- Not market SSBs to children under 12 years of age;
- Encourage only milk, juice (no added sugar) and water for the young, and only milk and water for the very young;
- Clearly display kilojoule/energy content of each can or bottle on the front of pack.

The Australasian Bottled Water Institute (ABWI), the dedicated bottled and packaged water division of the Australian Beverages Council, promotes the consumption of water as the beverage of choice for young Australians. In addition, on warm days, while travelling, at work and particularly during exercise, water is a key part of staying hydrated. This is in line with the Australian Dietary Guidelines which states ‘drink plenty of water’.

Further details of these initiatives are outlined in the section of the role of food industry in contributing to diets (Page 25).

3. School Canteen Policy

The National Healthy School Canteens (NHSC) project was funded by the Australian Government, as part of the Australian Better Health Initiative. Commencing in 2008, the project has developed national guidance and training to help canteen managers make healthier food and drink choices for school canteens.

Research indicates that:

- Children consume almost 40 per cent of their daily energy intake at school (42), and schools have been recommended as a key setting for population-based nutrition initiatives (43).
- Evidence from systematic reviews suggests that school food and beverage nutrition policies and guidelines have been effective in improving the food environment of schools and the dietary intake of students (44, 45).

The Australian Beverages Council actively participated in detailed consultation with the NSW Government in relation to the Canteen Strategy, and provided feedback on water, carbonated beverages and juice. We support the school canteen policy, including not offering SSB in schools, and encouraging the choice of 100 per cent fruit juice (with no added sugar), milk and water in school canteens.

4. NSW Healthy Food Finder

The NSW Healthy Food Finder is a product lookup tool developed by NSW Health. It is designed to help canteen staff make informed choices on what food and beverages should be purchased for schools and NSW Health facilities.

The key users of the NSW Healthy Food Finder are:

- NSW school canteen staff and volunteers (Government, Catholic and Independent schools);
- NSW Health food and drink suppliers and retailers;
- NSW Department of Education employees;
- Association of Independent Schools of NSW employees;
- Catholic Schools of NSW employees;

- NSW Health staff and volunteers; and
- Staff of other NSW Government organisations.

The Australian Beverages Council participated in consultations with the NSW Government and NSW Health to ensure industry participation assisted in shaping the strategic direction of the Healthy Food Finder. The Australian Beverages Council acted as a conduit between non-alcoholic beverages companies and the NSW Government to provide specific nutritional data for the Healthy Food Finder database. Many fields of data across thousands of beverage product lines were supplied to the NSW Government to ensure the database is accurate and up-to-date. The Australian Beverages Council also acts as an intermediary between the NSW Government and non-alcoholic beverages companies by collating and providing feedback on the usability of the database. Our organisation and Members have agreed to continue to support the database by supplying the latest nutritional information about products.

5. Healthy Weight Guide

The Healthy Weight Guide is a comprehensive source of information available to the Australian public on how to achieve and maintain a healthy weight. It is based on Australian and international research and has been developed by the Australian Government.

The Australian Beverages Council supports this and any other initiative that supports greater nutritional understanding and reduces nutritional misinformation. The Australian Beverages Council and its Members support the provision of low and no sugar/kilojoule options (see Appendix 3) while recommending that sugar-sweetened are consumed occasionally.

The Australian Government's Department of Health identified a need for one authoritative source about healthy weight for Australians. It commissioned a consortium of three groups of experts to develop the Healthy Weight Guide website and the supporting brochures, booklets and posters. The consortium consisted of a health and communications consultancy, which led the process and designed and wrote the Guide. The Boden Institute of Obesity, Nutrition, Exercise and Eating Disorders at The University of Sydney, which provided the evidence base for the Healthy Weight Guide.

A qualitative research company, which tested the draft materials with a wide range of Australians from different backgrounds and with a range of health professionals to ensure that the Guide content was appropriate and engaging for a broad Australian audience. The consortium worked closely with the Department of Health throughout the project.

6. Build participation in sport and physical activity

The Australian Government recently announced that it will invest \$230 million in initiatives that help build participation in sport and physical activity participation over five years.

The package will encourage more Australians to be more active, more often, by promoting participation in physical activity and strengthening links between the community and sporting organisations.

Key elements include:

- a participation grants program to get inactive people moving;
- expanding the Local Sporting Champions grants program;
- continuing the AusPlay survey, the Government's population level physical activity survey; and
- Safe Sport Australia – to build child safe cultures and practices in sport.

The Australian Beverages Council is very supportive of this announcement by the Australian Government, as research indicates that:

- Less than one in every two Australian adults met the “sufficiently active” threshold for the physical activity guidelines in 2011-12 (46),
- Less than one in every five (19 per cent) of children aged 5-17 years met the recommended 60 minutes of physical activity per day across all seven days (46), and
- Sport participation contributes significantly to total leisure time physical activity levels. (47).

Every Member of the Australian Beverages Council supports the industry's commitment to continue their active involvement either directly or in partnership with National and State educational

authorities, or with appropriate private and public partners, in educational programs to provide consumers with relevant information on healthy eating and active lifestyle.

Some of the ways in which Members of the Australian Beverages Council support healthy, active lifestyles include:

- Engagement with other stakeholder groups to encourage physical activity in children and adults
- Providing nutritional education brochures, website materials and nutritionally balanced recipes
- Ongoing Health Care Professional programs and education
- Education programs for high school students
- Hydration testing tools for use by sports dietitians
- Active Lifestyle programs, including Physical Activity Scholarships or similar, research studies investigating children's physical activity habits and consumer booklets developed in conjunction with the Australian Sports Commission
- Participation in stakeholder forums to help inform government and aid in the creation of government sponsored initiatives.

Summary: The effectiveness of existing policies and programs introduced by Australian governments.

1. The Australian Beverages Council recognises the need to prevent childhood obesity and the industry's responsibility to encourage healthy lifestyles and balanced diets.
2. The non-alcoholic beverage industry actively supports existing Government policies and programs, including the HSR, Healthy Food Partnership, School Canteen Policy, NSW Healthy Food Finder, and Healthy Weight Guide.
3. In recognising the need to constantly support the changing Australian diet, the Australian Beverages Council and its Members would, after appropriate consultation, actively support future initiatives that help reduce obesity.

F: Evidenced-based measures and interventions to prevent and reverse childhood obesity, including experiences from overseas jurisdictions

How can childhood obesity be reduced?

While obesity is a highly complex, multi-causal issue, there is significant evidence that comprehensive and multifaceted programs can reduce childhood obesity:

- A 2011 Cochrane review of 55 studies (48) found that childhood obesity prevention programs were effective in reducing BMI, particularly the programmes targeted to children aged 6 to 12 years. Promising policies and strategies included healthy eating and activity in the school curriculum, improving the nutritional quality of the food supply, encouraging environments and cultural practices that supported children to eat healthier foods and to be active, and providing support for teachers and parents.
- In line with the Cochrane review, two subsequent systematic reviews and meta-analysis (49, 50) found that the interventions with the largest reductions in BMI were those that combined dietary education with physical activity education and/or behavioural therapy, compared to a focus on diet alone.
- A 2013 meta-analysis of 32 randomised controlled trials (51) found that the largest reductions in BMI was for comprehensive programs more than 12 months long, that aimed to “provide information on nutrition and physical activity, change attitudes, monitor behaviour, modify environment, involve parents, increase physical activity and improve diet.”

A comprehensive, collaborative, systems-based approach is required

These findings are in line with the McKinsey Global Institute report (10) on overcoming obesity, which concluded:

“No single solution creates sufficient impact to reverse obesity: only a comprehensive, systemic program of multiple interventions is likely to be effective.” – McKinsey Global Institute Report (2014)

The importance for comprehensive, multifaceted solutions to prevent and reduce childhood obesity reflects the complex, multi-causal nature of obesity (10, 52). The McKinsey report also states that strategies are more likely to be effective with a collaborative approach from government, employers, educators, retailers, restaurants, and food and beverage manufacturers, with a combination of top-

down corporate and government interventions and bottom-up community-based ones (10). Government policy on its own is unlikely to be effective (53).

Case studies of effective interventions for reducing childhood obesity

1. Ensemble Prévenons l'Obésité Des Enfants' (EPODE, Together Let's Prevent Childhood Obesity)

The importance of a collaborative, multifaceted approach to prevent childhood obesity is demonstrated in the French program EPODE (54). This is a large-scale, coordinated, capacity-building approach for communities to implement effective and sustainable strategies to prevent childhood obesity. It promotes the involvement of multiple stakeholders at a:

- Central level (government, health groups, NGOs and private partners like industry); and
- Local and hyperlocal levels (political leaders, health professionals, families, teachers, local NGOs, and the local business community).

Implementing this approach in a pilot project in France, childhood obesity in the two pilot towns did not increase, while in two comparison towns, overweight and obesity levels doubled. Children in EPODE towns also had a better knowledge of nutrition, improved eating habits and increased their physical activity. A key to the program's success is its involvement of the whole community – families, local GPs, pharmacists, shop owners, local government, sports and cultural associations, as well as schools.

The EPODE model was shaped over five years of pilot implementation in France in 10 towns, and is now being used in some 300 worldwide, including the OPAL program in South Australia (55). The positive impact on obesity levels is highlighted in two recent publications:

- **France:** The EPODE methodology was implemented in eight French towns involving children in age groups from four to five years and 11 to 12 years. While national data in France indicated an overall stabilization in the prevalence of childhood overweight and obesity, results from the eight French EPODE pilot towns showed a significant decrease of 9.1 per cent in overweight and obesity between 2005 and 2009. Encouragingly, children who attended schools in deprived areas showed

a downward trend of 2 per cent in the prevalence of childhood overweight and obesity, compared with an increase in the prevalence of overweight and obesity in children from disadvantaged households at national level (56). In St Jean, Midi Pyrenees, 817 children were enrolled of whom 19 per cent were overweight in 2004. This figure had dropped to 13.5 per cent one year later.

A multidisciplinary team of experts was involved with each child and their family, with regular meetings with dietitians and doctors, with support from psychologists and other professionals.

- **Belgium:** The VIASANO program, based on the EPODE methodology, was launched in 2007 and 2008 in two towns in Belgium. The prevalence of overweight (-2.1 per cent) and obesity (-2.4 per cent) decreased in the pilot towns, but remained stable in the comparison population (57).

2. The Dutch Obesity Intervention in Teenagers (DOiT) – Netherlands

The DoiT intervention is a multicomponent school-based program aimed at preventing excess weight gain in adolescents aged 12-14 years (58). Its aim is to increase awareness and to induce behavioural changes concerning energy intake (e.g. consumption of SSB and high-energy snack foods) and energy output (e.g. physical activity and screen-viewing behaviour). The intervention consisted of both an individual component (i.e. an educational program), and an environmental component (i.e. encouraging schools to offer additional physical education classes and advice for changes to the foods sold in the school cafeteria).

Results from a randomised controlled trial (58) in 18 secondary schools reported an improvement in body composition in girls and a reduction in SSB consumption in boys and girls.

3. The OPAL Program – South Australia

The OPAL program in South Australia is the largest childhood prevention program in South Australia, operating in 20 local communities across the State and one community in the Northern Territory (over seven years of implementation) (59). It is a multi-setting, multi-sectoral, community-based, systems-wide program. The program has six goals around healthy eating and physical activity, with seven strategies to guide a comprehensive approach to health promotion. The program has taken multifaceted steps towards a healthier community, including encouraging children and families to walk and cycle to school, eat healthier breakfasts at school and home, and encouraging playing outdoors.

A 2016 evaluation of the OPAL program (60) found that children in the OPAL community had a:

- 53 per cent reduced likelihood of obesity in children 9-11 years compared to the control group;
- 50 per cent increased probability of meeting the daily recommended servings for fruit, with no change in probability in the control group;
- 50 per cent increased probability of meeting the discretionary (“extra”) food and drink guideline compared to children in the control communities; and
- 60-70 per cent more likely to meet the physical activity guidelines at the end of the intervention, although no significant difference vs. the control community.

4. The US Healthy Weight Commitment and the 2025 Beverages Calorie Initiative

The Healthy Weight Commitment, founded in 2009, is a U.S. initiative supported by 230 retailers, food and beverage manufacturers, restaurants, sporting goods and insurance companies, trade associations, non-governmental organisations and professional sports organisations. It aims to reduce obesity, especially childhood obesity, through providing education, a support system for families to make behavioural change, and bringing about changes to the food supply. Its companies initially pledged to remove 1.5 trillion calories from the marketplace by 2015 by introducing more low-calorie options, reducing the calorie content of current products and reducing portion sizes of single-serve products.

By 2012, 6.4 trillion calories had been removed from the food supply, exceeding the 2015 pledge by more than 400 per cent and three years early. This 6.4 trillion calorie decline translates to a reduction of 78 calories per person in the United States per day. The Healthy Weight Commitment Foundation have claimed that obesity rates among U.S. children aged 2-5 years have since plateaued and receded (61) and the McKinsey Global Institute ranked this public private partnership as one of the most effective programmes in the global fight against obesity (10).

The 2025 Beverages Calorie Initiative (62), in partnership with the Alliance for a Healthier Generation, the American Beverage Association, The Coca-Cola Company, and PepsiCo, plan to extend this reduction by reducing the calorie contribution of beverages by a further 20 per cent from 2014 to 2025. This is to be achieved by a range of initiatives, including increasing access to smaller portion sizes, water and no- and lower- calorie beverages, providing calorie counts, promoting calorie awareness, and with a specific focus on lower socio-economic areas.

These initiatives highlight the role that collaborative public-private partnerships can have in improving diet and preventing obesity.

Summary: Evidenced-based measures and interventions to prevent and reverse childhood obesity, including experiences from overseas jurisdictions.

1. Prevalence of childhood obesity can be reduced, with the strongest evidence supporting comprehensive, multi-faceted and system-wide intervention. The effectiveness of these approaches reflects the highly complex and multifaceted nature of obesity.
2. Components of effective interventions include: long-term (>12 months), school-based, include physical activity and nutrition education, improve the food supply of schools and the opportunities for physical activity, focus on influencing attitudes and behaviour, and include support for teachers and parents. There is evidence that these types of programs can be effective at improving diet and preventing obesity in both Australian children and adolescent populations.
3. The Australian Beverages Council recommends that strategies to prevent and reverse childhood obesity are commensurate with these principles. A collaborative approach between all stakeholders is needed to deliver the comprehensive, system-wide model required.

G: The role of the food industry in contributing to poor diets and childhood obesity in Australia

The Australian Beverages Council acknowledges the contribution that our products can have on the Australian diet, and we are committed to contributing to evidenced-based solutions that help towards preventing and reducing childhood obesity.

What initiatives have the beverage industry undertaken to improve the Australian diet?

For over a decade the non-alcoholic beverages industry, steered by the Australian Beverages Council, has been undertaking voluntary initiatives that will have a substantial and lasting impact on Australian's non-alcoholic beverage intake. Many of these initiatives are commensurate with recommendations from public health bodies to help reduce the population's sugars intake (53), which are the primary source of kilojoules from beverages.

1. Reducing sugar and kilojoules in drinks through introducing more lower and no-sugar/kilojoule options to market

Today, the non-alcoholic beverage industry is providing far greater beverage choices for Australians, with more low- or no- sugar/kilojoule beverage options than ever before. Australians now have the option to choose from a wide range of beverage categories, including diet soft drinks, lower kilojoule soft drinks with natural sweeteners such as Stevia, low kJ energy drinks, diet cordials, fruit juice drinks, low kJ sports drinks, and flavoured waters (see Appendix 3). This consumer choice between regular sugar/kilojoule and similar tasting low- or no-sugar/kilojoule options is unique to non-alcoholic beverages and is not found in any other category within the whole food supply.

2. Reducing pack size

Our Members have introduced smaller pack sizes for many products, for example, 300mL, 250mL and 200mL slimline cans for soft drinks, to offer consumers choice of portion size and reduce the intake of kilojoules from beverage products (see Appendix 2). In addition to this, portion sizes appropriate for children can be found in a wide variety of beverages. Research has indicated that the portion size of food and beverage products is an important determinant of energy intake (62-64).

3. Providing clear nutrition Information on pack

We are committed to informing consumers with correct nutritional information to help make it easier for them to understand how many kilojoules are in each beverage. We do this through voluntary adoption of front of pack labelling systems:

- **Nutrition Information panels on vending machines:** Major bottlers have committed to display nutrition information panels on the majority of vending machines.
- **The Daily Intake Guide label:** Introduced on beverage packs by most of the Australian Beverages Council Members in 2006, this provides clear information on both the number of kilojoules per serve and what this represents as a percentage of an adult's total daily energy intake.
- **Health Star Rating system:** The majority of our Members within the beverage industry have voluntarily adopted this government labelling system to help consumers to make informed choices. To assist consumers further by providing guidance on serve sizes, the beverage industry is the first to develop approved standard serve sizes for use on pack.

4. Responsible Marketing

The Australian Beverages Council and its Members have committed to a responsible marketing to children policy, which restricts direct advertising or marketing to children under 12 years of age for regular kilojoule products. The Australian Beverages Council's largest Members, representing between them 99 per cent of the carbonated beverage market, 50 per cent of the juice market and 95 per cent of the bottled water market, have all adopted these policies and continue to take their commitment very seriously. In all cases, Members of the Australian Beverages Council abide by the requirements of the Australian Consumer and Competition Commission (ACCC) and the Food Standards Code. In addition, the Australian Beverages Council has adopted, as policy, the Australian Association of National Advertisers' (AANA's) guidelines for advertising directed at children.

5. Complying with NSW Schools Canteen Policy

As an industry, where we have direct supply arrangements with schools, we have also restricted access of sugar-sweetened soft drinks to all NSW School canteens and complied with all relevant school canteen guidelines in Australia.

6. Building knowledge on the role of beverages in the Australian diet

The Australian Beverages Council also commissions independent research to better understand current beverage consumption behaviour and factors related to diet and health. For example, to understand the role of non-dairy, non-alcoholic beverages in the diet of Australians, a secondary analysis of the National Nutrition and Physical Activity Survey (2011-12) (part of the Australian Health Survey) was commissioned by the Australian Beverages Council and conducted by the CSIRO (41). The research has informed the Australian Beverages Council initiatives to help improve health and wellbeing.

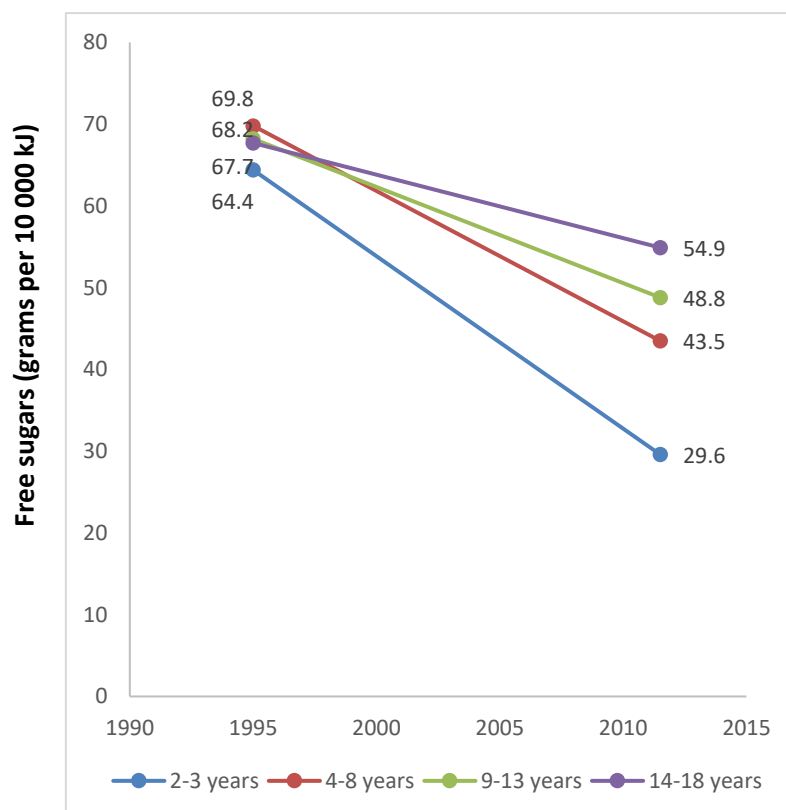
What impact have these initiatives had?

1. There has been a long-term (16-year) decline in the population intake of SSB and their contribution to free sugar intake, particularly in children and teenagers.

The ABS recently reported from nationally representative nutrition survey data that:

- **The total consumption of SSB has declined substantially from 1995 to 2011-12 (63).** The largest reductions are in the proportion of children consuming SSB, which has greatly decreased across all age groups (Figure 4):
 - ↓ **Adults 19 years plus:** The proportion consuming SSB declined from 35.0 per cent in 1995 to 30.6 per cent in 2011-12 (**13 per cent reduction**).
 - ↓ **Children 2-3 years:** The proportion consuming SSB declined from 64.4 per cent in 1995 to 29.6 per cent in 2011-12 (**54 per cent reduction**).
 - ↓ **Children 4-8 years:** The proportion consuming SSB declined from 69.8 per cent in 1995 to 43.5 per cent in 2011-12 (**38 per cent reduction**).
 - ↓ **Children 9-13 years:** The proportion consuming SSB declined from 68.2 per cent in 1995 to 48.8 per cent in 2011-12 (**28 per cent reduction**).
 - ↓ **Children 14-18 years:** The proportion consuming SSB declined from 67.7 per cent in 1995 to 54.9 per cent in 2011-12 (**19 per cent reduction**).

Figure 4. Proportion of children consuming sugar-sweetened beverages, by age group, 1995 and 2011-12.

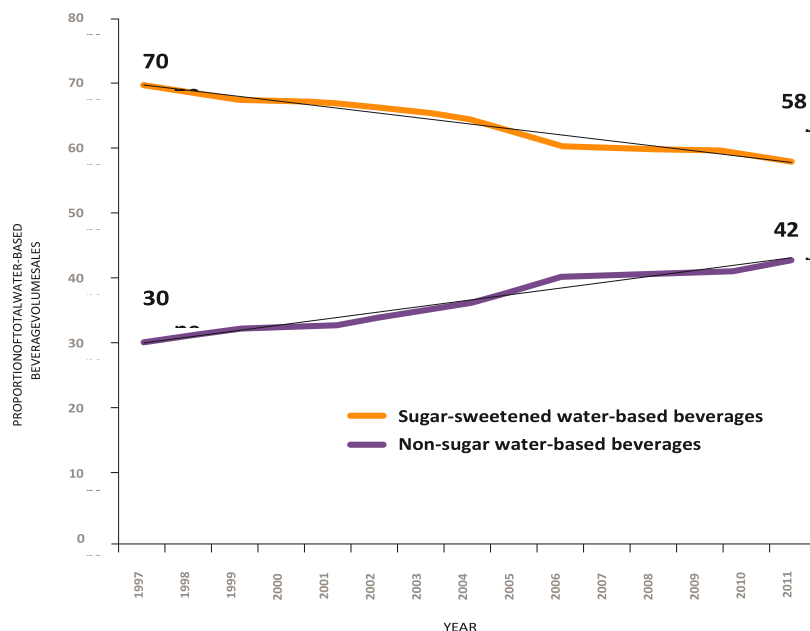


Source: ABS. Australian Health Survey: Nutrition First Results - Foods and Nutrients, 2011-12

- **The intake of free sugars from non-alcoholic beverages has declined substantially from 1995 to 2011-12 (63):** The intake of free sugars from non-alcoholic beverages has declined by about 24 per cent in this period – from 34.0 grams to 25.6 grams per 10 000 kJ (measure of total dietary intake). The largest reductions were again in children, which greatly decreased in each of the different age categories:
 - ↓ **Adults 19 years plus:** The free sugars intake per 10 000 kJ from non-alcoholic beverages declined from 27.0 grams to 23.5 grams (**13 per cent reduction**).
 - ↓ **Children 2-3 years:** The free sugars intake per 10 000 kJ from non-alcoholic beverages declined from 57.2 grams to 24.2 grams (**58 per cent reduction**).
 - ↓ **Children 4-8 years:** The free sugars intake per 10 000 kJ from non-alcoholic beverages declined from 54.7 grams to 27.3 grams (**50 per cent reduction**).

- ↓ **Children 9-13 years:** The free sugars intake per 10 000 kJ from non-alcoholic beverages declined from 52.4 grams to 33.8 grams (35 per cent reduction).
- ↓ **Children 14-18 years:** The free sugars intake per 10 000 kJ from non-alcoholic beverages declined from 58.6 grams to 41.7 grams (29 per cent reduction).
- **There has been a large change in the proportion of beverages sold that are sugar-sweetened.** Shrapnel and Levy (2014) (64) found a reduction in the proportion of sugar-sweetened vs. non-sugar sweetened beverages purchased, with the non-sugar varieties such as no-sugar soft drinks and still water increasing to nearly one in two drinks consumed in 2011 (42 per cent volume share in 2011 vs. 30 per cent in 1997) (Figure 5).

Figure 5. Volume share of sugar-sweetened and non-sugar water-based beverages, 1997-2011.



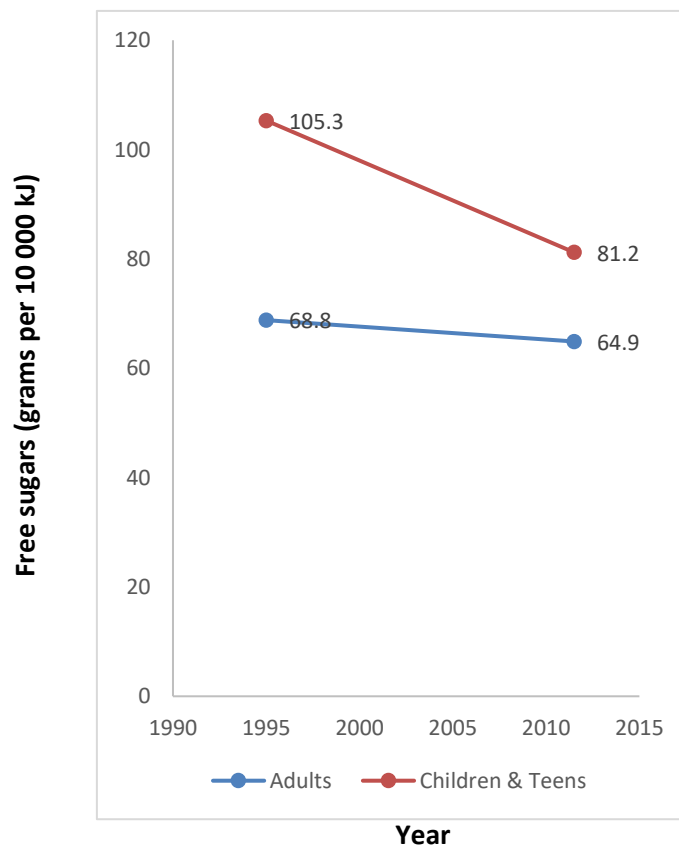
Source: Levy G, Shrapnel W. Nutrition & Dietetics. 2014; 4(71):193-200

2. The decline in the consumption of SSB has resulted in large decreases in the population intake of free sugars, particularly in children and teens.

The ABS also recently reported from nationally representative nutrition survey data that:

- The total dietary intake of free sugars has declined considerably from 1995 to 2011-12 – by about 12 per cent in Australians two years and over and almost one-quarter (23 per cent) in children and teens (63):
 - ↓ The free sugars intake has **declined** from 68.8 grams to 64.9 grams per 10 000 kJ in adults and has **declined** from 105.3 grams to 81.2 grams per 10 000 kJ in children and teens, from 1995 to 2011-12 (Figure 6).
 - ↓ The proportion of energy from free sugars has **declined** from 12.5 per cent in 1995 to 10.9 per cent in 2011-12.
 - ↓ The total intake has **declined** from 74.1 grams in 1995 to 59.6 grams in 2011-12.
 - ↓ More than half (54 per cent) of Australians now have free sugars intake **below** the World Health Organisation guideline on any given day, compared to less than half (46 per cent) in 1995.

Figure 6. Intake of free sugars (grams per 10 000 kJ) for the total diet in Australian adults (19 years plus) and children (2-18 years), 1995 vs. 2011-12



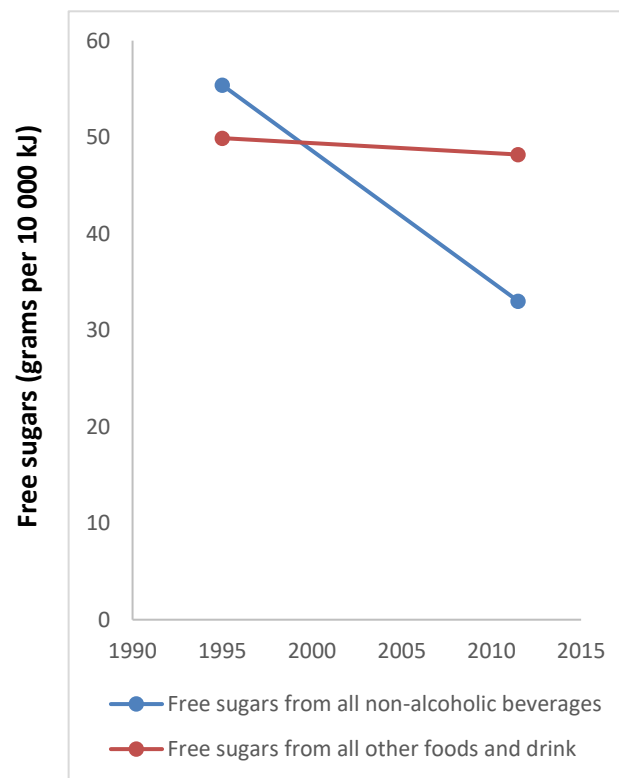
Source: ABS. Australian Health Survey: Consumption of Added Sugars, 2011-12

▪ **Almost all of this decline in free sugars intake can be accounted for by the reduction in the sugar consumed from non-alcoholic beverages (63):**

- ↓ In all Australians, **90 per cent of the total decline** in free sugars came from a reduction in free sugars consumed in non-alcoholic beverages.
- ↓ In children and teens, the reduction in free sugars from non-alcoholic beverages explained **94 per cent of the total reduction** in free sugars (Figure 7).

These findings are in line with evidence from several different research groups, who have consistently reported a sharp decline in both the sales and intake of SSB and/or added or free sugars (26, 27, 63-65).

Figure 7. Change in the intake of free sugars (grams per 10 000 kJ) from non-alcoholic beverages and all other foods and drinks in all Australian children and teens, 2 – 18 years, 1995 vs. 2011-12



Source: ABS. Australian Health Survey: Consumption of Added Sugars, 2011-12

3. At a population level, the contribution of sugar sweetened drinks to total energy intake is now relatively low.

A secondary analysis of the 2011-12 National Nutrition and Physical Activity Survey (41) reported that:

- The contribution of non-alcoholic, non-dairy beverages to total energy intake is relatively low across the population – only 5.5 per cent of children’s intake and only 4.1 per cent of adult’s intake.
- Sugar-sweetened soft drinks contributed less than two per cent of total energy intake in both children and adults (41).

How is the beverage industry and its Members planning to further improve the Australian diet?

While the intake of SSB and their contribution to total sugars has decreased substantially, we recognise that the average intake of sugar from discretionary foods is still too high. As such, the beverage industry has recently committed to **reducing its sugar contribution from the food supply by 10 per cent by 2020 and 20 per cent by 2025.**

The Australian non-alcoholic beverage industry has pledged to reduce its sugar contribution from the food supply by 10 per cent by 2020 and 20 per cent by 2025.

These commitments are based on sales weighted volume data from 2016 (1st January to 31st December 2015), and all drinks represented by the Australian Beverages Council are included in the commitment: all carbonated drinks, energy drinks, sports and electrolyte drinks, frozen drinks, bottled and packaged waters, juice and fruit drinks, cordials, iced teas, ready-to-drink coffees, flavoured milk products and flavoured plant milks.

This significant and important initiative demonstrates the continued commitment of the beverage industry in helping to improve the diets of Australians. It will be monitored and audited by an independent body with a public report on its progress made available.

The pledge will be achieved by a range of initiatives, including:

- ✓ Reformulation of higher sugar beverages;
- ✓ Increased innovation of low- and no-sugar beverages;
- ✓ Marketing mix weighted further towards low- and no-sugar beverages, including point of purchase initiatives;
- ✓ Introducing smaller pack sizes and reducing the pack sizes of some existing products (Appendix 2);
- ✓ Promoting the consumption of more bottled water for young Australians and only milk and water for the very young; and
- ✓ Transitioning all vending machines to including 75 per cent healthy choices by 2020.

Summary: The role of the food industry in contributing to poor diets and childhood obesity in Australia.

1. The non-alcoholic beverage industry has undertaken a range of voluntary initiatives to help improve the Australian diet, including product innovation, reducing portion sizes, ensuring clear labelling, introducing responsible marketing practices and investing in research.
2. There has been a substantial decline in the intake of free sugars, with the largest declines in children and teens (23 per cent reduction in free sugars per 10 000kJ). Almost all (94 per cent) of the decline in free sugars in children and teens is directly from the reduction in non-alcoholic beverages.
3. The non-alcoholic beverage industry will further reduce its contribution of sugar to the Australian diet by 10 per cent by 2020 and 20 per cent by 2025. The non-alcoholic beverage industry continues to be a collaborative stakeholder in helping to reduce and prevent childhood

H: Any other related measures: A sugar-sweetened beverage tax

What is the evidence for a SSB tax in reducing obesity?

A tax on SSB has been proposed by some stakeholders to help reduce obesity levels in Australia.

Current evidence mostly consists of:

- 1) modelling studies; and
- 2) real-world evidence.

These lines of evidence have been comprehensively reviewed last year by both the Menzies Research Centre (66) and the New Zealand Institute of Economic Research (67), who both concluded that a tax on SSBs lacks evidence for reducing obesity levels and improving health outcomes:

“Taxes on SSBs fail to reduce obesity” – Menzies Research Centre, 2017.

“No study based on actual experience with sugar taxes has identified an impact on health outcomes” – New Zealand Institute of Economic Research, 2017.

“The evidence that sugar taxes improve health is weak.” – New Zealand Institute of Economic Research, 2017.

1. Modelling studies

Modelling studies make hypothetical predictions about the effects a SSB tax will have on obesity, typically by its effects on reducing energy intake, e.g. a SSB tax will lead people to switch from SSB to water, reducing total energy intake. In general, these predicted benefits are small. For example, a modelling study in Australian adults reported that a 20 per cent SSB tax would reduce total daily energy intake by 16 kJ (men) and 9 kJ (women) in Australian adults (68) – this is less than the kilojoules in a single jellybean. This study also calculated a reduction in BMI by 0.1 kg/m² (men) and 0.06 kg/m² (women) – equivalent to around 300 grams for men and 200 grams for women over their entire lifetime.

2. Real-world evidence

▪ Mexico

In January 2014, a SSB tax was implemented in Mexico. It was reported by one study using ‘counterfactuals’ that there was a 6.1 per cent reduction in SSB purchases after the first year of implementation compared to previous years (69), and a 7.2 per cent reduction after two years (70). The estimated reduction in energy intake after the first year is about 6 calories a day (69) – in the context of an average daily dietary intake of 3,025 calories, this represents 0.2 per cent of the daily diet, or a bite of an apple. Unsurprisingly, the tax has had no discernable impact on rates of overweight and obesity. The 2016 National Health and Nutrition Survey found that overweight and obesity rates showed no reduction among Mexican adults over a similar period of time as the SSB tax was in place, increasing non-significantly from 71.2 per cent in 2012 to 72.5 per cent in 2016 in all adults and increasing significantly among adult women (73.0 per cent in 2012 vs. 75.6 per cent in 2016) (71). Mexican Treasury sales tax receipts have indicated that there was an initial dip in sales in 2014 but sales have since rebounded and stabilised, and then risen again in year three (72).

▪ Berkeley

In March 2015, a SSB tax was implemented in the US city of Berkeley, California. It was reported that the tax was associated with a reduction of sales of SSB but that there was only a small and non-significant reduction in energy intake from SSB of 25 kJ. Further, there was a 124 kJ increase in energy intake from untaxed beverages (e.g. milk, smoothies and milkshakes), which was significant (73). After the first year, there was a net *gain* in energy consumed from all beverages, comprising an additional 99 kJ (28 kcal) per person per day.

▪ Evidence from other jurisdictions

A comprehensive literature review of SSB taxes across 16 ‘real-world’ studies, where a SSB tax had been introduced, found that it had not lead to significant population weight loss in any place where it was implemented (74).

“All observational studies ... found no statistically significant associations between SSB taxes and weight gain” – Bes-Rastrollo et al. 2016.

Why might a SSB tax be ineffective for reducing obesity?

1. A SSB tax can have unintended consequences on the total diet

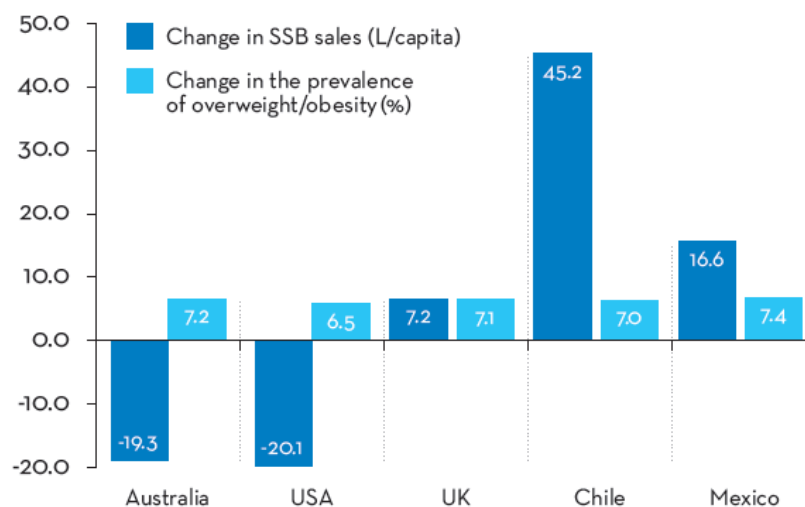
It is often predicted in modelling studies that individuals will respond to a SSB tax by switching entirely to water, but this does not always happen in real life. Studies have found that:

- In Mexico, consumers switched from more expensive to cheaper brands of soft drink, and bought larger drink sizes in bulk (75).
- Consumers are likely to have less money left over to spend on healthier ‘core’ foods – an Australian study predicted that we would see a decrease in the consumption of fruit and vegetables after a SSB tax (76).
- There can be an increase in the intake of untaxed ‘discretionary’ foods. A recent study from the U.K found that increasing the price of soft drink was associated with an increase in the sales of some types of alcohol (77), while another recent study found price increases in SSB was associated with an increase in the purchase of chocolate, confectionery and other sugary drinks (78).

2. SSBs are only small contributors to total energy intake and thus obesity risk

Researchers have consistently reported a sharp decline in both the sales and intake of SSB and/or added and free sugars during a time where overweight and obesity rates have continued to climb (26, 27, 63-65), and at a rate similar to other countries who have not reduced their intake of SSB (79) (Figure 8). A recent review paper of clinical trials also found a lack of strong scientific evidence that SSB are a primary cause of childhood obesity (80).

Figure 8. Changes in SSB sales do not correlate to changes in overweight and obesity (2002 to 2014).



Source: Arsenault et al. Nutrients. 2017; 9(6).

The critical dietary issue in Australia, however, is the **excess intake** of all discretionary foods (26, 27). This food group contributes 38.5 per cent of total energy intake in Australian children, while the contribution of SSB to total energy intake is only 4 per cent (25).

“A coordinated approach to lowering intakes of all discretionary foods and beverages is needed to balance energy intake with energy expenditure.” – Brand-Miller & Barclay. 2017.

Summary: The evidence for a SSB tax in reducing obesity.

1. There is limited evidence supporting a SSB tax as an effective strategy for reducing obesity. Focusing on SSB only identifies a small contributor to total kilojoules consumption, and there is consistent global evidence that SSB tax is not associated with a reduction in obesity.
2. A SSB tax can have unintended consequences on the diet, such as consumers switching from more expensive brands to cheaper alternatives, buying soft drinks in bulk, reduced budget for healthier foods, and increasing their intake of untaxed foods and beverages that contribute to energy intake (e.g. alcohol and confectionery).
3. A coordinated approach to reduce the intake of all discretionary foods and beverages is required. The Australian Beverages Council are continuing to undertake voluntary initiatives that help Australians to further reduce their intake of sugars from SSB.

Conclusion

The Australian Beverages Council is pleased to provide a submission to the Select Committee into the Obesity Epidemic in Australia.

Obesity is highly complex and multifactorial, and on behalf of the entire non-alcoholic beverages industry, the Australian Beverages Council recognises the role the sector should play in being part of the solution to Australia's obesity problem by improving the Australian diet. We have undertaken a range of voluntary initiatives, such as improved consumers information about the nutritional content of products, innovating to ensure a wide range of low and no kilojoule and or sugar beverage options, and introducing smaller portion sizes in the food supply. These initiatives have helped to deliver a substantial decline in SSB consumption and the total free sugars intake in the Australian diet, where the largest reductions have been seen in children.

Despite these declines, the intake of discretionary foods and beverages is still excessive, and more work needs to be done to reduce the energy intake from this group of foods. As such, we have also committed to the first industry sugar reduction pledge of its kind in this country. This will reduce our total sugars contribution to the Australian diet by 10 per cent by 2020 and 20 per cent by 2025.

We welcome working collaboratively with multiple stakeholders including government, health organisations and food industry to help address obesity and encourage a healthier Australia.

For further information:

To discuss this submission or any aspect contained herein, please contact:

Mr Geoff Parker Chief Executive Officer Australian Beverages Council	Mr Shae Courtney Public Affairs Manager Australian Beverages Council
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Glossary of terms:

Added sugars: Includes added forms of dextrose, fructose, sucrose, lactose, sugar syrups and fruit syrups. Excludes the natural sugars in intact fruits, vegetables and milk.

Body mass Index (BMI): A person's weight (in kilograms) divided by the square of his or her height (in metres). BMI is an approximate measure of total body fat.

Discretionary foods and beverages: Foods and drinks not necessary for a healthy diet and are too high in saturated fat and/or added sugars, added salt or alcohol and low in fibre, e.g. alcohol, cakes, biscuits, confectionery, chocolate, soft drinks, etc.

Free sugars: Include all sugars defined as added sugars plus the sugar component of honey, fruit juice and fruit juice concentrates.

Obesity: Excessive fat accumulation that presents a risk to health. A person with a BMI of 30 or more is generally considered obese.

Overweight: A person with a BMI of 25 or more is generally considered overweight.

Sugar-sweetened beverages (SSB): Beverages with added sugar, e.g. non-diet soft drinks, flavoured mineral waters, flavoured juice drinks, sports drinks, sweetened tea, coffee drinks, energy drinks, sports drinks.

Sugar-sweetened beverages tax: An increase in the cost of non-alcoholic, water-based beverages with added sugar, e.g. soft drinks, fruit drinks, cordials, energy drinks and sports drinks.

Total sugars: Includes free sugars plus the natural sugars in intact fruits, vegetables and milk.

Water-based beverages: Beverages ready to drink from the packaging and predominantly water based, e.g. carbonated soft drinks, sports drinks, energy drinks, iced tea, mineral water, mixers (e.g. tonic water and ginger beer) and still water. Does not include cordial, syrup-based carbonated soft drinks, tap water and milk-based beverages.

References

1. Australian Bureau of Statistics. National Health Survey: First Results, 2014-15 - 4364.0.55.001. Canberra 2015.
2. Morrill A, Chinn C. The obesity epidemic in the United States. *J Public Health Policy*. 2004;25:353-66.
3. Ravussin E, Ryan DH. Three New Perspectives on the Perfect Storm: What's Behind the Obesity Epidemic? *Obesity (Silver Spring)*. 2018;26(1):9-10.
4. Williams EP, Mesidor M, Winters K, Dubbert PM, Wyatt SB. Overweight and Obesity: Prevalence, Consequences, and Causes of a Growing Public Health Problem. *Curr Obes Rep*. 2015;4(3):363-70.
5. Hruby A, Hu FB. The Epidemiology of Obesity: A Big Picture. *Pharmacoeconomics*. 2015;33(7):673-89.
6. Gurnani M, Birken C, Hamilton J. Childhood Obesity: Causes, Consequences, and Management. *Pediatr Clin North Am*. 2015;62(4):821-40.
7. Finegood DT, Merth TD, Rutter H. Implications of the foresight obesity system map for solutions to childhood obesity. *Obesity (Silver Spring)*. 2010;18 Suppl 1:S13-6.
8. Kumanyika S. Minisymposium on obesity: overview and some strategic considerations. *Annu Rev Public Health*. 2001;22:293-308.
9. Vandenbroeck IP GJ, Clemens M. . Foresight Tackling Obesities: Future Choices—Building the Obesity System Map. : Government Office for Science, UK Government's Foresight Programme; 2007 [Available from: <http://www.foresight.gov.uk/Obesity/12.pdf>.
10. McKinsey Global Institute. Overcoming obesity: an initial economic analysis. Discussion paper. 2014.
11. National Preventative Health Taskforce. Australia: The healthiest country by 2020. National Preventive Health Strategy – the roadmap for action. Barton (AU) 2009.
12. VicHealth. Influencing children's health: critical windows for intervention. Research highlights. Carlton South (AU) 2015.
13. Vandevijvere S, Chow CC, Hall KD, Umali E, Swinburn BA. Increased food energy supply as a major driver of the obesity epidemic: a global analysis. *Bull World Health Organ*. 2015;93(7):446-56.
14. Ambrosini GL. Childhood dietary patterns and later obesity: a review of the evidence. *Proc Nutr Soc*. 2014;73(1):137-46.
15. Mozaffarian D. Dietary and Policy Priorities for Cardiovascular Disease, Diabetes, and Obesity: A Comprehensive Review. *Circulation*. 2016;133(2):187-225.
16. Te Morenga L, Mallard S, Mann J. Dietary sugars and body weight: systematic review and meta-analyses of randomised controlled trials and cohort studies. *BMJ*. 2012;346:e7492.
17. Nago ES, Lachat CK, Dossa RA, Kolsteren PW. Association of out-of-home eating with anthropometric changes: a systematic review of prospective studies. *Crit Rev Food Sci Nutr*. 2014;54(9):1103-16.
18. Monteiro CA, Moubarac JC, Cannon G, Ng SW, Popkin B. Ultra-processed products are becoming dominant in the global food system. *Obes Rev*. 2013;14 Suppl 2:21-8.
19. English L, Lasschuijt M, Keller KL. Mechanisms of the portion size effect. What is known and where do we go from here? *Appetite*. 2015;88:39-49.
20. Mozaffarian D, Hao T, Rimm EB, Willett WC, Hu FB. Changes in diet and lifestyle and long-term weight gain in women and men. *N Engl J Med*. 2011;364(25):2392-404.

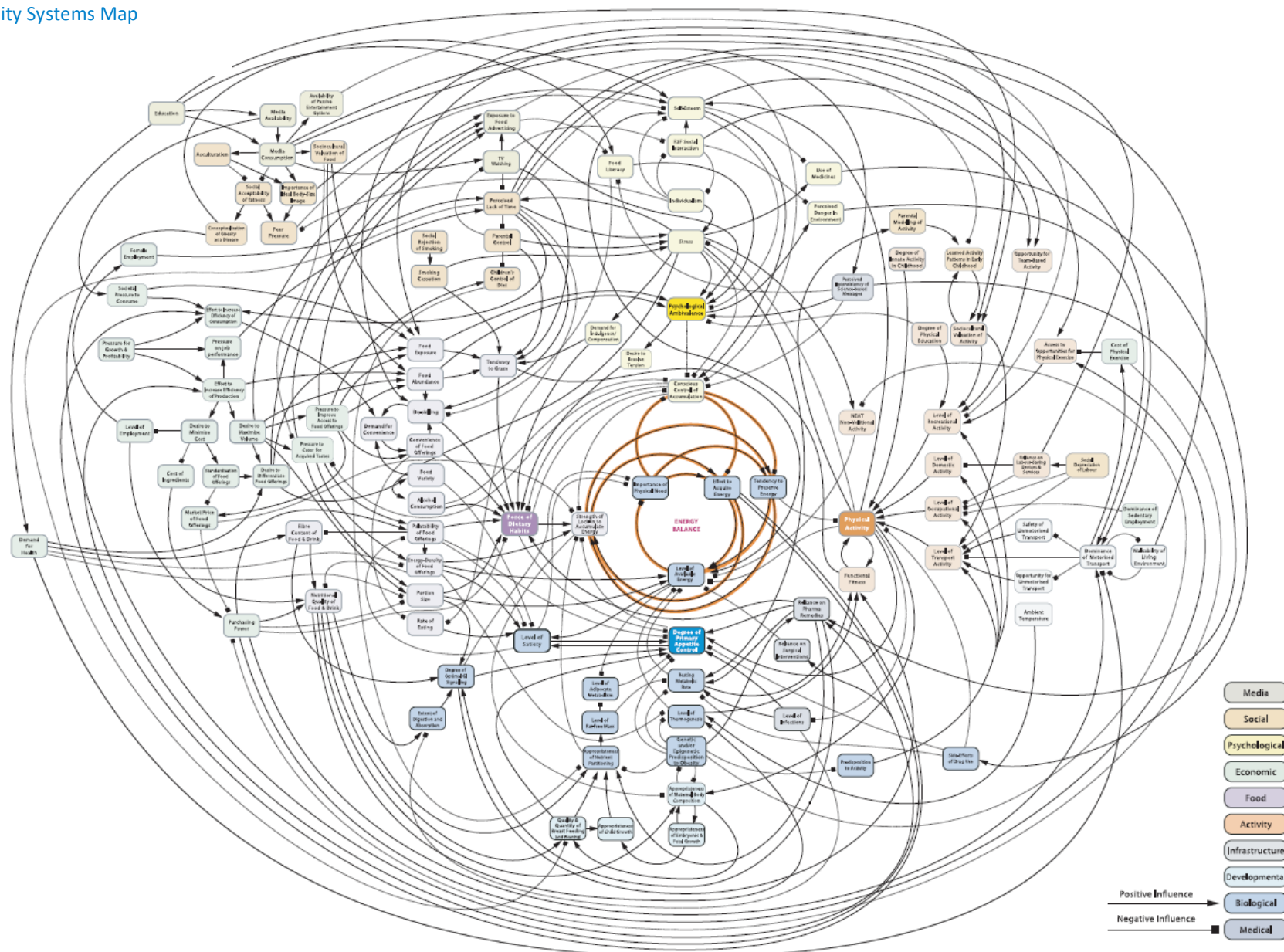
21. National Health and Medical Research Council (NHMRC). Australian dietary guidelines. In: Canberra, editor. 2013.
22. National Health and Medical Research Council. Discretionary food and drink choices [Available from: <https://www.eatforhealth.gov.au/food-essentials/discretionary-food-and-drink-choices>.
23. Sui Z, Wong WK, Louie JC, Rangan A. Discretionary food and beverage consumption and its association with demographic characteristics, weight status, and fruit and vegetable intakes in Australian adults. *Public Health Nutr*. 2017;20(2):274-81.
24. Australian Bureau of Statistics. Australian Health Survey: Consumption of Food Groups from the Australian Dietary Guidelines, 2011-12 - 4364.0.55.012. Canberra2016.
25. Australian Bureau of Statistics. Australian Health Survey: Nutrition First Results - Foods and Nutrients, 2011-12 - 4364.0.55.007. Canberra2014.
26. Lei L, Rangan A, Flood VM, Louie JC. Dietary intake and food sources of added sugar in the Australian population. *Br J Nutr*. 2016;115(5):868-77.
27. Brand-Miller JC, Barclay AW. Declining consumption of added sugars and sugar-sweetened beverages in Australia: a challenge for obesity prevention. *Am J Clin Nutr*. 2017;105(4):854-63.
28. Wong THT, Louie JCY. The direct and indirect associations of usual free sugar intake on BMI z-scores of Australian children and adolescents. *Eur J Clin Nutr*. 2018.
29. The Health Star Rating. Health Star Rating System 2018 [Available from: <http://www.healthstarrating.gov.au/internet/healthstarrating/publishing.nsf/Content/About-health-stars>.
30. Carrad AM, Louie JC, Yeatman HR, Dunford EK, Neal BC, Flood VM. A nutrient profiling assessment of packaged foods using two star-based front-of-pack labels. *Public Health Nutr*. 2016;19(12):2165-74.
31. Jones A, Radholm K, Neal B. Defining 'Unhealthy': A Systematic Analysis of Alignment between the Australian Dietary Guidelines and the Health Star Rating System. *Nutrients*. 2018;10(4).
32. Wellard L, Hughes C, Watson WL. Investigating nutrient profiling and Health Star Ratings on core dairy products in Australia. *Public Health Nutr*. 2016;19(15):2860-5.
33. Menday H, Neal B, Wu JHY, Crino M, Baines S, Petersen KS. Use of Added Sugars Instead of Total Sugars May Improve the Capacity of the Health Star Rating System to Discriminate between Core and Discretionary Foods. *J Acad Nutr Diet*. 2017;117(12):1921-30 e11.
34. Peters SAE, Dunford E, Jones A, Ni Mhurchu C, Crino M, Taylor F, et al. Incorporating Added Sugar Improves the Performance of the Health Star Rating Front-of-Pack Labelling System in Australia. *Nutrients*. 2017;9(7).
35. Parker G. Health Star Rating System: Campaign Evaluation Report. Pollinate Research; 2017.
36. Talati Z, Norman R, Pettigrew S, Neal B, Kelly B, Dixon H, et al. The impact of interpretive and reductive front-of-pack labels on food choice and willingness to pay. *Int J Behav Nutr Phys Act*. 2017;14(1):171.
37. Mantilla Herrera AM, Crino M, Erskine HE, Sacks G, Ananthapavan J, Mhurchu CN, et al. Cost-Effectiveness of Product Reformulation in Response to the Health Star Rating Food Labelling System in Australia. *Nutrients*. 2018;10(5).
38. Mhurchu CN, Eyles H, Choi YH. Effects of a Voluntary Front-of-Pack Nutrition Labelling System on Packaged Food Reformulation: The Health Star Rating System in New Zealand. *Nutrients*. 2017;9(8).
39. National Heart Foundation of Australia. Report on the monitoring of the implementation of the Health Star Rating system: Key findings for Area of Enquiry 2 – Consumer awareness and ability to use the Health Star Rating system correctly. April 2018.

40. National Health and Medical Research Council. Australian Dietary Guidelines. Canberra: NHMRC2013
41. Hendrie G, Baird D, Syrette J, Barnes M, Rily M. Consumption of non-dairy, non-alcoholic beverages in the Australian population: A secondary analysis of the Australian National Nutrition and Physical Activity Survey (NNPAS) 2011-12. Australia: CSIRO; 2015.
42. Bell AC, Swinburn BA. What are the key food groups to target for preventing obesity and improving nutrition in schools? *Eur J Clin Nutr.* 2004;58(2):258-63.
43. Masse LC, de Niet-Fitzgerald JE, Watts AW, Naylor PJ, Saewyc EM. Associations between the school food environment, student consumption and body mass index of Canadian adolescents. *Int J Behav Nutr Phys Act.* 2014;11(1):29.
44. Driessen CE, Cameron AJ, Thornton LE, Lai SK, Barnett LM. Effect of changes to the school food environment on eating behaviours and/or body weight in children: a systematic review. *Obes Rev.* 2014;15(12):968-82.
45. Jaime PC, Lock K. Do school based food and nutrition policies improve diet and reduce obesity? *Prev Med.* 2009;48(1):45-53.
46. Australian Bureau of Statistics. Australian Health Survey: Physical Activity, 2011-12 - 4364.0.55.004. Canberra; 2013.
47. Eime RM, Harvey JT, Charity MJ, Casey MM, van Uffelen JG, Payne WR. The contribution of sport participation to overall health enhancing physical activity levels in Australia: a population-based study. *BMC Public Health.* 2015;15:806.
48. Waters E, de Silva-Sanigorski A, Hall BJ, Brown T, Campbell KJ, Gao Y, et al. Interventions for preventing obesity in children. *Cochrane Database Syst Rev.* 2011(12):CD001871.
49. Clark JE. Does the type of intervention method really matter for combating childhood obesity? A systematic review and meta-analysis. *J Sports Med Phys Fitness.* 2015;55(12):1524-43.
50. van Hoek E, Feskens EJ, Bouwman LI, Janse AJ. Effective interventions in overweight or obese young children: systematic review and meta-analysis. *Child Obes.* 2014;10(6):448-60.
51. Sobol-Goldberg S, Rabinowitz J, Gross R. School-based obesity prevention programs: a meta-analysis of randomized controlled trials. *Obesity (Silver Spring).* 2013;21(12):2422-8.
52. Egger G, Dixon J. Beyond obesity and lifestyle: a review of 21st century chronic disease determinants. *Biomed Res Int.* 2014;2014:731685.
53. Evans CEL. Sugars and health: a review of current evidence and future policy. *Proc Nutr Soc.* 2017;76(3):400-7.
54. Borys JM, Bodo YL, Jebb SA, Seidell JC, Summerbell C, Richard D, et al. EPODE approach for childhood obesity prevention: methods, progress and international development. *Obesity Reviews.* 2012;13(4):299-315.
55. SA Health. OPAL: SA Health; 2016 [Available from: www.sahealth.sa.gov.au/wps/wcm/connect/public+content/sa+health+internet/healthy+living/healthy+communities/local+community/opal/opal].
56. Borys JM, Valdeyron L, Levy E, Vinck J, Edell D, Walter L, et al. EPODE – A Model for Reducing the Incidence of Obesity and Weight-related Comorbidities. *US Endocrinology.* 2013;9(1):32-6.
57. Vinck J, Brohet C, Roillet M, Dramaix M, Borys JM, Beysens J, et al. Downward trends in the prevalence of childhood overweight in two pilot towns taking part in the VIASANO community-based programme in Belgium: data from a national school health monitoring system. *Pediatr Obes.* 2016;11(1):61-7.

58. Singh AS, Chin APMJ, Brug J, van Mechelen W. Dutch obesity intervention in teenagers: effectiveness of a school-based program on body composition and behavior. *Arch Pediatr Adolesc Med.* 2009;163(4):309-17.
59. City of Playford. OPAL: The City of Playford; 2016 [Available from: www.playford.sa.gov.au/OPAL].
60. Flinders University. OPAL Evaluation Project Final Report. 2016.
61. Healthy Weight Commitment Foundation. Impact: Galvanizing Diverse Stakeholders to Focus on Collective Impact Since 2009 2018 [Available from: <http://www.healthyweightcommit.org/impact/>].
62. American Beverage Association. Cutting Sugar in the American Diet 2018 [Available from: <https://www.balanceus.org/en/industry-efforts/cutting-sugar-american-diet/>].
63. Australian Bureau of Statistics. Australian Health Survey: Consumption of added sugars, 2011-12 - 4364.0.55.011. Canberra 2016.
64. Levy G, Shrapnel W. Quenching Australia's thirst: A trend analysis of water-based beverages sales from 1997. *Nutrition & Dietetics.* 2014;4(71):193-200.
65. Ridoutt B, Baird D, Bastiaans K, Hendrie G, Riley M, Sanguansri P, et al. Changes in Food Intake in Australia: Comparing the 1995 and 2011 National Nutrition Survey Results Disaggregated into Basic Foods. *Foods.* 2016;5(2).
66. Menzies Research Centre. Fat chance: Why sugars taxes won't work. Barton; 2017.
67. New Zealand Institute of Economic Research. Sugar taxes: A review of the evidence. 2017.
68. Veerman JL, Sacks G, Antonopoulos N, Martin J. The Impact of a Tax on Sugar-Sweetened Beverages on Health and Health Care Costs: A Modelling Study. *PLoS One.* 2016;11(4):e0151460.
69. Colchero MA, Popkin BM, Rivera JA, Ng SW. Beverage purchases from stores in Mexico under the excise tax on sugar sweetened beverages: observational study. *BMJ.* 2016;352:h6704.
70. Colchero MA, Rivera-Dommarco J, Popkin BM, Ng SW. In Mexico, Evidence Of Sustained Consumer Response Two Years After Implementing A Sugar-Sweetened Beverage Tax. *Health Aff (Millwood).* 2017;36(3):564-71.
71. OMENT. Overweight and obesity update in Mexico – ENSANUT 2016 2016 [Available from: <http://oment.uanl.mx/overweight-and-obesity-update-in-mexico-ensanut-2016/?lang=en>].
72. Estadísticas Oportunas de Finanzas Públicas 2018 [Available from: http://finanzaspublicas.hacienda.gob.mx/es/Finanzas_Publicas/Estadisticas_Oportunas_de_Finanzas_Publicas].
73. Silver LD, Ng SW, Ryan-Ibarra S, Taillie LS, Induni M, Miles DR, et al. Changes in prices, sales, consumer spending, and beverage consumption one year after a tax on sugar-sweetened beverages in Berkeley, California, US: A before-and-after study. *PLoS Med.* 2017;14(4):e1002283.
74. Bes-Rastrollo M, Sayon-Orea C, Ruiz-Canela M, Martinez-Gonzalez MA. Impact of sugars and sugar taxation on body weight control: A comprehensive literature review. *Obesity (Silver Spring).* 2016;24(7):1410-26.
75. Andalon M, Gibson J. The 'Soda Tax' is Unlikely to Make Mexicans Lighter: New Evidence on Biases in Elasticities of Demand for Soda. IZA Discussion Paper No. 10765. University of Waikato; 2017.
76. Cobiac LJ, Tam K, Veerman L, Blakely T. Taxes and Subsidies for Improving Diet and Population Health in Australia: A Cost-Effectiveness Modelling Study. *PLoS Med.* 2017;14(2):e1002232.
77. Quirimbach DD, Cornelsen L, Jebb SA, Marteau T, Smith R. Effect of increasing the price of sugar-sweetened beverages on alcoholic beverage purchases: an economic analysis of sales data. *J Epidemiol Community Health.* 2018;72(4):324-30.

78. Smith RD, Cornelsen L, Quirmbach D, Jebb SA, Marteau TM. Are sweet snacks more sensitive to price increases than sugar-sweetened beverages: analysis of British food purchase data. *BMJ Open*. 2018;8(4):e019788.
79. Arsenault BJ, Lamarche B, Despres JP. Targeting Overconsumption of Sugar-Sweetened Beverages vs. Overall Poor Diet Quality for Cardiometabolic Diseases Risk Prevention: Place Your Bets! *Nutrients*. 2017;9(6).
80. Nissensohn M, Fuentes Lugo D, Serra-Majem L. Sugar-sweetened beverage consumption and obesity in children's meta-analyses: reaching wrong answers for right questions. *Nutr Hosp*. 2018;0(0):474-88.

Appendix 1 – Obesity Systems Map



Appendix 2 – Improved Pack Sizing



Coca-Cola treat-sized servings are creating some big waves amongst consumers.



NB: Images are for illustrative purposes only and do not demonstrate the full extent of new pack sizes across the non-alcoholic beverage industry.

Appendix 3 – Low/No Sugar Product Innovation



NB: Images are for illustrative purposes only and do not demonstrate the full extent of innovation in low/no sugar products across the non-alcoholic beverage industry.



NB: Images are for illustrative purposes only and do not demonstrate the full extent of innovation in low/no sugar products across the non-alcoholic beverage industry.



NB: Images are for illustrative purposes only and do not demonstrate the full extent of innovation in low/no sugar products across the non-alcoholic beverage industry.

Appendix 4 – Health Star Rating on Products



NB: Images are for illustrative purposes only and do not demonstrate the full extent of the Health Star Rating across the non-alcoholic beverage industry.



NB: Images are for illustrative purposes only and do not demonstrate the full extent of the Health Star Rating across the non-alcoholic beverage industry.