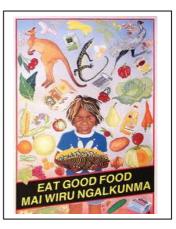
# **Store Nutrition Report**

# **Final Store Turnover Food and Nutrition Results**

## Nganampa Health Council

March 2013

Amanda Lee and Jamie Sheard



## Summary

This report provides food and nutrition information about the buying practices, and therefore the diet, of the people shopping at the Mai Wiru group stores (Pipalyatjara, Kanypi, Amata, Pukatja and Fregon) on the Anangu Pitjantjatjara Yankantjara (APY) Lands in South Australia in October 2012. These results were compared with store turnover conducted in 1986.

The purpose of this report is to provide feedback to relevant Councils to help inform decision making on key issues.

The Mai Wiru stores are now well stocked with healthy food choices at very competitive prices (see the companion report of the market basket survey conducted in November 2012). Over the last 25 years there have been many improvements in the number, range and quality of fresh fruits and vegetables, milk products and wholegrain cereals available. People are now eating more healthy foods and this has helped improve their intakes of nutrients.

But there has been a bigger increase in the number and range of discretionary 'junk' foods available. Popular foods include takeaway, convenience and snack foods and sugar-sweetened drinks. These 'junk' foods and drinks now comprise a large percentage of total intakes in the communities: 41% of energy, 28% of fat and 84% of sugar. The contribution of drinks to sugar intake has increased fourfold since 1986.

This is also likely to be the case in other stores in remote communities, but no other organisation has looked in detail at what people are buying in their stores like Nganampa Health and Mai Wiru have done.

The store turnover results suggest that people are not cooking as much as they were 25 years ago. They also suggest that the communities' diet has continued to transition away from the healthy, traditional diet. However studies of intake of traditional foods would be needed to ensure that the total diet was considered.

The results suggest that unless there are dramatic improvements in the communities' diet , people on the APY Lands will keep getting sick from chronic diseases like Type 2 diabetes, kidney

## **Recommendations:**

Just two major changes could lead to enormous improvements in the diet on the APY Lands:

- 1. Decrease reliance on convenience and takeaway foods that are high in energy, saturated fat and sodium (salt) by:
  - Increase the availability of healthy ready-to-eat meals and snacks. These could include lean, roasted meat and poultry and vegetables, sandwiches and salads, stews, curries, and sources

## Introduction

Health concerns, such as type 2 diabetes, kidney disease and heart disease are common in Aboriginal and Torres Strait Islander communities throughout Australia. In the APY Lands, as elsewhere, these conditions are occurring at younger ages and more prevalently than in the past.

Nganampa Health and Mai Wiru Stores have worked together to take a national lead by assessing current dietary intake in the communities that they service to provide detailed information on areas that could be targeted to improve the health of the communities.

The store turnover method, validated at Minjilang in 1990, was used to measure the diet of the communities in October 2012, and results were compared with the dietary intake measured in these communities by the store turnover method in 1986. Store turnover is useful because it assesses the whole diet of the community in terms of both foods and nutrients.

## Methods

## Store Turnover

Store turnover data for items purchased through Mai Wiru stores were collected electronically from ALPA's Grocery Manager Program for the month of October 2012. This data was entered in nutrient analysis software (Foodworks, Xyris) for nutritional analysis to obtain energy, macronutrient and micronutrient data.

The values for all 5 stores were averaged to compare with available results from 3 of the stores in 1986. These comparisons were conducted for total energy (kilojoules), fat (grams), sugar (grams) and micronutrients.

Foods were classified as belonging to the 5 food groups, discretionary ("junk") foods or allowance foods groups. They were also classified by food type similar to the methods used in 1986. Takeaway, convenience and infant food categories were added to reflect the changes in the food supply since the previous survey.

Results for each store are also reported separately for energy, fat, sugar and sodium.

Results were compared with dietary recommendations from the Australian Dietary guidelines (see box: What should people eat?)

#### What should people eat?

The Australian Dietary Guidelines 2013 underpin community-level nutrition messages and are reflected in the Australian Guide to Healthy Eating (see to the right). They are relevant to all Australians, including Aboriginal groups, and culturally appropriate foods can be selected. The guidelines recommend that the majority of the diet should come from the 5 food groups to decrease the risk of chronic diseases such as heart disease, type 2 diabetes and some cancers, to ensure appropriate and sufficient nutrient intake, to help avoid excessive weight gain, and to promote health and wellbeing. Additional guidelines for Aboriginal and Torres Strait Islander People include:

- Chose store foods which are most like traditional bush foods (low in saturated fat, sugar, salt and alcohol)
- Use traditional bush foods whenever possible. •

The foods and drinks in the discretionary ('junk') food group should be used only sometimes and in small amounts- if at all. Most of these foods and drinks are high in energy, saturated fat and added sugar which can contribute to excess body weight and increase risk of chronic diseases such as heart disease and type 2 diabetes. These foods also tend to be very low in the nutrients required for good health.

#### 5 food groups:

- Vegetables and legumes/beans ٠
- Lean meats and poultry, fish, eggs, ٠ tofu, nuts and seeds
- Grain (cereal) foods, mostly whole ٠ grain (like whole grain breakfast cereals, wholemeal bread)

Discretionary foods ("junk" foods):

- Soft drinks, cordial and sports drinks ٠
- Meat pies, sausage rolls and hot ٠ chips
- Fried take-away foods ٠
- Confectionary and chocolate
- Cream and butter •

#### Allowance foods:

• Unsaturated seed and vegetable oils and spreads (margarine)

- Fruit
- Milk, yoghurt, cheese and/or • alternatives, mostly reduced fat

- Cakes, sweet biscuits, desserts
- Potato crisps, savoury snacks, biscuits and crackers
- Ice-cream
- Jam and honey

Enjoy a wide variety of nutritious foods from these five food groups every day. Drink plenty of water. Grain (cereal) foods Lean meats and poultry, fish, eggs, tofu, nuts and seeds and legumes/beans

Australian Guide to Healthy Eating

Use small amounts



Australian Government

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Milk, yoghurt, cheese and/or alternatives, mostly reduced fat

www.eatierhealth.gov.au

Vegetables and

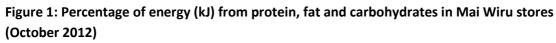
legumes/beans



## Results

## Headline data for store turnover

Energy intake from the macronutrients (protein, fat and carbohydrates) did not change significantly between 1986 and the latest analysis in October 2012 (Figures 1 and 2). However, the proportion of energy from protein tended to increase (12% to 16%) while the proportion of energy from fat tended to decrease (39% to 35%) but more fat is now unhealthy saturated fat.



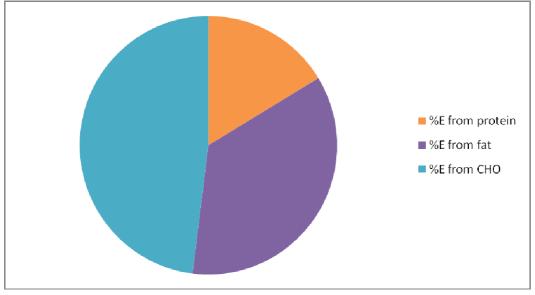
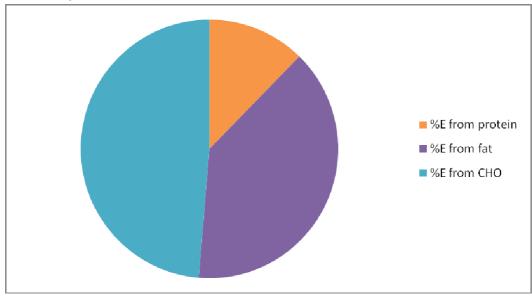


Figure 2: Percentage of energy (kJ) from protein, fat and carbohydrates in the central desert community stores (1986)



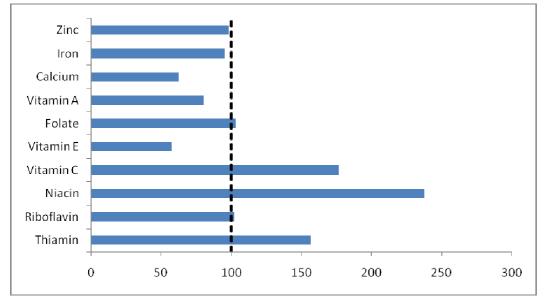
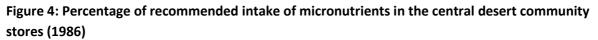
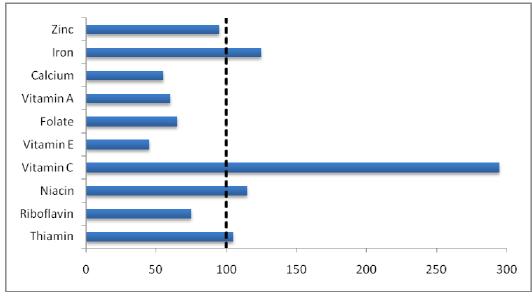


Figure 3: Percentage of recommended intake of micronutrients in Mai Wiru stores (October 2012)





Micronutrient intake has improved since the survey in 1986 (Figures 3 and 4). This is particularly the case for folate and riboflavin which are now at around 100% of recommended intake (Figure 3). The increase in folate is likely due to the fortification of bread but also to increased fruit and vegetable intake. Increase in milk/milks product consumption may explain the increase in riboflavin intake.

However, few people have their need for specific nutrients in mind when shopping and instead make their decision on what to eat on the basis of foods. Therefore, it is important to look at the specific foods that are being purchased. Understanding these relationships help to identify changes that can be made in the available food choices that can also improve the overall diet and nutrient intake of the community.

**Discretionary ("junk") foods accounted for 41% of the energy in the diet** (Figure 5) and this has increased from 39% in 1986 (Figure 6). Across all 5 Mai Wiru stores, the discretionary and allowance foods<sup>1</sup> accounted for 47% of energy which is higher than the 42% of energy that these foods represented in 1986. Most worrying this is much higher than the 35% of energy from discretionary and allowance foods that are consumed by average adults Australians. This is likely to be a major reason why people on the APY Lands have a high incidence and prevalence of diet-related chronic disease.

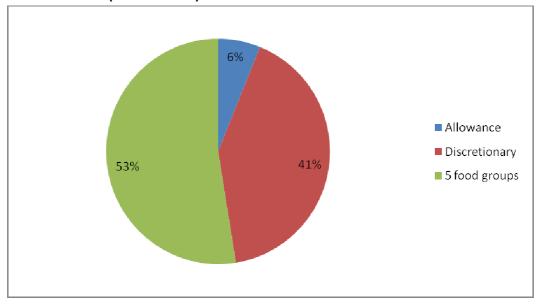
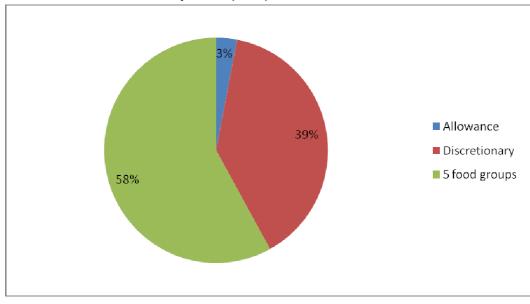


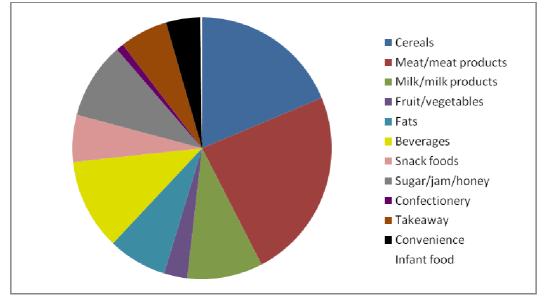
Figure 5: Percentage of energy (kJ) from 5 food groups, discretionary foods and allowance foods in Mai Wiru stores (October 2012)

Figure 6: Percentage of energy (kJ) from 5 food groups, discretionary foods and allowance foods in the central desert community stores (1986)



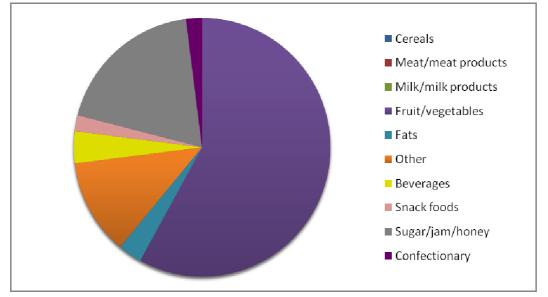
<sup>&</sup>lt;sup>1</sup> Note: This included some saturated spreads and fats in these communities.

When these foods are broken into food types, the highest contributors to energy intake are cereals, meat and meat products, and beverages (sugar sweetened soft drinks) (Figure 5). While the contribution of fruit and vegetables to energy has increased since 1986, the contribution of soft drinks, convenience foods, takeaway and snack foods has increased much more markedly. The contribution of sugar/jam/honey, cereals (mainly flour) and fresh meat to energy has decreased since 1986 (Figures 7 and 8). This suggests that less people are cooking than in 1986. Worryingly the results also suggest that the communities' diet has continued to transition further away from the healthy, traditional diet over the last 25 years. However dietary studies of intake of traditional bushfoods and all other foods would be needed to check this.



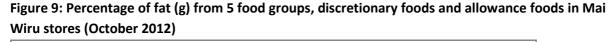






The consumption of fat from discretionary foods is **2.3 times** the amount documented in the last survey (Figures 9 and 10). Previously, the majority of fat was consumed in the 5 food groups, which

provide much healthier types of unsaturated fat than the discretionary foods which provide a lot of saturated fat (Figure 9).



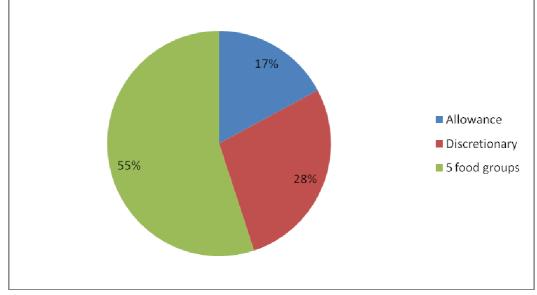
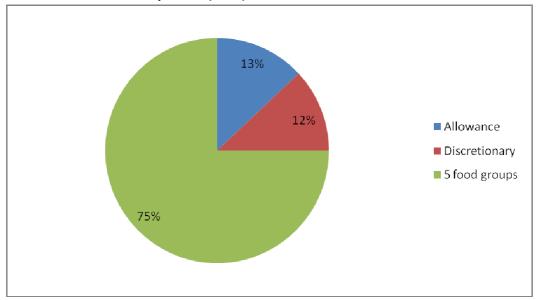


Figure 10: Percentage of fat (g) from 5 food groups, discretionary foods and allowance foods in the central desert community stores (1986)



When these foods are broken into food types, the highest contributors to fat intake are meat and meat products, fats and oils, milk and milk products, convenience foods, takeaway and snack foods (Figure 11). While the contribution of fats from meat and meat products has decreased since 1986,

the contribution from all these other groups has increased markedly during that time (Figures 11 and 12).

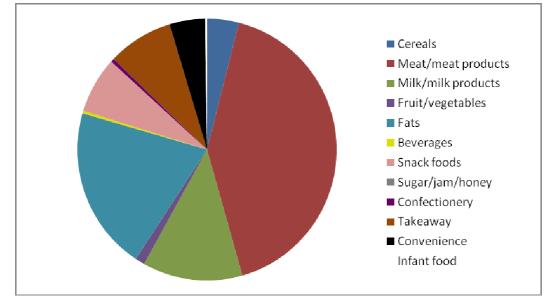
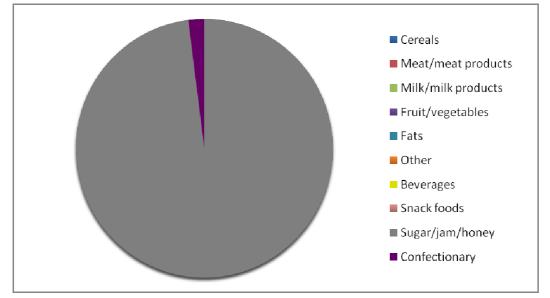


Figure 11: Percentage of fat (g) in Mai Wiru stores (October 2012) by food type

Figure 12: Percentage of fat (g) in the central desert community stores (1986) by food type



The contribution of sugar from discretionary decreased slightly from the last survey (Figures 13 and 14); this is mainly due to the increased intake of fruit and milk products.

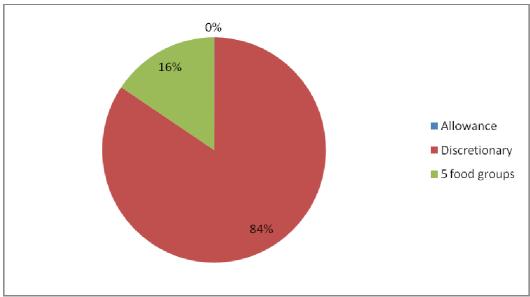
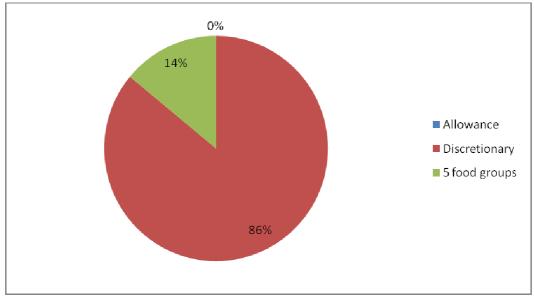


Figure 13: Percentage of sugar (g) from 5 food groups, discretionary foods and allowance foods in Mai Wiru stores (October 2012)

# Figure 14: Percentage of sugar (g) from 5 food groups, discretionary foods and allowance foods in the central desert community stores (1986)



The highest contributors to sugar intake in the Mai Wiru stores are beverages (including 99% fruit juice and sugar-sweetened beverages such as soft drinks, energy drinks, sports drinks, fruit juice drinks) at over 40% and sugar/jam/honey at around 30% (Figure 15). The contribution of beverages to sugar intake has increased **four fold** since 1986. On the other hand, the contribution of sugar/jam/honey has decreased by about half (Figures 15 and 16). In 1986 the approximate per

capita intake of sugar from white sugar per se in Central Australian communities was 130g (26 teaspoons) per day. This has now decreased by more than half, but much more sugar is now provided by drinks.

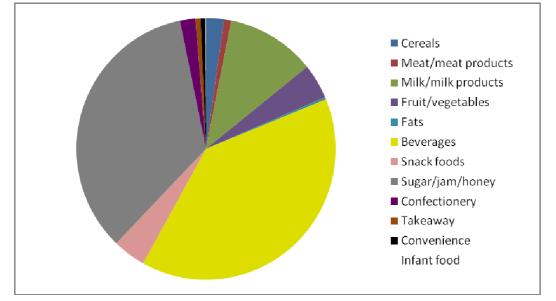
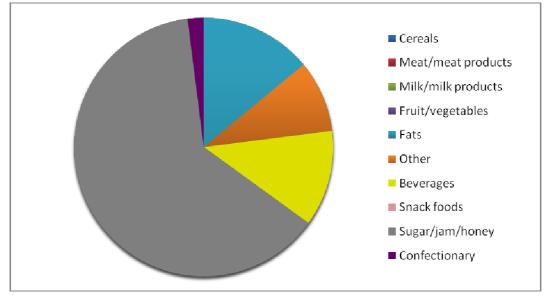


Figure 15: Percentage of sugar (g) in Mai Wiru stores (October 2012) by food type

Figure 16: Percentage of sugar (g) in the central desert community stores (1986) by food type

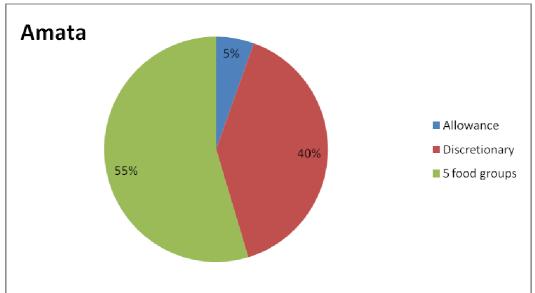


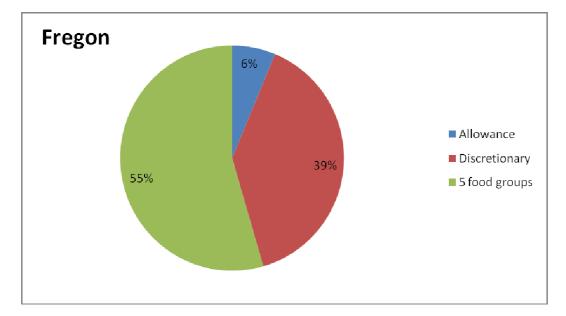
## Results by store

This section outlines the results of the analysis for each of the 5 stores. Care should be taken in comparing the results for the different stores due to high estimates of error.

In terms of energy, all stores were fairly similar in the distribution of energy intake across the 5 food groups, discretionary foods and allowance foods (Figure 17). At 55% both Amata and Fregon had the highest proportion of energy derived from the 5 food groups, while Pukatja was the lowest at 48%.

Figure 17: Percentage of energy (kJ) from 5 food groups, discretionary foods and allowance foods bought in each of the stores (October 2012)





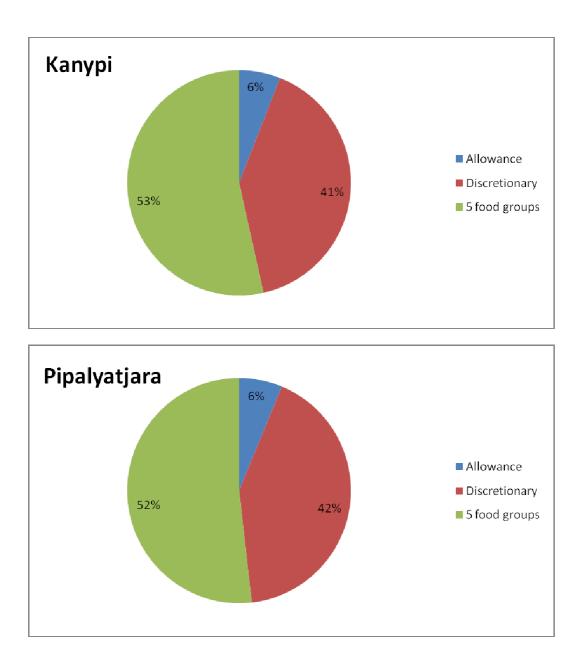
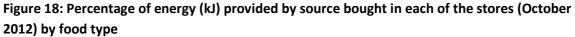
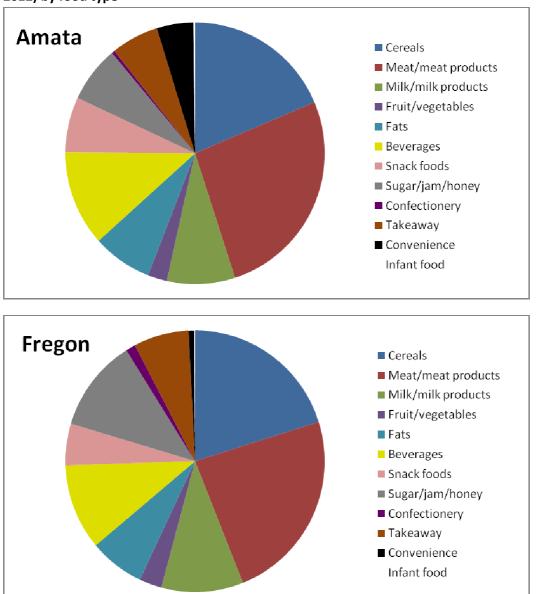
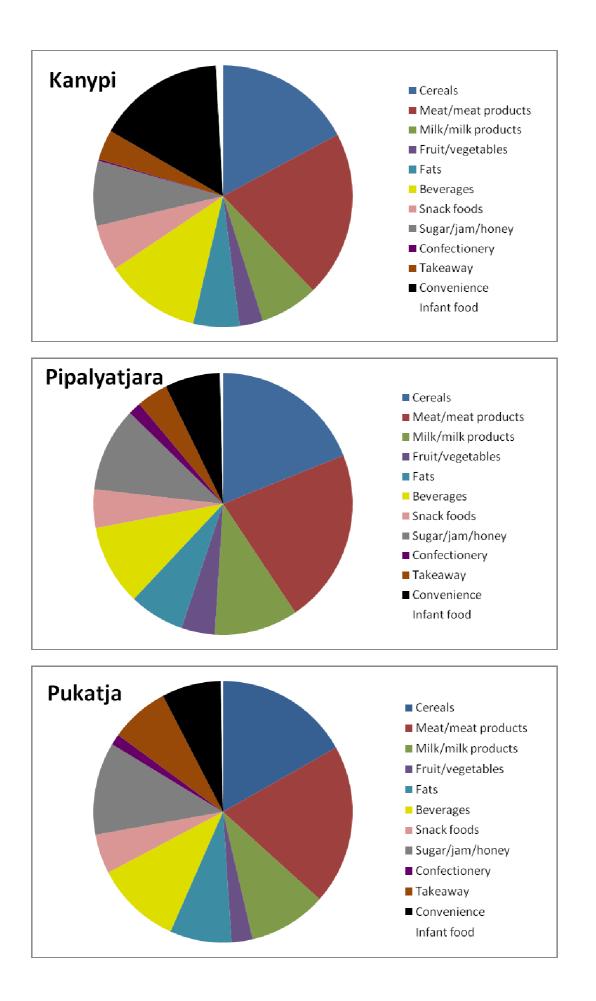


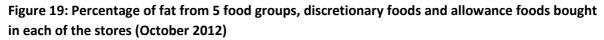
Figure 18 provides information about the percentage each food type contributed to total energy. The contribution of meat and meat products and takeaway foods to total energy was higher in Amata and Fregon than in the other stores. But these two stores tended to have more healthy takeaway options (eg stews and sandwiches) available than the other stores. Kanypi had the highest percentage of energy from convenience foods, at least twice that of the other stores, while Fregon's energy contribution from convenience foods was low. Sugar/jam/honey contributed highly to energy intake in Fregon and Pukatja.

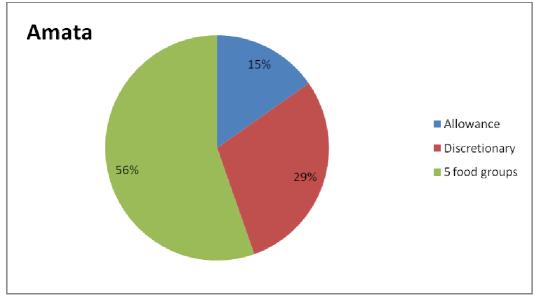




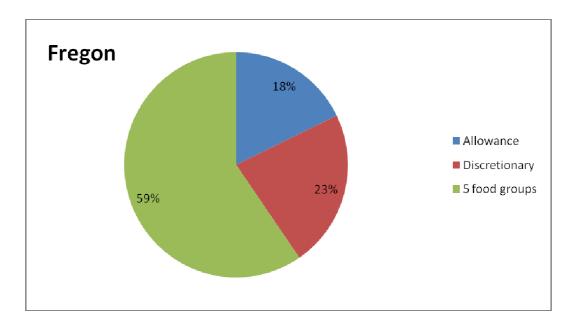


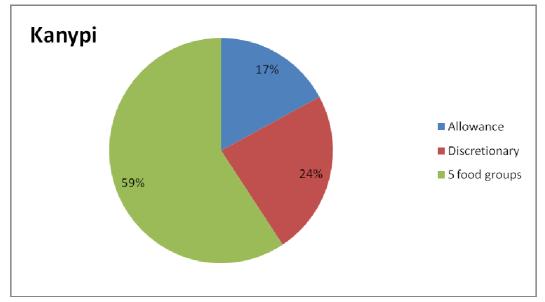
All stores were fairly similar in the distribution of fat intake across the 5 food groups, discretionary foods and allowance foods (Figure 19). Pukatja had the highest percentage of fat from the discretionary and allowance groups, which likely reflects the relatively high proportion of fatty, take-away foods available there in October 2012.<sup>2</sup>

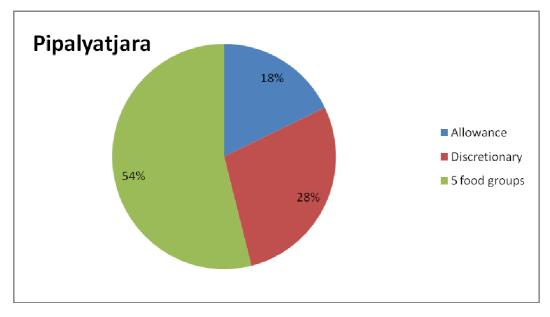




 $<sup>^2</sup>$  New managers have taken over the Pukatja store since October 2012 and are working hard to increase healthy choices in the takeaway.







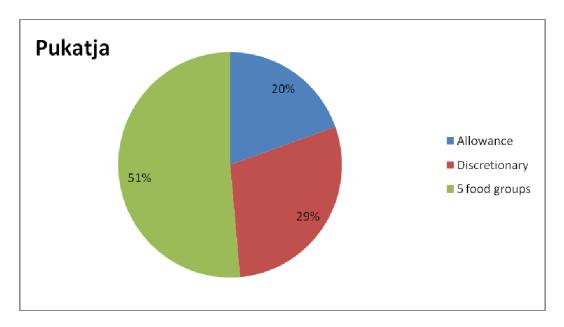


Figure 20 outlines the percentage of fat from each food type in each of the 5 stores. The convenience foods at Kanypi and Pukatja contributed to total fat intake more than at the other stores, similarly to the total energy intake. Takeaway foods at Kanypi represented a smaller proportion of fat intake than in the other stores.

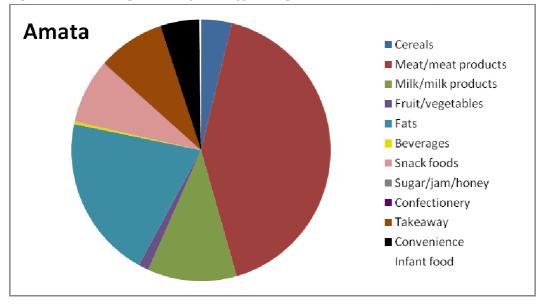
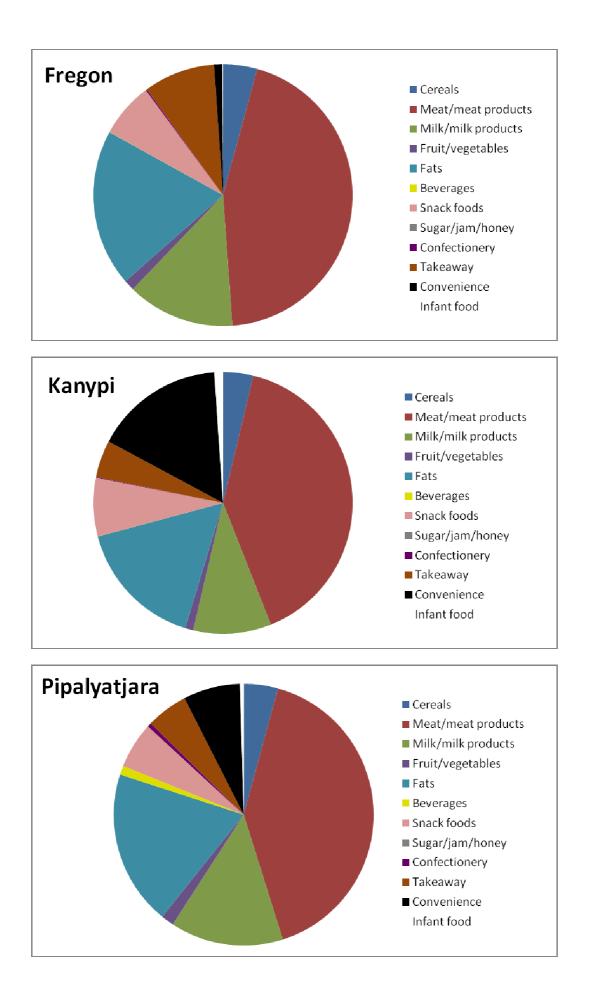
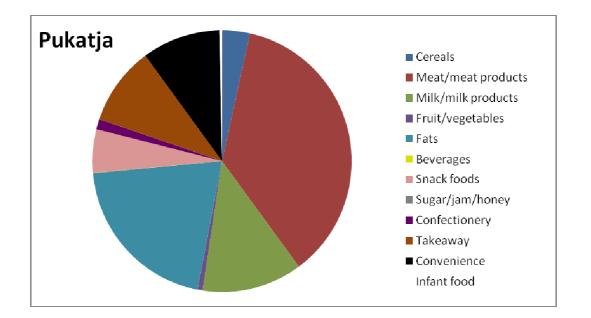
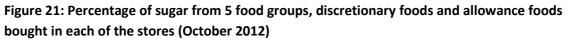


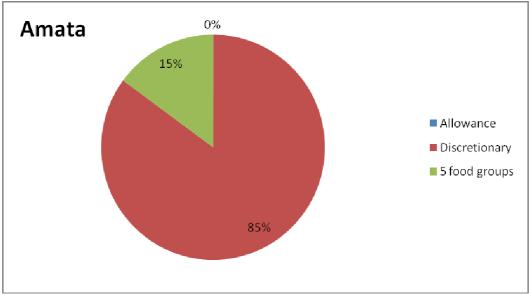
Figure 20: Percentage of fat by food type bought in each of the stores (October 2012)

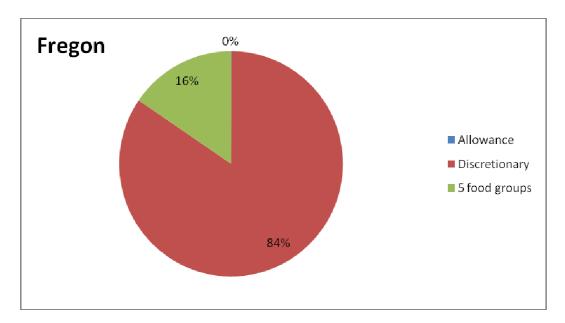


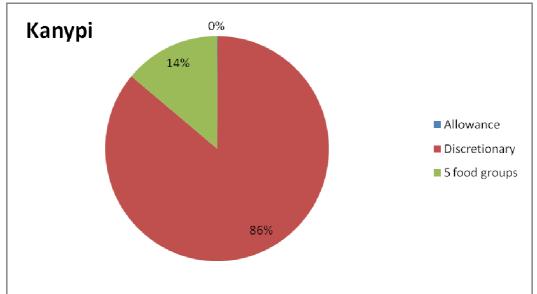


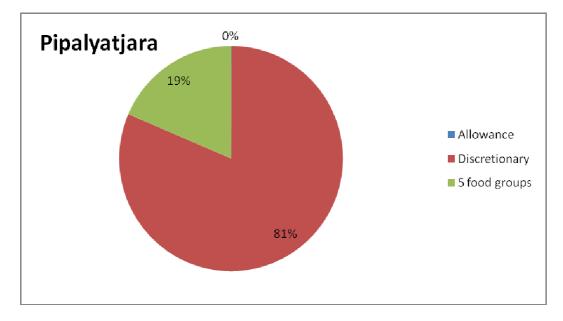
Again, all stores were fairly similar in the distribution of sugar intake across the 5 food groups and discretionary foods. Pipalyatjara had the lowest percentage of sugar intake from discretionary foods and the highest percentage of sugar intake from the 5 food groups (Figure 21)- this is mainly from fresh fruit.

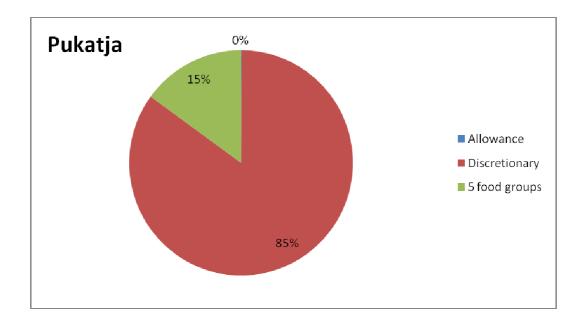












As indicated earlier in the average of all stores' data, beverages (99% fruit juice and sugarsweetened drinks such as soft drinks, energy drinks, sports drinks and fruit juice drinks) were the highest contributor to sugar intake in each of the stores. However, the proportion was highest in Amata and Kanypi (around 45%) and lowest in Pipylatjara and Fregon. Amata has the highest proportion of non-calorific ('diet') soft drinks to sweetened soft drinks (Table 1) but the highest percentage of 99% fruit juice consumed (Table 2).

The sugar/jam/honey category was also a significant contributor in each of the stores and particularly in Pukatja, Pipalyatjara and Fregon. Within the 5 food groups, milk and milk products and fruit provide healthy sources of sugar. Pipalyatjara had the highest proportion of sugar provided by fruit across all the stores.

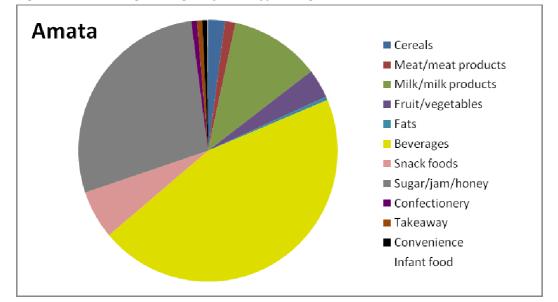
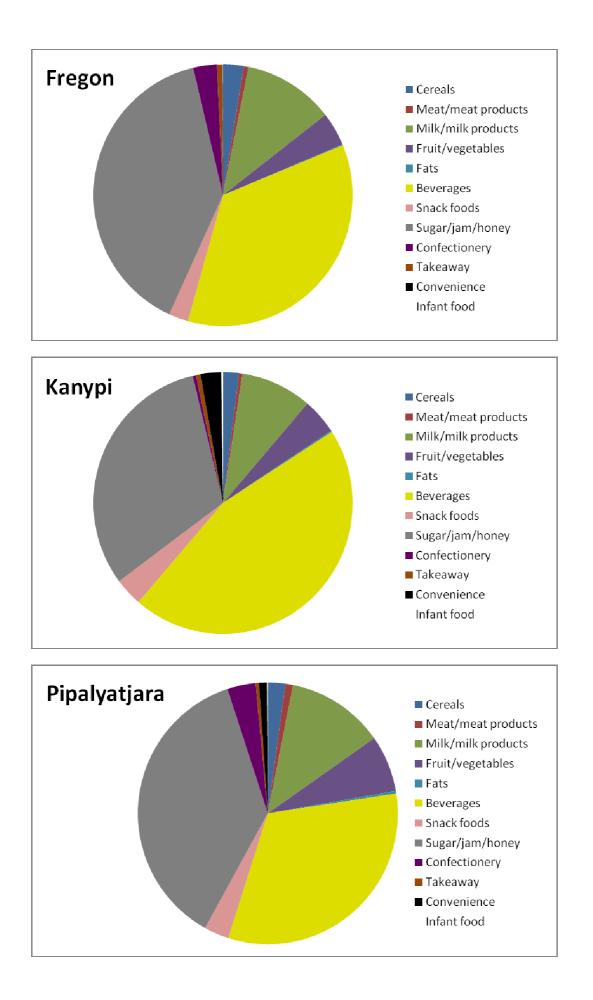
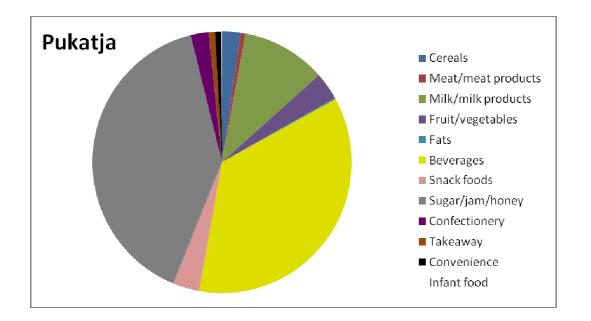
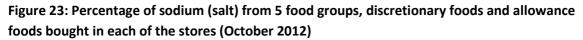


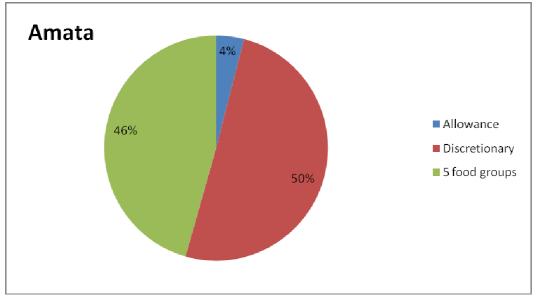
Figure 22: Percentage of sugar by food type bought in each of the stores (October 2012)

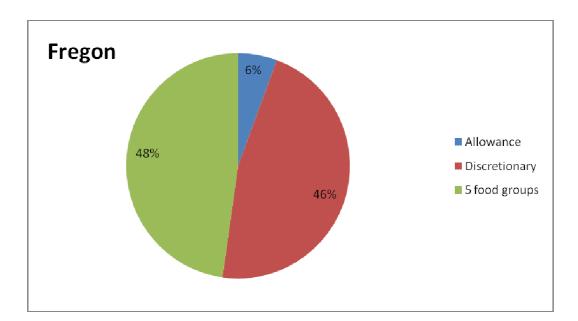


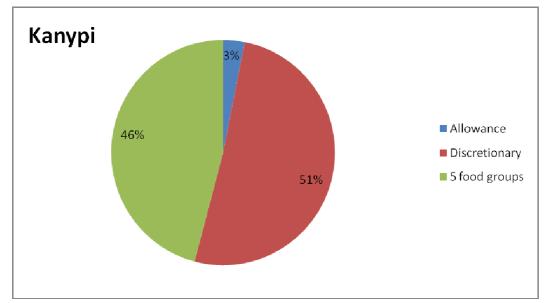


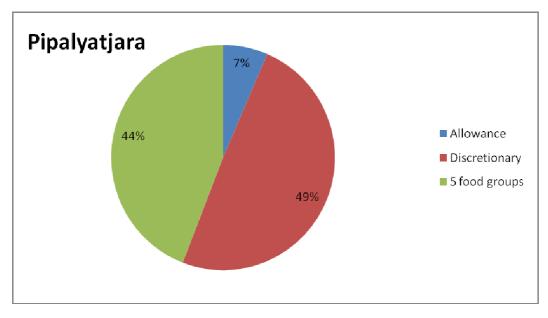
Discretionary and allowance foods combined provided over ½ of the very high intake of sodium(salt) (Figure 23). This percentage was the highest in Pukatja.

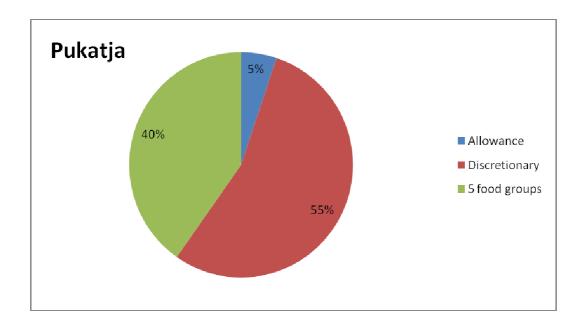












Cereal (grain) foods and meat/meat products each provided about ¼ of sodium intake in all stores (Figure 24). Takeaway and convenience foods contributed to approximately ¼ of sodium intake in Amata, Pipalyatjara and Pukatja, and convenience foods alone to around a third of the sodium intake in Kanypi.

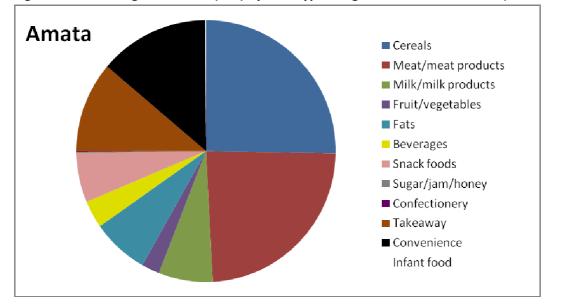
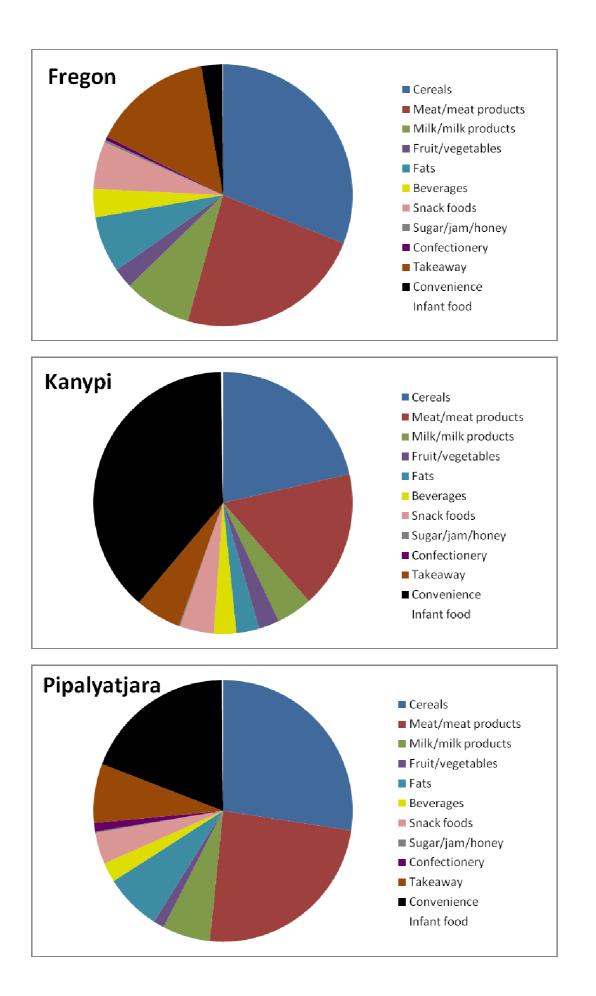


Figure 24: Percentage of sodium (salt) by food type bought in each of the stores (October 2012)



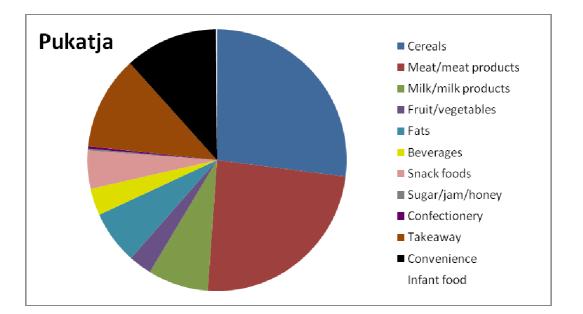


Table 1 provides information about beverages (drinks), dairy foods, breads and cereals. Pukatja had the lowest percentage of non-caloric 'diet' beverages (excluding dairy) with sugar-sweetened drinks representing over 75% of the drinks sold by weight. Amata had the highest percentage (47%) of non-caloric 'diet' drinks sold by weight. This was reflected in the soft drink category with Amata selling 65.6% of its soft drinks as diet soft drink. This may be explained by the fact that Amata also had diet soft drinks representing over 60% of the cool drinks displayed as presented in the Market Basket survey Report. The other four stores sold less non-caloric 'diet' soft drink, ranging from 13 to 28% of total soft drink sold.

	% non-caloric soft drink and water*	% diet soft drink**	% reduced fat dairy***	% wholemeal and whole grain bread	% lower sugar breakfast cereal
Amata	47.0	65.6	33.6	3.4	89.3
Fregon	33.6	17.9	43.7	13.5	81.7
Kanypi	26.6	23.1	57.6	7.3	94.4
Pipalyatjara	36.9	28.0	46.9	2.0	91.8
Pukatja	23.4	13.2	44.2	36.4	94.8

Table 1: Percentage by weight of the healthier options sold within certain food types

\*non-caloric soft drink, non-caloric cordial and water compared to total of soft drink, cordial, flavoured water, fruit drink (minimal fruit juice content), iced teas. This comparison does not include fruit juice, milk.

\*\*includes only soft drinks

\*\*\*includes yoghurt, milk, cheese

Kanypi sold the highest proportion of reduced fat dairy foods to all dairy foods by weight, reaching almost 60%, while Amata sold around half this rate (Table 1). While lower sugar breakfast cereal options were popular at over 80% of all breakfast cereals sold, wholemeal or wholegrain bread was

not so popular, with white bread representing between 64% (at Pukatja) and 98% (at Pipylatjara) of bread purchases.

Although it is useful as an indicative measure only, by weight fruit juice contributed a much greater proportion of all fruit sold than fresh fruit (Table 2). Pipalyatjara sold the least percentage of fruit as juice and also had the highest fruit and vegetable intake per 1000kJ and per person per day. Pukatja and Amata sold approximately ¾ of fruit as fruit juice and also had the lowest fruit and vegetable intake per 1000kJ of the stores. These stores, along with Fregon, represented the lowest intake of fruit and vegetables per person per day.

Canned vegetables represented between 6.3% (Pipalyatjara) and 23.6% (Kanypi) of vegetables sold. Frozen vegetables contributed between 13 and 20% of total vegetable intake.

		Approximate	Fru	Fruit		ables*	Fruit and vegetable intake**(g) per 1000kJ
Weight sold (kg)	weight sold (g) per person per day <sup>3</sup>	(g) per	% juice	% fresh	% frozen		
Amata	809	59	19.5	77.3	66.4	19.7	4.2
Fregon	351	45	41.3	55.5	71.6	15.9	4.9
Kanypi	255	83	27.8	68.7	58.5	17.9	7.8
Pipalyatjara	789	105	48.9	49.7	73.9	19.8	9.3
Pukatja	461	24	21.7	76.2	73.4	13.2	4.1

## Table 2: Total sales of fruit and vegetables (kg) and percentage by weight, October 2012

\* remainder of vegetables sold in tins/cans

\*\*includes fresh, frozen and canned fruit and vegetables; excludes fruit juice

<sup>&</sup>lt;sup>3</sup> Population estimates: Amata 441, Fregon 254, Kanypi 99, Pipalyatjara 243, Pukatja 609

## Summary:

The Mai Wiru stores are now well stocked with healthy food choices at very competitive prices (see market basket survey report November 2012). Over the last 25 years there has been lots of improvements in the number and range of fresh fruits and vegetables, milk products and wholegrain cereals available. People are now eating more fruit and vegetables and milk products, and this has helped greatly improve the intake of nutrients.

But there has been a bigger increase in the number and range of discretionary 'junk' foods available. Popular foods include takeaway, convenience and snack foods and sugar-sweetened drinks. These 'junk' foods and drinks now comprise a large percentage of total intakes in the communities: 41% of energy, 28% of fat and 84% of sugar. The contribution of drinks to sugar intake has increased fourfold since 1986.

This is also likely to be the case in other stores in remote communities, but no-one has looked in detail at what those stores are selling like Nganampa Health and Mai Wiru have done.

The store turnover results suggest that people are not cooking as much as they were 25 years ago. They also suggest that the communities' diet has continued to transition further away from the healthy, traditional diet. However dietary studies of intake of traditional foods and foods other than purchased at the community stores would be needed to ensure that the total diet was considered.

Unless there are dramatic improvements in the communities' diet , people on the APY Lands will keep getting sick from chronic diseases like Type 2 diabetes, kidney disease, heart disease and some cancers. They will keep getting these diseases at younger ages too.

## **Recommendations:**

Just two major changes could lead to enormous improvement in the diet:

- 1. Decrease reliance on convenience and takeaway foods that are high in energy, saturated fat and sodium (salt) by:
  - Increase the availability of healthy ready-to-eat meals and snacks. These could include lean, roasted meat and poultry and vegetables, sandwiches and salads, stews, curries and soups
  - Encourage cooking; stock a greater range of cooking equipment
  - Think about alternative models of meal provision, to help reduce reliance on convenience and takeaway meals, such as cafe's, dining rooms, catering ventures.
- 2. Decrease the high intake of sugar:
  - Increase the availability of water and artificially sweetened 'diet' soft drink and cordial and display these prominently in the stores

- Remove sweetened soft drink from all stores (especially in sizes > 375 ml) and replace these with water or artificially sweetened soft drink;
- Remove large sizes and multiple varieties of 99% fruit juice, but continuing to stock a small range of fruit juice in sizes less than 250ml.
- Think about not stocking sugar sweetened drinks, energy drinks, sports drinks and fruit juice drinks at all.

Other recommendations, including from the companion Market Basket survey report, include:

- Remove Golden Choice margarine, LOL carbonated fruit juice and baby chocolate custard
- Increase the availability of wholemeal and whole grain bread choices
- Stock more low salt or no added salt canned vegetable and other tinned foods
- Continue to offer the great range of vegetable and fruit at competitive prices
- Continue to stock low sugar breakfast cereals, such as Weet-Bix and oats
- Stocking a greater number and range of healthy ready-to-eat meals and snacks
- Stock only lean chicken pieces
- Continue to display and promote healthy foods from the 5 food groups. Develop more instore and point-of-sale nutrition promotions now that food supply and pricing policies and procedures are so well developed in Mai Wiru stores.