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**Health Promotion Evaluation Unit**

**Perth Royal Show 2008:  
Nutrition Intercept Survey & Baseline Food/Drink Scan**



THE UNIVERSITY OF  
WESTERN AUSTRALIA  
*Achieving International Excellence*

**The University of Western Australia  
School of Sport Science Exercise and Health**

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## **Executive Summary**

This report presents the findings of (1) the 2008 Perth Royal Show Patrons' Nutrition Attitudes and Behaviours survey & (2) the Baseline Food/Drink Scan.

Patrons' attitudes and behaviours towards the food and drink options available at the Show were assessed via a five minute interviewer administered survey. Baseline data of the types of healthy food and drinks sold by vendors were collected via a 68item standardised audit tool.

## **Nutrition Intercept Survey**

- The majority (81%) of Perth Royal Show patrons were supportive of increasing healthy food options at the Show.
- A greater proportion of females (90%) compared with males (71%) and those aged 20-39 years (93%) compared with those aged 15-19 years (72%) were supportive of an increase in healthy food options.
- Patrons identified preferences for healthier options such as 'sandwiches or rolls' (36%), 'sushi' (34%) and 'salad' (27%).
- 'Hot chips' (36%) and 'pizza/lasagne' (29%) were also popular food preference amongst patrons, particularly amongst males.
- Patrons identified the high cost of food and/or drinks as the main motivator for bringing food and/or drinks from home, with convenience a secondary factor.

## **Baseline Food/Drink Scan**

- The food and drinks available at the Show were considered to be predominantly unhealthy (74%).
- Few vendors were observed to be offering predominately healthy foods (5%) and few sold predominantly 'amber' options (20%).
- A large number of items classified as 'red' were sold by vendors, with 97% of vendors selling at least one 'red' item, 66% of those vendors sold three or more 'red' items.
- When modelling food options, the removal of the three most common unhealthy foods (i.e. hot chips, hot dogs and burgers) from the menu of all food outlets had little

impact on the observed overall unhealthy nature of foods available at the Show as over 54% of vendors were still selling 3 or more unhealthy options.

- The addition of water to the drink menu of all drink outlets positively changed the overall balance of drinks available at the Show.
- The addition of one healthy food option (fruit) to all food vendors resulted in a small increase (7%, n =6) in the number of vendors selling 3 or more healthy food options.

## **Conclusions**

Overall, the results of this study found that the proportion of unhealthy food and drink options available to patrons of the Perth Royal Show was high, while patron preference was for more healthy options. In addition to suggesting that more healthy food and drink options should be offered, this study also recognised the complex nature of food choices within the context of the Royal Show and the need for further understanding of how changes to food and drinks availability impacts upon patron perceptions, intentions and behaviour at the Perth Royal Show.

## **Recommendations**

- Introduce measures to increase the number of healthy “green” food options amongst existing vendors at the Perth Royal Show, and/or introduce new vendors that sell predominately healthy food options.
- Measure the impact of any changes to the food options introduced at the Royal Show and monitor patron’s attitudes, beliefs and behaviours towards these changes.
- Introduce strategies to reduce the visual cues towards unhealthy food options at the Perth Royal Show.
- Further investigate the relationship between the provision of healthy food options and patron’s food choices at the Perth Royal Show.

## 1.0 Introduction

In Western Australia, in 2007, 49% of adults, 23% of 7 to 15 year old males and 30% of 7 to 15 year old females were overweight or obese (Milligan, McCormack & Rosenberg 2007 and Hands et.al 2004). In part, these findings reflect broader changes in the lifestyles of many Western societies. Underlying a complex decision pathway are physical activity and food-related choices. Some of the decision around healthy eating habits and good nutrition are developed at a young age and are known to track through adolescence and adulthood. The interaction between individual preferences, the immediate environment and the broader community affect our nutrition choices. The establishment of 'healthy environments' may play an important part in encouraging individuals to choose healthy options when deciding what they want to eat.

Within a broader health promoting agenda, Healthway requires organisations receiving more than \$20000 in sponsorship to develop a range of health policies including a healthy food policy that aims to create a healthy food environment at events. Sponsored organisations are also required to promote a health related message at sponsored events.

The Perth Royal Show is sponsored by Healthway to promote the "Smoke Free WA" message. The Show has shown commitment to fostering and promoting this message over several years, and in 2009 the Show will be known as the 'Smoke Free' Perth Royal Show. Building on the momentum from the smoke free initiative, Healthway began focusing on the promotion of healthy food choices at the Royal Show. The Show is predominately a family event, and eating out is convenient and encouraged at the Show. At this point, little information exists on the healthy food options available at the Royal Show; therefore, the aims of this study were to:

- (1) Assess patrons' attitudes and behaviour towards the food and drink options available at the Perth Royal Show and
- (2) Collect baseline data of the types of healthy food and drinks available at the Royal Show.

## 2.0 Method

The study comprised two parts, a cross sectional survey of patrons attitudes towards healthy food and drink choices at the Royal Show, and a food and drink scan of the food and drink vendors at the Show.

### 2.1 Nutrition Intercept Survey

A 5 minute interviewer administered survey was used to intercept Royal Show patrons and ask their opinion about healthy food and drink options at the Show. The survey comprised 5 food and drink questions and 3 demographic questions.

### 2.2 Baseline Food/Drink Scan

The audit of the food and drink options available at the 2008 Perth Royal Show was conducted using a 68 item standardised audit tool (Appendix A). The instrument comprised a non exhaustive list of food and drink products classified as either 'green' (should eat most often), 'amber' (eat in moderation) or 'red' (should eat least often).

The audit was based upon the WA School Canteens Association (WASCA) definitions of 'green', 'amber' and 'red' food and drinks as described in Table 1 below (WASCA 2009).

**Table 1: WASCA food and drink definitions**

<b>GREEN</b>	<b>AMBER</b>	<b>RED</b>
Fill the menu	Select carefully	Limit or remove
- Good sources of nutrients and are low in saturated fats, and/or added sugars and/or sodium <b>-Are the healthiest choices and should be encouraged and promoted on the menu as foods to be eaten every day.</b>	-Should be selected carefully to add variety to a menu and eaten in moderation -Have some nutritional value, contain moderate levels of saturated fat, and/or added sugar and/or salt -Can, in larger serves, contribute to excess energy intake <b>-Should be limited on the menu, offered in small serve sizes and not actively promoted or advertised</b>	-Energy dense and nutrient poor - High in saturated fat, and/or added sugar and/or sodium -Can contribute to excess energy intake and should be eaten occasionally <b>-Should be limited or removed from the menu, only available in small serve sizes and not actively promoted or advertised</b>
E.g. sandwiches, rolls, salads and sushi	E.g. rice and pastas	E.g. hot chips, fairy floss, hamburgers and hotdogs

## **Audit Procedure**

Six auditors, working in pairs, were allocated an area (on a map) of the Showgrounds to conduct the audits (Appendix B). Auditors walked to each food and drink outlet marked on their map. The auditors were required to indicate on the audit form whether or not each food/drink item was available and then to classify each vendor by the most dominant/prominent type of food/drink available (e.g. mostly 'red', mostly 'amber' or mostly 'green'). In total, 84 of a possible 95 food/drink vendors were audited. The audit took approximately 15 minutes to complete per vendor. All audits were completed on the 30 September 2008.

## **2.3 Analysis**

All analysis was conducted using SPSS for Windows (Version 15). Univariate analysis was conducted for each key variable and reported as the proportion of respondents surveyed or vendors audited. Chi-square significance testing (or when needed a Fisher's exact test) was also conducted on the cross sectional survey data to assess if responses differed by age group and gender.

### 3.0 Results

#### 3.1 Nutrition Intercept Survey

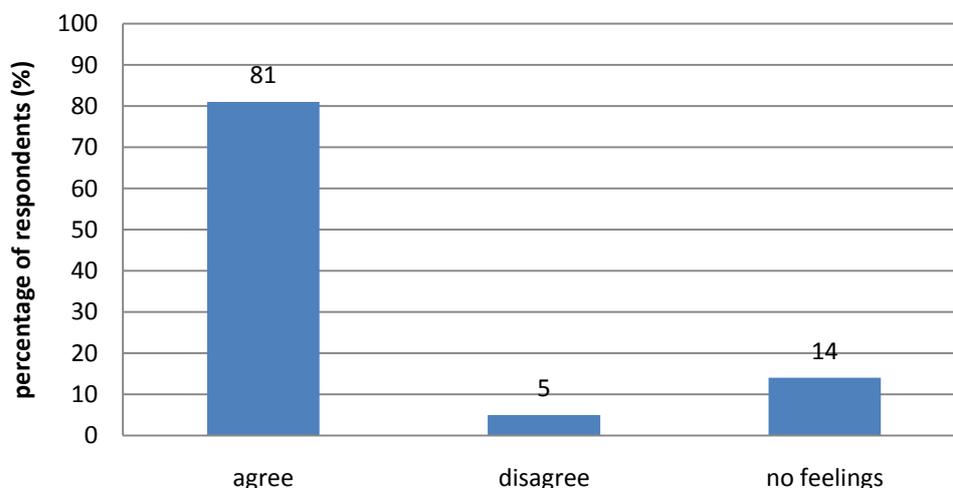
A total of 207 respondents participated in the intercept survey, of which 56% were female and 44% were male. A range of age groups were represented, with 45% of respondents aged 15-19 years (Table 2).

**Table 2: Gender and age group of respondents**

	N (207)	%
<b>Gender</b>		
Male	92	44
Female	115	56
<b>Age Group</b>		
15-19 years	94	45
20-39 years	53	26
40+ years	60	29

##### 3.1.1 Patron Attitudes towards plans to Increase Healthy Options at the Show

Respondents were asked if they agreed, disagreed or had no feelings either way towards plans to increase the number of healthy food options available at the Show. Overall, 81% (n=168) of respondents agreed, 5% (n=10) disagreed and 14% (n=29) had no feelings either way (Figure 1). Females (90%) were significantly more likely than males (71%) to agree with plans to increase the number of healthy food options available at the Show ( $p < 0.01$ ). When analysed by age group, those aged 20-39 years (93%) were significantly more likely to agree with plans to increase the number of healthy food options than those who were 15-19 years of age (72%) ( $p < 0.01$ ).



**Figure 1: Agreement with plans to increase the number of healthy food options**

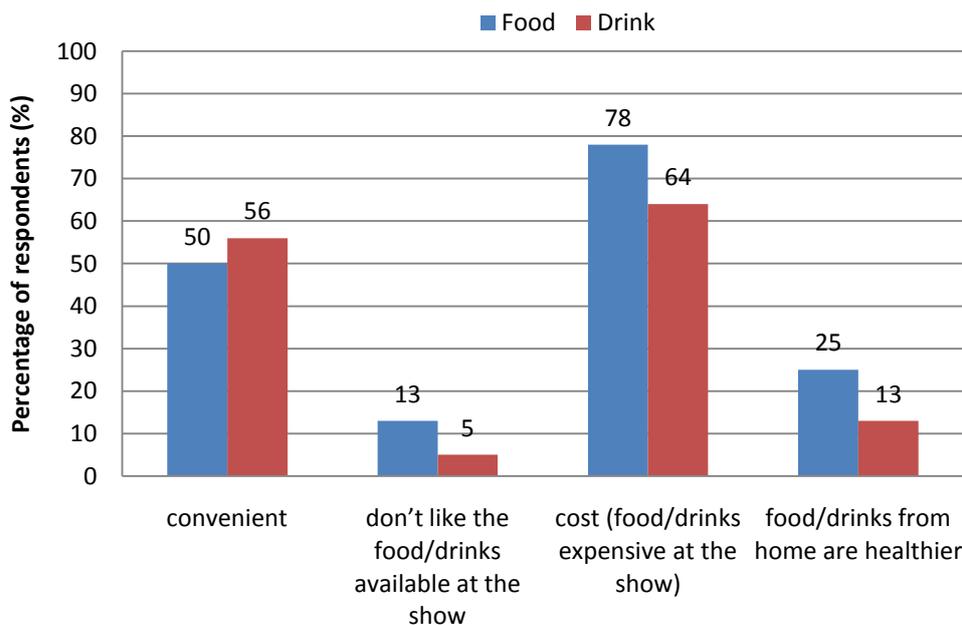
### 3.1.2 Food and/or Drinks Brought from Home

Respondents were asked if they bought food or drinks with them to the Show. As shown in Table 3 most respondents (67%, n=139) did not bring any food or drinks with them. Of the 33% of people that indicated that they did bring food/drinks with them to the show, females were significantly more likely than males to have bought both food (Females 24%, Males 6%;  $p < 0.01$ ) and drinks (Females 40%, Males 16%;  $p < 0.01$ ). In general, as age increased, respondents were significantly more likely to bring drinks to the Show (15-19years 21%, 20-39 years 26%, 40+ years 45%;  $p < 0.01$ ).

**Table 3: Which of the following did you bring with you to the Show today?**

Response	N (207)	%
Food only	7	3
Drinks only	36	17
Food and drinks	25	12
Neither	139	67

Amongst respondents that bought food with them to the Show (n=32), a majority (78%, n=25) did so because they considered food at the Show to be “expensive”. Other reasons for bringing food from home was “convenience” (50%, n=16), “because it was healthier” (25%, n=8) or because they did not like the food available at the Show (13%, n=4) (Figure 2). Amongst respondents that bought drinks with them to the Show (n=61), almost two thirds (64%, n=39) did so because they believed drinks were expensive. Another common reason for bringing drinks to the Show was “convenience” (56%, n=34 (Figure 2).



**Figure 2: Reasons for bringing food (n=32) and drink (n=61) from home**

### 3.1.3 Patron Food Preferences

Respondents were read a list of foods and asked which they would want to buy if the foods were similar in price and available at the Royal Show. As shown in Figure 3, 36% (n=73) of respondents indicated they would want to buy 'sandwiches or rolls'; 36% of respondents also indicated they would want 'chips'; 34% (n=70) chose 'sushi'; 29% (n=60) 'pizza or lasagne' and 27% (n=55) salads. When analysed by gender, males were significantly more likely than females to want to buy hot chips (Males 43%, Females 29%;  $p=0.03$ ) and burgers (Males 33%, Females 20%;  $p=0.05$ ). In general, as age increased a preference for fruit (15-19 years 14%, 20-39 years 21%, 40+ years 32%;  $p=0.03$ ), salads (15-19 years 14%, 20-39 years 28%, 40+ years 45%;  $p<0.01$ ), sandwiches and rolls (15-19 years 22%, 20-39 years 43%, 40+ years 50%;  $p<0.01$ ) and noodles (15-19 years 10%, 20-39 years 23%, 40+ years 28%;  $p=0.01$ ) significantly increased.

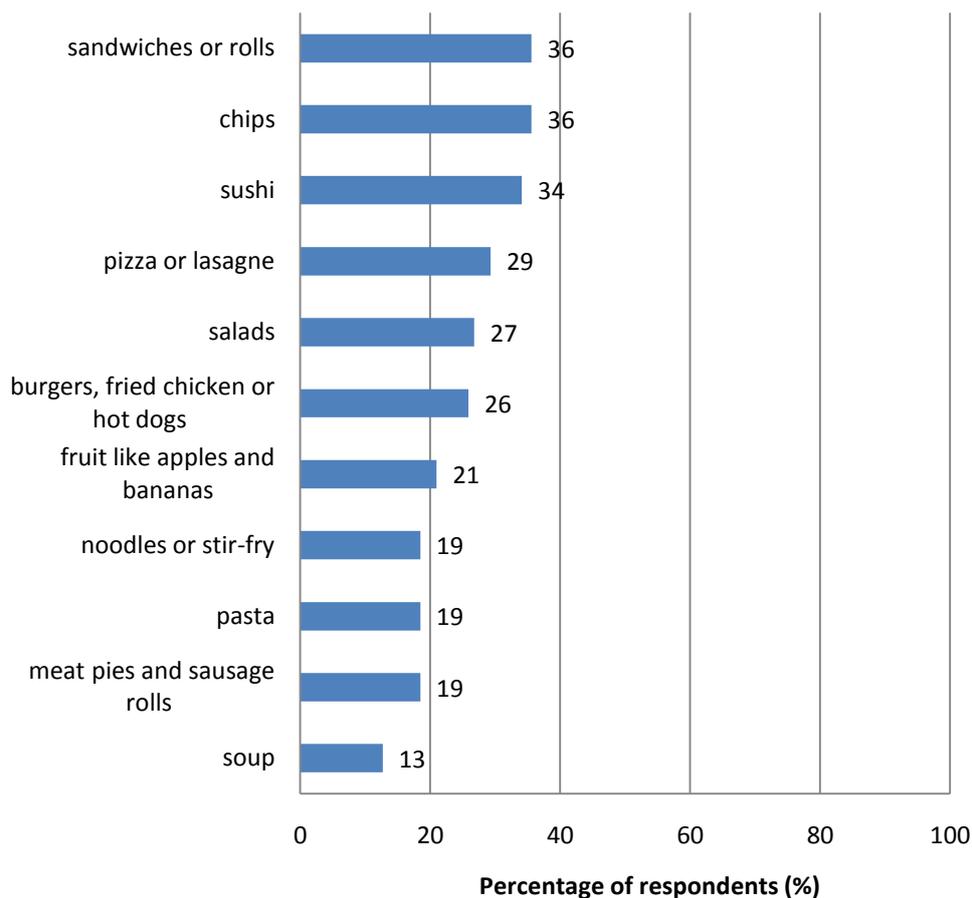


Figure 3: Food preferences of Royal Show Patrons (2008)

### 3.1.5 Patron Drink Preferences

As shown in Figure 4, when presented with a range of drink products similarly priced, 52% (n=106) of respondents indicated they would buy 'water', 42% (n=85) would prefer 'juice' and 38% (n=77) would choose 'soft drinks or energy drinks' (Figure 4). Females were significantly more likely than Males to choose water (Females 58%, Males 44%;  $p=0.05$ ) and juice (Females 49%, Males 33%;  $p=0.03$ ). Males were significantly more likely than Females to choose soft drinks (Males 49%, Females 28%;  $p<0.01$ ). In general, as age increased the preference for coffee and tea significantly increased (15-19 years 15%, 20-39 years 28%, 40+ years 58%;  $p<0.001$ ). Those aged 20-39 years (66%) were significantly more likely than those aged 15-19 years (43%) to prefer water ( $p=0.01$ ).

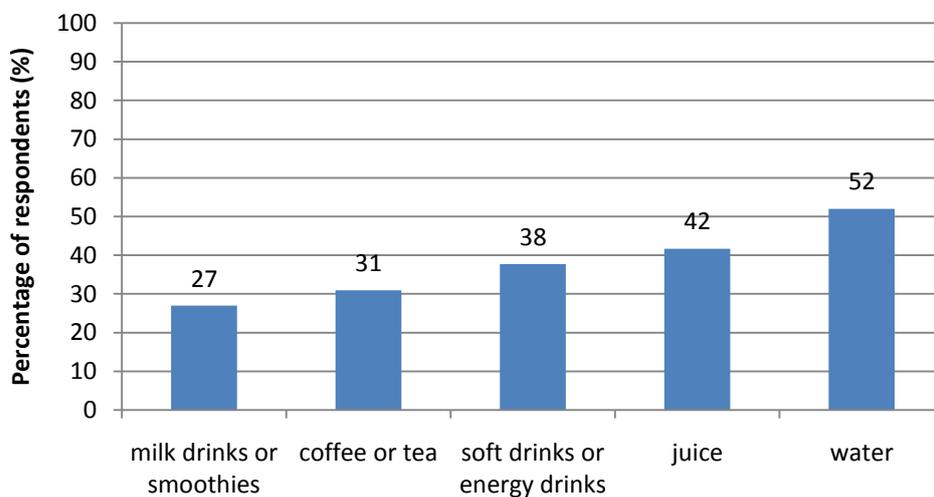
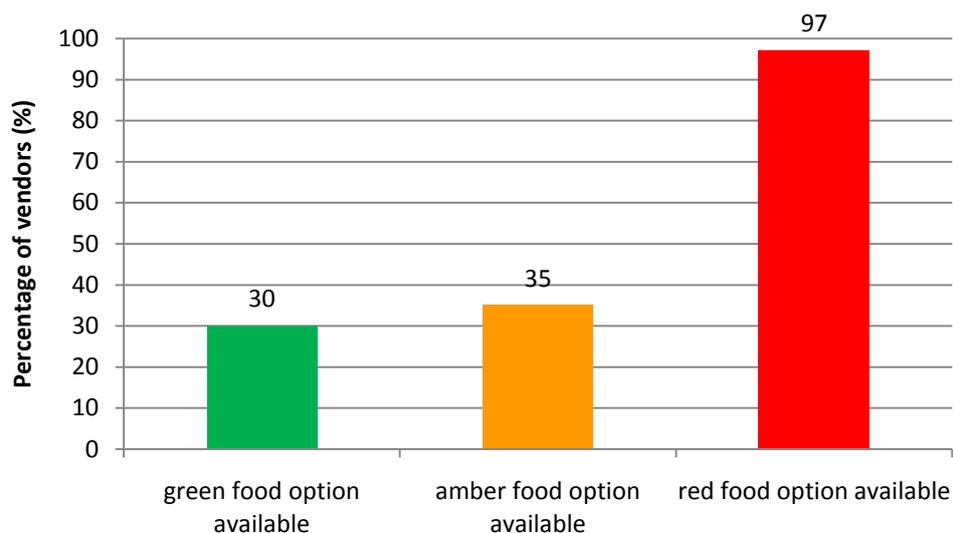


Figure 4: Drink Preferences of Royal Show Patrons (2008)

## 3.2 Baseline Food/Drink Scan

### 3.2.1 Types of Foods Available

Of the 84 vendors audited, 94% (n=79) sold food. Approximately one third (30%, n=24) sold at least one 'green' food option, 35% (n=28) sold at least one 'amber' food option and the vast majority (97%, n=77) sold at least one 'red' food option (Figure 5).



**Figure 5: Proportion of vendors that sold at least one 'green', 'amber' and 'red' food option**

Of the vendors that sold food, 18% (n=14) sold 'wraps', 15% (n=12) sold 'sandwiches' and 14% (n=11) sold 'salads' (Table 3). All vendors that sold at least one 'green' food option also sold at least one 'red' food option. Only two vendors (8%) that sold both 'green' and 'red' food options were considered to sell predominantly 'green' food options.

As shown in Table 4, 'grilled vegetables' (13%, n=10), 'rice' (6%, n=5) and 'kebabs' (5%, n=4) were the most widely available 'amber' food products. Of the 28 vendors that sold at least one 'amber' food option, 26 vendors also sold at least one 'red' food option.

The most widely available 'red' food products were 'hot chips' (42%, n=33), 'hot dogs' (28%, n=22) and 'burgers' (25%, n=20) (Table 4). Only two (2%) of the 79 vendors that sold food sold no 'red' food options.

**Table 4: Most widely available food items**

Food Product	Number of vendors	% of vendors
<b>Green</b>		
Wraps	14	18
Sandwiches	12	15
Salad	11	14
<b>Amber</b>		
Grilled veg	10	13
Rice	5	6
Kebabs & toasted flatbread	4	5
<b>Red</b>		
Hot chips	33	<b>42</b>
Hot dogs	22	<b>28</b>
Burgers	20	<b>25</b>

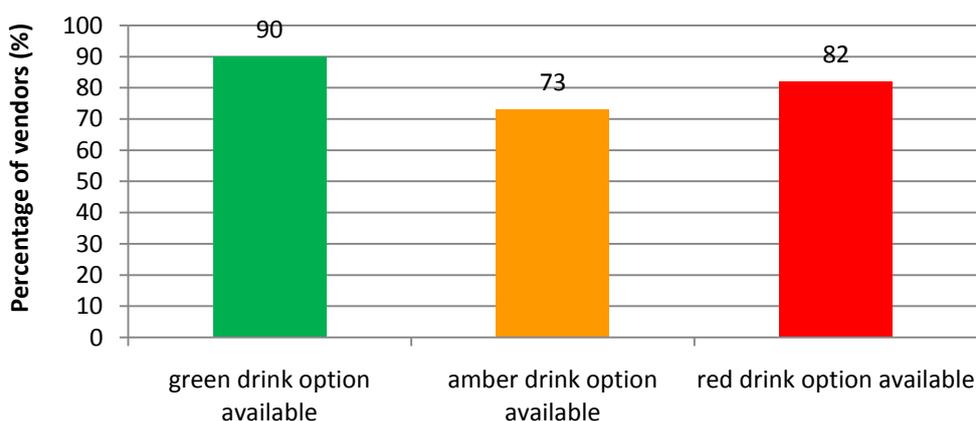
### 3.2.2 Types of Drinks Available

Of the 84 vendors audited, 94% (n=79) sold drinks. As evidenced in Table 5, the most widely available drink items were 'bottled water' (84%, n=66), 'soft drinks' (64%, n=54) and 'bottled juice' (>250ml) (54%, n=43).

**Table 5: Most widely available drink items**

Drink Product	Number of vendors	% of vendors
<b>Green</b>		
Bottled water	66	<b>84</b>
Freshly squeezed juice	7	9
Bottled juice (<250ml)	7	9
<b>Amber</b>		
Bottled juice (>250ml)	43	<b>54</b>
Milk drinks (>300ml)	37	47
Tea/coffee	30	38
<b>Red</b>		
Soft drinks	54	<b>68</b>
Slushies	20	25
Sports drinks	15	19

Of those vendors that sold drinks, the majority (90%, n=71) sold at least one healthy drink option (Figure 6). Water was the only healthy option available at 75% (n=59) of vendors. Figure 6 shows that 73% (n=58) of vendors that sold drinks sold at least one 'amber' drink option. The majority (82%, n=65) of vendors that sold drinks, sold at least one 'red' drink option of which , 83% (n=54) sold 'soft drinks' and 11% (n=7) sold 'alcohol' (Figure 6).



**Figure 6: Percentage of vendors that sold at least one 'green', 'amber' and 'red' drink option**

### 3.2.3 Dominant Food and Drinks Available

Of the vendors that sold food and drink options, 74% (n=55) were deemed to be selling predominantly 'red' food and drink options, with 20% (n=15) mostly 'amber' options and 5%

(n=4) mostly 'green' options (Figure 7). All vendors that sold only food (n=5) were considered to be selling predominantly 'red' food options. Sixty per cent (n=3) of vendors that sold only drinks (n=5) were considered to be selling predominantly 'green' drink options.

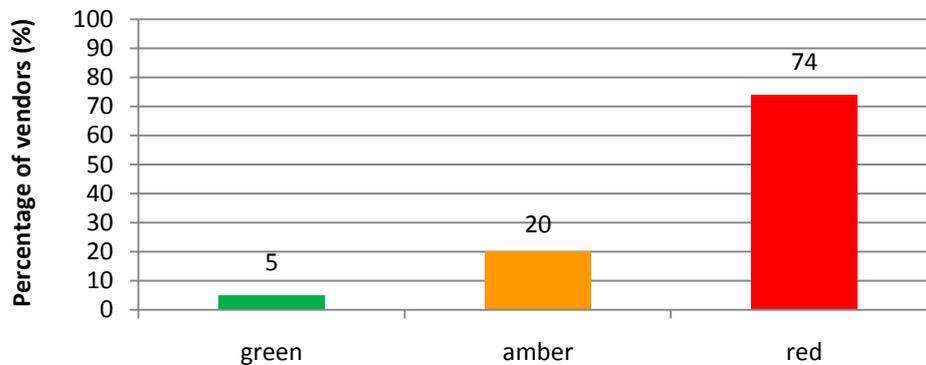


Figure 7: Dominant type of food and drinks sold at vendors at the Perth Royal Show (2008)

### 3.2.4 Geographical Location of Vendors

A geographical representation of where the 'green', 'amber' and 'red' vendors were located is shown below (Figure 8). As can be seen in the Figure, vendors were predominately clustered close to the public seating areas around the main arena. As depicted above, the graph shows the majority of vendors are classified as selling mostly unhealthy 'red' options with few selling mostly 'amber' options and less again offering mostly 'green' options.

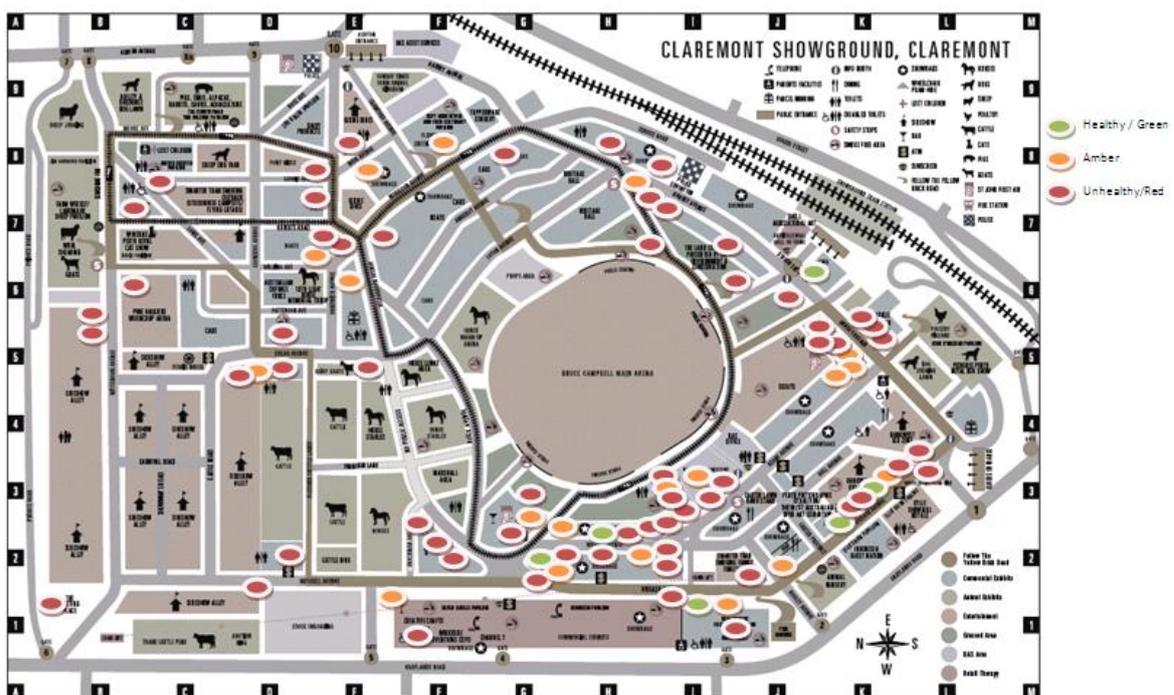


Figure 8: Map of the Showgrounds displaying 'green', 'amber' and 'red' vendor locations

### 3.2.5 Modelling Changes in the Food and Drink Options Available

An analysis modelling hypothetical changes to the distribution of food types ('green', 'amber' and 'red') at the Royal Show was conducted. Initially, vendors were grouped by the number ('none', '1-2 options' or '3+ options') of 'green', 'amber' and 'red' food and drink options sold. The modelling comprised four separate analyses; adding a 'green' food option to all vendor menus, adding a 'green' drink option to all vendor menus, removing specific 'red' foods items and removing a specific 'red' drink item from all vendor menus. The impact on the distribution of 'red', 'amber' and 'green' food and drinks offered at Royal Show vendors was then assessed.

#### An Increase in Healthy Food Options

Figure 9 shows the observed proportion of vendors that sold either no 'green', 'amber' and 'red' food options; 1-2 'green', 'amber' and 'red' food options and 3 or more 'green', 'amber' and 'red' food options. The Figure shows the majority of food outlets offered no 'green' (71%, n=60) or 'amber' (67%, n=56) food options, compared with 66% (n=55) that offered 3 or more 'red' food options.

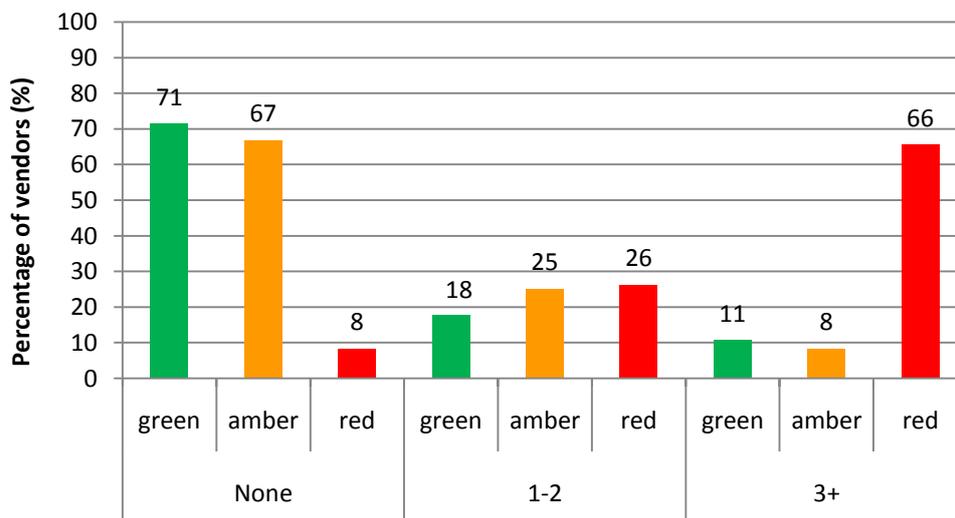
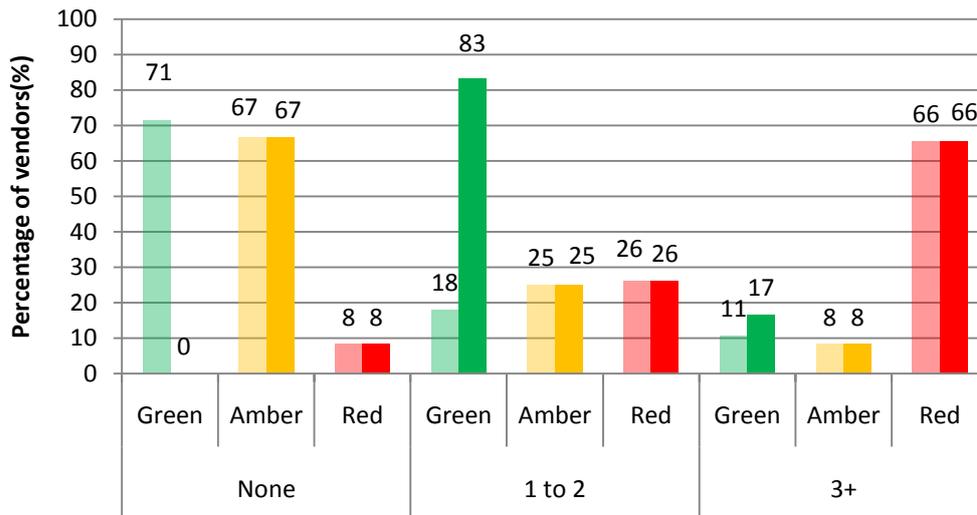


Figure 9: Percentage of vendors selling none, 1-2 and 3+ 'green', 'amber' and 'red' food options

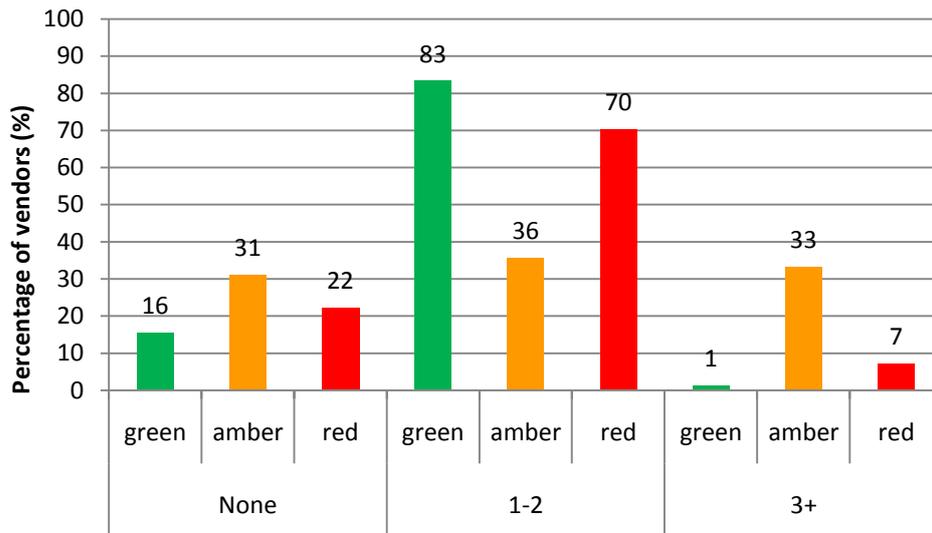
In order to observe how an increase in offering healthy foods may affect the distribution of foods sold by vendors, a single 'green' food option (fresh fruit) was added to each vendor in the data set (Figure 10). As evidenced in Figure 10, the proportion of vendors that sold no 'green' food options was reduced from 71% (n=60) of vendors to 0%. The proportion of vendors selling 1-2 'green' food options increased from 18% (n=15) to 83% (n= 70) and the proportion of vendors selling 3+ 'green' food options increased from 11% (n=9) to 17% (n=14).



**Figure 10: Change in percentage of vendors selling none, 1-2 and 3+ 'green', 'amber' and 'red' food options having added a single 'green' food option to each vendor**

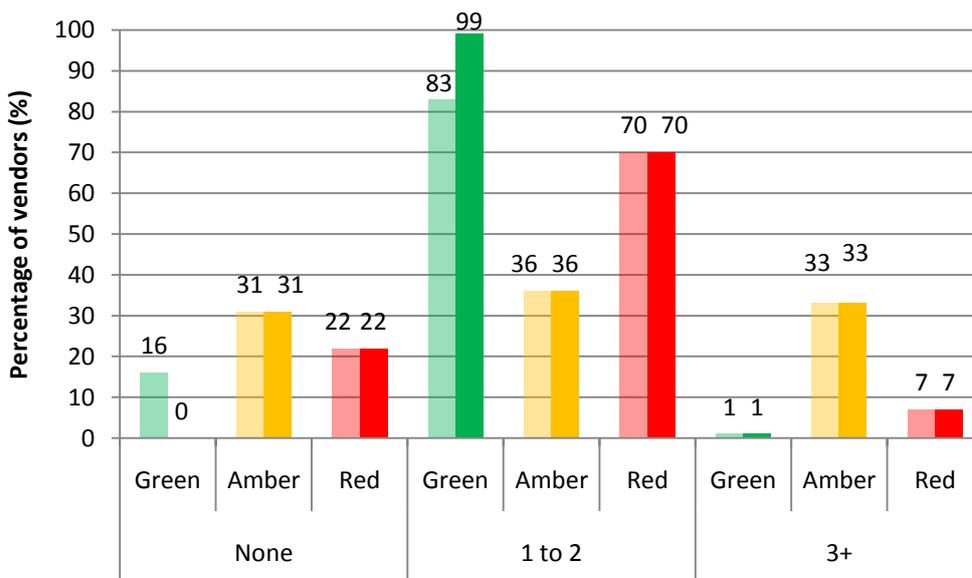
### **An Increase in Healthy Drink Options**

Figure 11 shows the proportion of vendors that sold no 'green', 'amber' and 'red' drink options; 1-2 'green', 'amber' and 'red' drink options and 3 or more 'green', 'amber' and 'red' drink options. The Figure shows the majority of vendors (83%, n=70) offered 1-2 'green' options and 70% (n=59) offered 1-2 'red' drink options. One third (33%, n=28) of vendors offered three or more 'amber' drink options, with 7% (n=6) offering three or more 'red' drink options.



**Figure 11: Percentage of vendors selling none, 1-2 and 3+ 'green', 'amber' and 'red' drink options**

In order to gauge the impact of an increase in healthy drinks on the overall drink distribution, water was added to those vendors in the data set not already offering it (Figure 12). As evidenced in Figure 12, the proportion of vendors that sold no 'green' drink options was reduced from 16% (n=13) of vendors to 0%. The proportion of vendors selling 1-2 'green' drink options increased from 83% (n=70) to 99% (n=83), while the proportion of vendors selling 3+ 'green' drink options remained at 1% (n=1).

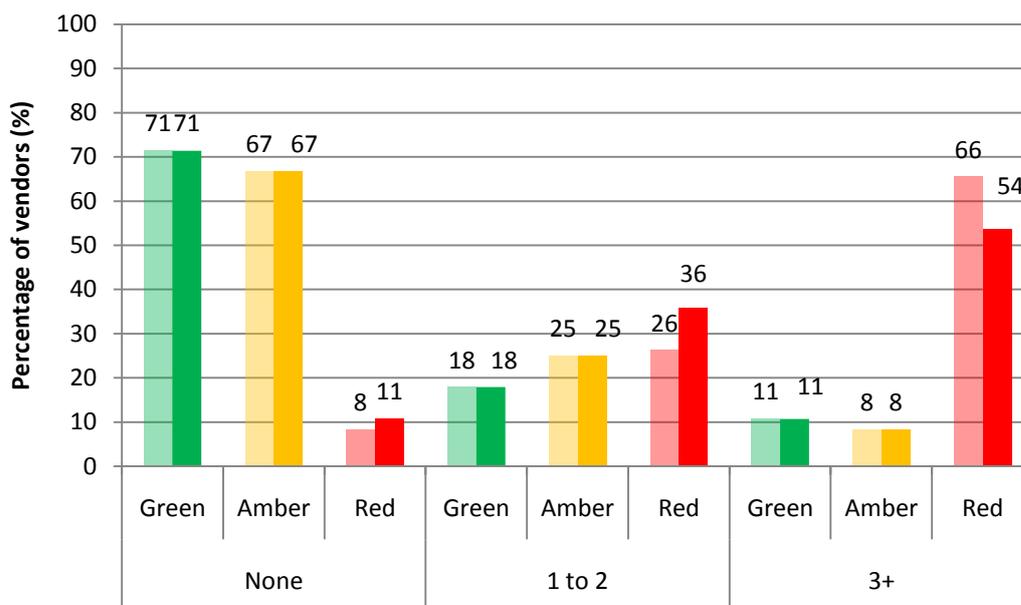


**Figure 12: Change in percentage of vendors selling none, 1-2 and 3+ 'green', 'amber' and 'red' drink options having added a single 'green' drink option to each vendor**

## A Reduction in Unhealthy Food Options

To gauge how a reduction in selected 'red' foods may affect the distribution of food at Royal Show outlets, the most widely available 'red' food item ('hot chips') was removed from vendor menus resulting in only a 5% decrease in the number of food vendors selling three or more 'red' food items (66%, n= 55 to 61%, n=51).

In order to see how further reductions in widely available unhealthy foods would affect the distribution of food at the Royal Show, the three most widely available 'red' food options ('hot chips', 'hot dogs' and 'burgers') were then removed from the menu of all food vendors. As evidenced in Table 13, a small increase was observed in the proportion of vendors selling no 'red' food options from 8% (n= 7) to 11% (n=9), the proportion of vendors selling 1-2 'red' food options increased slightly from 26% (n=22) to 36% (n=30) and the proportion of vendors selling 3+ 'red' food options reduced from 66% (n=55) to 54% (n=45).

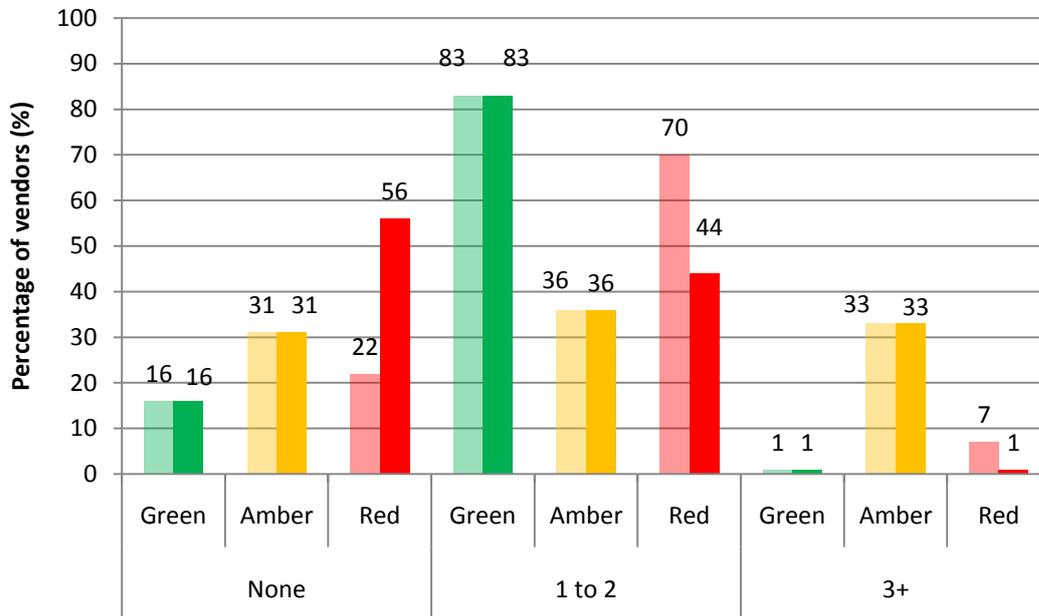


**Figure 13: Change in percentage of vendors selling none, 1-2 and 3+ 'green', 'amber' and 'red' food options having removed hot chips (n=33), hot dogs (n = 22) and burgers (n = 20)**

## A Reduction in Unhealthy Drink Options

To examine how a reduction in unhealthy drinks may affect the distribution of drinks, the most widely available 'red' drink option ('soft drink') was removed from the menu (Figure 14). As evidenced in Figure 14, an increase is seen in the proportion of vendors selling no 'red' drink options from 23% (n=19) to 56% (n=46). The proportion of vendors selling 1-2 'red'

drink options decreased from 70% (n=59) to 44% (n=37) and the proportion of vendors selling 3+ 'red' drink options reduced from 7% (n=6) to 1% (n=1).



**Figure 14: Change in percentage of vendors selling none, 1-2 and 3+ 'green', 'amber' and 'red' drink options having removed soft drinks (n=53)**

## 4.0 Conclusions

Overall, the majority of Perth Royal Show patrons were supportive of increasing healthy food options. A greater proportion of females compared with males and those aged 20-39 years compared with those aged 15-19 years were supportive. The results suggest patrons support plans to increase healthy food options at the Royal Show, with high preferences for 'sandwiches', 'rolls', 'sushi' and 'salad'. However, 'hot chips', 'pizza' and 'lasagne' remain a popular food preference amongst patrons, particularly males. While this may in part be a result of the existing culture of the Royal Show and the available food options, there remains scope to provide healthier or 'light' versions and/or smaller portion sizes of these "red" foods. Preferences toward healthier food choices was expectantly more prevalent amongst 20-39 year old respondents compared with 15-19 year old respondents who were more likely to desire unhealthy food options. In contrast, patron's overall preferred drink choice was water, which contrasts the current dominance of soft drinks and energy drinks on sale. The results also suggest that the high cost of food and/or drinks was the main motivator for patrons bringing food and drinks from home, with convenience a secondary factor.

The results of this study suggest a mismatch between patrons desire to purchase healthy food options and the dominance of 'red' food options available at the Show. The majority of vendors had both water and soft drinks available for patrons to purchase. Overall, the food and drinks available at the Show were considered to be predominantly unhealthy. Very few vendors were observed to be offering predominately healthy foods and few sold predominantly 'amber' options. These results suggest that those patrons who would prefer a healthier option at the Show may find it difficult to find healthier choices.

The results also suggest a large number of items classified as 'red' were sold by vendors. This was evidenced by the removal of the three most common unhealthy foods (i.e. hot chips, hot dogs and burgers) from the menu of all food outlets having little impact on reducing the observed overall unhealthy nature of foods available at the Show. These observations further support the type and number of unhealthy food options available at the Show. The addition of one healthy food option resulted in a small increase on the number of vendors that sold three or more healthy food options, with the addition of water to the drink menu of all drink outlets changing the overall balance of drinks available at the Show positively,

The results of this study suggest patron's desire for healthy options might be met through realignment of more healthy and less unhealthy food and drink options. However, consumer behaviour is more complex than simply changing this balance. Although changing the balance of options in itself is critical, factors such as vendor location, advertising and pricing

are also crucial elements in people's food and drink choices. The provision of more healthy options and reduction of unhealthy options in conjunction with other strategies such as reducing the visual ambience of unhealthy options available and changing expectations of options available are important factors in reducing the overall unhealthy nature of the Show.

It was unclear from the current study whether patrons consider the Show to be a "special occasion" where they deem indulging in unhealthy foods as acceptable, similar to perceived visits to fast food outlets and how this affects their food purchasing intentions. In addition to the food and drink vendors at the Royal Show, the advertising of confectionary within "Show Bags" compliments the high proportion of unhealthy options available at the Show. The current study did not investigate the prevalence of "Show Bags" and the nature of their contents or how they may influence unhealthy food choices at the Show.

Overall, the results of this study showed a high proportion of unhealthy food and drink options were available to patrons, who indicated a preference for more healthy options. In addition to suggesting more healthy food and drink options should be offered, this study also recognises the complex nature of food choices within the context of the Royal Show and the need for further understanding of how changes to food and drinks available impacts upon patron perceptions, intentions and behaviour.

#### **4.1 Limitations**

The intercept survey was voluntary and patrons who agreed to participate may have differed from those who declined. Patrons were randomly approached across a wide area of the Showgrounds in order to limit any selection bias. The self report nature of the intercept survey is limited to the face value of responses, as there was no opportunity to validate responses.

As the food and drink audit was not developed in conjunction with vendors, it is possible it did not include every food and drink item available nor did it account for multiple brands of a similar product being available. In addition, the audits were not validated to confirm the auditors accounted for every food and drink item on offer at each vendor. It should also be noted that the assessment of the predominant food and drink type was subjective to the auditor.

As there was no information collected on the ingredients of each product, an analysis of food composition was not conducted. Similarly, no information was collected on the types of food

and drinks purchased by patrons; therefore an analysis of patrons' actual food and drink consumption was not conducted.

#### **4.2 Recommendations**

Based upon the findings of this study, we recommend the following:

- Introduce measures to increase the number of healthy “green” food options amongst existing vendors at the Perth Royal Show, and/or introduce new vendors that sell predominately healthy food options.
- Measure the impact of any changes to the food options introduced at the Royal Show and monitor patron’s attitudes, beliefs and behaviours towards these changes.
- Introduce strategies to reduce the visual cues towards unhealthy food options at the Perth Royal Show.
- Further investigate the relationship between the provision of healthy food options and patron’s food choices at the Perth Royal Show.

## References

Milligan, R., McCormack, G. R., Rosenberg, M. (2007). Physical Activity Levels of Western Australian Adults 2006. Results from the Adult Physical Activity Study. Perth, Western Australia: Western Australian Government.

Hands, B., Parker, H., Glasson, C., Brinkman, S. & Read, H. (2004). *Physical Activity and Nutrition Levels in Western Australian Children and Adolescents: Report*. Perth, Western Australia: Western Australian Government.

Western Australian School Canteen Association (2008). Nutritional Guidelines. Available at [www.waschoolcanteens.org.au](http://www.waschoolcanteens.org.au) (Date accessed: December 2008)

## **APPENDIX A: AUDIT**

Name of the Food Vendor \_\_\_\_\_

Position on map \_\_\_\_\_

Time of Audit \_\_\_\_\_

Type of Vendor  Movable  Permanent

**1. What types of drinks/foods were available?**

**Drinks**

- |                          |                          |   |
|--------------------------|--------------------------|---|
| No                       | Yes                      |   |
| <input type="checkbox"/> | <input type="checkbox"/> | Alcohol                                     |
| <input type="checkbox"/> | <input type="checkbox"/> | Soft drinks / energy drinks / sports drinks |
| <input type="checkbox"/> | <input type="checkbox"/> | Flavoured water / vitamin water             |
| <input type="checkbox"/> | <input type="checkbox"/> | Milkshake / thickshake                      |
|                          | <input type="checkbox"/> | Other (please specify) _____                |

- |                          |                          |                                   |
|--------------------------|--------------------------|-----------------------------------|
| No                       | Yes                      |                                   |
| <input type="checkbox"/> | <input type="checkbox"/> | Coffee / tea/ hot chocolate       |
| <input type="checkbox"/> | <input type="checkbox"/> | Milk drinks / fruit smoothies     |
| <input type="checkbox"/> | <input type="checkbox"/> | Bottled juice >250ml (big bottle) |
|                          | <input type="checkbox"/> | Other (please specify) _____      |

- |                          |                          |                                      |
|--------------------------|--------------------------|--------------------------------------|
| No                       | Yes                      |                                      |
| <input type="checkbox"/> | <input type="checkbox"/> | Water / bottled water                |
| <input type="checkbox"/> | <input type="checkbox"/> | Freshly squeezed juice               |
| <input type="checkbox"/> | <input type="checkbox"/> | Bottled juice <250ml (little bottle) |
|                          | <input type="checkbox"/> | Other (please specify) _____         |

**Food**

- |                          |                          |  |
|--------------------------|--------------------------|--|
| <input type="checkbox"/> | <input type="checkbox"/> | Pies / sausage rolls / pasties               |
| <input type="checkbox"/> | <input type="checkbox"/> | pizza / nachos                               |
| <input type="checkbox"/> | <input type="checkbox"/> | Burgers / hot dogs                           |
| <input type="checkbox"/> | <input type="checkbox"/> | Fried chicken / battered fish                |
| <input type="checkbox"/> | <input type="checkbox"/> | Fried vegetables / super spuds               |
| <input type="checkbox"/> | <input type="checkbox"/> | Chips / Wedges                               |
| <input type="checkbox"/> | <input type="checkbox"/> | Deep fried pastry e.g. spring rolls, dim sum |
| <input type="checkbox"/> | <input type="checkbox"/> | Lollies / fairy floss /crisps                |
| <input type="checkbox"/> | <input type="checkbox"/> | Cake / biscuits / muffins                    |
| <input type="checkbox"/> | <input type="checkbox"/> | ice-cream                                    |
| <input type="checkbox"/> | <input type="checkbox"/> | Chocolate/coated nuts                        |
|                          | <input type="checkbox"/> | Other (please specify) _____                 |
|                          |                          | _____  |
|                          |                          | _____  |
|                          |                          | _____  |

- |                          |                          |  |
|--------------------------|--------------------------|--|
| <input type="checkbox"/> | <input type="checkbox"/> | Grilled vegetables                         |
| <input type="checkbox"/> | <input type="checkbox"/> | Quiche / frittata / filo pastry            |
| <input type="checkbox"/> | <input type="checkbox"/> | Pasta / lasagne                            |
| <input type="checkbox"/> | <input type="checkbox"/> | Noodles / rice / stir-fry / curry          |
| <input type="checkbox"/> | <input type="checkbox"/> | Kebab                                      |
| <input type="checkbox"/> | <input type="checkbox"/> | Toasted sandwiches / foccacia / flat bread |
| <input type="checkbox"/> | <input type="checkbox"/> | Grilled fish / tuna / salmon patties       |
|                          | <input type="checkbox"/> | Other (please specify) _____               |
|                          |                          | _____                                      |
|                          |                          | _____                                      |
|                          |                          | _____                                      |
|                          |                          | _____                                      |
|                          |                          | _____                                      |
|                          |                          | _____                                      |

- |                          |                          |                              |
|--------------------------|--------------------------|------------------------------|
| <input type="checkbox"/> | <input type="checkbox"/> | Fresh fruit / fruit salad    |
| <input type="checkbox"/> | <input type="checkbox"/> | Fresh vegetables / salad     |
| <input type="checkbox"/> | <input type="checkbox"/> | Sushi                        |
| <input type="checkbox"/> | <input type="checkbox"/> | Soup                         |
| <input type="checkbox"/> | <input type="checkbox"/> | Sandwiches / rolls / wraps   |
|                          | <input type="checkbox"/> | Other (please specify) _____ |
|                          |                          | _____                        |
|                          |                          | _____                        |
|                          |                          | _____                        |
|                          |                          | _____                        |
|                          |                          | _____                        |
|                          |                          | _____                        |

**2. Dominant /prominent type of food available?**

Group 1 (e.g. deep fried foods, burgers, chips etc)

Group 2 (e.g. pasta, noodles etc)

Group 3 (e.g. fresh fruit & vegetables)

## **APPENDIX B: SHOWGROUNDS MAP**

# CLAREMONT SHOWGROUND, CLAREMONT



- TELEPHONE
- PARENTS FACILITIES
- PARCEL MINDING
- PUBLIC ENTRANCE
- INFO BOOTH
- DINING
- TOILETS
- DISABLED TOILETS
- SAFETY STOPS
- SMOKE FREE AREA
- SHOWBAGS
- WHEELCHAIR PRAM HIRE
- LOST CHILDREN
- SIDESHOW
- BAR
- ATM
- SUNSCREEN
- IGA FOLLOW THE YELLOW BRICK ROAD
- HORSES
- DOGS
- SHEEP
- POULTRY
- CATTLE
- CATS
- PIGS
- GOATS
- ST JOHN FIRST AID
- FIRE STATION
- POLICE

- IGA Follow The Yellow Brick Road
- Commercial Exhibits
- Animal Exhibits
- Entertainment
- Grassed Area
- RAS Area
- Retail Therapy

