Consuming calories and creating cavities: beverages NZ children associate with sport

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Sugar-sweetened beverages

- Contribute to energy intake, little or no nutrient benefit
- Significant impacts for health, wellbeing and inequalities
  - Obesity
    - 32.6% children overweight or obese  
      NZ Health Survey, Ministry of Health, 2014
    - #3 in OECD  
      OECD, 2014
  - Type 2 diabetes
    - ↑ incidence in children
  - Dental caries
    - Leading cause of hospital admissions for children

- NZ children’s consumption not aligned with Food and Nutrition Guidelines
Children’s and parents’ opinions on the sport-related food environment

- 82 children, 10-12y
- Wellington and Porirua
- Football, netball and rugby
- Photos and focus groups
Sport in NZ

- High participation - 2/3rds involved in sport  
  (Sport NZ, 2012)

- Important and ideal setting for health promotion  
  (Kelly et al, 2010)

- Integral part of children's food environments

- Obesogenic  

- Lack formal policies  
Objective and method

- 74% children photographed a drink
  - 31 different drinks

- To analyse the nature of the beverages sport-playing NZ children associate with sport

- Analysed labels of 30 beverages
  - Packaging and serving sizes
  - Energy, sugars, sodium and caffeine
  - Advisory statements

- Determined pH
Drink plenty of water and include (preferably reduced or low-fat) milk every day.

Sugary beverages (cordials, powdered beverages, fruit drinks, carbonated drinks, sports (electrolyte) drinks and sports waters), flavoured milks and diet beverages should be limited to less than one glass (250ml) per week in total. Fruit juice should be limited to no more than one glass per day.

Caffeine beverages including energy drinks, are not recommended for children or young people; children under 13 should not consume coffee or tea.

Relevant regulations
- FSANZ – Food Standards Codes

Impact on health
## Classification of drinks

<table>
<thead>
<tr>
<th>Classification (proportion*)</th>
<th>Type</th>
</tr>
</thead>
</table>
| Everyday (17%)              | Water (tap and bottled)  
                                | Plain milk |
| Limited (70%)               | Sports drinks, fruit drinks, flavoured milk and water (76%)  
                                | Fruit juices (19%)  
                                | Carbonated drink (5%) |
| Not recommended (13%)       | Energy drinks  
                                | Iced tea  
                                | Cola beverage |

*of the 30 different types of drinks analysed
Packaging and serving sizes

- **Serving size 200 – 1000ml**
  - Limited/rec drinks 52% > 250ml
- **Package size 250 – 3000ml**
  - Those > 250ml, 67% = one serve
  - Most (83%) 500-1000ml

- **Regulations** (Australian Government, 2013a)
  - Only average serving and packaging size required
  - Average serving size determined by manufacturer
  - “should reflect a realistic portion of the food that a person might normally consume on one eating occasion”  
    FSANZ 2012, p.14
Energy and sugars content

- 2.4 – 165kJ/100ml (all)

- 4.4 to 9.3g/100ml (limited and not recommended)

- For moderately active child (Ministry of Health, 2012)
  - 28% limited and not recommended > 10% of daily EER
  - >20% less active child
  - 40% if follow recent recommendations of >5% (mod. active)
## Energy and sugars content

<table>
<thead>
<tr>
<th>Drink</th>
<th>Serving size (ml)*</th>
<th>Sugars g/serve</th>
<th>Sugars tsp/serve</th>
<th>Energy/serve (kJ)</th>
<th>%Daily EER^</th>
</tr>
</thead>
<tbody>
<tr>
<td>Calci Strong</td>
<td>250</td>
<td>23</td>
<td>6</td>
<td>750</td>
<td>4</td>
</tr>
<tr>
<td>Pumped flavoured</td>
<td>750</td>
<td>17</td>
<td>4</td>
<td>393</td>
<td>3</td>
</tr>
<tr>
<td>e2</td>
<td>800</td>
<td>74.4</td>
<td>18.5</td>
<td>1320</td>
<td>12.7</td>
</tr>
<tr>
<td>Powerade</td>
<td>750</td>
<td>43</td>
<td>11</td>
<td>969</td>
<td>7.4</td>
</tr>
<tr>
<td>V</td>
<td>250</td>
<td>53</td>
<td>13</td>
<td>975</td>
<td>9.1</td>
</tr>
<tr>
<td>Lipton’s Ice Tea</td>
<td>500</td>
<td>32.5</td>
<td>8</td>
<td>565</td>
<td>5.6</td>
</tr>
</tbody>
</table>

*manufacturer-determined  
^daily estimated energy requirement for a moderately active 11y male = 9900kJ
Energy and sugars content

- Large portions encourage excessive energy intake
- SSBs not as satiating
- High palatability encourage more
- Absorption hindered by sugars therefore drink more

Regulations
- Carbohydrate content of sports drinks and flavoured waters regulated (Australian Government, 2013b)
Sodium and caffeine content, pH

- All drinks contained sodium
  - <5mg to 110mg/100ml
  - Sports drinks in particular
  - Sports drinks not required for children unless >90mins strenuous exercise

- Caffeine
  - 4 beverages
  - Not recommended for children <13y
  - 95mg = 1 can energy drink sufficient to impact children
  - Caffeine content regulated by FSANZ (Australian Government, 2013c)

- pH
  - 69% were acidic: 2.6-3.8
  - Erosion of tooth enamel when pH<5.5
Advisory statements

- Regulations
  - Reduced-fat milk – not for children under 2y  (Australian Government, 2011)
  - Sports drinks (volume and frequency of use)  (Australian Government, 2013b)
  - Added caffeine - ‘Contains caffeine’  (Australian Government, 2013c)
  - Energy drinks  (Australian Government, 2013c)
    - Amount of caffeine
    - Warning not for children
    - Max daily consumption (manufacturer-determined)
  - ‘Supplemented food’ – fruit juices and sports water  (Ministry for Primary Industries, 2013)

- One-third had advisory statements
  - Milk ✓
  - Sports drinks 2/6
  - Caffeinated drinks ✓
    - Iced tea x
  - Supplemented food ✓
Labels

- Not immediately apparent
- Small font
- On back of each product

Labelling regulated by
- FSANZ
- Ministry for Primary Industries

‘Supplemented foods’
- Mandatory legibility requirements
Children’s feedback – focus groups and notebooks

- Energy for playing sport and improved sports performance, hydration and quench thirst

“you don’t get tired as quickly and we can play longer” (Porirua, netball, girl)

“Powerade drink...it’s a good energising drink before, during and after sport” (Porirua, netball, girl)

- Available at venues

“Soft drinks (and water) sold at our games” (Wgtn, netball, girl)
Children’s feedback – focus groups and notebooks

Advertising and athlete endorsement

“A bottle of isotonic Powerade... It has been advertised many times by famous sports players and is drunk by a lot of sports players and used in many sports”  (Porirua, netball, girl)

“it makes other people want to drink Powerade, ‘cos it’s like role model energy”  (Porirua, netball, girl)

“Milo always advertises being healthy and being great for before or after games”  (Wgtn, football, boy)
Sport-specific solutions

- Food policies at local clubs and grounds
  - To restrict the promotion and availability of sugary drinks
  - Normalise water consumption

- Key stakeholders
  - Sports coaches, clubs and associations
  - Local government
  - Parents

Sports sponsorship replacement

Broad public health measures

- Regulate unhealthy food marketing
- Independent regulation of serving sizes and package size
- Taxation SSBs
- Improved labelling
  - Location and size of mandatory advisory statement
  - FOP labelling – mandatory rather than voluntary
- Precedent
  - Milk'
  - Supplemented Foods’
Strengths and limitations

- Consumption not primary aim
  - Some photos showed children consuming
  - 31% comments confirmed consumption
- Children’s took photos
- Range of children
- Local, but global availability and promotion
Conclusions

- Majority drinks do not comply with recommendations
- Consumption of one serving = substantial proportion of energy intake
- Part of sport-related diet and promoted as such
- Encourage excessive consumption
- Research to measure consumption
- Action required
  - Sport
  - Broadly
  - Comprehensive package
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References