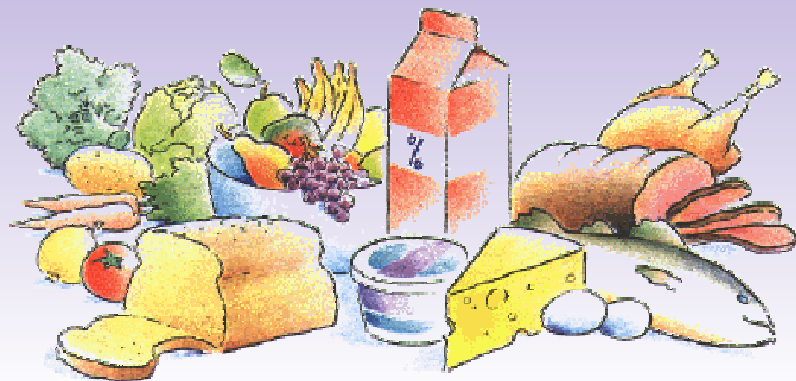


Knowledge of *Canada's Food Guide* and Food Portion Size

Based on a Survey by Statistics Canada

December 2004



PHRED

Public Health Research, Education
& Development Program



REDSP

Programme de recherche,
d'éducation et de développement
en santé publique



Sudbury & District

Health Unit

Service de
santé publique

Prepared by:

Darshaka Malaviarachchi, Epidemiologist
Public Health Research, Education and Development (PHRED) Program
Resources, Research, Evaluation and Development Division
Sudbury & District Health Unit

Joanne Beyers, Researcher, Nutrition & LifeStyles
Public Health Research, Education and Development (PHRED) Program
Resources, Research, Evaluation and Development Division
Sudbury & District Health Unit

Tina Skjonsby, 4th year Nursing Student
Laurentian University

Renee Allen, Nutritionist
Health Promotion Division
Sudbury & District Health Unit

Acknowledgements:

The staff and students of the Survey Skills Development Course (SSDC-90), Statistics Canada.

This report could not have been completed without the help from Lee Rysdale, Tina Swinamer, Claire Warren, Leah Chytil, Megan Dumais, Shannon Mahaffy, Tracey Weatherbe, and Susan Snelling.

A special thank you to Megan Doniec and Carole Ouellette for their assistance in formatting the report.

For more information contact:

Darshaka Malaviarachchi, Epidemiologist
Resources, Research, Evaluation and Development Division
Sudbury & District Health Unit
1300 Paris Street
Sudbury, ON P3E 3A3
Telephone: (705) 522-9200, ext. 256
Email: malaviarachchid@sdhu.com

Table of Contents

Executive Summary	i
Section I: Introduction	1
Section II: Method.....	3
Survey Skill Development Course	3
Sample	3
Weighting.....	4
Limitations.....	4
Section III: Findings	5
Part 1: Demographic Profile.....	6
Part 2: Self Perceived Health Status.....	8
Part 3: Awareness & Knowledge of CFG.....	9
Part 4: Portion Size	13
Part 5: Fast Food Consumption Habits	18
Part 6: Frequency of Feeling Uncomfortably Full	21
Part 7: Fitness Equipment/Gym Membership	22
Section IV: Implications	23
References.....	27

Executive Summary

Obesity, one symptom of poor diet and physical inactivity, is increasing not only locally but also across Canada. Northern Ontario, and Sudbury, has a higher obesity rate than the Ontario average. Little is known about the eating habits or the dietary knowledge of Sudbury residents. Due to the lack of available local data, Statistics Canada was asked to conduct a survey in the City of Greater Sudbury. As part of the Survey Skills Development training course for their employees, Statistics Canada offers a free survey creation and collection service to agencies such as Health Units.

Methods

The survey was developed and conducted by Statistics Canada staff. The questions explored awareness of Canada's Food Guide to Healthy Eating (CFG), portion size, fast food consumption, frequency of feeling uncomfortably full and the availability or presence of fitness equipment and/or gym membership. A bilingual household survey was conducted with a total of 409 respondents.

Findings

The majority of the respondents were aware of the CFG, but only half had knowledge of the minimum number of servings of fruits and vegetables. Those with greater awareness of CFG included individuals with: higher education, higher income, between 25 to 54 years of age, and women. Specific food portions were commonly overestimated such as bread, pasta, and chopped vegetables. Men commonly overestimated meat portion sizes while those with lower education, lower income, and women commonly underestimated. People with lower incomes, individuals between 18-24 years of age and men commonly consumed fast food multiple times per week. One in four women never purchased combination meals compared to nine percent of men, while men frequently super sized. Although equal percentages of men and women felt uncomfortably full after meals most of the time, more women responded "never" than men. Lastly, as income increased, the availability of both fitness equipment and club membership increased.

Implications

Increased awareness of CFG is important for all populations. The results of this survey demonstrate a lack of consumer knowledge of CFG, thus identifying a need for education on food groups, appropriate portion sizes, and healthy restaurant choices. The survey also suggests that low-income groups tend to eat fast food more and have less access to home fitness equipment and club memberships. Reasons for differences in fast food habits could be explored in future research and addressed in future programming. Current and future programming also ought to explore and address the gaps, barriers and facilitators in knowledge, attitudes and beliefs of healthy eating and physical activity. These same programs also require ongoing evaluation to determine their effectiveness and sustainability.

Program messages within the Sudbury & District Health Unit (SDHU) should continue to focus on healthy eating and physical activity to promote healthy weights among the population. This is currently being done within SDHU by the delivery of programs such as: Healthy Measures, Nutrition Expedition, Eat Smart!, Child Health Carousel, Nutrition Month promotion, Take 5: 5-10 a Day and various media campaigns.

Areas where programming could be enhanced within SDHU include: increased promotion of the Take 5: 5-10 a Day program and Nutrition Expedition, grocery store tours, ongoing promotion of physical activity opportunities, and access to safe, nutritious and culturally appropriate food for all.

Considering these factors in future research and program development will enhance the health of Sudbury & Districts residents.

Section I: Introduction

Northern Ontario, and Sudbury, has a higher obesity rate than the Ontario average. Little is known about the eating habits or the dietary knowledge of Sudbury residents. Data was collected from a sample of Sudbury residents regarding the knowledge of food portion size and other nutrition related topics. This report includes a synthesis of the data.

Background

Obesity is an important public health issue. Obesity is associated with many health problems such as increased risk of type 2 diabetes, hypertension, heart disease, sleep apnea and cancers (Trakas, Lawrence & Shear 1999; MacDonald, Reeder, Chen & Depres, 1997). In fact, it is estimated that 30% of all cancer cases are attributable to poor diet and/or obesity (Adami, Day, Trichopoulos & Willet, 2001). In the United States it is estimated that obesity is the second leading killer, behind smoking, and is projected to overtake smoking (Trakas et al., 1999). New calculations estimate that being overweight shortens life expectancy by three years, and being obese between seven to fourteen years for Americans of various socio-demographic backgrounds (Peeters, Baredregt, Willekens, Mackenbach, Mamum & Bonneux 2003; Fontaine, Redden, Wang, Westfall & Allison, Fontaine 2003)

The obese population is more likely to visit their family doctors (Trakas et al., 1999), and in total the estimated direct cost to Canada's health care system is over 1.8 billion dollars (Birmingham, Muller, Palepu, Spinelli & Aslam, 1999).

There are several dietary factors that appear interrelated to rising obesity rates. For example, in the last 20 years the portion sizes have increased by 20%; Canadians' intake of food has increased by 18% in the last 20 years and 25% of intake comes from the "other foods" group in Canada's Food Guide to Healthy Eating (Statistics Canada, 2003; Piche & Garcia, 2001b; Neilson & Popkin, 2003; Starkey, Johnson-Down & Gray-Donald, 2001). The greatest area for this increase in portion size is seen in the fast food industry (French, Story, & Jeffery, 2001), where in order to increase revenue, restaurants increase serving sizes to attract bargain hunters (Young & Nestle, 2003; Young & Nestle, 2002). Also, studies have suggested that when people eat out they are less likely to consider healthy eating habits, and will eat 30% more if given the chance (Young & Nestle, 2002; Nestle, 2002). In addition, the fast food industry targets children, who have had an increase in obesity rates (Statistics Canada, 1998). Health Canada has found that 60% of Canadian children eat junk food at least three times per week (Statistics Canada, 2002; Nestle, 2002; Health Canada, 2003a; Agriculture Canada, 2003; Mendelson, Tarasuk, Chappell, Brown & Harvey Anderson, 2003).

Although obesity and diet are related, the consequences of poor diet are not restricted to obesity. Poor diet is related to certain cancers, heart disease, and Type 2 diabetes. Other morbidities to which poor diet can be related include anemia, osteoporosis, and dental caries (World Health Organization, 2002). The objective of *Canada's Food Guide to Healthy Eating*¹ is to encourage and guide the population to make healthy choices. Health Canada promotes five guidelines to Healthy Eating: enjoy a variety of foods; emphasize cereals, breads, other grain products, vegetables and fruit; choose lower-fat dairy products, leaner meats and food prepared with little or no fat; achieve and maintain a healthy body weight by enjoying regular physical activity and healthy eating; limit salt, alcohol and caffeine (Health Canada, 1989). A recent survey found that one quarter of adults did not consume the minimum requirements in all food groups and half of women did not have the minimum number of servings of meat and alternatives. Despite this discrepancy, most respondents had heard of the CFG and most had the notion to eat in moderation (Health Canada, 2003a). It has been suggested that Canadians eat more than they think they do (i.e., they underestimate their consumption) (Starkey, & Kuhnlein, 2000; Statistics Canada, 2000; Agriculture Canada, 2003).

39% of Sudburians are overweight compared to 33% of Ontarians (Statistics Canada, 2001).

The influence of education and income on weight is also noteworthy. Those without a university degree were twice as likely to be obese, and those with lower income also showed lack of knowledge regarding portion size (Macdonald et al., 1997). The Ontario Food Survey (Mendelson et al., 2003) found that those with lower incomes felt that price was a barrier to healthy eating.

Throughout Canada, obesity and average adult weight is on the rise (Katzmarzyk, 2002). In Sudbury, 39% of the residents (45% of males and 34% of females) are overweight compared to the provincial average of 33% (Malaviarachchi & Giles, 2002). Despite these significant statistics, little is known about Northern Ontario residents' eating habits, and more specifically Sudburians' eating habits. Therefore, this survey was undertaken to provide the Sudbury & District Health Unit with additional information regarding the eating habits of Sudburians and other factors that affect obesity, in order to plan effective nutrition promotion initiatives.

¹ Canada's Food Guide to Healthy Eating will hereafter be referred to as CFG

Section II: Method

Survey Skill Development Course

Statistics Canada offers a *Survey Skill Development Course (SSDC)* to its employees as part of professional development. The course includes actual survey design and data collection by the students under the direction of the supervisors. The purpose of the course is to provide students with knowledge of survey taking by having participants design and conduct an actual survey under real life conditions. The procedure and data remain subject to Statistics Canada's standards for reliability and accuracy.

Sudbury & District Health Unit arranged with Statistics Canada to conduct a survey on nutrition as part of their training. The "*Food Portion Awareness Questionnaire*" was developed and conducted by the Statistics Canada students to measure aspects of nutrition and eating habits in Sudbury. The survey was developed to collect data on topics such as, demographics; perceived health status; understanding of CFG; knowledge of food portion size; fast food habits including frequency and meal size; and availability of fitness equipment and gym membership. The demographic data included variables such as the presence of children, education level, income, gender and age.

Sample

The sampling strategy was designed to maximize the number of surveys completed by the researchers who had significant traveling time between the selected households. Thus, 600 households were selected in the core area of Sudbury over a four-day survey period.

The sampling method was a stratified, multistage probability design. The stratification reflected the income of the Sudbury population. The income was broken down into three areas of high, medium and low distribution. In order to do this, 24 sampling units according to income were selected from enumeration areas obtained from 2001 Census lists. The number of units selected was proportional to the number of the dwellings with that income. Of these areas, 25 households were selected, with the exception of institutions and group home dwellings. After demographic data were collected from each of the households selected, a random selection of any eligible adult was used to complete the survey.

The surveys were completed in person, door to door between September 24 to 29, 2003 in both French and English. Only informed household members, 18 years old and over were asked to participate. Interviewers, in pairs, attempted to contact 600 homes in the three selected income groups. Contact was attempted at various times in the four days. A total of 409 individuals granted interviews. The remainders were either vacant (n=10), not home or refused the interview (n=181).

Weighting

The sample was weighted to represent the population in general. Weighting was also used to compensate for non-respondents.

Limitations

There are several limitations to the data collected from the “Food Portion Awareness Survey”:

- One hundred and eighty one people did not complete due to either being not home or refusing. Therefore, certain populations may have been under-represented
- Some population groups were not included such as those living in institutions
- The survey was designed and conducted by Statistics Canada students under short time lines (i.e. six weeks from beginning of tool development to report writing) as part of their training, and thus may not be comprehensive in its scope
- Statistical significance cannot be commented on for differences between estimates because 95% confidence intervals were not available

Section III: Findings

The results of the survey are presented in the following 7 Parts:

Part 1. Demographic Profile

Part 2. Self Perceived Health Status

Part 3. Awareness & Knowledge of Canada's Food Guide (CFG)

Part 4. Knowledge of Portion Size

Part 5. Fast Food Habits

Part 6. Frequency of Feeling Uncomfortable After Meals

Part 7. Fitness Equipment/Gym Membership

Part 1: Demographic Profile

Overall the sample size was 409 households. Below is a description of the demographic breakdown of the sample.

Figure 1.1 represents a fairly even distribution of the gender; however, as illustrated by Figure 1.2 there was a higher proportion of older age groups represented.

Figure 1.1: Distribution by Gender

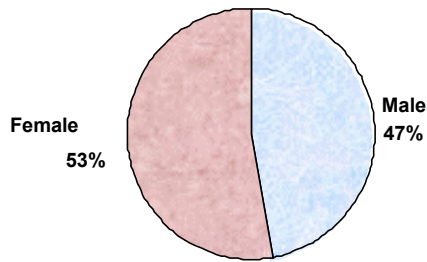


Figure 1.2: Distribution by Age Group

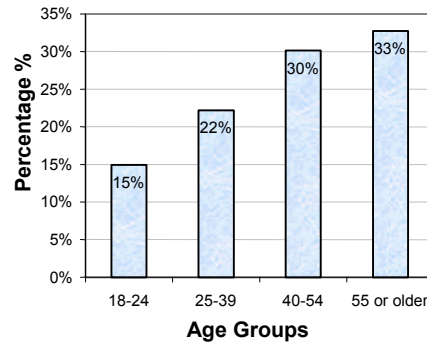
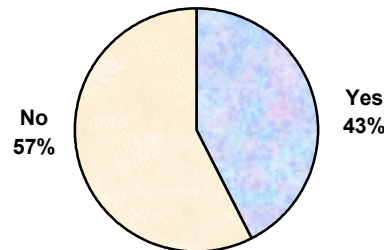


Figure 1.3 shows that 43% of the households had a child under the age of 18 living at home.

Figure 1.3 Percentage of Households With Children Under 18 Living at Home



Respondents were asked specific questions about household income and education such as “Which of the following income groups best described your total household income for 2002? (i.e. before taxes)”, and for education “What is your highest level of education?” Table 1.4 presents education and income breakdowns for the respondents. The majority of respondents had either some post-secondary education (23%) or completed post-secondary education (35%); yet a high percentage had an income of less than \$40,000 (40%). This may have been due to 33% of the participants being 55 years of age or older, who were available during the day when the survey took place.

The 2000/2001 Census of Greater Sudbury found similar statistics. It was found that 23% of the population under age 65 had less than high school education, and 28% had obtained high school education. Similarly for household income, 33% of population earned less than \$40,000, 21% earned between \$40,000 and \$60,000, and 46% earned over \$60,000 (Statistics Canada, 2004).

Education and income have been shown to influence food habits. For example, it has been found that with less education, there is a higher prevalence of obesity (Cancer Care Ontario, 2003). One study found that women in particular with less than high school education have a prevalence of obesity twice that of those with post secondary education (Macdonald, et al. 1997). Meanwhile, Piche & Garcia (2001a) and the Ontario Food Survey (Mendelson et al., 2003) found that low income was identified as a factor preventing healthy food purchase and consumption.

Table 1.4: Education and Income of Sample

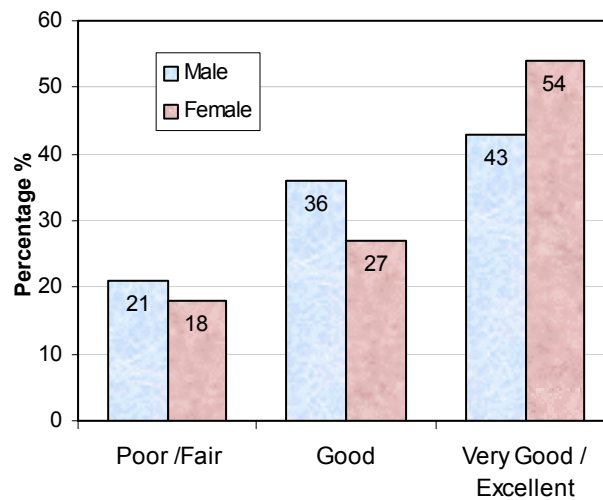
Education		Household Income 2002	
Less than High School	20%	Less than \$40,000	40%
Completed High School	22%	\$40,000-\$60,000	27%
Some Post Secondary	23%	More than \$60,000	32%
Completed Post Secondary	35%		

Part 2: Self Perceived Health Status

Self-perceived health status, although subjective, is strongly correlated to objective measures of health status (Johnson, Goettler, Goral, Leffley, Lueske, Lee-Han, Mallon, Mann, Sahai, Sanderson, Schultz & Sim, 2000). Although objective measures of health status were not included in the survey, the question: “In general, would you say that your health is . . .” was used as a gauge of the respondent’s health status.

Figure 2.1 displays results of the self-perceived health status question by gender. Women were more likely to respond that their health was Very Good/Excellent (54% for women and 43% for men). Green, Cameron, Polivy, Cooper, Liu, Leiter & Heatherton (1997), found that men were more likely to be satisfied with their overall health even if they were more overweight, inactive, or obese than females. In fact, 40% of men who were overweight or obese were trying to lose weight compared to 62% of women.

Figure 2.1: Self Perceived Health Status by Gender



Figures 2.2 & 2.3 show self-perceived health status by education and by income. Both figures show increases in self-perceived health status with greater education and income. For education, 59% of those who completed post secondary education perceived their health as very good/excellent, compared to 25% of those with less than high school. For income, 64% of the respondents with an income of more than \$60,000 stated that their health was very good/excellent, compared to only 38% of those making less than \$40,000.

Figure 2.2: Distribution of Self-Perceived Health Status by Education

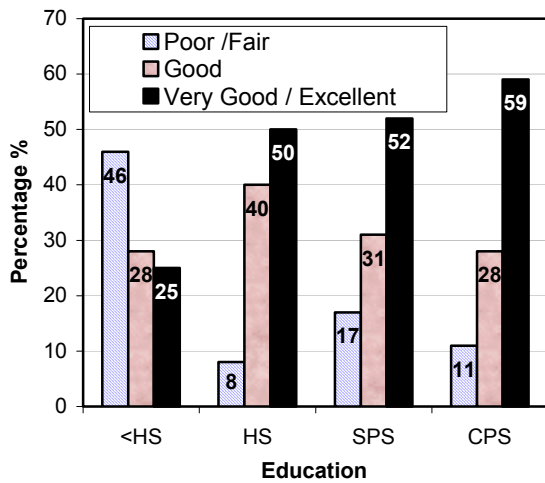
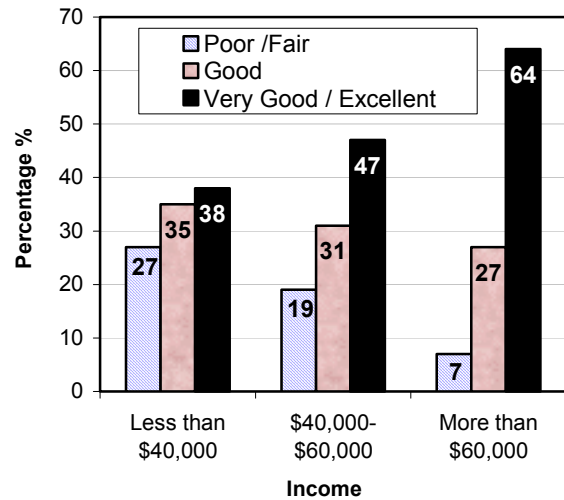


Figure 2.3: Distribution of Self-Perceived Health Status Compared by Income



<HS=Less than high school
SPS= Some post secondary

HS= Completed high school
CPS=Completed post secondary

Part 3: Awareness & Knowledge of Canada's Food Guide (CFG)

Canada's Food Guide is the most widely distributed guide to healthy eating in Canada. Previous surveys have shown that a large majority of the population is aware of CFG (Health Canada, 2003a), but would like to know more about healthy eating (Piche & Garcia, 2001b). In order to obtain a Sudbury perspective on this problem, questions were asked to obtain a portrait of the knowledge of CFG.

The majority of the respondents were aware of CFG (80%). However, specific yet important areas, such as knowledge of recommended minimum number of servings of fruit and vegetables, were correctly identified by only 50% of participants. Figure 3.1.1 shows that females had the tendency to be more aware of the CFG than males, and Figure 3.1.2 indicates that females also had better knowledge of the minimum number of servings of fruits and vegetables. Health Canada (2003a), review of the CFG found similar statistics where 86% of the respondents had heard of CFG, but only 68% reported that they had read or looked at it.

Figure 3.1.1: Awareness of Canada's Food Guide (CFG) by Gender

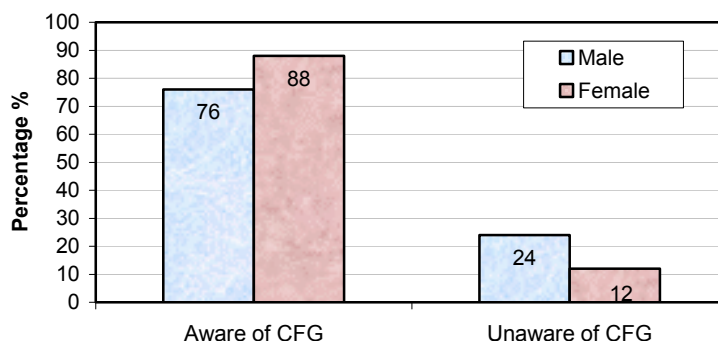


Figure 3.1.2: Knowledge of those Aware of Canada's Food Guide (CFG) by Gender

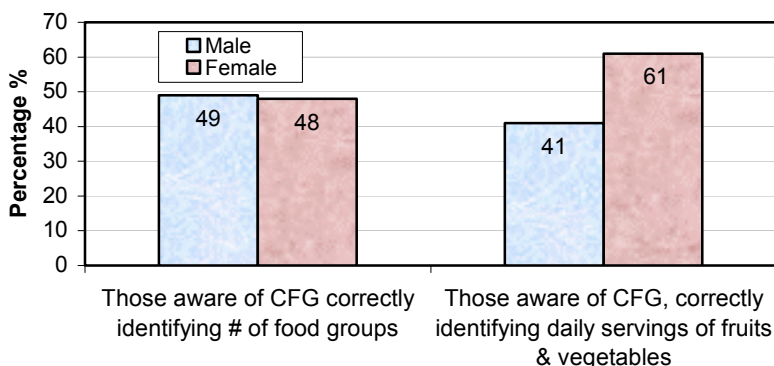


Figure 3.2.1 shows the respondents awareness of CFG by education. Those that responded 'unaware of CFG' were more likely to have less than high school education (40%) compared to other education groups (23% to 8%). Figure 3.2.2 shows the respondents who are aware of the CFG, their knowledge of the number of food groups in the CFG and the daily number of servings of fruits and vegetables per day.

Figure 3.2.1: Awareness of the Canada's Food Guide (CFG) by Education Level

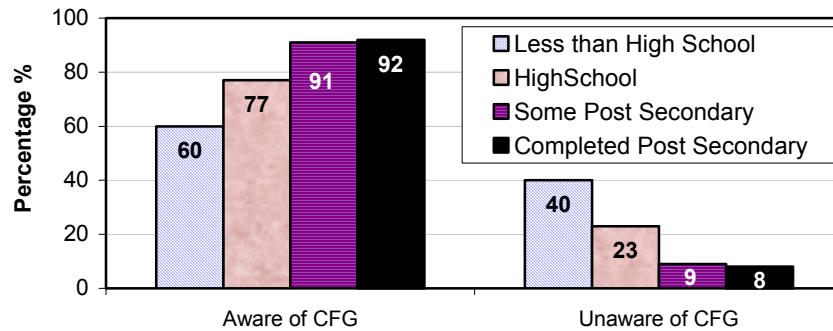


Figure 3.2.2: Knowledge of Those Aware of Canada's Food Guide (CFG) by Education Level

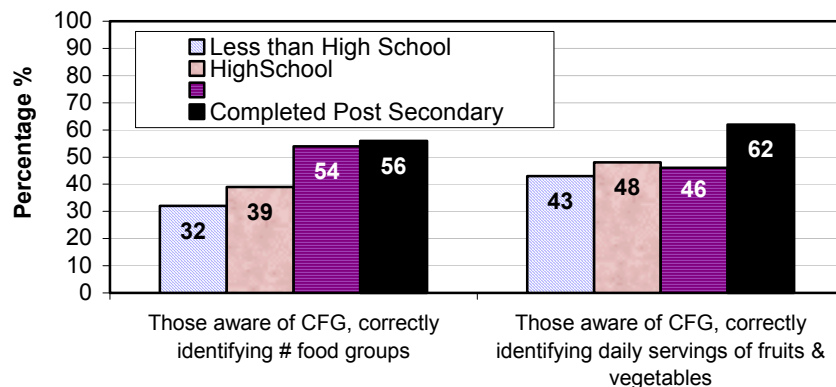


Table 3.1 represents the trends seen in income, age and children's presence in the household. As income increased, knowledge of the number of servings of fruits and vegetables and total awareness of CFG increased. Fifty-two percent of those making less than \$40,000 responded with the correct number of servings of fruits and vegetables compared to 61% of those making more than \$60,000.

Age groups with the lowest knowledge and awareness of CFG were the youngest and the oldest age groups. Those 18-24 years and those 55 years or older appeared less knowledgeable about the number of servings of fruits and vegetables (52% and 45% respectively) and less aware of CFG (79% and 75% respectively) compared with the middle-aged groups 25-54 years of age.

These results are similar to what has been found elsewhere. For example, Cancer Care Ontario (2003) found that 40% of Canadians did not know the recommendation to eat at least five servings of fruit and vegetables daily. Within that, men were found to be consistently the worst group for not eating vegetables and fruit, and those with less education were less likely to eat at least five servings of fruit and vegetables (Cancer Care Ontario, 2003).

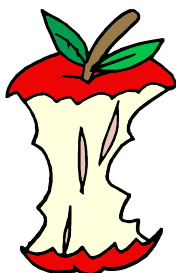
The relationship between children under the age of 18 living in the household and the respondent's awareness of CFG also reflected existing findings in the literature. Households with children under 18 were more likely (61%) than those without (43%) to correctly identify the number of food groups. Piche & Garcia (2001b) suggested that the increased knowledge of CFG seen in households with children reflected that children often were educated or obtained CFG from schools.

Table 3.1: Awareness of Canada's Food Guide

		CFG Awareness	Number of People Correctly Identifying	
			Number of Food Groups	Correct # of Servings of Fruits and Vegetables
Income	<i>Less than \$40,000</i>	75	49	52
	<i>\$40,000-\$60,000</i>	81	46	50
	<i>More than \$60,000</i>	91	49	61
Age	<i>18-24</i>	79	57	49
	<i>25-39</i>	86	66	58
	<i>40-54</i>	89	42	57
	<i>55 or older</i>	75	38	45
Children living in home	<i>With children under 18 living at home</i>	88	61	52
	<i>Without children living at home</i>	80	43	52

Part 4: Portion Size

“With the single exception of sliced white bread, all of the commonly available food portions measured exceeded - sometimes greatly . . . standard portions” (Young & Nestle, 2002, pp. 246).



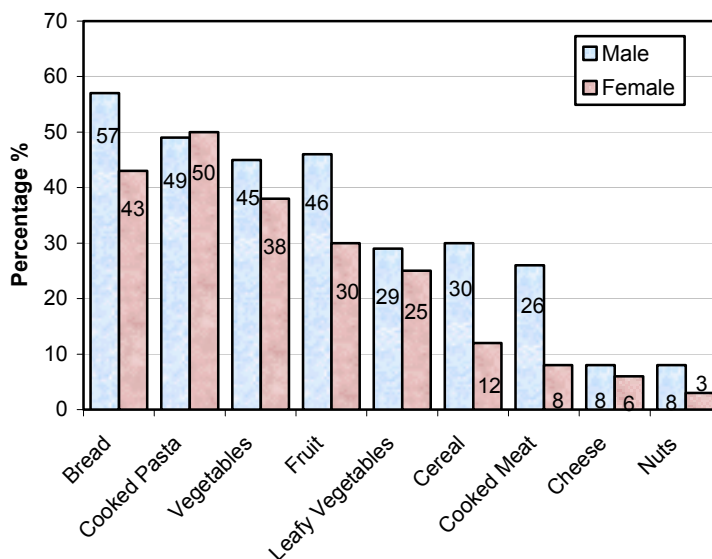
Since food portion sizes have increased in the last twenty years (Statistics Canada, 2003), and data show that Canadians have difficulty in establishing correct portion sizes (Health Canada, 2003a & 2003b), the survey included questions regarding portion size based on *Canada’s Food Guide to Healthy Eating*. These included questions for the different categories of food, such as: “In your opinion, how many slices of bread would it take to make one recommended portion of bread?”. Following is a summary of the data collected.

Gender

The following graphs represent the estimation of food portion sizes for different types of food compared by gender. In general, men were more likely to overestimate correct portions, and women although more likely to correctly estimate portions, were also likely to underestimate.

Food portions most commonly overestimated, as shown in Figure 4.1, were bread, cooked pasta, chopped vegetables and fruit. For example, more than one in two men and women overestimated cooked pasta (49% and 50% respectively).

Figure 4.1: Distribution of Overestimating Portion Sizes by Gender



The largest difference between the responses of males and females was with cooked meat, where men (26%) overestimated more than women (8%).

Figure 4.2 shows that women tended to correctly estimate the food portion sizes more frequently than men with the exception of cheese. Both men (81%) and women (83%) correctly estimated the proper portion size of nuts. In contrast, cooked pasta was estimated incorrectly most often by both men (23%) and women (40%).

Figure 4.2: Distribution of Correctly Estimating Portion Sizes by Gender

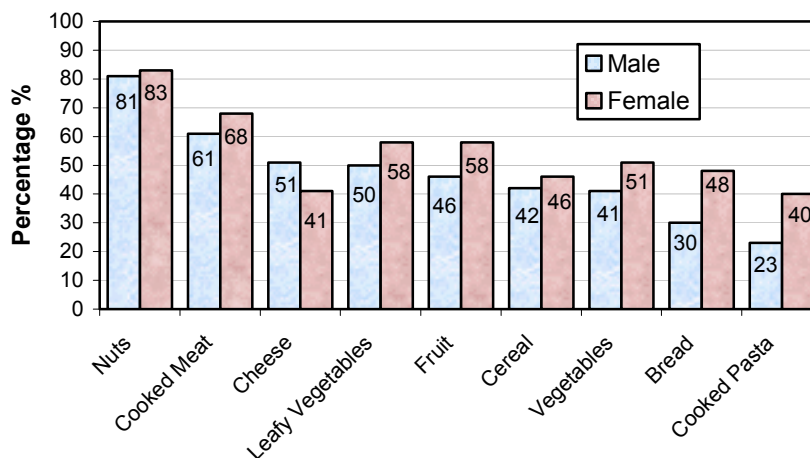


Figure 4.3 displays portions sizes underestimated by food groups and gender. Women were more likely to underestimate portion size consistently. Cereal was the food type with the largest gap between the genders; 40% of females underestimated compared to 18% of the males.

It is interesting to note that cheese was most commonly underestimated for both genders (37% for males and 53% for females) as other research has found that Canadian participants admit to having little knowledge about the portion size of milk products (Health Canada, 2003a) and that no age group or gender met the minimum target intake level of milk products (Starkey & Kuhnlein, 2000).

Figure 4.3: Distribution of Underestimating Portion Sizes by Gender

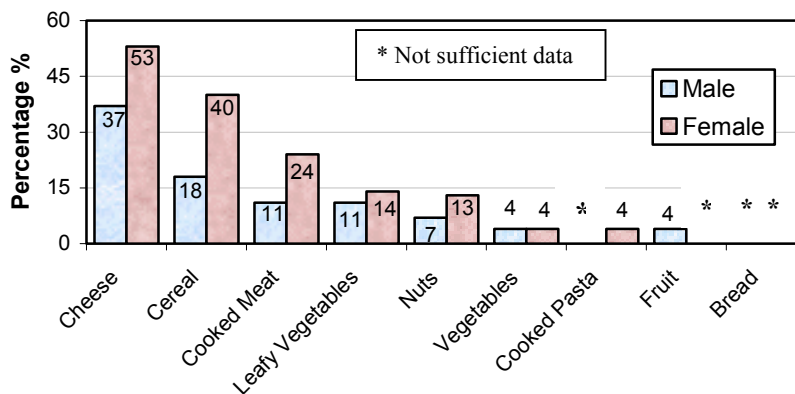
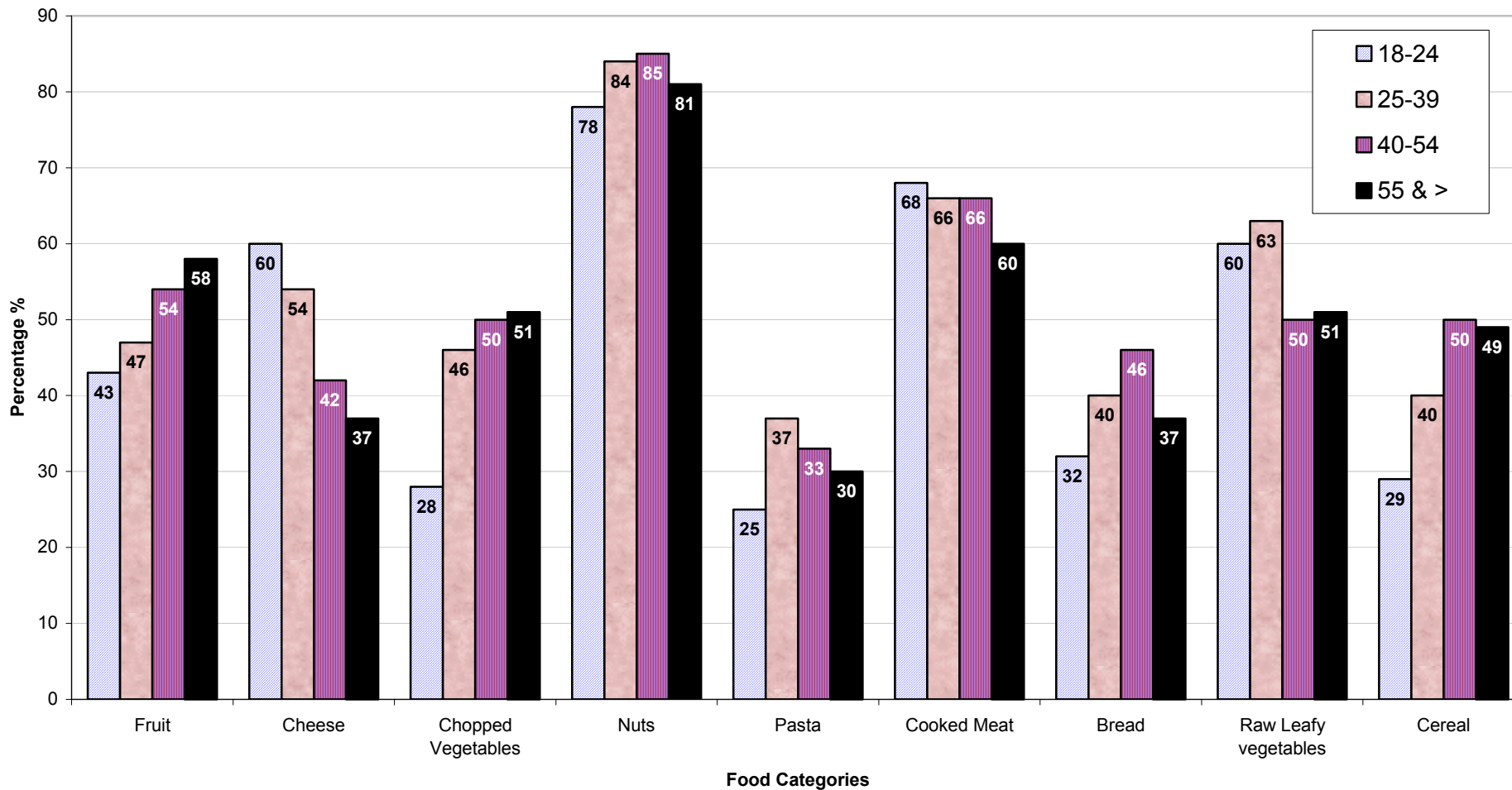


Figure 4.4: Distribution of Estimating Correct Portion Size by Age Groups



Education

Figure 4.5 represents the differences in education to portion size estimation. Those who completed high school correctly estimated portion size (70%) of meat more frequently (48%) than those that had less than high school education.

Figure 4.6 displays the underestimation of the correct portion size of raw leafy vegetables. The trend shows that underestimating decreases with increased education. Those respondents with less than high school education were more likely to underestimate the correct portion size of raw leafy vegetables (19%) than those who had completed post secondary education (9%).

Figure 4.5: Distribution of Knowledge of Portion Size of Meat Compared to Education

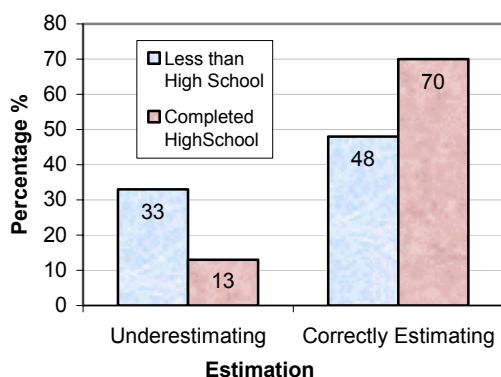


Figure 4.6: Distribution of Underestimating Portion Size of Raw Leafy Vegetables by Education

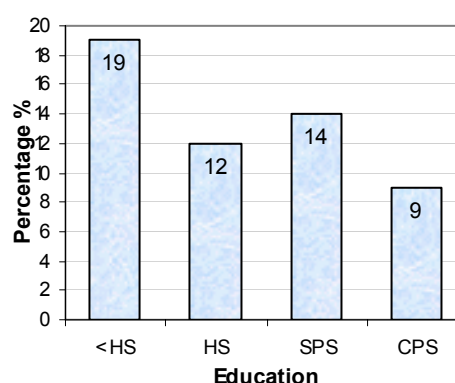


Figure 4.7 and 4.8 represent those who correctly estimated the portion size of pasta and bread by education. Both show that those with less than high school education level were least likely to correctly estimate the proper portion size of bread and pasta. Only 29% and 23% of those with less than high school education correctly estimated the portions of bread and pasta (respectively) compared to 34% and 33% of those who completed high school.

Figure 4.7: Distribution of Correctly Estimating Pasta Portion by Education

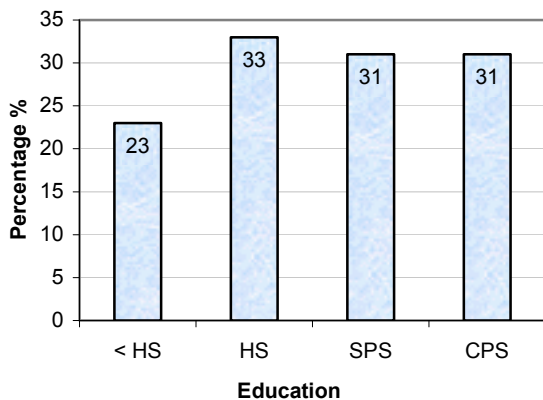
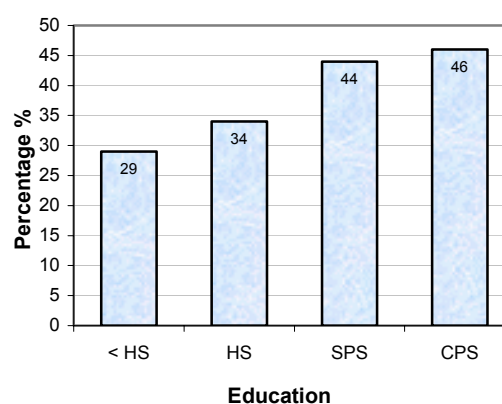


Figure 4.8: Distribution of Correctly Estimating Bread Portion by Education

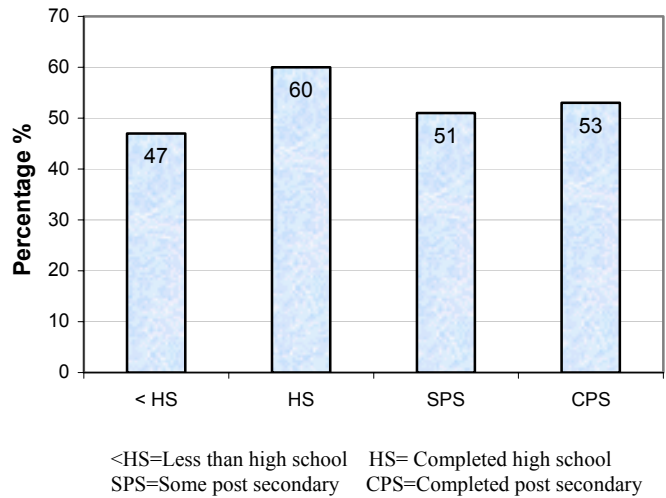


<HS=Less than high school
SPS= Some post secondary

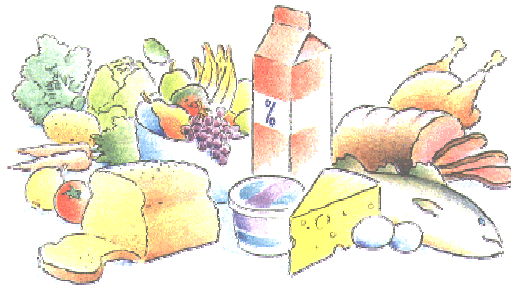
HS= Completed high school
CPS=Completed post secondary

Lastly, Figure 4.9 represents the proportion of the population that correctly identified between 5 to 9 appropriate portion sizes of the nine food groups in the CFG, which ranged from 47% to 60% depending on the education level.

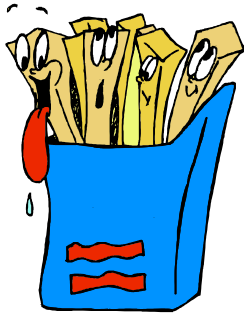
Figure 4.9: Distribution of Respondents Identifying 5-9 Portion Sizes Correctly by Education



Health Canada's review of CFG reported that their respondents felt that they knew least about milk, grain and meat portion sizes (Health Canada, 2003a, 2003b & 2003c).



Part 5: Fast Food Consumption Habits



As previously mentioned, fast food is seen as the largest contributor to the consumption of increased portion sizes (Young & Nestle, 2003 & 2002). This is combined with the fact that traditionally healthier choices are less likely to be available and/or made in restaurants, and that Canadians are eating out more (Health Canada, 2003a; Statistics Canada, 2003; Mendelson, et al., 2003). The following is a review of the data regarding fast food, including the frequency of consumption of combination meals and super sizing.

Frequency of Eating Fast Food

“The increasing frequency of eating out at restaurants and eating food prepared away from home has undeniably significant influence on eating behaviours” (French et al., 2001, pp. 312).

Forty-five percent of men ate fast food at least once a week compared to 29% of women.

Figure 5.1.1 shows that among those who eat out at least once a week, men were likely to consume fast food 2-3 times a week (37%) compared to women (29%). Meanwhile, women (65%) were more likely to eat fast food only once a week compared with men (53%).

Figure 5.1.1: Frequency of Eating Fast Food by Gender, Among Those Who Eat Out at Least Once a Week

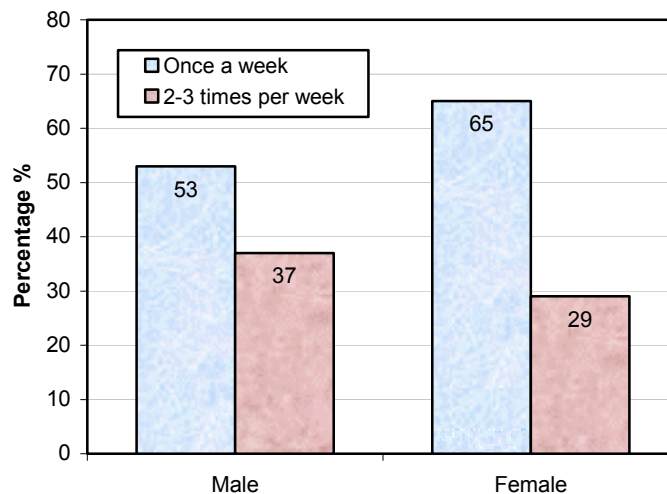


Figure 5.1.2 displays the consumption frequency of fast food by age groups among those who eat out at least once a week. Older age groups (55 or older) were more likely to eat fast food only once a week (67%), while younger age groups were more likely to have fast food 2-3 times per week (47%) compared to those 55 or older (26%).

Figure 5.1.2: Frequency of Eating Fast Food by Age Groups Among those who eat out at Least Once a Week

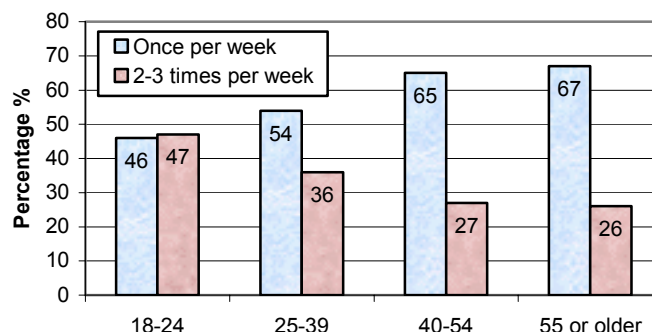
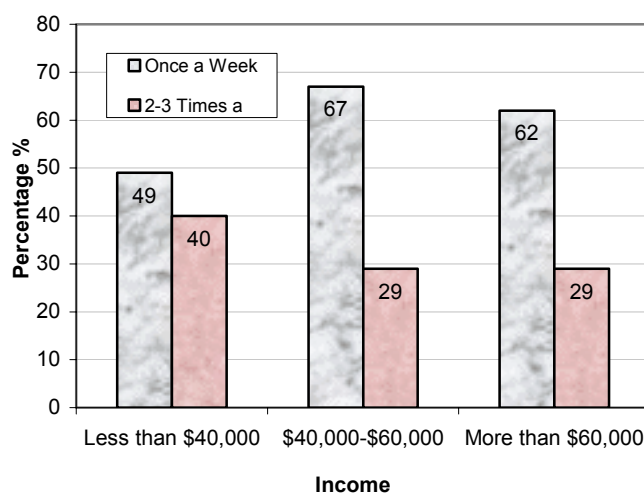


Figure 5.3 shows the prevalence of fast food consumption by income, among those who eat out at least once a week. It is noteworthy to see that individuals with an annual household income of less than \$40,000 were more likely to have fast food 2-3 times per week (40%) compared to higher income groups (29%). Those with an income between \$40,000 and \$60,000 were the more likely (67%) to have fast food at least once per week compared to other income groups.

Figure 5.3: Distribution of Fast Food Consumption by Income Among those who eat out at Least Once a Week



Super Sizing & Combo Meals

One of the ways fast food restaurants increase sales is by having a large size for only a nominal difference in price (Nestle, 2002). Thus, the survey asked the question “When you go to a fast food restaurant, how often do you buy a combo meal?” and “How often do you super-size any part of your order?”

Figure 5.4 & 5.5 demonstrates the frequency of ordering the combo meal and super sizing.

Figure 5.4: Frequencies of Purchasing Combo Meals by Gender Among those who eat Fast Food at Least Once a Week

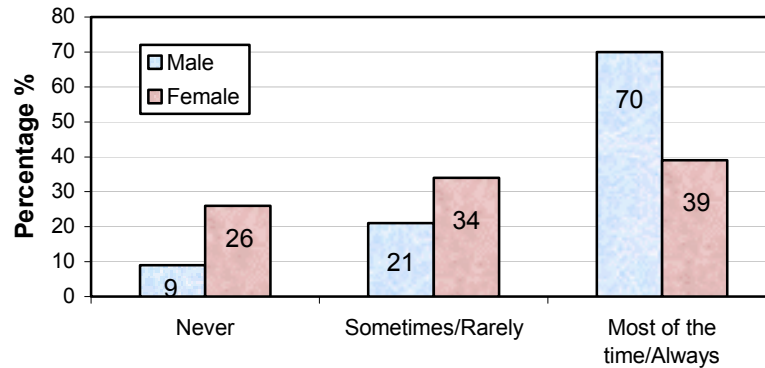
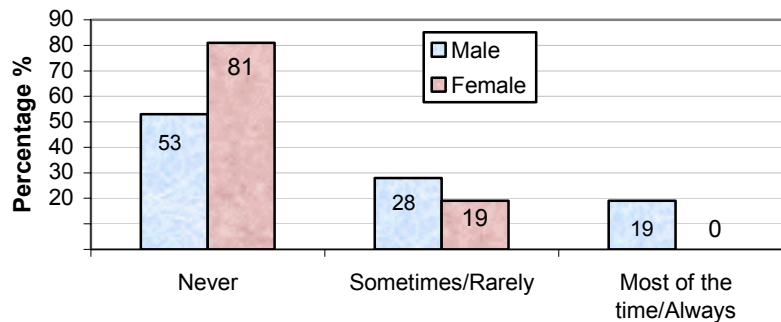


Figure 5.5: Frequencies of Super Sizing Combo Meals by Gender Among those who eat Fast Food at Least Once a Week



- Among those who eat fast food at least once a week a greater proportion of women (26%) compared with men (9%) stated that they never purchased a *combination* meal.
- Men (70%) were more likely than women (39%) to purchase a combo meal “most of the time/always”.
- Women were more likely than men to respond that they never *super sized* (81% compared to men, 53%).

Part 6: Frequency of Feeling Uncomfortably Full

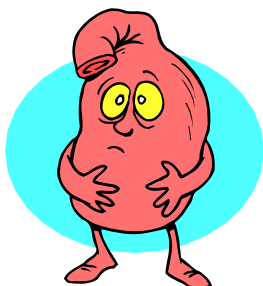
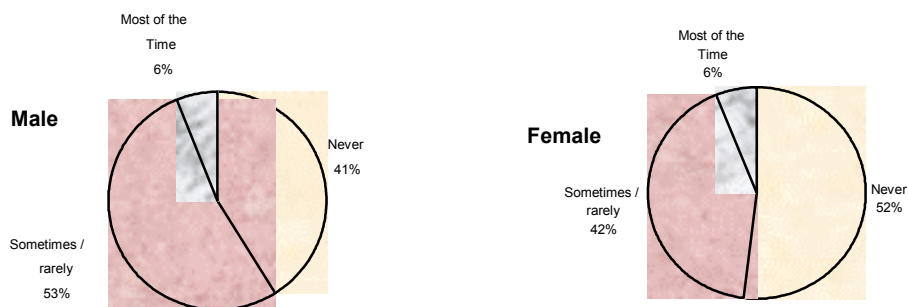


Figure 6.1 below represents the data collected for the question: "In the past seven days, how often did you feel uncomfortably full after eating lunch or dinner?" The question was based on the consensus in the literature that suggests Canadians are eating larger portions, and that they will eat more if given the opportunity (Statistics Canada, 2003; Young & Nestle, 2002; Neilson & Popkin, 2003; French et al., 2001; Agriculture Canada, 2003).

Figure 6.1 displays the differences between genders to "Feeling Uncomfortably Full". Although both had a 6% response 'most of the time', males were less likely to say never (41%) compared to females (52%).

Figure 6.1: Distribution of "Feeling Uncomfortably Full after a meal"



Part 7: Fitness Equipment/Gym Membership

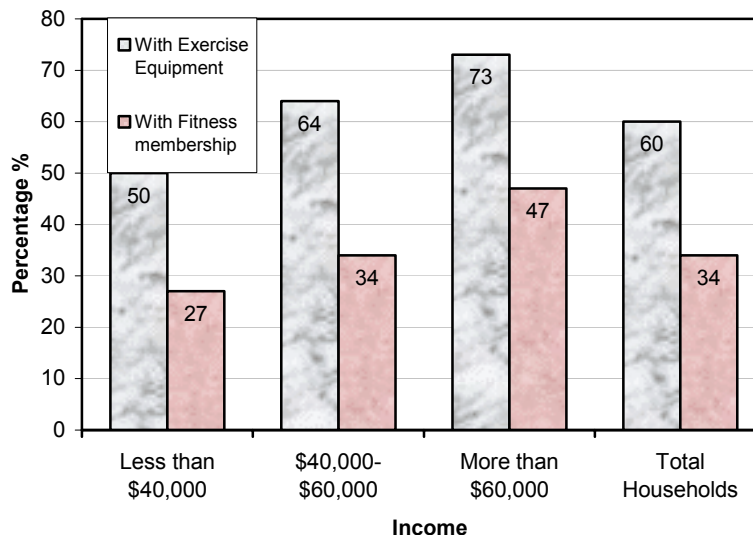


In a recent Ontario survey, four out of ten men and five out of ten women did not meet minimum recommendations for physical activity, and those that were less active were more likely to be obese (Cancer Care Ontario, 2003). Although limited in scope, this survey asked questions regarding availability of fitness equipment and gym memberships among Sudbury residents. The responses to the questions: “Does anyone in your household have a membership at a health or fitness facility” and “Do you or anyone else in your household have any type of exercise equipment in your home? (e.g. weight machine, stationary bike, treadmill, etc.) are displayed in the following Figure 7.1.

Figure 7.1 shows the distribution of fitness equipment and fitness club membership by income. Sixty percent of the total households had exercise equipment and 34% had a fitness club membership.

The graph shows that with increase in income, both the prevalence of exercise equipment and fitness club membership increased. Seventy-three percent of the households with an income of more than \$60,000 had exercise equipment compared to 50% of the households with less than \$40,000 in household income. Similarly, those who had an income of more than \$60,000 were also more likely to possess a fitness club membership (47%) compared to those with less than \$40,000 of household income (27%).

Figure 7.1: Distribution of Households with Fitness Equipment or Memberships by Income



Section IV: Implications

A review of the results includes:

- The majority of the respondents were aware of the CFG, but only half had knowledge of the minimum number of servings of vegetables and fruits.
- Those with greater awareness of CFG included: those with higher education, higher income, between 25 to 54 years of age and women.
- Specific food portions were commonly overestimated such as bread, pasta, and chopped vegetables, while several demographic groups underestimated cheese portion sizes more commonly than other foods.
- Men commonly overestimated meat portion sizes while those with lower education, lower income, and women commonly underestimated.
- Individuals with lower incomes, between 18-24 years of age and men commonly consumed fast food multiple times per week.
- More women “never” purchased combination meals compared to men, while men frequently super-sized.
- Although equal percentages of men and women felt uncomfortably full after meals most of the time, more women responded “never” than men.
- As income increased, the availability of both fitness equipment and club membership increased.

Implications for Public Health Practice & Research at SDHU:

Increased awareness and application of CFG is important for all populations. The results of this survey demonstrate a lack of consumer knowledge of CFG, thus identifying a need for more education on food groups and appropriate portion sizes. The survey also suggests that low-income groups tend to eat out more and have less access to home fitness equipment and club memberships.

The Nutrition & Physical Activity Working Group’s (NPAWG) role is to ensure consistent nutrition & physical activity messaging through various SDHU programs/teams, using education & supportive environmental approaches. Current SDHU efforts that should incorporate these findings (i.e. increase education of CFG and appropriate portion sizes) include:

- School Team - Eat Smart! cafeteria program, Healthy Schools, Healthy Kids, YES program, curriculum support through schools and daycare, advocating for policy changes in schools based on the Ontario Society of Nutrition Professionals in Public Health (OSNPPH) “Call to Action”, body image & self-esteem workshops.

- Workplace Team - Eat Smart! cafeteria program, Advocating for “Healthy Eating Guidelines” in workplace, which includes appropriate portion sizes, not super sizing.
- Family Team - “Dining Together” and “Being Active Together” promotion.
- Nutrition, Physical Activity Action Team (NPAAT) – Eat Smart!, Nutritious Food Basket, Food Charter; advocacy for increased accessibility to public physical activity facilities, increased access to nutritious foods, Healthy Measures Train the Trainer, develop and launch “Portion Distortion” toolkit, Nutrition Expedition, Take 5:5-10 a Day program, various multi-media campaigns.
- Branch offices - advocating for increased accessibility of public physical activity facilities, provide support to peer educators, Eat Smart!, use of media to promote healthy weights and portion sizes, Healthy Measures, Nutrition Expedition, Take 5:5-10 a Day program.

It is important to explore and address the gaps between males and females, in knowledge, attitudes and accessibility to healthy eating. Further research exploring the reasons why men choose larger portion sizes may also be beneficial, given the fact that men most often over-estimated portion sizes and are likely to consume the larger portion sizes. Thus a project targeting men and ‘Portion Distortion’ is being planned that will address portion sizes, fast food choices and general healthy eating amongst men.

As identified in the survey, lower income individuals tend to consume fast food more often than those in higher income groups. Considering the high cost of eating out, future research could also explore the reasons why individuals eat out rather than eat at home and provide programming to address these issues.

Future SDHU programming efforts that may be applicable include:

- 1) Education/Skill Building/Marketing:
 - a) Explore opportunities to increase nutrition knowledge & physical activity in workplaces and schools
 - b) Social marketing program(s) to increase awareness/knowledge of accurate and “reasonable” portion sizes; consumer awareness savvy re: Innovative marketing campaigns, re: food industry strategies, super-sizing, combo meals; low carbohydrates
 - c) Healthy Measures toolkits to address the issue of eating to the point of ‘feeling uncomfortably full’.
 - d) Promotion of family mealtime and ‘dining together’ could be investigated, with an emphasis on menu planning, budgeting and balanced meals.
 - e) Target all age groups and genders, including ‘high risk’, low income, lower education – consider tailoring programs specific to high-risk groups.

2) Supportive Environment/Policy:

- a) Physical activity is not just about gyms & equipment, although these data point to increasing need for support for residents with lower incomes. SDHU can advocate for subsidized fitness/community centres; safe parks; walking to school programs; daily quality physical activity; workplace wellness policies, etc.
- b) Comprehensive, long-term community-wide programs addressing health eating and physical activity opportunities
- c) Advocating for changes in legislation to decrease the advertising of junk food marketing to children.

Beyond consistent messages within public education and media campaigns, areas of advocacy and policy development need to continue emphasizing: increased accessibility to affordable, safe, nutritious and culturally appropriate foods, and safe and accessible physical activity opportunities for all. Policy development will foster a supportive environment where making the healthy choice is the easy choice. Considering these factors in future research and program development will also enhance programs, such that we may contribute to increased physical activity and healthy eating opportunities for individuals in Sudbury & Districts.

References

- Adami, H. O., Day, N. E., Trichopoulos, D., & Willet, W. C. (2001). Primary and secondary prevention in the reduction of cancer morbidity and mortality. *European Journal of Cancer*, 37, S118-127.
- Agriculture Canada. (2003). *Food Statistics*. (Publication Number. 21-020-XIE). Ottawa, ON: Author.
- Birmingham, C. L., Muller, J. L., Palepu, A., Spinelli, J., & Aslam, H. (1999). The cost of obesity in Canada. *Canadian Medical Association Journal*, 160 (4), 483-487.
- Cancer Care Ontario. (2003). News and information on nutrition and cancer prevention. *Insight on Cancer* (Vol. 2). Toronto: Canadian Cancer Society (Ontario Division)
- Fontaine, K., Redden, D., Wang, C., Westfall, A. O., & Allison, D. (2003). Years of life lost due to obesity. *JAMA*, 289 (2), 187-193.
- French, S., Story, M., & Jeffery, R. (2001). Environmental influences on eating and physical activity. *Annual Review of Public Health*, 22, 309-335.
- Green, K. L., Cameron, R., Polivy, J., Cooper, K., Liu, L., Leiter, L., & Heatherton, T. (1997). Weight dissatisfaction and weight loss attempts among Canadian adults. *Canadian Medical Association Journal*, 157 (Supp 1), S17-S24.
- Health Canada. (2003). *Consumer perspectives on healthy eating-summary of quantitative research*. (Publication No. H44-55/2003E-PDF). Ottawa, ON: Author.
- Health Canada. (2003). *Consumer perspectives on healthy eating-summary of qualitative research*. (Publication No. H44-34/2-2003E-PDF). Ottawa, ON: Author.
- Health Canada. (2003). *Healthy eating- consumer perspectives- how do consumer perspectives on healthy eating related to Canada's Food Guide to Healthy Eating*. (Publication No. H44-34/1-2003E-PDF). Ottawa, ON: Author.
- Health Canada. (1989). *Nutrition Recommendations . A Call for Action*. Publication No. H39-162/1990/E). Ottawa, ON: Author.
- Johnson, I., Goettler, F., Goral, A., Leffley, A., Lueske, B., Lee-Han, H., Mallon, J., Mann, V., Sahai, V., Sanderson, R., Schultz, S., Yim, C. (2000). *Report on the Health Status of the Residents of Ontario*. Public Health Research, Education & Development Program (PHRED Partners).
- Katzmarzyk, P., (2002). The Canadian obesity epidemic, 1985-1998. *Canadian Medical Association Journal*, 166 (3), 1039-1040.
- MacDonald, S. M., Reeder, B., Chen, Y., & Depres, J. (1997). Obesity in Canada: a descriptive analysis. *Canadian Medical Association Journal*, 157 (Supp. 1), S3-S9.
- Malaviarachchi, D. & Giles, G. (2002, October). *Canadian Community Health Survey preliminary data: Cycle 1.1, 2000/2001*. Sudbury, ON: Public Health Research, Education and Development (PHRED) Program, Sudbury & District Health Unit.

- Mendelson, R., Tarasuk, V., Chappell, J., Brown, H., & Harvey Anderson, G., (2003). *Report of the Ontario Food Survey*. Toronto, ON: University of Toronto.
- Neilson, S. J., & Popkin, B. M. (2003). Patterns and trends of food portion sizes, 1997-1998. *JAMA*, 289 (4), 450-453.
- Nestle, M. (2002). *Food politics: how the food industry influences nutrition and health*. Los Angeles, CA: University of California Press.
- Peeters, A., Barendregt, J., Willekens, F., Mackenbach, J., Al Mamum, A., & Bonneux, L. (2003). Obesity in adulthood and its consequences for life expectancy: A life-table analysis. *Annals in Internal Medicine*, 138, (1) 24-32.
- Piche, L. A., & Garcia, A.C. (2001). Factors influencing food-buying practices of grocery shoppers in London, Ontario. *Canadian Journal of Dietetic Practice & Research*. 62 (4), 199-202.
- Piche, L. A., & Garcia, A.C. (2001). Perceptions and use of Canada's food guide to healthy eating by grocery shoppers in London, Ontario. *Canadian Journal of Dietetic Practice & Research*, 62 (3), 123-127.
- Starkey, L. J., & Kuhnlein, H. V. (2000). Montreal food bank users' intakes compared with recommendations of Canada's Food Guide to Healthy Eating. *Journal of Dietetic Practice & Research*, 61 (2), 73-5.
- Starkey, L., Johnson-Down, L., Gray-Donald, K. (2001). Food habits of Canadians: Comparison of intakes in adults and adolescents to Canada's Food Guide to Healthy Eating. *Canadian Journal of Dietetic Practice and Research*, 62 (2), 61-69.
- Statistics Canada. (2003). Food Consumption. *The Daily*: <http://www.statscan.ca/Daily/English/031016b.htm> (16 October 2003, 22 January 2004)
- Statistics Canada, (2004). *Census 2000/2001*. Toronto, ON: Health Planning Branch.
- Trakas, K., Lawrence, K., & Shear, N. (1999). Utilization of health care resources by obese Canadians. *Canadian Medical Association Journal*, 160 (10), 1457-1462.
- Young, L. R., & Nestle, M. (2003). Expanding portion sizes in the US marketplace: Implications for nutrition counseling. *The American Dietetic Association*, 103, 231-234.
- Young, L. R., & Nestle, M. (2002). The contribution of expanding portion sizes to the US obesity epidemic. *American Journal of Public Health*, 92 (2), 246-249.
- Visscher, T. L. S., & Seidell, J. (2001). The public health impact of obesity. *Annual Review of Public Health*, 22, 355-375.
- World Health Organization. (2002). Diet, nutrition and the prevention of chronic disease: report of a joint WHO/FAO expert consultation. Geneva, Switzerland. ftp://ftp.fao.org/es/esn/nutrition/diet_prevention_disease.pdf (6 April 2004)