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HOW ARE WE?

NUTRITION AND FOOD CONSUMPTION AMONG THE INUIT OF NUNAVIK

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RESEARCH, VALIDATION AND COMPUTERIZATION OF DIETARY DATA FROM THE 24-HOUR DIETARY RECALL

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KEY ISSUES

Food and nutrient intakes

- Intakes of protein, thiamin, riboflavin, niacin and vitamin B12 as well as intakes of minerals such as iron, phosphorus, zinc and selenium the day before the survey were acceptable for more than half of the Inuit adults.

- Inversely, intakes of vitamins A, C and D, vitamin B6, folate, calcium, magnesium and dietary fibre were particularly low among the Inuit for all age groups and both sexes.

- Fat intake was within the acceptable range for 75% of the Inuit. However, for 25% of them, the fat intake exceeded the recommended level, with these individuals getting 35% or more of their calories from fat.

- Intakes of carbohydrates and sodium were excessive, especially among young people. In fact, Inuit men and women aged between 18 and 29 years got the largest proportion of their calories from carbohydrates or sweet foods.

- The low intakes of some nutrients reflect the low consumption of milk products, fruits and vegetables and whole-grain products in Nunavik.

- When the amounts of daily servings from the food groups were compared to the Canadian Food Guide, results showed that most of people met the recommendation for meat and alternatives. In contrast, most of the Inuit fell below the recommended levels for milk products, fruits and vegetables and grain products.

- Intakes of sweet foods and drinks were high in 2004. In particular, sweet beverages such as sodas and fruit beverages were the most important sources of carbohydrates the day before the interview. Moreover, the consumption of sweet beverages was much higher among young people.

- The high sodium intake of the Inuit was likely supplied by prepared foods such as soups, snacks, French fries, sauces and prepared meals. In addition to the consumption of these salty foods, nearly 40% of the Inuit indicated they often add salt to their foods.

Consumption of traditional foods

- The day before the survey, traditional foods supplied 16% of total calories in comparison with 84% supplied by store-bought foods. Consequently, the contribution of store-bought foods to nutrient intakes was generally higher than that of traditional foods.

- The contribution of traditional foods to energy intake was higher among older Inuit (28%) than among young people (11%).

- Traditional foods contributed up to 25% of protein, niacin, and riboflavin, vitamins B6 and B12, omega-3 fatty acids, selenium, zinc, iron and phosphorus in the Inuit diet.

- The fish and seafood group, followed by land animals, represented the main traditional foods consumed and accounted for 32% and 31%, respectively. Arctic char contributed the most to the consumption of foods from the fish and seafood group whereas caribou represented 99% of the consumption from the land animal group. Birds accounted for 16% of the total traditional food consumed; goose, followed by ptarmigan, mostly contributed to this consumption. For marine mammal meat, which accounted for 12% of traditional food use, beluga was the most consumed marine mammal as compared with seal and walrus.

- During the year before the survey, fish and seafood was consumed nearly three times a week. Caribou was consumed nearly twice a week. Wildfowl and marine mammal meat were consumed on average once a week.

Food insecurity

- In 2004, nearly one person out of four (24%) indicated they had lacked food during the month before the survey.

- A greater proportion of Inuit residing in Hudson communities, and of those having no job, a low income, separated, divorced or widowed indicated they had lacked food in their home in comparison to their counterparts in other corresponding categories.

- The prevalence of food insecurity also rose as the number of individuals in the household increased.

- Finally, nearly 88% of household respondents reported getting traditional foods from the community freezers, 75% did so occasionally and 13% did so often.

BACKGROUND OF THE NUNAVIK INUIT HEALTH SURVEY

The monitoring of population health and its determinants is essential for the development of effective health prevention and promotion programs. More specifically, monitoring must provide an overall picture of a population's health, verify health trends and how health indicators vary over distance and time, detect emerging problems, identify priority problems, and develop possible health programs and services that meet the needs of the population studied.

The extensive survey conducted by Santé Québec in Nunavik in 1992 provided information on the health status of the Nunavik population (Santé Québec, 1994). The survey showed that health patterns of the population were in transition and reflected important lifestyle changes. In actual fact, the Inuit population has undergone profound sociocultural, economic, and environmental changes over the last few decades. The Inuit have changed their living habits as contact with more southerly regions of Quebec has increased. A sedentary lifestyle, the switch to a cash-based domestic economy, the modernization of living conditions and the increasing availability and accessibility of goods and foodstuffs imported from southern regions have contributed to these changes. These observations suggest the need for periodic monitoring of health endpoints of Nunavik Inuit to prevent the negative impact of risk factor emergence and lifestyle changes on subsequent morbidity and mortality from major chronic diseases.

In 2003, the Nunavik Regional Board of Health and Social Services (NRBHSS) decided to organize an extensive health survey in Nunavik in order to verify the evolution of health status and risk factors in the population. The NRBHSS and the Ministère de la Santé et des Services sociaux (MSSS) du Québec entrusted the Institut national de santé publique du Québec (INSPQ) with planning, administering and coordinating the survey. The INSPQ prepared the survey in close collaboration with the Unité de recherche en santé publique (URSP) of the Centre hospitalier universitaire de Québec (CHUQ) for the scientific and logistical component of the survey. The Institut de la statistique du Québec (ISQ) participated in methodology development, in particular in the survey's design.

The general aim of the survey was to gather social and health information on a set of themes including various health indicators, physical measurements, and social, environmental and living conditions, thus permitting a thorough update of the health and well-being profile of the Inuit population of Nunavik. The survey was designed to permit a comparison of the 2004 trends with those observed in 1992. Data collected in 2004 also allowed researchers to compare the Inuit to other Quebecers.

TARGET POPULATION

The health survey was conducted among the Inuit population of Nunavik from August 27 to October 1, 2004. According to the 2001 Canadian census, the fourteen communities of Nunavik have a total of 9632 inhabitants, 91% of whom identified themselves as Inuit. The target population of the survey was permanent residents of Nunavik, excluding residents of collective dwellings and households in which there were no Inuit aged 18 years old or older.

DATA COLLECTION

Data collection was performed on the Canadian Coast Guard Ship Amundsen, thanks to a grant obtained from the Canadian Foundation for Innovation (CFI) and the Network of Centres of

Excellence of Canada (ArcticNet). The ship visited the fourteen villages of Nunavik, which are coastal villages. The study was based on self-administered and interviewer-completed questionnaires. The study also involved physical and biological measurements including clinical tests. The survey was approved by the Comité d'éthique de la recherche de l'Université Laval (CERUL) and the Comité d'éthique de santé publique du Québec (CESP). Participation was voluntary and participants were asked to give their written consent before completing interviews and clinical tests. A total of 677 private Inuit households were visited by interviewers who met the household respondents to complete the identification chart and the household questionnaire. A respondent was defined as an Inuit adult able to provide information regarding every member of the household. The identification chart allowed demographic information to be collected on every member of the household. The household questionnaire served to collect information on housing, environment, nutrition and certain health indicators especially regarding young children.

All individuals aged 15 or older belonging to the same household were invited to meet survey staff a few days later, on a Canadian Coast Guard ship, to respond to an interviewer-completed questionnaire (individual questionnaire) as well as a self-administered confidential questionnaire. Participants from 18 to 74 years of age were also asked to complete a food frequency questionnaire and a 24-hour dietary recall, and to participate in a clinical session. The individual questionnaire aimed to collect general health information on subjects such as health perceptions, women's health, living habits and social support. The confidential questionnaire dealt with more sensitive issues such as suicide, drugs, violence and sexuality. During the clinical session, participants were invited to answer a nurse-completed questionnaire regarding their health status. Then, participants had a blood sample taken and physical measurements were performed including a hearing test, anthropometric measurements, an oral glucose tolerance test (excluding diabetics) and toenail sampling. Women from 35 to 74 years of age were invited to have a bone densitometry test. Finally, participants aged 40 to 74 who so consented could have an arteriosclerosis screening test as well as a continuous measure of cardiac rhythm for a two-hour period.

SURVEY SAMPLING AND PARTICIPATION

The survey used a stratified random sampling of private Inuit households. The community was the only stratification variable used. This stratification allowed a standard representation of the target population. Among the 677 households visited by the interviewers, 521 agreed to participate in the survey. The household response rate is thus 77.8%. The individual response rates are obtained by multiplying the household participating rate by the individual collaboration rate since the household and individual instruments were administered in sequence. The collaboration rate corresponds to the proportion of eligible individuals who agreed to participate among the 521 participating households. In this survey, about two thirds of individuals accepted to participate for a response rate in the area of 50% for most of the collection instruments used in the survey. A total of 1056 individuals signed a consent form and had at least one test or completed one questionnaire. Among them, 1006 individuals answered the individual questionnaire, 969 answered the confidential questionnaire, 925 participated in the clinical session, 821 had a hearing test, 778 answered the food frequency questionnaire, 664 answered the 24-hour dietary recall, 282 had an arteriosclerosis test, 211 had a continuous measure of their cardiac rhythm for a two-hour period and 207 had a bone densitometry test. More details on the data processing are given in the Methodological Report.

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1. INTRODUCTION[i]

Traditional Inuit food reflects the values, economic practices and health-related behaviours of these peoples as well as their relationship with their environment[1]. Historically, the Inuit have lived from the land, rivers, lakes and the sea. Inuit people have also known periods of starvation. Through the experience and the teaching of elders, the Inuit learned to select local foods in proper amounts to supply the body with the required nutrients and thus appear to have succeeded in avoiding nutritional deficiencies by eating all animal parts[2].

Meat from land animals, marine mammals, birds, and the flesh of fish and seafood supplies protein. Animal liver, fish and marine mammal fat are good sources of vitamins A and D. Country meat also provides large amounts of iron and zinc. The consumption of raw meat and the stomach content (lichen and moss) of caribou, in addition to the consumption of plants and berries in summer and fall, provides vitamin C[1]. Moreover, the Inuit traditional diet, in particular the fat found in fish and marine mammals, provides protection against cardiovascular disease (CVD). Over the past 15 years, numerous studies attributed this beneficial health effect to the high omega-3 (or n-3) fatty acid intake obtained from marine food consumption[3-8]. A diet rich in fish and marine mammals has also been linked to a lower incidence of thrombotic disease[9-11]. Omega-3 fatty acids may also offer protection against other health problems seldom encountered in Nunavik, such as high blood pressure, diabetes and certain types of cancers[3, 5]. These fatty acids are also essential for brain development and recent studies suggest that they are essential to mental health.

The Inuit's consumption of traditional foods has decreased over recent decades. Young Inuit, in particular, depend on food imported from the South more than their parents do[12-19]. The break from traditional eating habits among Inuit arises from a number of factors. As transportation and communication with southern regions improved, the Inuit diet began to include more store-bought foods from southern regions[2]. In addition, the increased demographic pressure has had an impact upon fish and game reserves in the territory, and rising salaried employment has reduced the time available for hunting and fishing, as well as the dependence upon these traditional activities. Thus, individuals now dispose of an income that enables them to purchase commercial foodstuffs[20-25]. The consumption of store-bought foods in Nunavik will certainly increase in the future. Hence, the promotion of safe nutritional habits among the Inuit presents a great challenge: maintain or increase traditional food use, which confers important advantages to the Inuit population, and support efforts to increase the use of healthy store-bought foods.

[i] For ease of readability, the expression "Inuit" is used throughout this report to define the population under study even thought a small percentage of individuals surveyed identified themselves as non-Inuit. Refer to "Background of the Nunavik Inuit Health Survey" for further details regarding the definition of the target population.

2. OBJECTIVES OF THE NUTRITION PART OF THE SURVEY

The general purpose of the nutrition part of the 2004 health survey was to provide reliable and updated information about the Inuit diet.

Specifically, the nutrition survey enabled to:

- Estimate the food and nutrient intakes of the Inuit in order to describe the quality of the Inuit diet in terms of foods, food groups, nutrients and eating patterns;
- Identify the main food sources of the Inuit (traditional foods versus store-bought foods) and their relative contribution to energy and nutrient intakes;
- Determine the relationship between dietary and nutrient intakes as well as that between eating patterns and certain socio-demographic characteristics;
- Estimate the prevalence of food insecurity among Inuit households;
- Compare results of the survey with data collected in 1992 during the Santé Québec health survey.

3. METHODOLOGICAL ASPECTS

3.1. QUESTIONNAIRES

In 2004, information on food and nutrient intakes was obtained using a 24-hour dietary recall (Appendix I) and a food frequency questionnaire (Appendix II). The construction of the dietary questionnaires, particularly that of the food frequency questionnaire, took into account comparability with the Santé Québec survey (1992) as well as the methodological problems identified during that survey. Consultations were held with Inuit people, Nunavik representatives, experts in nutrition, and researchers from the International Inuit Cohort Study to verify the accuracy of the questionnaires and that of the list of food items on the food frequency questionnaire. A field test to validate the questionnaires was conducted in Kuujjuaq in April 2004[26]. The questionnaires were checked, any incongruity in results was verified, and corrections were made to ensure the validity of the questions. Dietary questionnaires were available in Inuktitut, English, and French and were administered to men and non-pregnant women aged between 18 and 74 years.

A **24-hour dietary recall** is a method often used to quantify the food intake of individuals or households during a specific day just prior to an interview. The method is simple and rapid and its value in assessing the average intake of groups is well established[27, 28]. However, since dietary intake is highly variable from day to day, a single 24-hour recall is rarely representative of an individual's average intake. Thus, results obtained from the 24-hour recall in 2004 can not be interpreted as usual intake. Multiple 24-hour recalls would have been necessary to improve the accuracy of individual intake estimates. Nevertheless, data collected in 2004 from the 24-hour dietary recall enabled to calculate mean and median intakes of energy and nutrients for the adult population as a whole or divided in large sub-groups, and data were interpreted as estimates for the day before the survey was conducted (24 hours). The contribution of foods or food groups to nutrient intakes and the importance of traditional foods and store-bought foods were also assessed. A 24-hour dietary recall was also completed by men and women in 1992[25] and similar food models were used to quantify the food intake. Therefore, it was possible to compare the Inuit dietary intakes of both periods.

A **food frequency questionnaire** is generally used to assess the frequency at which food items or food groups are consumed during a specified time period[28, 29]. This type of questionnaire generally comprises a list of foods, frequency-of-use response categories and sometimes pre-determined portion sizes. Specific combinations of foods can be used as predictors for intakes of certain nutrients (e.g. carbohydrates, omega-3 fatty acids, iron, vitamin A). The food frequency questionnaire used in 2004 measured the consumption of traditional Inuit foods for all four seasons during the year preceding the survey. A similar questionnaire was used in 1992 during the Santé Québec health survey but the questionnaire was completed by women only and was less detailed regarding traditional foods[25]. In the 2004 food frequency questionnaire, the traditional food list referred to 25 food items derived from fishing and hunting (including several parts of marine mammals such as meat, fat, skin, liver). Additional questions regarding the consumption of 44 store-bought foods provided information about the consumption frequency of fruit, vegetables, commercial meats, dairy products, bread and grain products, fatty and sweetened products, and the consumption of fat and sugar during the month before the survey. Pre-defined serving sizes were included in the questionnaire and the corresponding food model was shown to the respondents.

Finally, the **household and individual questionnaires** included questions on Inuit eating habits such as use of salt and fat, perceptions and beliefs about traditional foods and store-bought foods, use of traditional foods for their medicinal properties, and food insecurity. The household questionnaire was completed by the person in charge of meal preparation aged 18 years and over; the individual questionnaire was answered by individuals aged 15 years and over.

3.2. INTERVIEWER TRAINING FOR DIETARY DATA COLLECTION

A training session was held at the INSPQ in August 2004, several days before the beginning of data collection in Nunavik. The interviewers were professionals from southern Quebec and Inuit from Nunavik who had been recommended by leaders of the Inuit communities or by the NRBHSS. Training documents presenting detailed information on conducting data collection and including various simulations were given to the interviewers[30]. The first day of the training session began with a description of the 24-hour dietary recall followed by the steps in data collection. Interviewers were given ways to collect information on what the respondents had eaten or drunk in the last 24 hours, and where and when the food and beverages were consumed (Appendix 1).

The second day of the training session provided an explanation and illustration of the steps in data collection using the food frequency questionnaire (Appendix II). Interviewers were presented with ways to collect information on the traditional foods consumed during the year prior to the survey. Directions were given to interviewers on the way to record the frequency (by day, week, month, season) and the usual serving of each food item consumed. Various examples to record the frequency or the serving size were given. Finally, the day prior to the beginning of data collection on the boat, there was a second training for interviewers with a practical session concerning the administration of the 24-hour dietary recall and the food frequency questionnaire.

3.3. DIETARY DATA COLLECTION

As mentioned before, data collection was conducted on the icebreaker and scientific research vessel: the Amundsen[26]. Face-to-face interviews were conducted to collect information from the 24-hours dietary recall and the food frequency questionnaire, and also from the individual and household questionnaires. Each dietary interview lasted approximately 1–1½ hour. Food models of standardized portions (n=54) were used to help interviewers and respondents visualize and better describe the amounts of food eaten. These food models were rented to the Direction Santé Québec (ISQ). Moreover, with the help of local interviewers, an "Events Calendar for Nunavik" was prepared (Appendix III). This "Events Calendar" listed a few well-recognized events that had taken place in the community one year prior the survey being done in each community. This instrument was useful to facilitate memory, thus helping respondents get a better sense of the period of year or the season they needed to consider when recalling foods eaten over the last year (traditional foods). In order to detect errors or oversights made by the interviewers, dietary questionnaires were checked every evening and this, throughout the entire data collection process. Interviewers were given feedback from nutritionists the following day during group meetings or on a one-to-one basis for correcting details. More details on the methodology used in the nutrition survey are discussed in the survey's Methodological Report[26].

3.4. COMPUTERIZATION OF DIETARY DATA

3.4.1. Data from the 24-hour dietary recall

The computerization of data obtained from the 24-hour dietary recall was done by a nutritionist at the INSPQ. First of all, the data quality of the information collected was verified. Secondly, data entry was performed using Micro Gesta software[31]. This software is designed for nutrition surveys and contains both foods and recipes. Micro Gesta software permits the addition or modification of the information in the database in an interactive mode. Dietary data collected with the 24-hour dietary recall were computerized according to servings or food models used during the data collection or as weights or volumes. The software thereafter converted all measurements into grams since the nutrient content of foods is generally available by servings of 100 grams. Nutritional information for each food consumed was obtained from the Canadian Nutrient File (CNF), 2005[32]. The CNF is a food composition database containing average values for nutrients in foods available in Canada. The CNF contains data on 5370 food items for up to 129 food components. The nutrient content of recipes was obtained from the USDA Nutrient Database and the Continuing Survey of Food Intakes by Individual (CSFII) recipes database, 1994-1996.

3.4.2. Data from the food frequency questionnaire

The computerization of data obtained from the food frequency questionnaire was primarily done by a firm specialized in data entry and partially at the INSPQ. Data was computerized according to consumption frequency of foods listed in the questionnaire and according to food models used during data collection. All quantities pertaining to servings recorded during data collection are available. These servings or quantities for all foods and beverages listed in the questionnaire were thereafter converted into grams.

3.5. DATA QUALITY CONTROL AND POSSIBLE LIMITATIONS OF DIETARY DATA

3.5.1. Data quality control

The quality control process for the data collected by the 24-hour dietary recall was the responsibility of the nutritionist in charge of the computerization of dietary data. The nutritionist contacted people in Nunavik several times in order to verify information about traditional foods, traditional recipes or grocery products. The nutritionist also did exhaustive research on the composition of several traditional foods. In some instances, she had to create recipes for traditional foods and determine the nutrient content of foods using available data published in Canada or by other northern regions. She also had to verify whether data specified in dietary recalls were sufficiently detailed or precise for data analysis. Some 24-hour dietary recalls were rejected because there was too much missing information.

The quality control process for the food frequency questionnaire data was conducted by an epidemiologist with a background in nutrition. All data relating to the consumption frequency of foods listed in the questionnaire were checked as were the quantities recorded during data collection. Food frequency questionnaires were generally rejected when the questionnaire was incomplete, in particular when consumption frequencies were not specified. However, incomplete food frequency questionnaires were included in the study when only the first section (traditional foods) was completed, this situation having been caused by a lack of time when participants had to leave the boat quickly.

The validation process regarding dietary data was performed by the statistician in charge of the survey's data analyses, the nutritionist in charge of the 24-hour recall data entry, and the person in charge of the nutrition survey[26]. Validation was conducted to check for inconsistencies in the frequency of observations, e.g. the variable values and the observation counts. In the case of aberrant data, verification was done simultaneously in the 24-hour dietary recall and the food frequency questionnaire. Consequently, it was possible to clarify incomplete information in some cases and thus avoid discarding their records.

3.5.2. Possible limitations of dietary data

To provide adequate information on serving size and meal times, subjects must be able to describe them in terms of their own habits[28]. The cultural context of Nunavik may have made it difficult to use the food measurement models and to define meal times. Therefore, participants may have underestimated or overestimated the portion size of some foods. The questions related to meal times in the 24-hour dietary recall did not provide the information being sought from participants. Since that information was incomplete, few statistical analyses according to meals and snacks were performed.

Furthermore, as data collection was done on a ship, it was impossible to check food brands, which could have been done in the participant's house. Thus, it was sometimes difficult for participants to recall the details regarding foods consumed since they could not check in their cupboards. Some concepts related to the questionnaires and interviews were very hard for some Inuit interviewers to comprehend since they had little or no experience with questionnaires. This may have had a negative impact on the quality of the data collected.

3.6. PROFILE OF PARTICIPANTS TO THE NUTRITION SURVEY

The characteristics of participants in the nutrition survey are shown in Table 1. There were 664 participants in the 24-hour dietary recall and 778 individuals responded to the food frequency questionnaire. The response rates for the 24-hour recall and the food frequency questionnaire were only 40% and 47%, respectively. However, it is important to note that for the 24-hour recall, nearly 33% of the non-responses are a reflection of inadequate interview or logistic problems on the Amundsen. For the food frequency questionnaire, this percentage was 16%. Details regarding non-responses for each instrument are given in Appendix F of the survey's Methodological Report[26].

Table 1 Characteristics of participants in the nutrition part of the survey, population aged 18 to 74 years, Nunavik, 2004

	24-hour dietary recall (n=664)	Food frequency questionnaire (n=778)
	%	
Sex		
Men	53.0	52.7
Women	47.0	47.3
Age group		
18-29 years	36.1	36.1
30-49 years	43.8	43.8
50-74 years	20.1	20.1
Coastal region		
Hudson	56.7	56.7
Ungava	43.3	43.3
Community size		
Large communities	57.6	57.6
Small communities	42.4	42.4
Education level		
Elementary school completed or less	21.0	22.7
Secondary school not completed	52.5	52.8
Secondary school completed or higher	26.5	24.6
Job status		
Work	75.3	74.2
Other [a]	24.7	25.8

[a] Other: hunter support program, housework, retired or on pension, unemployment insurance, social welfare, student or other.

Source: Nunavik Inuit Health Survey 2004.

There was no significant difference in the characteristics of individuals who answered both questionnaires. Participants were aged 18-74 years; 47% were men (mean age = 36.4 yrs) and 53% were women (mean age = 37.2 yrs). A higher proportion of individuals aged 30-49 years participated in the nutrition survey in comparison with other age groups. Moreover, as was observed in the general health survey, individuals from Hudson coast and from large communities were more numerous in participating in the survey when compared with those residing on the Ungava coast or in small communities. This reflects the population's regional distribution[33]. As for coastal regions, it should be noted that the Nunavik territory has also been divided in two regions because place of residence could influence life habits. The Hudson coast includes the villages of Kuujjuarapik, Umiujaq, Inukjuaq, Puvirnituq, Akulivik, Ivujivik and Salluit while the Ungava coast includes Kangiqsujuaq, Quaqtaq, Kangirsuk, Aupaluk, Tasiujaq, Kuujjuaq and Kangiqsualujjuaq. In terms of community size, large communities include villages of more than 1000 inhabitants (Kuujjuak, Puvirnituk, Inukjuak and Salluit). Small communities refer to Kuujjuarapik, Imiujaq, Akulivik, Ivujivik, Kanggiqsujuaq, Quaqtaq, Kangirsuk, Aupaluk, Tasiujaq and Kangiqsualujjuaq.

Individuals having completed some high school or having a job at the time of the survey also responded in a greater proportion than did the other groups. In terms of the education variable, it is important to specify that the choice of answers for post-secondary training were not well adapted to

the context of the survey's target population. The answers given for this category reveal that there was likely confusion during data collection between training that requires a post-secondary diploma and training that does not (e.g. driver's license, fishing license, etc.). Therefore, the number of people with post-secondary education was likely overestimated.

3.7. DATA ANALYSIS

3.7.1. Data analysis of the 24-hour dietary recall

Results obtained from the 24-hour dietary recall include estimated daily intakes of energy and nutrients as well as food intakes of the adult population of Nunavik. As mentioned above, since only one 24-hour dietary recall was completed by participants, the data collected are not representative of the usual or long-term intake of Inuit adults. Therefore, caution should be used in interpreting the results.

Bearing in mind that only one dietary recall was completed in 2004 when comparisons of nutrient intakes were made with the Canadian nutrient recommendations in order to determine the range of intakes among some Inuit population groups. Nutrient intakes were summarily compared to the Estimated Average Requirement (EAR), the Adequate Intake (AI) and Tolerable Upper Intake Level (UL) in order to approximate the percentage of Nunavik population who may have insufficient or excessive nutrient intakes (requirement values are indicated in Appendix IV)[34].The EAR is the average daily nutrient intake level estimated to meet the requirement of half of the healthy individuals in a particular life stage and gender group. It is used to estimate the prevalence of inadequate intakes in a population group and is calculated based on usual intake. The following nutrients, for which an EAR has been established and for which food composition data are available, were considered in the present report: vitamin A, thiamin, riboflavin, niacin, vitamin B6, folate, vitamin B12, vitamin C, phosphorus, magnesium, iron, zinc, selenium.

The AI is the recommended average daily intake level based on observed or experimentally determined approximations or estimates of nutrient intakes in a group (or groups) of apparently healthy people that are assumed to be adequate. An AI has been established for nutrients for which food composition data are available. In this report, vitamin D, dietary fibre and calcium are considered. The UL is the maximum level of daily nutrient intake that is likely to pose no risk of adverse health effects for almost every individual in the general population[35]. As intake increases above the UL, the potential risk of adverse effects may increase. A comparison with the UL was performed for sodium intake.

Readers must remember that comparisons with the EAR, AI or UL do not permit the identification of groups at risk of deficiencies nor the prevalence of inadequate intakes in the Inuit of Nunavik since only one dietary recall was completed by the survey participants. The comparisons are presented in an informative way and must be applied to a group not to individuals.

Food intakes were classified according to the four food groups in Canada's Food Guide First Nations, Inuit and Métis[36] (CFG): meat and alternatives, milk products, vegetables and fruit and grain products (Appendix V). Comparisons with the CFG recommendations on daily consumption of food groups have been performed for Inuit aged from 18 to 74 years. An "Other foods" category has been defined, grouping foods such as fats, sweets, beverages, condiments, etc. (Appendix VI). Food group intakes were compared to suggested daily servings in the CFG. The contribution of the food groups to energy

and nutrient intakes was also examined as well as the contribution of traditional foods and store-bought foods. Finally, energy and food group distribution was verified based on the meals and snacks consumed the day before the interview.

3.7.2. Data analysis of the food frequency questionnaire

An analysis of the food frequency questionnaire data provided estimates of the consumption frequency and the usual intake in grams of traditional foods on a daily, weekly, monthly, seasonal or annual basis. Daily food intakes were calculated on an annual basis by multiplying the consumption frequency of the food by the intake in grams for each food. Traditional foods have been grouped according to wildlife animal class, e.g. marine mammal (including subgroups such as marine mammal meat, marine mammal fat and marine mammal offal), fish and seafood, big game (caribou, bear), small game (hare, fox), birds and berries.

The monthly consumption of store-bought foods has been calculated according to the preceding method. Store-bought foods have been grouped according to the CFG and daily/weekly consumption frequency was estimated.

3.7.3. Statistical analyses and tests

All statistics presented in this report were obtained from data that has been weighted in order to be representative of the entire population under study and not only for the sample itself. Thus, all results are weighted and representative of the Nunavik adult population aged between 18 and 74 years. The statistical distribution of dietary variables did not show normal curves. Heavy tails (falling off at high values) and highly asymmetric curves are often observed with dietary variables since some individuals consumed very high amounts of foods compared to others[28]. Therefore, the median was used as the measure of central tendency since it is affected by extreme values to a lesser degree than is the arithmetic mean. For many results, the medians are different from the means, e.g. median values are lower than mean values, especially when variables have heavy-tailed asymmetric curves. Sample medians provide a better approximation for the population median than do sample means for the population mean. Moreover, to ensure that results from the food frequency were not affected by a few extreme observations, dietary variables were winsorized, so that the observations with values higher than those in the 99th percentile were set to the 99th percentile value.

The bootstrap technique was used for the estimation of sample variance. Confidence intervals (CI) were performed to compare medians according to independent variables. Arithmetic means and standard errors were also calculated and presented for information purposes or for comparisons with other surveys. The chi-square test was used to compare the prevalence of categorical variables according to independent variables.

The coefficient of variation (CV) has been used to quantify the accuracy of estimates. When the coefficient of variation (CV) is between 16.6 and 33.3 ($16.6 \leq CV \leq 33.3$), the estimates can be considered for general, unrestricted release but should be accompanied by a warning, cautioning users of the high sampling variability associated with the estimates. Such estimates are identified by the letter E. When the coefficient of variation (CV) is higher than 33.3 ($CV \geq 33.3$), it is recommended not to release these estimates because of their unreliability. These estimates are replaced with the letter F.

Statistics are generally reported by sex and age group because food and nutrient intakes vary greatly according to sex and age. Food and nutrient intakes were also estimated by socio-demographic characteristics such as level of education, job status, coastal region and community size.

Finally, statistical analyses were performed to compare food and nutrient intakes of the Inuit as estimated in the Santé Québec survey conducted in 1992 and the 2004 survey[25]. Comparisons were performed using generalized multinomial logistic models adjusted for age and survey design. The Wald chi-square statistic with Satterthwaite correction for degrees of freedom[37] was used for this model. Further details on the statistical analysis are given in the Methodological Report[26].

3.7.4. Presentation of results

Section 4 of this report presents the results obtained from the 24-hour dietary recall, Section 5 those from the food frequency questionnaire and Section 6 those from the individual and household questionnaires relating to eating habits, perceptions and beliefs with regard to traditional and store-bought foods, as well as food insecurity.

4. RESULTS FROM THE 24-HOUR DIETARY RECALL

4.1. INTAKES OF ENERGY AND MACRONUTRIENTS

This section presents daily intakes of energy and macronutrients estimated for the adult population of Nunavik for the day before the survey. Macronutrients such as protein, lipid (fat) and carbohydrates are energy-yielding substances. The energy value of foods is expressed in terms of calories[ii]. Alcohol is not a nutrient but it does contribute to energy intake. In contrast, dietary fibre does not yield energy but it is considered a macronutrient. The contribution of macronutrients to total energy intake was also examined in this section and comparisons are made with reference values used in Canada[34]. The day before the survey, alcohol intake was very low among the Inuit and the low number of drinkers did not permit detailed analyses to be performed. Finally, some comparisons of dietary intakes observed in 2004 were made with data collected in 1992 during the Santé Québec Health Survey[25].

4.1.1. Intakes of energy

Sufficient food to meet energy needs is the first nutritional priority[38]. Individual energy needs depend on many factors such as age, sex, body size (weight, height), climate and activity (work, leisure activities). For example, men, young people or individuals who are very physically active generally have higher calorie needs than women, old people or sedentary individuals.

For the day surveyed, the median energy intake of the Inuit adult population was estimated at 1937 calories (Table 2). The energy intake of men was higher than that of women and decreased significantly with age. In fact, median energy intakes of men and women aged 50-74 years were estimated as low as 1523 and 1304 calories, respectively, for that day. When comparing data from the present survey with that collected in 1992, results show that the energy intake of people aged 50-74 years was higher in 2004 than in 1992. Median intakes of calories appear lower among people with the lowest level of education as compared with those in other educational level groups (data not shown). People who did not work during the time of the survey had lower energy intakes than those having a job. There was no significant difference in energy intakes between people residing in Ungava and those in Hudson region, nor between people living in small versus large communities.

[ii] Note that in accordance with common practice, the term “calorie” is used synonymously with the terms “energy” and “kilocalorie” in this report.

Table 2 Median and mean intakes of energy and macronutrients by age and sex, Nunavik, 2004

		Men			Women			Total
		18-29	30-49	50-74	18-29	30-49	50-74	
Energy (calories)	Median (CI)	2316 (2111-2476)	2124 (1980-2590)	1523 (1302-1869)	2113 (1899-2181)	1669 (1535-1809)	1304 (1065-1572)	1937 (1863-2018)
	Mean (SE)	2520 (126)	2382 (109)	1739 (127)	2115 (74)	1778 (60)	1478 (93)	2082 (45)
Protein (g)	Median (CI)	87.7 (77-101)	106 (95-119)	92.5 (76-115)	78.5 (72-90)	79.7 (73-88)	81.2 (70-95)	88.7 (82-94)
	Mean (SE)	104 (6.5)	117 (6.6)	105 (9.3)	90 (4.6)	90 (3.8)	87 (4.9)	100 (2.6)
Lipids (g)	Median (CI)	70.5 (61-83)	67.0 (61-77)	57.4 (43-68)	58.7 (52-68)	52.4 (48-56)	39.8 (33-57)	60.1 (56-64)
	Mean (SE)	83.3 (5.9)	83.2 (4.9)	64.5 (6.5)	66.6 (3.1)	58.7 (2.5)	51.2 (4.1)	70.2 (2.1)
Carbohydrates (g)	Median (CI)	301 (268-362)	276 (238-293)	146 (116-192)	280 (246-316)	196 (186-216)	136 (114-180)	233 (220-247)
	Mean (SE)	333 (17)	286 (14)	177 (15)	291 (12)	212 (8.1)	163 (11)	257 (6.0)
Alcohol (g)	Median (CI)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Mean (SE)	F	F	F	F	F	F	6.3[E] (1.1)
Dietary fibre (g)	Median (CI)	8.3 (7.0-9.6)	8.3 (7.3-9.9)	4.8 (3.6-7.2)	8.3 (6.9-9.7)	6.3 (5.6-7.5)	6.1 (3.8-7.7)	7.3 (6.8-7.9)
	Mean (SE)	9.8 (0.6)	9.8 (0.7)	6.8 (0.7)	9.6 (0.6)	7.2 (0.4)	6.7 (0.5)	8.6 (0.3)

E Interpret with caution.

F Unreliable estimate.

Source: Nunavik Inuit Health Survey 2004.

4.1.2. Intakes of protein

Proteins are essential for the growth and repair of body tissues and for the production of antibodies to fight infection. Protein is mainly found in animal meat including land or marine mammal meat, store-bought meat, fish, birds, eggs and dairy products. Vegetable sources of protein are nuts, legumes and grain products.

The day prior to the survey, median protein intake was estimated at 89 grams for the Inuit adult population (Table 2). Protein intake was higher in men than in women but did not vary according to age. However, when the sex/age categories in Table 2 are compared, it is observed that men aged 30-49 years had the highest intake of protein as compared with men and women of the other age groups. Median intakes of protein did not vary according to level of education but people who did not work during the survey period seem to have lower protein intakes than those having a job (data not shown). There was no significant difference in protein intake according to place of residence. Finally, comparisons of data with those collected in 1992 reveal a similar protein intake in both surveys.

4.1.3. Intakes of lipids, fatty acids and cholesterol

Lipids (or fat) supply energy and are required for the transportation and the absorption of fat-soluble vitamins A, D, E, K. Low intakes of total fat and cholesterol, including saturated and trans fats, are recommended because they increase the risk of heart disease. However, diet should supply essential polyunsaturated fatty acids that the body cannot produce such as linoleic acid and linolenic acid.

Interestingly, the Inuit diet supply foods rich in polyunsaturated fatty acids, in particular in omega-3 (or n-3) fatty acids such as eicosapentanoic acid (EPA) and docosahexanoic acid (DHA).

Total lipids

The median lipid intake of Inuit adults on the day before the survey was estimated at 60 grams (Table 2) and the lipid intake of men was significantly higher than that of women. Lipid intake did not vary significantly according to age (Table 2). However, lipid intake of the Inuit in the group with the lowest level of education seems to be lower than that of the Inuit with higher educational levels (data not shown). Lipid intake did not vary significantly according to job status or the place of residence.

Data comparison with 1992 results showed that total lipid intake was lower in 2004 than that observed in 1992. This reduced lipid intake found in 2004 was observed among men and women of all age groups and may be explained by the reduction of the intake of saturated fatty acids (SFA) and, in particular, of monounsaturated fatty acids (MUFA), and mainly among the elders.

Fatty acids

Table 3 shows the estimated intakes of fatty acids and cholesterol by the Inuit the day before the survey. Total fatty acid intake was higher in men than in women and when comparing the intakes according to age groups, the Inuit aged 50-74 years had lower intakes of total fatty acids than the younger age groups. Similar observations were noted for SFA. Moreover, the SFA intake of people in the lower level of education group was lower than that of the Inuit with higher educational levels.

Median intakes of MUFA were higher in men than in women and decreased with age. MUFA intake did not vary according to other socio-demographic characteristics. Intakes of polyunsaturated fatty acids (PUFA) and n-6 PUFA were similar among men and women but intakes of individuals aged 50-74 years were significantly lower than those of younger individuals, especially when comparing them with men and women aged 18-29 years. PUFA intake of the Inuit in the lower level of education group was also less than that of individuals who were more educated. No significant difference was observed according to other socio-demographic factors. Linoleic acid contributed the most to n-6 PUFA and median intakes were similar among men and women. The intake of linoleic acid decreased with age, the median intake of the Inuit aged 50-74 years being significantly lower than of the Inuit in younger age groups. Figure 1 shows the proportion of total fatty acids supplied by MUFA, SFA and PUFA the day before the survey. MUFA accounted for 41% of fatty acid intake followed by SFA (38%) and PUFA (20%). As mentioned above, the comparison of 2004 data with that collected in 1992 reveals lower intakes of MUFA and SFA in 2004 whereas those of total PUFA did not change. Inversely, intakes of n-6 PUFA were higher in 2004 than in 1992, especially among people aged between 18 and 49 years.

The median intake of n-3 fatty acids was significantly higher among individuals aged 50-74 years, in particular among Inuit men (Table 3). Linolenic acid, followed by EPA, DHA and DPA, mostly accounted for n-3 fatty acid intake. While the median intakes of linolenic acid among men and women decreased with age, those of EPA, DHA and DPA increased. Accordingly, the ratio of n-6 to n-3 fatty acids drops significantly with age, being 8.1 and 8.2, respectively, among men and women in the 18-29 age group comparatively to 1.9 and 3.0, respectively, among men and women aged 50-74 years. Interestingly, the n-6/n-3 ratio was significantly higher in 2004 than that estimated in 1992, especially among individuals aged 18-49 years. Finally, while the Inuit in the lowest level of education group had

a greater n-3 fatty acid intake than the Inuit in the higher educational levels, n-3 fatty acid did not vary significantly according to other socio-demographic characteristics (data not shown).

Cholesterol and trans fatty acids

For the day before the survey, total cholesterol median intake has been estimated at 281 grams. Inuit men, in particular those aged 30-49 years, had higher intakes of cholesterol than women (Table 3). Cholesterol intake did not vary significantly according to other socio-demographic characteristics (data not shown).

Trans fatty acid intakes were summarily estimated since data on trans fatty acid in the Canadian Nutrient File are not detailed for all dietary sources[32]. In effect, the 2005 version of the Canadian Nutrient File provides the trans fatty acid content for only 7.3% of foods included in the file. Nevertheless, the results showed that the median intake of trans fatty acids in the Nunavik adult population was 0.43 grams the day before the survey. Men appear to have higher intakes than women, especially men aged 30 years and over.

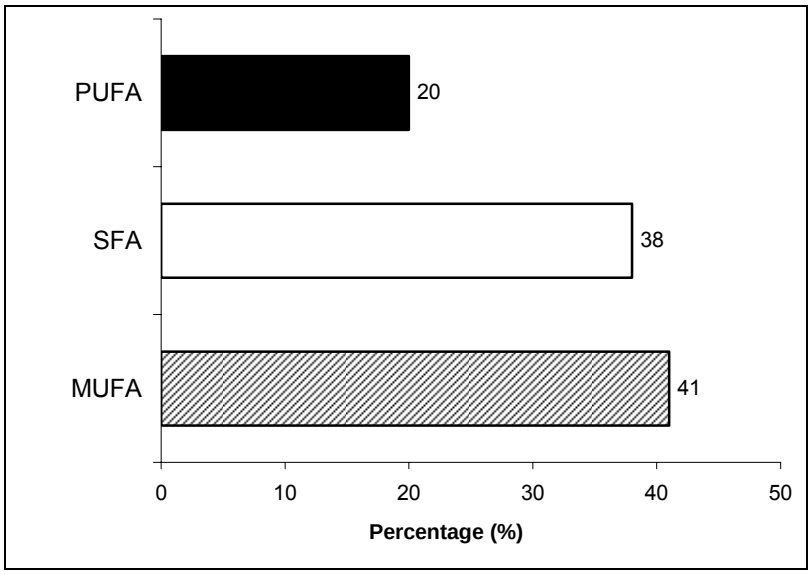
Table 3 Median and mean intakes of fatty acids and cholesterol by age and sex, Nunavik, 2004

		Men			Women			Total
		18-29	30-49	50-74	18-29	30-49	50-74	
Total Fatty Acids (FA) (g)	Median (CI)	62.9 (56-76)	62.6 (57-69)	49.8 (39-64)	54.0 (48-60)	47.4 (43-51)	37.6 (31-51)	55.0 (52-58)
	Mean (SE)	74.1 (5.0)	74.6 (4.3)	56.4 (5.6)	59.4 (2.8)	53.6 (2.4)	44.7 (3.6)	62.8 (1.8)
Saturated FA (SFA) (g)	Median (CI)	25.9 (22-28)	24.6 (20-27)	15.8 (10-19)	21.3 (20-23)	17.7 (17-20)	11.8 (10-18)	20.3 (19-22)
	Mean (SE)	28.9 (1.9)	28.1 (1.6)	18.8 (2.0)	22.8 (1.1)	20.4 (1.0)	16.0 (1.4)	23.6 (0.7)
Monounsaturated FA (MUFA) (g)	Median (CI)	25.6 (24-29)	26.9 (22-31)	19.5 (14-23)	19.5 (18-23)	18.5 (16-23)	14.7 (11-19)	21.5 (20-23)
	Mean (SE)	30.9 (2.3)	30.9 (1.8)	21.9 (2.2)	23.7 (1.2)	23.0 (1.1)	18.7 (1.7)	25.9 (0.8)
Polyunsaturated FA (PUFA) (g)	Median (CI)	11.7 (10-13)	11.4 (9.2-13.0)	8.2 (5.9-9.4)	10.0 (8.6-12.6)	9.2 (8.0-10.1)	5.8 (4.3-8.4)	9.7 (8.9-10.4)
	Mean (SE)	14.6 (1.1)	13.9 (0.9)	9.8 (1.2)	12.3 (0.7)	10.0 (0.5)	8.7 (1.0)	12.0 (0.4)
N-6 PUFA (g)	Median (CI)	9.9 (8.4-12)	9.2 (7.4-11)	4.7 (3.7-6.6)	8.5 (6.9-11)	7.2 (6.4-8.2)	4.1 (3.6-5.6)	7.7 (7.0-8.3)
	Mean (SE)	12.8 (1.0)	11.8 (0.8)	6.7 (0.7)	10.8 (0.6)	8.3 (0.4)	6.5 (0.8)	10.0 (0.3)
N-6 PUFA, Linoleic Acid (g)	Median (CI)	9.7 (8.1-12)	8.8 (6.8-10)	4.2 (3.6-6.2)	8.4 (6.6-10)	6.7 (6.1-7.9)	3.7 (3.5-5.4)	7.3 (6.6-8.0)
	Mean (SE)	12.5 (1.0)	11.4 (0.8)	6.2 (0.7)	10.4 (0.6)	7.9 (0.4)	6.2 (0.8)	9.6 (0.3)
N-3 PUFA (g)	Median (CI)	1.3 (1.0-1.6)	1.6 (1.4-2.0)	3.2[E] (2.4-5.8)	1.3 (1.1-1.5)	1.4 (1.1-1.5)	1.4 (1.2-3.2)	1.5 (1.4-1.6)
	Mean (SE)	2.2 (0.2)	3.0 (0.3)	5.8[E] (1.1)	2.1 (0.2)	2.3 (0.2)	2.9 (0.3)	2.8 (0.2)
N-3 PUFA, Linolenic Acid (g)	Median (CI)	0.87 (0.71-1.0)	1.02 (0.79-1.20)	0.59 (0.47-0.84)	0.81 (0.65-1.0)	0.73 (0.66-0.83)	0.52 (0.35-0.69)	0.78 (0.71-0.84)
	Mean (SE)	1.2 (0.1)	1.4 (0.1	1.0[E] (0.2)	1.0 (0.1)	0.94 (0.1)	0.84 (0.1)	1.1 (0.04)
N-3 PUFA, Eicosapentanoic Acid (EPA) (g)	Median (CI)	0.07[E] (0.01-0.13)	0.06[E] (0.03-0.14)	1.1[E] (0.20-1.3)	0.04[E] (0.01-0.11)	0.12 (0.06-0.16)	0.34 (0.14-0.71)	0.11 (0.08-0.14)
	Mean (SE)	0.42[E] (0.07)	0.59[E] (0.10)	1.6[E] (0.26)	0.43[E] (0.10)	0.54 (0.07)	0.69 (0.10)	0.64 (0.05)
N-3 PUFA, Docosapentanoic Acid (DPA) (g)	Median (CI)	0.04[E] (0.02-0.05)	0.04[E] (0.01-0.05)	0.54[E] (0.09-0.94)	0.03 (0.01-0.04)	0.04 (0.02-0.04)	0.07[E] (0.04-0.46)	0.04 (0.04-0.05)
	Mean (SE)	0.30[E] (0.1)	0.40[E] (0.1)	1.1[E] (0.2)	0.28[E] (0.1)	0.29 (0.04)	0.40[E] (0.1)	0.41 (0.04)
N-3 PUFA, Docosahexanoic Acid (DHA) (g)	Median (CI)	0.05 (0.04-0.08)	0.08[E] (0.05-0.14)	1.1[E] (0.24-1.8)	0.04 (0.04-0.07)	0.07 (0.04-0.10)	0.21 (0.07-0.55)	0.08 (0.06-0.10)
	Mean (SE)	0.28[E] (0.06)	0.58[E] (0.10)	2.1[E] (0.55)	0.36[E] (0.07)	0.46 (0.07)	0.90[E] (0.15)	0.66 (0.07)
EPA + DHA (g)	Median (CI)	0.14[E] (0.10-0.22)	0.16[E] (0.13-0.26)	2.0[E] (0.49-3.9)	0.13 (0.08-0.16)	0.17 (0.12-0.28)	0.59 (0.17-1.5)	0.17 (0.14-0.23)
	Mean (SE)	0.7[E] (0.13)	1.2[E] (0.20)	3.7[E] (0.78)	0.8[E] (0.16)	1.0 (0.13)	1.6 (0.24)	1.3 (0.12)
N-6/N-3 Ratio	Median (CI)	8.1 (6.4-9.3)	6.0 (4.9-6.7)	1.9 (0.9-3.4)	8.2 (6.9-9.6)	6.1 (5.2-6.8)	3.0 (2.2-5.0)	6.0 (5.6-6.7)
	Mean (SE)	9.5 (0.8)	7.1 (0.5)	4.3 (0.7)	9.3 (0.6)	7.0 (0.5)	4.9 (0.6)	7.4 (0.3)
Cholesterol (mg)	Median (CI)	336 (224-379)	446 (336-520)	219 (171-312)	246 (211-290)	255 (227-309)	215 (150-257)	281 (256-308)
	Mean (SE)	386 (31)	489 (31)	346 (50)	330 (26)	335 (20)	279 (27)	375 (13)

E Interpret with caution.

Source: Nunavik Inuit Health Survey 2004.

Figure 1 Percentage of total fatty acids derived from saturated (SFA), monounsaturated (MUFA) and polyunsaturated (PUFA) fatty acids, Nunavik, 2004



Source: Nunavik Inuit Health Survey 2004.

4.1.4. Intakes of carbohydrates

Carbohydrates are an important source of energy and fibre. There are two main categories of carbohydrates: complex carbohydrates, which are slowly absorbed by the body and yield energy over a longer period; and simple carbohydrates, which supply energy more rapidly. Complex carbohydrates are found in most grain products, fruit, vegetables and legumes. Simple carbohydrates are found in sugar, sweets, cakes, cookies, fruit juices, sweet beverages, honey, jam, etc. Foods high in complex carbohydrates and fibre are recommended for keeping energy balance and having a healthful body weight.

The day before the survey, median intakes of carbohydrates were higher in men than in women and decreased significantly with age. As shown in Table 2, the median carbohydrate intake of men and women aged 18-29 years was two-fold higher than that of people aged 50-74 years. Individuals having the lowest level of education or having no job had lower carbohydrate intakes than those with higher levels or having a job (data not shown). Carbohydrate intakes were generally similar across the Nunavik region. Carbohydrate intake appeared to be higher in 2004 than in 1992. In fact, people aged 18-49 years had significantly higher intakes of carbohydrates than in 1992, whereas intakes were about the same among people aged 50-74 years.

4.1.5. Intakes of dietary fibre

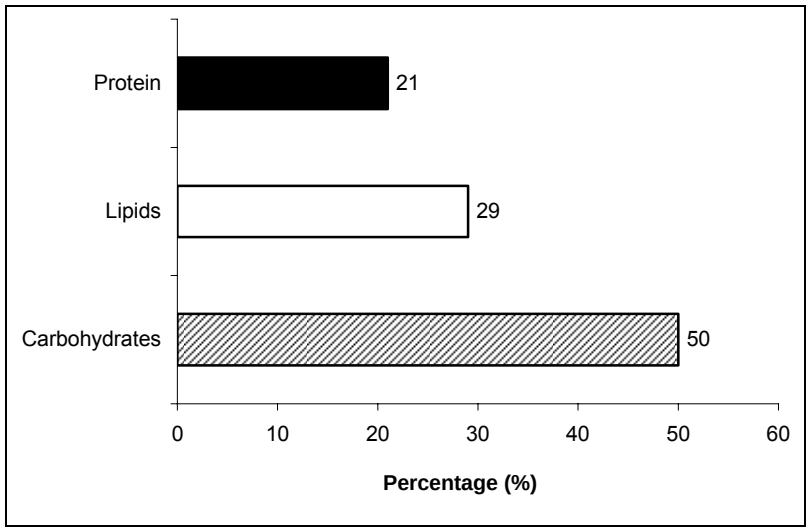
Dietary fibre is the non-digestible portion of ingested carbohydrates; their consumption has been associated with cardiovascular and intestine benefits. Fibre is found in whole-grain products, fruit, vegetables, nuts and legumes. Results showed that the day before the survey, the median fibre intake was about 7 grams and, globally, the intake was similar for both sexes. However, Inuit men aged 50-74 years consumed the lowest quantity of fibre in comparison with younger men (Table 2). Fibre intake did not vary among female age groups. Fibre intake was slightly higher in 2004 than in 1992 among Inuit adults, particularly among men aged 18-29 years and 50-74 years. Despite this slight

increase, fibre intake remains low, the daily requirement value varying between 30 to 38 grams for men and 21 to 25 grams for women (Appendix IV). Therefore, 98% of the adult population had an insufficient fibre intake the day before the survey. Fibre intake increased significantly according to the level of education: the median intake of people with the lowest level amounted to 5 grams as compared with nearly 10 grams for those with the highest educational level. No difference was observed between people having or not having a job and fibre intake was generally similar across the Nunavik region.

4.1.6. Contribution of macronutrients to energy intake

Figure 2 shows the contribution (median percentage) of macronutrients to total energy or calorie intake. Estimates of energy intake include calories from alcoholic beverages but their calorie percentiles are not shown since the daily intake was estimated at 0.02% of the total calorie intake. Therefore, results revealed that the day before the survey, Inuit adults derived 50% of their calories from carbohydrates, 29% from lipids (fat) and 21% from protein. Carbohydrates accounted for significantly more energy intake among young individuals than among older individuals whereas the contribution of lipids did not vary according to age (Table 4). Protein accounted for significantly more energy intake among the Inuit aged 50-74 years than among younger Inuit.

Figure 2 Contribution of protein, lipids and carbohydrates to energy intake, Nunavik, 2004



Source: Nunavik Inuit Health Survey 2004.

The contribution of the three macronutrients to energy intake was compared to the Acceptable Macronutrient Distribution Ranges (AMDR) established by the Institute of Medicine[34]. An AMDR is defined as a range of intakes for a particular energy source that is associated with reduced risk of chronic disease while providing an adequate intake of essential nutrients. The AMDRs are listed in Table 4 and in Appendix IV[34].

The day before the survey, the median contribution of protein to energy intake was within the AMD ranges for 83% of the Inuit (data not shown). Nearly 10% of individuals were below the acceptable protein range. In contrast, 8% of the Inuit got 35% or more of their calories from protein. The contribution of lipid to energy intake of Inuit adults was within the AMD ranges for 59% of the Inuit. However, 25% of adults exceeded the AMD range for lipids, getting 35% or more of their calories

from fat whereas 16% were below the acceptable range. The median contribution of carbohydrates to energy intake was within the suggested range among 50% of the Inuit. However, 38% got less than 45% of their calories from carbohydrates whereas 12% were over the acceptable range. Indeed, a greater proportion of young people exceeded the range for carbohydrates as compared with older individuals. In contrast, a greater proportion of Inuit aged 50-74 years was below the acceptable range the day before the survey.

Women aged 18-29 years followed by men of the same age group got the largest proportion of their calories from carbohydrates (Table 4). In contrast, the contribution of carbohydrates to energy was low among individuals aged 50-74 years and 58% of them were below the AMDR. When compared with 1992 data, the contribution of carbohydrates and lipids to energy intake showed an appreciable change in 2004, while no difference was observed for protein contribution. The contribution of carbohydrates to energy intake was lower in 1992 (42%) as compared with 2004, whereas the contribution of lipids was higher (37%). The results of the Canadian Community Health Survey (CCHS 2.2-Nutrition) showed that Quebecers derive 49%, 32% and 16% of calories from carbohydrates, lipids and protein, respectively[39]. Hence, it seems that the protein intake of the Inuit contributed more to energy intake than is the case for Quebecers as a whole, whereas the Inuits' lipid contribution appears to be lower.

Table 4 Contribution of protein, lipids and carbohydrates to energy intake by age and sex, Nunavik, 2004

		Men			Women		
		18-29	30-49	50-74	18-29	30-49	50-74
		%			%		
Protein	Median (CI)	16.1 (15-18)	19.0 (17-21)	23.2 (21-29)	15.8 (14-17)	20.0 (19-21)	24.3 (21-28)
AMDR=10-30%	Mean (SE)	17.2 (0.7)	21.0 (0.8)	25.8 (1.5)	17.2 (0.8)	21.5 (0.7)	25.5 (1.2)
Lipids	Median (CI)	27.6 (25-31)	28.9 (27-31)	31.7 (28-34)	27.1 (26-28)	28.8 (28-30)	30.2 (28-31)
AMDR=20-35%	Mean (SE)	28.8 (1.0)	29.9 (0.8)	32.2 (1.6)	27.9 (1.0)	29.5 (0.9)	29.5 (1.1)
Carbohydrates	Median (CI)	53.1 (51-57)	49.0 (46-52)	43.6 (39-46)	57.0 (54-59)	49.2 (46-51)	43.3 (39-47)
AMDR=45-65%	Mean (SE)	53.4 (1.3)	48.1 (1.0)	40.1 (2.0)	55.2 (1.3)	48.0 (1.0)	44.3 (1.3)

Source: Nunavik Inuit Health Survey 2004.

Table 5 shows the median percentages of energy supplied by fatty acid categories the day before the survey. For saturated fatty acids (SFA), the median contribution to energy was estimated at 10% and was similar for men and women. No significant difference was observed among age groups. Although there is no official reference value for fatty acid categories, it is currently recommended to limit the contribution of SFA to 10% of total energy intake. Additional analyses revealed that for 54%, 36% and 10% of individuals, SFA contributed <10%, 10-15% and >15% of total energy intake, respectively. The median percentage of energy intake from MUFA was also estimated at 10%, regardless of the sex/age group. In fact, MUFA contributed at least 10% to the energy intake of 54% of the individuals. For PUFA, the median contribution to energy has been estimated at 5% and did not vary according to sex and age. N-3 PUFA accounted for 1% of total energy intake and their

contribution was significantly higher among the Inuit aged 50-74 years as compared with younger Inuit.

Table 5 Contribution of fatty acids to energy intake by age and sex, Nunavik, 2004

		Men			Women			Total
		18-29	30-49	50-74	18-29	30-49	50-74	
		%			%			%
SFA	Median (95% CI)	10.3 (9.4-11)	10.2 (9.4-11)	8.4 (7.3-10)	9.1 (8.4-9.6)	9.8 (9.5-10)	8.9 (7.9-10)	10.0 (9.0-10)
	Mean (SE)	10.2 (0.4)	10.3 (0.3)	9.3 (0.5)	9.6 (0.4)	9.9 (0.3)	9.2 (0.4)	9.9 (0.2)
MUFA	Median (95% CI)	9.9 (9.4-11)	11.7 (10-13)	11.1 (9.5-13)	9.8 (9.4-10)	10.7 (10-11)	10.0 (9.0-12)	10.0 (10-11)
	Mean (SE)	10.6 (0.4)	11.2 (0.3)	11.2 (0.6)	9.9 (0.3)	11.2 (0.3)	10.6 (0.4)	10.8 (0.2)
PUFA	Median (95% CI)	4.9 (4.3-5.4)	4.5 (4.4-5.1)	4.7 (4.3-5.1)	4.9 (4.5-5.4)	4.8 (4.5-5.4)	4.3 (3.8-4.7)	5.0 (5.0-5.0)
	Mean (SE)	5.1 (0.2)	4.9 (0.2)	5.0 (0.4)	5.1 (0.2)	4.9 (0.2)	4.8 (0.3)	5.0 (0.1)
N-6 PUFA	Median (95% CI)	4.0 (3.5-4.6)	3.9 (3.7-4.2)	3.3 (3.2-4.0)	4.4 (3.8-4.7)	3.9 (3.7-4.2)	3.5 (3.3-3.8)	4.0 (4.0-4.0)
	Mean (SE)	4.4 (0.2)	4.2 (0.1)	3.4 (0.2)	4.5 (0.2)	4.1 (0.1)	3.7 (0.2)	4.1 (0.1)
N-3 PUFA	Median (95% CI)	0.50 (0.5-0.6)	0.69 (0.6-0.8)	2.1 (1.2-3.0)	0.57 (0.5-0.7)	0.65 (0.6-0.8)	1.1 (0.8-1.7)	1.0 (1.0-1.0)
	Mean (SE)	0.90 (0.1)	1.1 (0.1)	3.1 (0.4)	0.88 (0.1)	1.3 (0.1)	1.7 (0.2)	1.3 (0.1)

Source: Nunavik Inuit Health Survey 2004.

4.2. INTAKES OF MICRONUTRIENTS

This section presents the estimated median daily intakes of micronutrients of Inuit adults during the day before the survey. Vitamins and minerals are micronutrients essential to health and well-being. These nutrients are present in small amounts in foods and represent about 2% of the diet. Micronutrients do not supply energy, but they play important roles in the well-being of the body.

A statistical data analysis was performed for nine vitamins including fat-soluble vitamins (vitamins A, D), water-soluble vitamins (vitamin C) and B-complex vitamins (thiamin (B1), riboflavin (B2), niacin (B3), folate (B9), vitamin B6 and vitamin B12). Statistical analyses were also performed for seven minerals: calcium, magnesium, phosphorus, iron, zinc, selenium and sodium. Caffeine intake was also assessed even though it is not a nutrient.

4.2.1. Vitamin A

Vitamin A plays an important role in vision, bone development, reproduction, and regulation of the immune system[38]. It contributes to skin and mucous membrane (eyes, respiratory, urinary and intestinal tract) health. Vitamin A is needed to fight infections from bacteria and viruses and is also essential for the regulation of inflammatory responses.

The new Dietary Reference Intake (DRI) recommendations suggest expressing vitamin A in terms of Retinol Activity Equivalents or RAEs [40]. Therefore, the amounts in µg of each fraction of retinol (animal sources) and carotenoids (vegetable sources) contributing to activity for vitamin A are

calculated in RAEs. It is well known that individual intake of vitamin A highly varies day by day. Thus, for this survey, comparisons with reference values or with other surveys are not appropriate since only one dietary recall was completed by participants. However, the data suggest that less than one person in four (24%) met the recommended vitamin A intake (EAR= 625 µg/d for men and 500 µg/d for women) the day before the interview (Appendix IV). Moreover, the intake does not seem to have improved since 1992, the median intake being 300 µg the day before the survey (Table 6). In 1992, vitamin A intake was also low among men and women of all age groups, particularly among older people.

Vitamin A intake did not vary significantly according to age and sex with the exception of women aged 50-74 years for which vitamin A intake was very low as compared with other women or men. The median vitamin A intakes did not vary according to level of education or job status nor by community size (data not shown). However, individuals living on the Ungava coast appeared to have higher intakes in vitamin A than residents on the Hudson Coast.

Table 6 Median and mean intakes of vitamins by age and sex, Nunavik, 2004

		Men			Women			Total
		18-29	30-49	50-74	18-29	30-49	50-74	
Vitamin A (Retinol activity equivalent) (µg)	Median (CI)	277 (224-325)	398 (323-520)	317 (224-388)	320 (240-362)	299 (254-337)	126 (82-239)	299 (277-327)
	Mean (SE)	343 (31)	537 (51)	716[E] (162)	360 (28)	337 (18)	342 (48)	428 (24)
Vitamin D: total (µg)	Median (CI)	1.9 (1.4-2.2)	2.8 (2.2-3.3)	1.9 (1.1-3.1)	1.8 (1.5-2.1)	1.9 (1.6-2.4)	1.3 (0.9-1.9)	2.0 (1.8-2.1)
	Mean (SE)	2.9 (0.4)	6.0[E] (1.5)	F	2.1 (0.2)	2.9 (0.2)	3.3[E] (0.8)	4.3 (0.7)
Vitamin C (mg)	Median (CI)	79.8 (60-106)	41.9 (35-56)	29.6 (9.2-44)	83.6 (47-107)	51.1 (38-60)	35.1 (13-60)	51.1 (43-60)
	Mean (SE)	145 (20)	105 (12)	75[E] (16)	119 (11)	89 (9.6)	77[E] (14)	106 (6.0)
Thiamin (mg)	Median (CI)	1.6 (1.4-1.7)	1.9 (1.6-2.0)	1.4 (1.2-1.7)	1.4 (1.2-1.5)	1.3 (1.2-1.4)	1.3 (1.0-1.7)	1.5 (1.4-1.6)
	Mean (SE)	1.9 (0.1)	1.9 (0.1)	1.6 (0.1)	1.5 (0.1)	1.4 (0.1)	1.5 (0.1)	1.7 (0.05)
Riboflavin (mg)	Median (CI)	2.1 (1.9-2.4)	2.6 (2.4-2.8)	2.1 (1.7-2.8)	1.9 (1.7-2.1)	2.0 (1.8-2.2)	1.7 (1.5-2.1)	2.1 (2.0-2.3)
	Mean (SE)	2.5 (0.1)	2.8 (0.1)	2.5 (0.2)	2.1 (0.1)	2.3 (0.1)	2.0 (0.1)	2.4 (0.06)
Niacin (NE)	Median (CI)	41.3 (38-47)	49.5 (44-55)	43.6 (32-53)	36.8 (34-40)	34.5 (31-38)	31.0 (27-37)	40.4 (38-43)
	Mean (SE)	49.7 (3.0)	54.7 (3.1)	47.9 (3.9)	41.1 (2.3)	40.2 (1.8)	36.7 (2.3)	46.0 (1.2)
Folate (DFE) (µg)	Median (CI)	395 (341-450)	468 (381-502)	390 (298-499)	352 (316-399)	290 (266-322)	346 (282-370)	362 (343-387)
	Mean (SE)	464 (30)	513 (26)	451 (33)	392 (24)	337 (15)	354 (23)	424 (11.2)
Vitamin B6 (mg)	Median (CI)	1.3 (1.2-1.5)	1.5 (1.3-1.6)	0.83 (0.6-1.2)	1.3 (1.1-1.4)	1.1 (1.0-1.3)	0.94 (0.8-1.2)	1.2 (1.2-1.3)
	Mean (SE)	1.6 (0.1)	1.7 (0.1)	1.3 (0.2)	1.4 (0.1)	1.2 (0.1)	1.2 (0.1)	1.4 (0.04)
Vitamin B12 (µg)	Median (CI)	3.5 (2.8-5.9)	6.0 (4.1-8.2)	4.1 (2.7-6.7)	3.6 (2.8-5.3)	5.0 (4.1-6.1)	7.2 (4.9-9.1)	4.6 (4.1-5.3)
	Mean (SE)	8.3 (0.9)	9.2 (0.8)	9.3[E] (1.6)	8.1 (1.2)	8.5 (0.9)	10.2 (1.6)	8.8 (0.5)

E Interpret with caution.
F Unreliable estimate.
Source: Nunavik Inuit Health Survey 2004.

4.2.2. Vitamin D

Vitamin D is essential for the growth and maintenance of bone tissues and teeth[38]. Vitamin D prevents osteoporosis by enhancing the absorption and retention of calcium. When the skin is exposed to the sun, vitamin D may be synthesized by the body. In Canada, vitamin D is added to milk and margarine in order to permit sufficient intake.

The day before the survey, the median intake of vitamin D was estimated at 2.0 µg for the Inuit adult population and globally, the men's intake was similar to that of the women. However, men aged 30-49 years had the highest vitamin D intakes as compared with the Inuit in the other sex/age groups (Table 6). Vitamin D intake appeared to be inadequate for 83% of individuals the day before the survey, the daily adequate intake being 5 µg for people aged 19-50 years and 10 to 15 µg for older people (Appendix IV). A greater proportion of Inuit women than men were below the acceptable intake level. Low vitamin D intake was also observed in 1992 and comparisons made between the surveys suggest that vitamin D intake was not different in 2004.

The median intakes of vitamin D did not vary according to level of education (data not shown). However, individuals having a job during the time of the survey had higher vitamin D intakes than individuals who did not work at that time. The median intake of vitamin D varied little by region. However, fewer individuals residing in small communities had an acceptable intake in vitamin D the day before the survey as compared with people living in large communities.

4.2.3. Vitamin C

Vitamin C is essential for several metabolic processes. It contributes to collagen synthesis, which is needed for connective tissues of the skin, ligaments and bones[38]. Vitamin C is involved in immune function, activates wound healing, participates in the formation of red blood cells and increases the absorption of dietary iron from vegetal sources. Vitamin C is also an important antioxidant. Intake in vitamin C should be higher among smokers, their body needs being greater.

The median intake of vitamin C among the Inuit has been estimated at 51 mg the day prior to the survey and the intakes of men and women were similar. However, Table 6 shows that vitamin C intake decreased significantly with age. More than half of adult population (57%) had insufficient vitamin C intake the day prior the survey, the EAR being 75 mg for men and 60 mg for women (Appendix IV). The proportion of inadequate intakes increased significantly with age, reaching 67% of individuals aged 50-74 years (data not shown). It is well known that the body's need for vitamin C is greater for smokers. However, the results showed that 69% of smokers had insufficient vitamin C intake the day prior to the interviews and the proportion increased significantly with age. Indeed, 89% of smokers aged 50-74 years had low vitamin C intake as compared to 60% and 73%, respectively, for people aged 18-29 years and 30-49 years.

When verifying vitamin C intake according to level of education, higher intakes of vitamin C were found among people in the highest level as compared with people in the lowest level; more individuals in the former group also had acceptable vitamin C intakes the day prior the survey (data not shown). No significant difference was found according to job status, region, or community size. Finally, a comparison of the data with that collected in 1992 revealed a slight but significant increase in vitamin C intake in 2004 and this increase was observed among all age groups.

4.2.4. Thiamin, Riboflavin and Niacin

Thiamin, also named vitamin B1, is essential for energy production, especially from carbohydrates[38]. It has an active role in the transmission of nervous impulses and is a factor in the normal growth process. Riboflavin or vitamin B2 also plays a role in energy metabolism. It contributes to the growth and repair of tissues, to hormonal production and to red blood cell structure. Niacin or vitamin B3 is involved in numerous metabolic reactions, particularly in energy production from dietary carbohydrates, lipids, proteins and alcohol. It plays a role in the process of DNA formation for normal growth and development.

In general, the day before the interview, Inuit men had higher intakes of thiamin, riboflavin and niacin than women, men aged 30-49 years having had the highest intake (Table 6). Intakes of thiamin and riboflavin were shown to be higher than those estimated in 1992, whereas no significant difference was observed for niacin. The day before the survey, the intakes of riboflavin and niacin appeared to be acceptable for 89% and 97% of the Inuit, respectively, and 75% of them had an adequate intake of thiamin. Individuals with the lowest level of education had lower intakes of thiamin than individuals in the other levels, whereas the median intakes of riboflavin and niacin did not vary according to these socio-demographic characteristics (data not shown). The median intakes of thiamin and niacin were similar among residents of Hudson and Ungava, and among people living in small versus large communities. Only riboflavin intake varied according to region, individuals from Ungava having higher riboflavin intakes than those from the Hudson coast.

4.2.5. Folate

Folate plays an important role for the production of genetic material and amino-acids[38]. It is essential in the formation of red blood cells, for nervous and immune system balance and for scarring. Folate contributes to the formation of new cells during phases of rapid growth such as childhood, teenage years and pregnancy (fetal development).

Dietary Folate Equivalents (DFEs) is now the most common unit of expression for folate. It comprises folic acid, the added synthetic form, and food folate, naturally occurring in food. The DFEs in the Inuit adult population the day before the survey have been estimated at 362 μg; men had significant higher intakes than women. The median intakes of DFEs did not vary among age groups but, as shown in Table 6, men aged 30-49 years had the highest intake. Insufficient folate intake was observed among 42% of individuals the day prior the survey (EAR = 320 μg/d for men and women), and the proportion reached 49% among women. The median intake of folate varied little according to socio-demographic characteristics (data not shown). Since the unit of expression for folate has changed since 1992, no statistical test was performed for temporal comparisons.

4.2.6. Vitamin B6 and Vitamin B12

Also named pyridoxine, vitamin B6 is an integral part of the coenzymes involved in protein and amino acid metabolism and in neurotransmitter synthesis[38]. Pyridoxine plays an important role in regulating mood. It also contributes to the formation of antibodies and red blood cells. Vitamin B12 or cobalamin is essential to growth, cell division and to nervous system balance. It plays a role in the synthesis of DNA and RNA, protein, myelin, red blood cells and glucose and lipid metabolism[38].

The median intake of vitamin B6 was relatively low the day before the survey (EAR = 1.1 mg/d for men and 1.3-1.4 mg/d for women, Appendix IV) and it was comparable to that observed in 1992. No difference in vitamin B6 intake was observed between men and women. However, the vitamin B6 intake of individuals aged 50-74 years was significantly lower than that of younger individuals (Table 6). In fact, 46% of individuals had a vitamin B6 intake that was lower than recommended and this proportion increased significantly with age, amounting to 64% among people aged 50-74 years.

The median intake of vitamin B12 was similar between men and women and did not vary according to age. Indeed, most men and women (72%) had acceptable vitamin B12 intakes the day prior to the survey, the EAR being 2.0 µg/d (Appendix IV). However, it appears that the intake of vitamin B12 estimated in 2004 is significantly lower than that observed in 1992.

The median intakes of vitamin B6 and vitamin B12 did not vary by level of education (data not shown). However, among individuals having less schooling there appeared to be fewer with an acceptable vitamin B6 intake than was the case among those with higher levels of education. Inuit workers had higher intakes of vitamin B6 than those who were unemployed, the latter being also more numerous to have insufficient vitamin B6 intake the day before the survey. Median intakes of vitamin B6 and B12 did not vary according to area of residence. However, a higher percentage of the Inuit from Hudson did not have an acceptable intake of either of these vitamins the day before the survey as compared with the Inuit living in Ungava.

4.2.7. Calcium, Magnesium and Phosphorus

Calcium, an integral component of bones, is the most abundant mineral in the body[38]. It contributes to bone and teeth formation and to their health. Calcium also has an essential role in blood coagulation, blood pressure balance and muscular contraction, for the heart, in particular. Magnesium is involved in bone mineralization, protein structure, the enzymatic process, muscular contraction, nervous impulse transmission, tooth health and immune system function. Phosphorus is the second most abundant mineral in the body. It has an essential role in bone and tooth formation, is involved in tissue growth and regeneration, and is a constituent of cell membranes.

Table 7 shows the mineral intakes of Inuit adults as estimated for the day before the survey. It demonstrates that the median intakes of calcium, magnesium and phosphorus of men were generally higher than those of women. Calcium intake did not vary significantly according to age group but a lower calcium intake was observed among men aged 50-74 years and women aged 30-49 years. Even though the calcium intake estimated in 2004 was significantly higher than that observed in 1992, the results also revealed that it was still lower than the acceptable intake level (AI = 1000 mg/d and 1200 mg/d for people aged < 50 years and ≥ 50 years, respectively). In fact, 93% of individuals had a calcium intake lower than the recommended level the day before the survey, the percentage reaching 96% among women. Furthermore, more people with the highest level of education had acceptable calcium intakes than did individuals with the lower levels (data not shown).

Magnesium intake was also higher than that estimated in 1992. However, the intake of nearly 80% of the Inuit was lower than is recommended, the EAR varying between 330-350 mg/d for men and 255-265 mg/d for women). This was the case, in particular, for Inuit aged 50-74 years (85%) and with the lowest level of education (87%). For phosphorus, nearly 90% of individuals had a sufficient intake the day before the survey; the intakes observed in 2004 were comparable to those in 1992. The median intakes of calcium and phosphorus did not vary according to level of education nor by job status (data

not shown). In contrast, individuals with the highest level of education and those who had a job had higher magnesium intakes as compared with people in the other population groups. The intakes of calcium, magnesium and phosphorus did not vary according to region or community size.

Table 7 Median and mean intakes of minerals and caffeine by age and sex, Nunavik, 2004

		Men			Women			Total
		18-29	30-49	50-74	18-29	30-49	50-74	
Calcium (mg)	Median	516	574	434	445	357	437	439
	(CI)	(431-561)	(512-616)	(343-497)	(403-467)	(325-390)	(345-458)	(418-466)
	Mean	560	611	541	453	428	421	511
	(SE)	(33)	(33)	(52)	(23)	(27)	(28)	(14)
Magnesium (mg)	Median	225	242	209	205	198	187	213
	(CI)	(212-243)	(221-263)	(166-238)	(176-225)	(182-210)	(168-220)	(203-223)
	Mean	250	262	235	227	212	193	234
	(SE)	(14)	(13)	(19)	(11)	(7.0)	(11)	(5.3)
Phosphorus (mg)	Median	1173	1391	1297	1071	1082	1147	1175
	(CI)	(1074-1240)	(1234-1590)	(1087-1533)	(956-1202)	(989-1145)	(995-1285)	(1139-1226)
	Mean	1356	1476	1484	1160	1140	1174	1302
	(SE)	(74)	(78)	(121)	(54)	(43)	(62)	(31)
Iron (mg)	Median	14.8	17.8	15.2	14.7	12.9	14.9	15.1
	(CI)	(13-18)	(16-21)	(13-21)	(12-17)	(12-15)	(13-18)	(14-16)
	Mean	18.0	21.0	23.4	18.4	17.5	20.8	19.5
	(SE)	(1.0)	(1.3)	(2.3)	(1.9)	(1.0)	(2.0)	(0.6)
Zinc (mg)	Median	10.8	12.6	9.3	9.7	9.5	8.3	10.4
	(CI)	(10-12)	(11-14)	(7.1-12)	(8.9-11)	(8.7-10)	(7.0-12)	(9.8-11.2)
	Mean	13.0	14.2	12.0	11.8	12.5	10.1	12.6
	(SE)	(1.0)	(0.8)	(1.0)	(0.7)	(1.1)	(0.7)	(0.4)
Selenium (µg)	Median	102	121	124	97.3	89.2	89.4	104
	(CI)	(89-116)	(109-135)	(93-160)	(79-113)	(81-104)	(75-126)	(97-112)
	Mean	119	147	154	111	105	112	124
	(SE)	(7.2)	(10)	(20)	(7.3)	(5.1)	(9.2)	(4.1)
Sodium (mg)	Median	2772	3290	2349	2812	2458	1994	2682
	(CI)	(2512-3107)	(3020-3570)	(1937-2642)	(2427-2996)	(2184-2761)	(1798-2328)	(2521-2826)
	Mean	3455	3639	2784	2951	2713	2514	3094
	(SE)	(190)	(181)	(227)	(138)	(99)	(172)	(78)
Caffeine (mg)	Median	161	237	238	149	243	237	226
	(CI)	(144-201)	(216-284)	(237-296)	(124-169)	(226-278)	(161-252)	(208-237)
	Mean	202	287	327	197	312	250	262
	(SE)	(15)	(17)	(26)	(18)	(16)	(21)	(7.2)

Source: Nunavik Inuit Health Survey 2004.

4.2.8. Iron, Zinc and Selenium

Iron is an integral part of hemoglobin, which carries oxygen to the cells for the production of energy[38]. Zinc is involved in the genetic process, immune response and the transport of vitamin A. It participates in taste perception, the scarring process, sperm synthesis and fetal growth. Selenium has an important role as an antioxidant. It also contributes to the activation of thyroid hormones.

The day before the survey, the median intake of iron was higher in men than in women and did not vary according to age (Table 7). Nearly 88% of the Inuit had acceptable iron intakes (during that day) and a lower proportion of women (81%) than men (93%) met the recommended intake level on this day (Appendix IV). The median iron intake estimated in 2004 was comparable to that observed in 1992. Although median intake of iron did not vary significantly according to region or community size, more of the Inuit residing in Hudson and more of those in large communities had unacceptable iron intakes (data not shown). The zinc intake was higher among men than among women but did not vary by age group, educational level or job status. Nearly 34% of the individuals did not have an

acceptable zinc intake the day before the survey this was the case for older men, in particular. The zinc intake was higher in 2004 than that observed in 1992.

The day prior to the survey, the median selenium intake of the Inuit was estimated at 104 µg and most of them (88%) had an acceptable intake level (EAR = 45 mg/d). The median intake of selenium among Inuit men was higher than that among women but did not vary by age group, level of education, job status or place of residence. Selenium intake was not calculated in 1992, but a previous study using 1992 data indicates that selenium intake was higher in 1992, particularly among men[41].

4.2.9. Sodium

Sodium is the main body electrolyte needed for osmotic pressure and water balance[38]. A diet high in sodium may increase blood pressure and may increase the risk of cardiovascular and renal diseases.

The day before the survey, the median intake of sodium was higher in men than in women and men aged 30-49 years had the highest intake among all sex/age groups (Table 7). More than half of the Inuit (61%) had excessive sodium intake (≥ 2300 mg/d) and the proportion was higher among individuals aged 18-49 years as compared with older people. In fact, 72% of the men aged 30-49 years showed an excessive sodium intake during the day surveyed. The median intake of sodium was also higher among individuals with the highest level of education than among those at the lower levels (data not shown). Sodium intake did not vary according to job status or place of residence. Finally, a comparison of the sodium intake with that estimated in 1992 revealed that the sodium intake was significantly higher in 2004.

4.2.10. Caffeine

Caffeine is not a nutrient but a xanthine alkaloid compound that acts as a stimulant in humans. Caffeine is called theine when found in tea. Caffeine is a central nervous system stimulant, having the effect of temporarily warding off drowsiness and restoring alertness. Beverages such as coffee, tea, soft drinks and energy drinks, as well as chocolate and some medicinal drugs contain caffeine in various concentrations. It is generally recommended to limit the consumption of caffeine to about 400 to 450 mg per day, the equivalent of 3 cups of coffee per day (one cup equals 8 ounces or 237 ml)[42].

The median intake of caffeine the day before the survey was estimated at 226 mg and there was no significant difference between the intakes of Inuit men and women. However, caffeine intake of men and women aged 30-74 years was much higher than that observed among younger people (Table 7). Individuals with the lowest level of education had higher caffeine intake as compared with more educated individuals but employment was not associated with caffeine intake or with place of residence (data not shown). Finally, the results revealed that caffeine intake among Inuit adults was higher in 1992 than in 2004.

4.3. FOOD CONSUMPTION

This section presents the food consumption of the Inuit adults the day before the survey. Foods were classified according to the four food groups in Canada's Food Guide: First Nations, Inuit and Métis (CFG): meats and alternatives, milk products, vegetables and fruit and grain products[36] (Appendix V). The "Other foods" category was defined to include foods such as fats, sweets, beverages. Food group consumption was compared to the suggested daily servings in the CFG. The contribution of the food

groups to energy and nutrient intakes was also examined as well as the contribution of traditional foods and store-bought foods. Special consideration was given to sweet food intake since these foods may be a primary determinant of some increasing diseases in Nunavik such as diabetes, CVD or obesity. Finally, energy and food group distribution was analyzed according to meals consumed the day before the interview.

4.3.1. Meat and alternatives

The meat and alternatives group includes store-bought meats, such as beef, pork, chicken, canned fish and processed meats; and traditional foods, e.g. country meats such as caribou, fish and seafood, seal, beluga or birds; and alternatives, such as eggs, nuts, seeds and legumes. The CFG suggests two daily servings of meat and alternatives for women and three servings for men.

During the day before the survey, the median number of servings of meat and alternatives was 3.4 (Table 8). Men ate more foods from the meat and alternatives group than did women, but meat consumption did not vary according to age. Nearly 75% of Inuit adults consumed at least two servings of meat and alternatives during the day prior to the survey and 41% of men consumed four servings or more that day (Table 9). Inversely, 29% of women consumed fewer than two servings compared to 21% of the men. In general, the consumption of meat and alternatives did not vary according to other socio-demographic characteristics (data not shown). However, a higher proportion of the Inuit who had a job (43%) ate four servings or more of meat and alternatives as compared with 33% of those who did not work. Inversely, a higher proportion of unemployed persons (33%) than working individuals (22%) did not eat at least two servings of meat and alternatives.

Table 8 Median and mean number of servings consumed for the four food groups by age and sex, Nunavik, 2004

		Men			Women			Total
		18-29	30-49	50-74	18-29	30-49	50-74	
Meat and alternatives	Median (CI)	3.2 (2.8-3.8)	4.1 (3.7-4.7)	3.4 (2.7-4.6)	2.8 (2.5-3.5)	3.3 (2.8-3.6)	3.3 (2.6-3.7)	3.4 (3.2-3.7)
	Mean (SE)	4.0 (0.3)	4.8 (0.3)	4.3 (0.5)	3.4 (0.2)	3.7 (0.2)	3.4 (0.2)	4.0 (0.1)
Milk products	Median (CI)	0.22 (0.1-0.4)	0.19 (0.1-0.3)	0.03 (0-0.2)	0.19 (0.1-0.4)	0.1 (0.1-0.2)	0.08 (0-0.1)	0.13 (0.1-0.2)
	Mean (SE)	0.64[E] (0.1)	0.60 (0.1)	0.44[E] (0.1)	0.49 (0.1)	0.57 (0.1)	0.22[E] (0.05)	0.53 (0.04)
Vegetables and fruit	Median (CI)	2.0 (1.7-2.6)	2.0 (1.4-2.2)	0.79 (0.2-1.9)	1.6 (1.3-2.3)	1.9 (1.4-2.3)	1.9 (0.6-2.4)	1.8 (1.5-2.0)
	Mean (SE)	3.7 (0.5)	2.9 (0.3)	2.3[E] (0.4)	3.4 (0.3)	2.7 (0.2)	2.3 (0.4)	3.0 (0.2)
Grain products	Median (CI)	4.3 (3.8-5.8)	5.4 (4.9-6.6)	4.2 (3.6-5.8)	4.3 (3.5-4.9)	3.2 (2.8-3.7)	5.0 (4.3-5.6)	4.3 (4.1-4.8)
	Mean (SE)	5.7 (0.4)	6.7 (0.4)	5.3 (0.5)	4.7 (0.3)	4.0 (0.2)	4.9 (0.3)	5.3 (0.2)

E Interpret with caution.
Source: Nunavik Inuit Health Survey 2004.

Table 9 Distribution of Inuit population according to the number of servings consumed for each food group by age and sex, Nunavik, 2004

	Men			Women			Total
	18-29	30-49	50-74	18-29	30-49	50-74	
	%			%			%
Meat and alternatives							
0 - < 2 servings	29.6	12.1[E]	24.6[E]	31.0	27.6	26.7[E]	24.7
2 - < 3 servings	17.0[E]	19.5[E]	16.6[E]	23.4[E]	18.8	19.9[E]	19.2
3 - < 4 servings	13.0[E]	16.7[E]	15.7[E]	13.5[E]	15.3[E]	19.3[E]	15.3
4 and + servings	40.4	51.8	43.1	32.1	38.3	34.1[E]	40.8
Milk products							
0	32.9	29.0	48.4	26.4	31.7	46.9	33.7
> 0 - < 1 servings	50.3	53.4	35.7[E]	59.1	51.8	46.1	50.8
1 - < 2 servings	9.9[E]	9.9[E]	F	9.6[E]	8.9[E]	F	9.4
2 and + servings	6.9[E]	7.7[E]	F	F	7.6[E]	F	6.1
Vegetables and fruit							
0 - < 3 servings	61.2	69.6	75.1	62.8	64.2	71.8	66.5
3 - < 5 servings	17.2[E]	14.9[E]	F	8.4[E]	21.5	19.0[E]	15.4
5 - < 7 servings	F	F	F	12.5[E]	6.8[E]	F	6.9
7 and + servings	16.8[E]	8.6[E]	F	16.3[E]	7.6[E]	F	11.2
Grain products							
0 - < 4 servings	41.4	34.9	43.9	43.7	60.5	35.2[E]	44.2
4 - < 6 servings	21.2[E]	20.4[E]	23.9[E]	26.9	17.0	39.2	23.0
6 - < 8 servings	11.5[E]	14.5[E]	F	11.8[E]	10.2[E]	16.4[E]	12.4
8 and + servings	25.8	30.2	20.5[E]	17.6[E]	12.3[E]	F	20.4

E Interpret with caution.

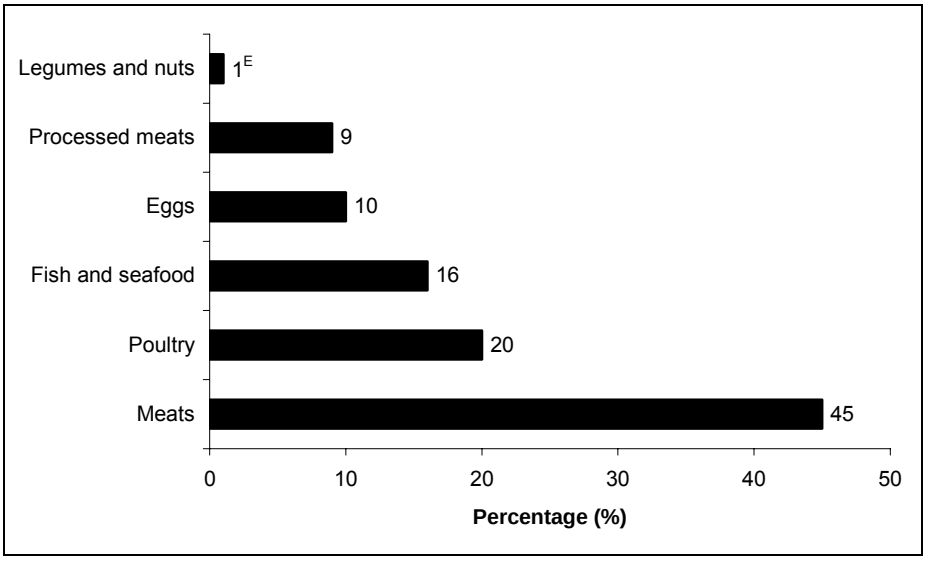
F Unreliable estimate.

Source: Nunavik Inuit Health Survey 2004.

4.3.1.1. Specific foods

The day before the interview, meats including store-bought meats and country meats contributed to 45% of the meat and alternatives group (Figure 3). Beef and pork were the most popular store-bought meats consumed during that day. Poultry accounted for about 20% of total consumption followed by fish and seafood (16%). Alternatives such as eggs, legumes, seeds and nuts represented 11% and processed meats accounted for 9% of the total consumption of foods from the meat and alternatives group. Also of note, the contribution of processed meats was much higher among young people than among people aged 50-74 years. Inversely, the contribution of fish was lower among individuals aged 18-49 years as compared with older individuals.

Figure 3 Distribution of foods from the meat and alternatives group consumed the day before the survey, Nunavik, 2004



E Interpret with caution.

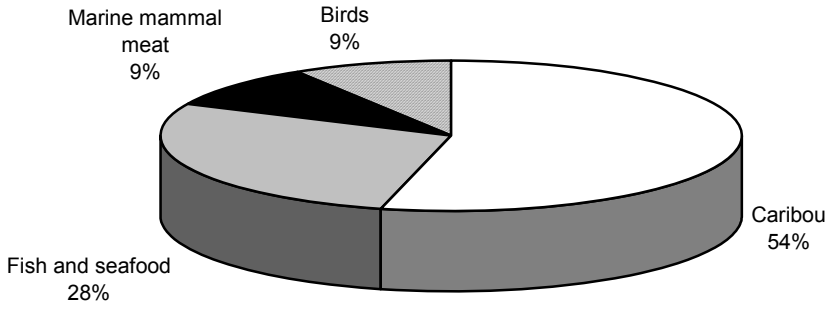
Source: Nunavik Inuit Health Survey 2004.

4.3.1.2. Country meats, fish and birds

The total consumption (median intake) of country meats, fish, seafood and birds the day before the interview was estimated at 136 grams. The consumption of these traditional foods did not vary according to sex but the Inuit aged 50-74 years had significantly higher consumption of these foods (207 grams) than the Inuit aged 18-29 years (77 grams) or those aged 30-49 years (132 grams).

Traditional foods accounted for 48% of the meat and alternatives group and caribou, followed by fish and seafood, contributed the most to this intake (Figure 4). The contribution of traditional foods to the total consumption of meat and alternatives did not vary according to sex but a variation appears among age groups. The contribution of caribou was higher among younger individuals as compared with individuals aged 50-74 years (data not shown). Inversely, the contribution of fish and seafood, marine mammal meat and birds to the total traditional food consumption appeared to be lower among younger people as compared with older Inuit but the difference was not significant.

Figure 4 Distribution of traditional foods included in the meat and alternatives group consumed the day before the survey, Nunavik, 2004



Source: Nunavik Inuit Health Survey 2004.

4.3.2. Milk products

Milk products include milk, cheese and yogurt. The CFG recommends a daily consumption of two servings of milk products for adults aged 19-50 years and three servings for those aged 51 years and over (Appendix V). The day before the survey, 66% of the Inuit consumed milk products. However, the median number of milk product servings was as low as 0.1 serving (Table 8). In fact, only 6% of the Inuit adult population consumed the recommended number of servings during that day (Table 9). The consumption of milk products was similar among men and women but significant differences were observed according to age. In fact, even though the dairy product consumption was very low in all age groups, nearly 90% of individuals aged 50-74 years did not consume at least one serving and, 48% of them did not consume any milk products at all. Most of the younger Inuit (62%) did not consume the minimum recommended two daily servings. Results also revealed that milk product consumption was associated with level of education. Only 3% of people with the lowest level of education consumed the minimum recommended servings as compared to 12% people with more schooling.

4.3.2.1. Specific foods

Milk contributed 66% of the total milk product consumption the day before the survey whereas cheese and yogurt represented 27% and 3% of the consumption, respectively. Partly skimmed milk (2% fat) was most often consumed, being used mainly with tea and coffee. However, coffee whitener, which is not a dairy product, was consumed by 40% of the Inuit.

4.3.3. Vegetables and fruit

The vegetables and fruit group includes fresh, frozen, cooked or canned fruit and vegetables as well as fresh fruit or vegetable juices. The CFG recommends a minimum of seven to eight servings per day (Appendix V). The day before the survey, nearly 45% of the Inuit consumed fruit and 71% consumed vegetables. Table 8 shows that the median number of servings was only 1.8 serving for Inuit adults. Furthermore, only 11% of individuals consumed the recommended minimum of seven servings during that day (Table 9).

The consumption of fruit and vegetables was similar among men and women and it decreased with age. In fact, 74% of people aged 50-74 years consumed fewer than three servings of vegetables and fruit as compared to 62% of individuals aged 18 and 29 years. More individuals having a higher level of education than those in other categories ate the suggested number of servings (data not shown).

4.3.3.1. Specific foods

Fruit, especially fruit juices, contributed the most to the total consumption in the vegetables and fruit group. Indeed, fruit juices accounted for 60% of fruit consumed the day before the survey. The consumption of citrus fruit was negligible whereas other fruit such as apples, bananas and berries accounted for about 40% of the fruit consumption. Potatoes were the most popular vegetable consumed and accounted for 38% of the vegetable consumption during that day. French fries represented 25% of the potato consumption or 12% of the total vegetable consumption. Orange vegetables (especially carrots and turnip) accounted for 11% of vegetable intake consumed as compared to only 1%[E] for dark-green vegetables such as broccoli, spinach, lettuce.

4.3.4. Grain products

Grain products include foods such as bread, pasta, rice, hot or cold cereals and a diversity of baked products. The CFG suggests women eat 6-7 servings of grain products daily for women and 7-8 servings for men (Appendix V). The day before the survey, 96% of Inuit adults ate grain products and the median number of servings was 4.3 servings (Table 8). About 44% of the Inuit consumed fewer than four servings of grain products during that day whereas 12% consumed 6-7 servings and 20% ate at least eight servings. In other words, 67% of the Inuit did not consume the recommended number of servings. Moreover, nearly 75% of women and 61% of men consumed fewer than six servings of grain products.

4.3.4.1. Specific foods

Only 4% of people ate whole-grain products whereas 96% consumed refined products. White bread and white flour contributed to about 60% of the total consumption of grain products; pasta and rice represented 20% of the consumption; cereals, cookies and crackers accounted for 14%. It is interesting to note that high-fat grain products such as donuts, pancakes, cakes and pies were not consumed to a great extent during the day before the survey; these foods accounted for about 10% of the total intake of grain products.

4.3.5. "Other foods" category

The "Other foods" category is a broad category covering foods and beverages that are not part of the four major groups[39]. It includes fat-based items such as butter, shortening, country fat (blubber/misirak) and cooking oils; sweets such as sugar, jam, honey, syrup and candies; high-fat and/or high-salt foods such as chips (potato, corn, etc.); beverages such as soft drinks, tea, coffee and alcohol; and herbs and condiments such as pickles, mustard and ketchup. The CFG recommends moderate consumption of items in the "Other food" category.

Table 10 shows the median and mean amounts of some foods and drinks consumed the day before the survey and classified in the "Other food" category. Since less than 50% of the participants did not consume snacks, margarine/oil and country fat (blubber, misirak) the day before the survey, median intakes for the total adult population can not be estimated. However, median intakes were estimated

for consumers. For the total adult population, the median consumption of sweet beverages including sodas (soft drinks) and fruit beverages amounted to 370 ml during that day. In fact, more than half of the Inuit adults drank these beverages during that day and consumption was significantly higher among younger individuals as compared with older people. Indeed, the median consumption of sweetened sodas was as high as 740 ml among men and women aged 18-29 years. It is interesting to note that among consumers of sweet beverages, the mean amount consumed was estimated at 925 ml (Table 10). Median sugar consumption (including sugar, syrups, preserves, honey, etc.) was estimated at 16.3 grams for the total adult population and amounted to 24.2 grams among consumers. Consumption was lower among young people, the highest consumption being observed among individuals aged 30-49 years. The median consumption of snacks among consumers was 50 grams for the day interviewed and consumption appeared to be higher among young people.

Butter was the main fat spread used by the Inuit (59%) whereas margarine and country fat were consumed by only 17% and 13% of individuals, respectively. Among consumers, the median amount of country fat consumed was estimated at 14.4 grams compared to 10.2 grams for butter and 5.6 grams for margarine and oil. The consumption of these fats among consumers did not vary according to sex or age.

Table 10 Median and mean amount of foods and drinks in the "Other foods" category consumed by the total adult population and by consumers, Nunavik, 2004

Food/drink	Median		Mean	
	Total population	Consumers	Total population	Consumers
Sweet beverages (ml)	370	740	630	925
Sugar, syrups, preserves (g)	16.3	24.2	26.6	34.9
Snacks (g)	F	50.0	23.8	60.3
Butter (g)	3.6	10.2	8.3	14.8
Margarine and oil (g)	F	5.6	4.2	11.0
Country fat (g)	F	14.4	3.4	27.5

F Unreliable estimate.

Source: Nunavik Inuit Health Survey 2004.

4.4. CONTRIBUTION OF FOOD GROUPS TO ENERGY AND NUTRIENT INTAKE

The contribution of food groups to energy and nutrient intake was examined in order to verify their main food sources among the Inuit adult population. Table 11 shows the percentage distribution of sources of energy, protein, carbohydrates, lipids and dietary fibre the day before the survey.

4.4.1. Contribution of food groups to energy intake

The day before the survey, the "Other foods" category was the main source of calories (36%), followed by meat and alternatives (30%), grain products (22%), vegetables and fruit (9%) and milk products (3%) (Table 11). Figure 5 illustrates that the "Other foods" category and the "Meat and alternatives" group supplied 66% of energy intake.

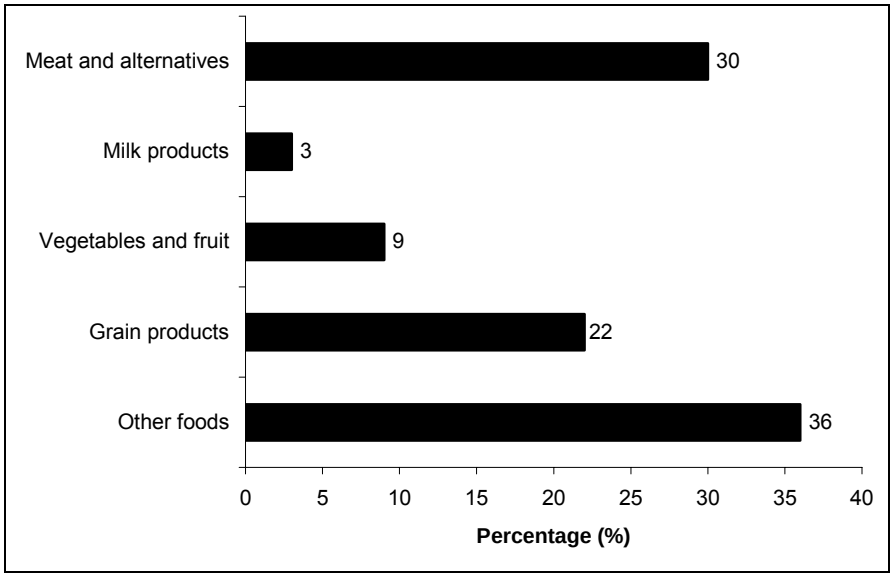
Table 11 Contribution of food groups to energy and macronutrient intake, Nunavik, 2004

	Energy (CI)	Protein (CI)	Carbohydrate (CI)	Lipid (CI)	Fibre (CI)
			%		
Meat and alternatives	29.7	70.4	1.9	41.8	2.0
	(28-31)	(69-72)	(1.5-2.4)	(40-43)	(1.5-2.4)
Milk products	3.2	5.4	1.8	5.6	F
	(2.9-3.6)	(4.7-6.1)	(1.5-2.1)	(4.9-6.2)	--
Vegetables and fruit	8.9	4.1	16.3	3.0	34.7
	(8.2-10)	(3.7-4.5)	(15-18)	(2.5-3.5)	(33-37)
Grain products	22.3	15.2	36.2	8.4	49.4
	(21-23)	(14-16)	(35-38)	(7.6-9.2)	(47-52)
"Other foods"	35.9	5.0	43.8	41.2	13.7
	(35-37)	(4.4-5.5)	(42-45)	(39-43)	(13-15)

F Unreliable estimate.

Source: Nunavik Inuit Health Survey 2004.

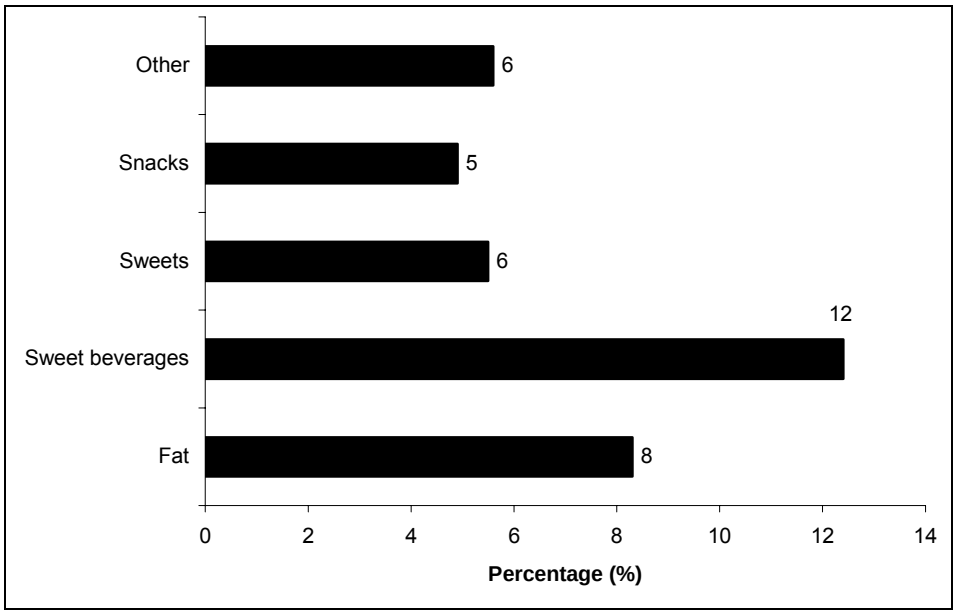
Figure 5 Contribution of food groups to energy intake, Nunavik, 2004



Source: Nunavik Inuit Health Survey 2004.

The contribution of specific foods included in the "Other foods" category to energy intake is shown in Figure 6. Sweet beverages contributed to about 12% of the total energy intake, soft drinks accounting for 9% and fruit drinks for 3%. Sugar, syrups and preserves supplied nearly 6% of the energy intake. Snacks, such as potato chips and chocolate bars, accounted for 5% of energy intake. A combination of shortening and country fat was the greatest contributor of energy (4%) followed by butter (3%), margarine and vegetable oil (1%).

Figure 6 Contribution of foods and drinks included in the "Other foods" category to energy intake, Nunavik, 2004



Source: Nunavik Inuit Health Survey 2004.

Table 12 Foods and drinks in the "Other foods" category contributing the most to energy intake, Nunavik, 2004

Food/drink	Percentage (%)
Soft drinks	9.0
Sugar, syrups, preserves	5.5
Fruit drinks	3.4
Potato chips	3.2
Butter	2.8
Shortening	2.6
Chocolate bars	1.7
Country fat	1.5
Margarine	0.7
Vegetable oil	0.7

Source: Nunavik Inuit Health Survey 2004.

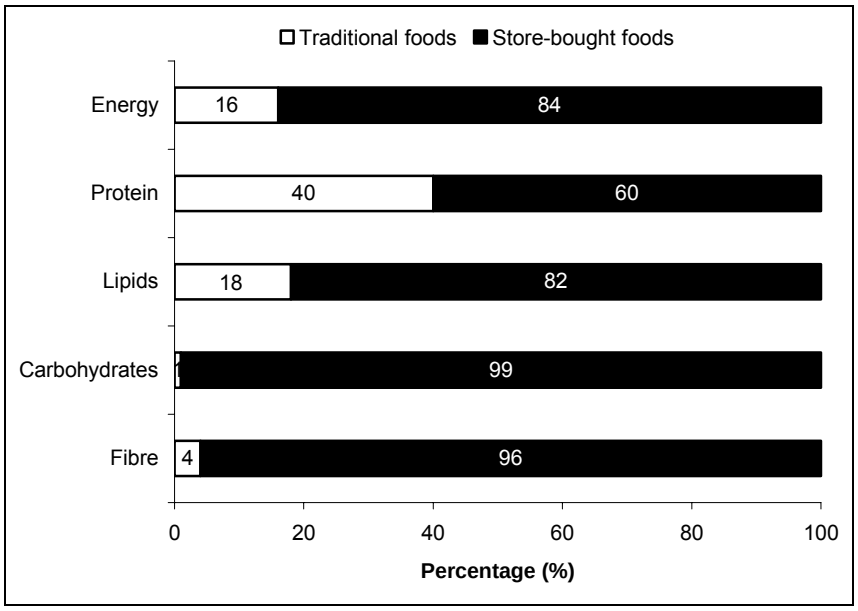
As regards the meat and alternatives group, meats including traditional meats and store-bought meats contributed the most to energy intake, followed by poultry, fish and eggs. In the group of grain products, bread, followed by flour, pasta and rice contributed the most to energy intake.

The contribution of meat and alternatives and grain products to energy intake in 2004 appears to be similar to that observed in 1992 (data not shown). Moreover, the contribution of milk products was also low in 1992. The contribution of fruit and vegetables to energy intake was slightly higher in 2004 (9%) than in 1992 (5%). Inversely, the contribution of the "Other foods" category was estimated at 42% in 1992 as compared to 36% in 2004.

4.4.1.1. Contribution of traditional foods versus store-bought foods to energy intake

Figure 7 shows the relative contribution of traditional foods and store-bought foods to energy and macronutrient intake the day before the survey. The contribution of traditional foods during that day was estimated at 16% as compared to 84% for store-bought foods. The contribution of traditional foods to energy intake increased significantly with age. Indeed, among people aged 18-29 years, the contribution (mean percentage) was 10.8% (8.9-12.6%), among individuals aged 30-49 years it was 15.2% (13.2-17.2%) and, among the elders, the percentage was as high as 28.3% (24.4-32.2%). The contribution of traditional foods to energy intake was also higher among the Inuit with the lowest level of education (26.6%) as compared with more schooling (11.7%). The contribution of traditional foods to energy intake was higher in 1992 (21%) than in 2004. Indeed, in 1992, traditional foods contributed more to the energy intake of the Inuit aged 18-49 years than in 2004, whereas the contribution was similar among the Inuit aged 50-74 years.

Figure 7 Contribution of traditional foods and store-bought foods to energy and macronutrient intake, Nunavik, 2004

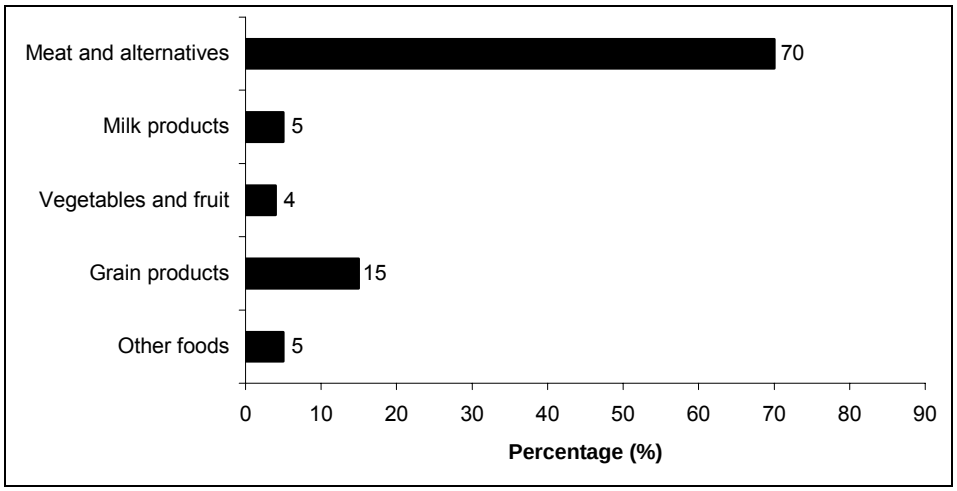


Source: Nunavik Inuit Health Survey 2004.

4.4.2. Contribution of food groups to protein intake

As expected, the group of meat and alternatives contributed the most to protein intake (Figure 8). Food sources of protein were mainly store-bought meats and alternatives. Meats, such as beef, pork, processed meats and poultry supplied about 28% of protein (Table 13). Traditional foods supplied 40% of protein (Figure 7). Among these, caribou and fish were the main traditional food sources of protein. Indeed, the contribution of traditional foods to protein intake increased significantly with age and was 58% among the Inuit aged 50-74 years as compared with 32% among the Inuit aged 18-29 years. The contribution of traditional foods to protein intake was significantly higher (56%) among individuals having less formal education as compared with people with the highest education level (31%). Finally, grain products supplied 15% of protein, and bread, flour and pasta were the main sources.

Figure 8 Contribution of food groups to protein intake, Nunavik, 2004



Source: Nunavik Inuit Health Survey 2004.

Table 13 Foods from the meat and alternatives group contributing the most to protein intake, Nunavik, 2004

Food	Percentage (%)
Caribou	21.5
Poultry	14.6
Fish and seafood	10.5
Beef and pork	9.8
Eggs	4.3
Processed meats	4.0
Birds	4.0
Marine mammal meat	3.8[E]

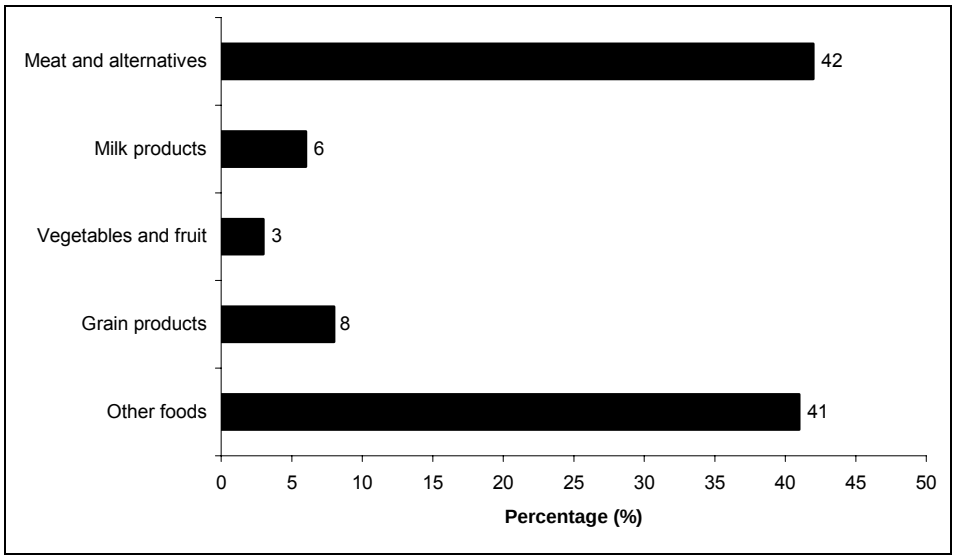
E Interpret with caution.

Source: Nunavik Inuit Health Survey 2004.

4.4.3. Contribution of food groups to lipid intake

Figure 9 shows that the meat and alternatives group and the "Other foods" category supplied lipids in almost equal proportions the day before the survey. In the group of meat and alternatives, meats (including store-bought and country meats) followed by poultry, processed meats, eggs and fish were the main sources of lipids (Table 14). In the category of "Other foods", spread fat contributed to 12% of total lipid intake, butter accounting for about 10% and margarine for about 2%. Shortening supplied 9% of lipid intake as compared to about 4% for marine mammal fat and 2.5% for vegetable oil. Snacks represented 9% of the total lipid intake the day prior to the survey.

Figure 9 Contribution of food groups to lipid intake, Nunavik, 2004



Source: Nunavik Inuit Health Survey 2004.

Table 14 Foods from the meat and alternatives group and the "Other foods" category contributing the most to lipid intake, Nunavik, 2004

Food	Percentage (%)
Meats (store-bought and country meats)	16.0
Poultry	9.9
Processed meats	5.7
Eggs	5.0
Fish	3.8
Butter	9.6
Shortening	9.4
Snacks	9.0
Marine mammal fat	3.7
Vegetable oil	2.5
Margarine	2.4

Source: Nunavik Inuit Health Survey 2004.

Table 15 shows that fatty acids were mostly supplied by the meat and alternatives group and the "Other foods" category. The group of meat and alternatives contributed the most to the MUFA, n-3 PUFA and EPA plus DHA intakes. In fact, 41% and 54% of n-3 PUFA and EPA+DHA were supplied by traditional foods (Figure 10). It is important to note that 41% of individuals did not consume sources of EPA and DHA the day before the survey. The main traditional food sources of EPA and DHA were fish (25%), marine mammal meat (7%), birds (4%) and marine mammal fat (10%). Traditional foods also supplied 20% of the total MUFA and 17% of PUFA and the main contributors of the fatty acid categories were caribou and fish. The contribution of traditional foods to fatty acids increased significantly with age (data not shown). Effectively, the contribution of traditional foods to

fatty acid intake of the Inuit aged 50-74 years was, for most of fatty acid categories, twice as high as that observed among young people. Indeed, traditional foods supplied as high as 75% of EPA and DHA among older Inuit as compared with 44% among the Inuit aged 18-29 years.

In the "Other foods" category, butter, shortening and country fat supplied 13% and 15% of the total SFA, respectively. Snacks contributed to 8% of the SFA intake. Moreover, snacks accounted for 14% of the n-6 PUFA intake, shortening for 9%, oils and margarine for 7%. MUFA were mainly supplied by country fat (3%), snacks (8%), oils and margarine (6%). N-3 PUFA was supplied by country fat (7%) and margarine and oils (10%). Country fat also contributed to 10% of EPA+DHA intake. Store-bought foods were also the main sources of cholesterol (Figure 10) and meats, eggs and poultry contributed the most to the intake. In the "Other foods" category, butter followed by other animal fat was the main source of cholesterol. Finally, as expected, foods included in the "Other foods" category mostly supplied trans fatty acids, which are mainly found in store-bought foods, especially in butter and shortening.

Table 15 Contribution of food groups to fatty acid and cholesterol intake, Nunavik, 2004

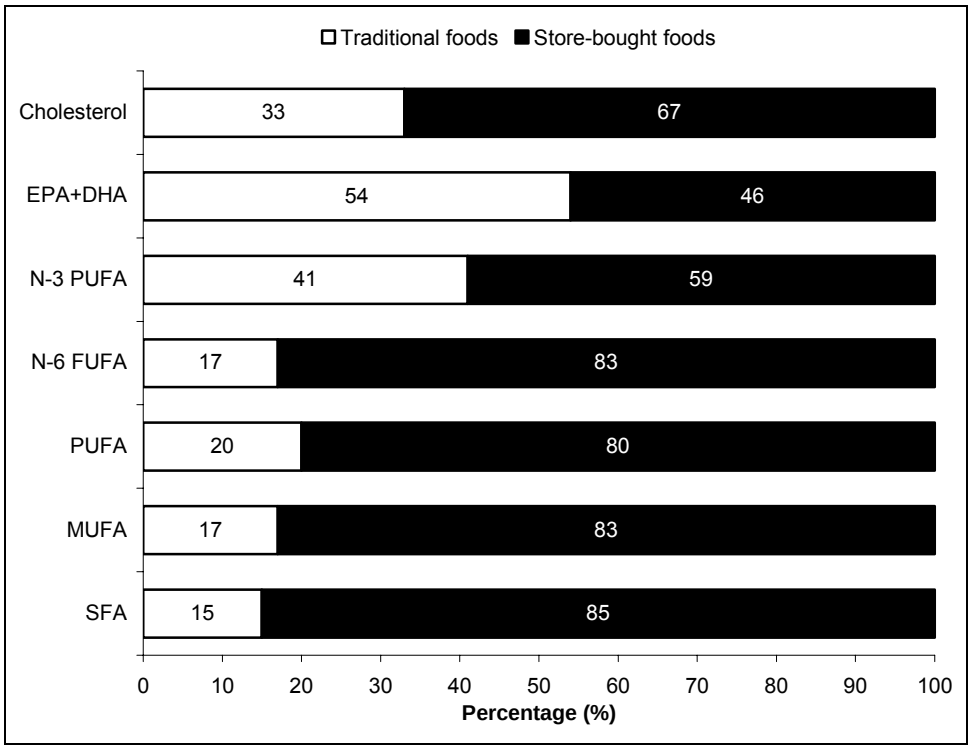
	Meat and alternatives (CI)	Milk products (CI)	Vegetables and fruit (CI)	Grain products (CI)	Other foods (CI)
			%		
SFA	39.9 (38-42)	9.4 (8.3-11)	1.9 (1.5-2.3)	5.3 (4.7-6.0)	43.4 (42-45)
MUFA	45.3 (43-47)	4.3 (3.8-4.9)	3.1 (2.4-3.7)	7.0 (6.2-7.9)	40.3 (38-42)
PUFA	40.2 (38-42)	1.3 (1.1-1.4)	4.4 (3.7-5.0)	16.4 (15-18)	37.8 (36-40)
N-6 PUFA	38.4 (37-40)	1.2 (1.0-1.4)	4.7 (4.0-5.4)	17.9 (17-19)	38.4 (36-40)
N-3 PUFA	50.7 (48-53)	2.6 (2.2-3.0)	3.6 (3.0-4.2)	11.3 (10-12)	31.8 (30-34)
EPA+DHA	88.9 (87-91)	0	F	F	10.2 (8-12)
Cholesterol	79.3 (77-81)	6.4 (5.4-7.4)	F	2.8 [E] (1.7-3.8)	11.3 (9.8-13)

E Interpret with caution.

F Unreliable estimate.

Source: Nunavik Inuit Health Survey 2004.

Figure 10 Contribution of traditional foods and store-bought foods to fatty acid and cholesterol intakes, Nunavik, 2004



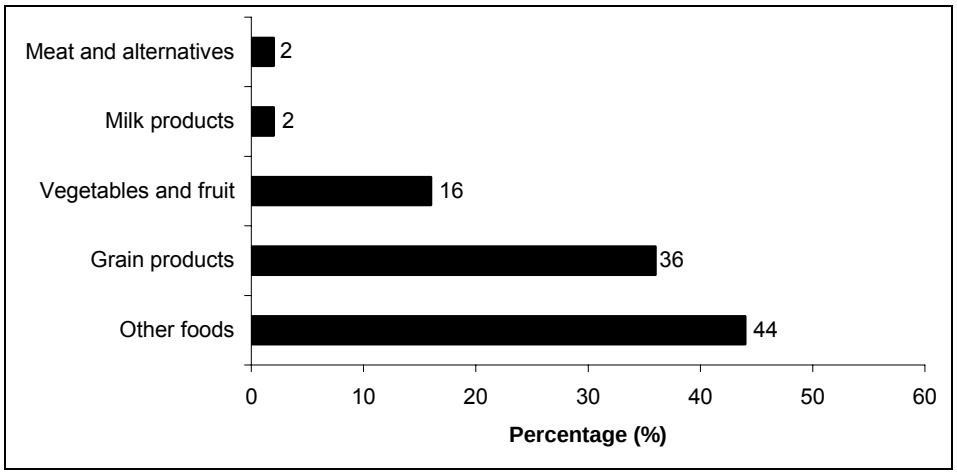
Source: Nunavik Inuit Health Survey 2004.

4.4.4. Contribution of food groups to carbohydrate intake

The day before the survey, 99% of the carbohydrate intake of Inuit adults was supplied by store-bought foods (Figure 7). The "Other foods" category contributed the most to carbohydrate intake (44%) followed by grain products (36%) and fruit and vegetables (16%) (Figure 11). Table 16 shows that the contribution of soft drinks (sodas) and fruit beverages to the carbohydrate intake was about 23% during that day. Sugar, jam and preserves accounted for 12% of the carbohydrate intake and snacks contributed to 4% of the intake.

For grain products, non-whole grain products such as white flour, white bread, pasta and rice contributed the most to the carbohydrate intake. Interestingly, grain products high in fat such as cakes, donuts and pies accounted for only 2.4% of the carbohydrate intake. With regard to the fruit and vegetables group, carbohydrates were mainly supplied by potatoes and fruit juices.

Figure 11 Contribution of food groups to carbohydrate intake, Nunavik, 2004



Source: Nunavik Inuit Health Survey 2004.

Table 16 Foods contributing the most to carbohydrate intake, Nunavik, 2004

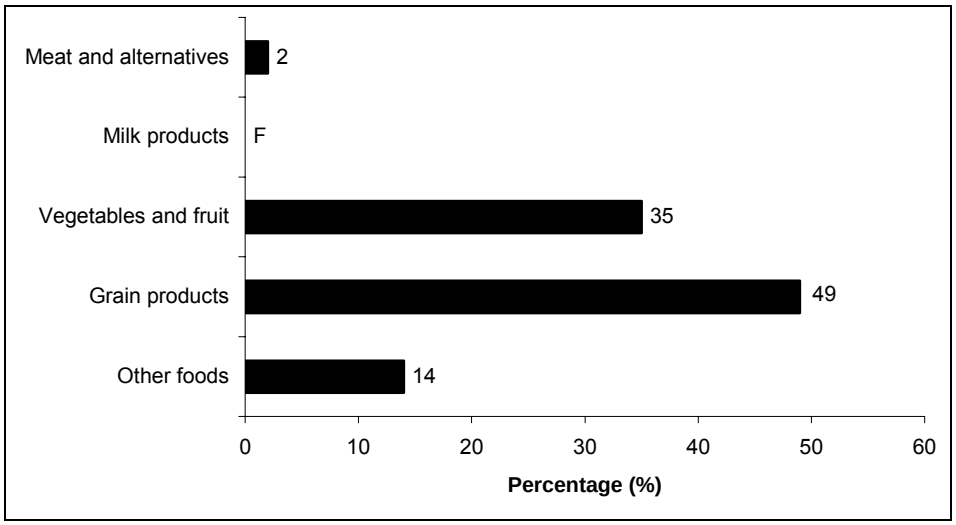
Food	Percentage (%)
Soft drinks	17.0
Flour	12.0
Sugar and preserves	11.5
Bread	10.9
Pasta and rice	7.1
Fruit beverages	6.3
Fruit juices	5.9
Potatoes	5.1
Snacks	4.3

Source: Nunavik Inuit Health Survey 2004.

4.4.5. Contribution of food groups to dietary fibre intake

The day before the survey, store-bought foods supplied 96% of dietary fibre (Figure 7). Grain products and vegetables and fruit were the main fibre sources (Table 11). Refined grain products accounted for 45% of fibre intake as compared to whole-grain products, which contributed only 4%. White bread and flour supplied 18% and 16% of dietary fibre, respectively; pasta and rice 9%; cereals, cookies and crackers 5%. Nearly 35% of the total fibre intake was supplied by fruit and vegetables (Figure 12), and fruit juices contributed to 11% of the intake. In fact, about 11% of the fibre intake was supplied by potatoes whereas the contribution of dark vegetables such as broccoli, lettuce, spinach was negligible. Orange vegetables supplied only 4% of the fibre whereas various other vegetables contributed to 9% of the intake. Fruit juices provided 4% of the total fibre and other fruit such as apples, bananas, berries and oranges accounted for 8% of the intake. The contribution of foods included in the "Other foods" category amounted to 14% of the total fibre intake and snacks accounted for 10%.

Figure 12 Contribution of food groups to fibre intake, Nunavik, 2004



F Unreliable estimate.

Source: Nunavik Inuit Health Survey 2004.

4.4.6. Contribution of food groups to vitamin intake

Table 17 shows the contribution of the food groups to the vitamin intakes for the day surveyed. The "Other foods" category supplied 36% of the total **vitamin A** intake, followed by meat and alternatives (25%). In the "Other foods" category, fat such as butter (17%), margarine (5%), and country fat (5%) were the main sources of vitamin A. In the meat and alternatives food group, eggs supplied 12% of the intake, meat, poultry and fish 14%. Figure 13 shows that traditional foods supplied 15% of the vitamin A intake and marine mammal fat, fish and marine mammal meat were the main contributors. Yellow vegetables, especially carrots, were the main sources of vitamin A for the fruit and vegetables group whereas milk (10%) followed by cheese (6%) contributed the most to the intake in the group of milk products.

Meat and alternatives were the main sources of **vitamin D** the day before the survey, with meats, eggs and poultry being the main contributors (Table 17). Traditional foods supplied 24% of the vitamin D intake, with fish and caribou contributing the most to the intake (Figure 13). Milk products, which are very good sources of vitamin D, only supplied 22% of the total intake and milk was the main source. In the "Other foods" category, which supplied 14% of the vitamin D, margarine and country fat were the main sources.

The day before the survey, the vegetables and fruit group supplied 54% of the **vitamin C** intake (Table 17) and, as expected, store-bought foods were the primary source (Figure 13). Fruit juices were the main source of vitamin C (22%), followed by potatoes (11%) and other vegetables (10%). In the "Other foods" category, vitamin C was mostly supplied by fruit beverages (14%) and potato chips (8%).

Grain products and meat and alternatives were the main sources of **thiamin** the day prior to the survey (Table 17). Figure 13 also shows that store-bought foods contributed the most to the intake. Among grain products, bread and flour supplied 27% of the thiamin, pasta 6% and cereals 5%. For the group

of meat and alternatives, meats and poultry supplied 28% of the thiamine intake. Among traditional foods, caribou and fish supplied 14% and 8% of the thiamin, respectively.

Table 17 Contribution of food groups to vitamin intake, Nunavik, 2004

	Meat and alternatives (CI)	Milk products (CI)	Vegetables and fruit (CI)	Grain products (CI)	Other foods (CI)
			%		
Vitamin A	25.5 (23-28)	17.2 (15-19)	19.3 (17-22)	2.4 [E] (1.5-3.4)	35.6 (33-38)
Vitamin D	61.4 (59-64)	22.1 (20-24)	0.9 [E] (0.4-1.5)	1.7 (1.2-2.2)	13.9 (12-16)
Vitamin C	17.1 (15-19)	1.8 [E] (1.0-2.5)	54.4 (51-57)	F	26.5 (24-29)
Thiamin	37.2 (35-39)	1.9 (1.6-2.2)	11.8 (11-13)	42.0 (40-44)	7.1 (6.3-7.8)
Riboflavin	46.6 (45-49)	7.3 (6.4-8.2)	5.1 (4.6-5.6)	21.1 (20-22)	19.8 (19-21)
Niacin	62.3 (61-64)	2.8 (2.4-3.1)	6.2 (5.6-6.7)	21.2 (20-23)	7.5 (6.8-8.3)
Folate	13.4 (12-15)	1.4 (1.2-1.6)	13.7 (12-15)	55.2 (53-57)	16.3 (15-18)
Vitamin B6	49.5 (47-52)	3.2 (2.7-3.8)	22.6 (21-24)	12.9 (12-14)	11.8 (10-13)
Vitamin B12	81.3 (79-83)	11.7 (10-13)	F	2.0 (1.3-2.6)	4.8 (3.8-5.7)

E Interpret with caution.

F Unreliable estimate.

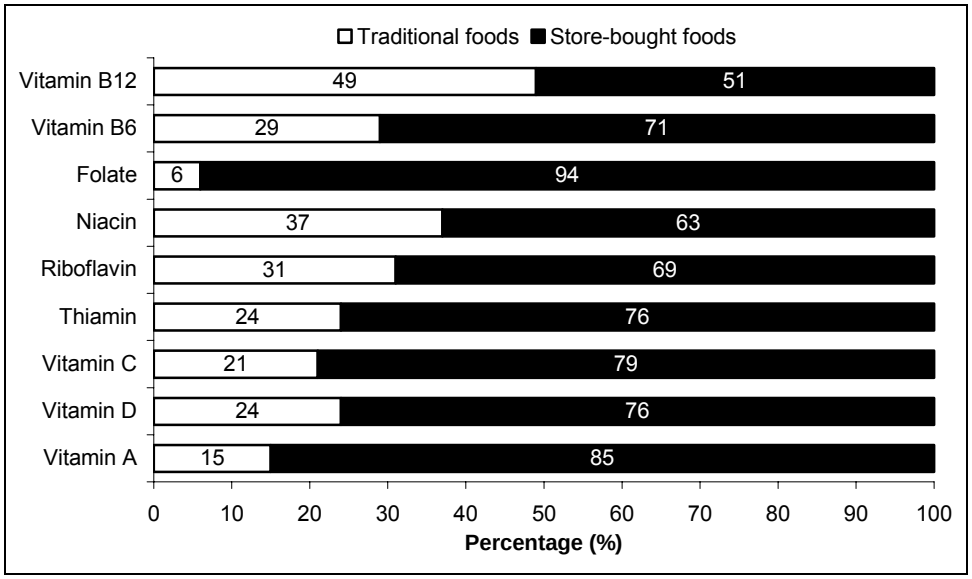
Source: Nunavik Inuit Health Survey 2004.

Store-bought foods accounted for 69% and 63% respectively of the **riboflavin** and **niacin** intakes (Figure 13). Riboflavin and niacin were mainly supplied by meat and alternatives and grain products (Table 17). Meat and poultry were the main sources of these vitamins. The main traditional food sources were caribou and fish, which supplied 28% and 31% of the total riboflavin and niacin, respectively. Concerning grain products, bread, flour and pasta contributed the most to the riboflavin and niacin intakes.

Store-bought foods contributed 94% of the **folate** intake the day prior to the survey (Figure 13) and grain products accounted for 55% of the intake (Table 17). Flour and bread contributed in equal proportion (20%) to the folate intake and pasta supplied 8%. It is also interesting to note that bannock supplied 13% of the folate during that day.

Meat and alternatives contributed to 50% and 81% of the total intake of **vitamin B6** and **vitamin B12**, respectively, the day before the survey (Table 17). Store-bought foods supplied 71% of the vitamin B6 and 51% of the vitamin B12 during that day (Figure 13). Meat and poultry supplied 43% and 66% of vitamins B6 and B12, respectively. The main traditional food source of these vitamins was caribou. In addition, fruit and vegetables contributed to 23% of the vitamin B6 intake and potatoes were the main source.

Figure 13 Contribution of traditional foods and store-bought foods to vitamin intake, Nunavik, 2004



Source: Nunavik Inuit Health Survey 2004.

4.4.7. Contribution of food groups to mineral intake

The day before the survey, the food sources of **calcium** varied. Contributing the most to the intake were, in decreasing order, the "Other foods" category, milk products and grain products (Table 18). Indeed, 94% of the calcium was supplied by store-bought foods (Figure 14). In the "Other foods" category, various food items such as sauces, soups, snacks and beverages were the main sources of calcium. Among milk products, milk and cheese supplied 11% and 8% of the total calcium intake during that day, respectively. Grain products accounted for 20% of the calcium intake and bread was the main contributor (14%).

Magnesium was mainly supplied by the meat and alternatives group (33%) and the "Other foods" category (29%) (Table 18). Moreover, 82% of the intake was supplied by store-bought foods (Figure 14). Within the meat and alternatives group, meats, in particular caribou, fish and poultry, contributed the most to the magnesium intake. In the "Other foods" category, the main magnesium contributors were snacks and sweet beverages.

Table 18 shows that the day prior to the survey, the main source of phosphorus was meat and alternatives (49%) with store-bought foods supplying 71% of the total intake (Figure 14). Meat and poultry contributed the most to the phosphorus intake (35%). Moreover, caribou and fish supplied 15% and 10% of the total phosphorus, respectively. The "Other foods" category accounted for 22% of

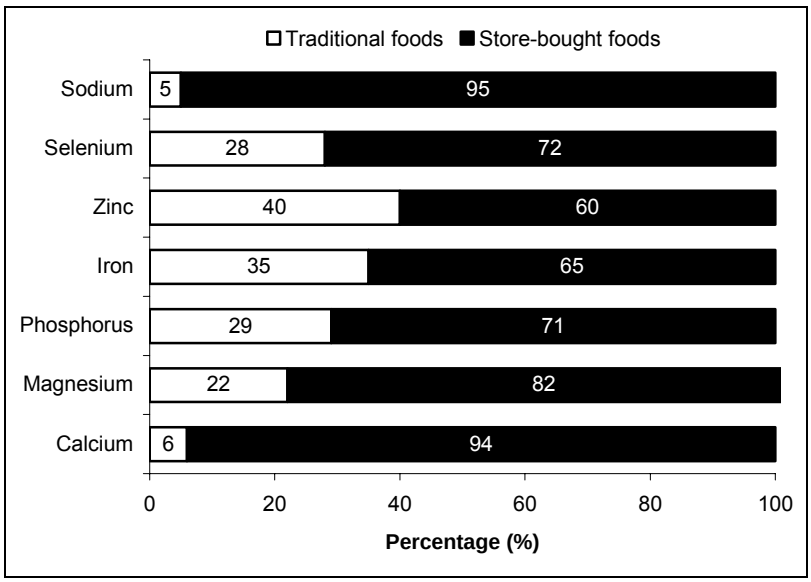
the intake and various food items in this category contributed to the intake such as sauces, soups and snacks.

Table 18 Contribution of food groups to mineral intake, Nunavik, 2004

	Meat and alternatives (CI)	Milk products (CI)	Vegetables and fruit (CI)	Grain products (CI)	Other foods (CI)
			%		
Calcium	14.2 (13-15)	21.0 (19-23)	9.0 (8.2-9.9)	19.6 (18-21)	36.1 (34-38)
Magnesium	33.1 (32-35)	4.4 (3.8-4.9)	16.1 (15-17)	17.0 (16-18)	29.4 (28-31)
Phosphorus	49.4 (48-51)	8.9 (7.9-9.8)	6.9 (6.4-7.5)	13.3 (12-14)	21.5 (20-23)
Iron	48.6 (46-51)	0.6 (0.5-0.7)	8.3 (7.6-9.0)	32.8 (31-35)	9.8 (9.0-11)
Zinc	67.0 (65-69)	5.8 (5.0-6.5)	5.5 (5.0-6.1)	12.6 (12-14)	9.1 (8.4-9.9)
Selenium	57.2 (55-59)	3.1 (2.7-3.6)	1.5 (1.3-1.7)	33.6 (32-36)	4.5 (4.0-5.1)
Sodium	17.8 (17-19)	3.4 (2.9-3.9)	5.2 (4.4-5.9)	17.8 (16-19)	55.9 (54-58)

Source: Nunavik Inuit Health Survey 2004.

Figure 14 Contribution of traditional foods and store-bought foods to mineral intake, Nunavik, 2004



Source: Nunavik Inuit Health Survey 2004.

Iron and **zinc** were also mainly supplied by the meat and alternatives group (Table 18) with store-bought foods contributing 65% and 60% of the iron and zinc intakes, respectively (Figure 14). Within the meat and alternatives group, 49% of the iron was supplied by meat such as caribou (21%), poultry (9%), fish (4%), birds (5%), marine mammal meat (4%[E]) and eggs (3%). Grain products supplied 33% of the iron and the main sources were bread (12%), flour (9%), pasta and cereals (7%). Meats and poultry supplied 58% of the zinc and the main traditional food source was caribou (26%).

Store-bought foods supplied 72% of the total **selenium** intake as compared to traditional foods, which contributed 28% (Figure 14). Meat and alternatives were the main sources of selenium (Table 18); meats accounted for 27%, poultry and eggs 17% and fish 12%. Grain products supplied 34% of the selenium and bread, flour and pasta were the main sources for this food group. Finally, store-bought foods supplied 95% of the **sodium** intake (Figure 14) and the "Other foods" category was the main contributor (56%) (Table 18). Various food items such as salad dressings, sauces and snacks were the sources of sodium.

4.5. MEALS AND SNACKS

The cultural context must be taken into account when estimating Inuit food intakes per meal. Many Inuit do not eat regularly scheduled meals; thus, the standard measurement used for daily meals in southern regions is not appropriate within the Inuit population. As mentioned in Section 4.5.2, the questions related to meal times did not provide the information being sought from participants since in Nunavik, Inuit people customarily eat when they are hungry. Consequently, few statistical analyses were performed according to meals and snacks given that the information collected was incomplete.

With regard to the day before the survey, 80% of the Inuit reported they had breakfast, 93% lunch and 88% dinner. Snacks were reported by 94% of the respondents. A higher proportion of individuals aged 50-74 years had breakfast and dinner when compared to younger people. About 15% of daily energy (calories) was consumed at breakfast whereas lunch and dinner accounted for 30% and 27% of the total energy intake, respectively (Table 19). Snacks consumed between meals contributed to 28% of the calories.

Table 19 Distribution of calories according to meals and snacks by age and sex, Nunavik, 2004

	Men			Women			Total
	18-29	30-49	50-74	18-29	30-49	50-74	
	%			%			%
Breakfast	11.9	15.6	20.0	13.3	14.2	17.6	14.6
Lunch	29.4	30.4	29.7	31.0	30.2	33.6	30.4
Dinner	26.0	27.5	25.8	27.3	29.0	28.9	27.3
Snacks	32.7	26.5	24.5	28.4	26.6	19.9	27.7

Source: Nunavik Inuit Health Survey 2004.

5. RESULTS FROM THE FOOD FREQUENCY QUESTIONNAIRE

Results obtained from the food frequency questionnaire are presented in this section. In addition, the consumption of traditional food items is documented on an annual, seasonal, weekly or daily basis. The consumption frequency of store-bought foods during the month before the survey was also assessed with particular attention devoted to sweet foods. Comparisons were made with results observed among Inuit women in 1992.

5.1. CONSUMPTION FREQUENCY OF TRADITIONAL FOODS

Table 20 shows the consumption frequency of traditional foods by Inuit adults during the year before the survey. All traditional foods listed in the food frequency questionnaire were consumed but the consumption frequency greatly varied according to food items. The traditional foods most frequently consumed by the Inuit (≥ 11 times per year) in decreasing order of importance were caribou, arctic char, goose, wild berries, ptarmigan and beluga blubber/misirak. Walrus, igunak, scallops, seaweed, bear and hare were consumed by less than 20% of the respondents during the year before the survey. The other fishes consumed were mainly fourhorn sculpin (often called "ugly fish" by the Inuit) and northern pike whereas the other birds include birds such as eider, black scoter, northern pintail and murres.

The consumption frequency of traditional foods varied significantly according to socio-demographic characteristics (data not shown). Consumption frequency generally increased with age with the exception of caribou for which the frequency consumption was comparable among age groups. The consumption frequency of fish, seafood and land animals was generally similar among men and women but marine mammals and birds were more frequently consumed by men whereas the frequency of consuming wild berries was higher among women.

A higher proportion of individuals with the lowest level of education reported having consumed more often marine mammal meat and parts (liver, kidney, intestine, etc), marine mammal fat (blubber and misirak) and wild berries as compared with individuals having higher levels of education (data not shown). In general, the consumption frequency of traditional foods did not vary according to job status.

The consumption frequency of marine mammal meat and parts, birds and wild berries was higher in Hudson whereas land animals were most frequently consumed in Ungava. Some significant differences according to the community size were observed for the consumption frequency of traditional foods. More specifically, individuals residing in small communities reported having consumed marine mammal meat and parts more frequently whereas the consumption frequency of land animals and wild berries appear to be higher among individuals residing in large communities.

Table 20 Consumption frequency of traditional foods during the year before the survey, Nunavik, 2004

	Never	1-10 times / year	≥ 11 times / year
		(%)	
Marine mammals[1,2,3,5,6]			
Beluga meat	48.7	36.0	15.3
Dried beluga	57.1	30.2	12.7
Beluga blubber/misirak	42.8	17.9	39.3
Muktuk	16.5	58.4	25.2
Seal meat	23.4	46.8	29.8
Seal Blubber/misirak	57.5	15.4	27.1
Walrus	82.5	14.6	3.0[E]
Igunak	83.4	14.4	2.3[E]
Beluga/seal/walrus other parts	51.5	32.8	15.6
Marine mammal fat:blubber/misirak	28.9	17.0	54.1
Fish and seafood[2]			
Arctic char	7.4	16.8	75.8
Cod	78.9	14.0	7.1
Whitefish	54.7	21.3	24.0
Trout/salmon	50.2	23.4	26.4
Other fish	76.0	15.5	8.5
Dried fish	23.6	41.3	35.1
Mussels	30.5	44.2	25.3
Scallops	92.6	5.7	1.8[E]
Seaweed	87.9	8.1	4.0
Land animals[5, 6]			
Caribou	F	11.5	87.4
Bear	86.5	12.6	F
Hare	96.1	3.8	F
Birds[1,2,5]			
Ptarmigan	20.7	35.4	43.9
Goose	7.0	32.2	60.8
Other birds	79.3	14.2	6.5
Egg birds	35.1	45.4	19.5
Wild berries[1,2,3,5,6]	14.9	38.7	46.4

Significant differences among sex[1], age[2], level of education[3], job status[4], region[5], community size[6] categories.

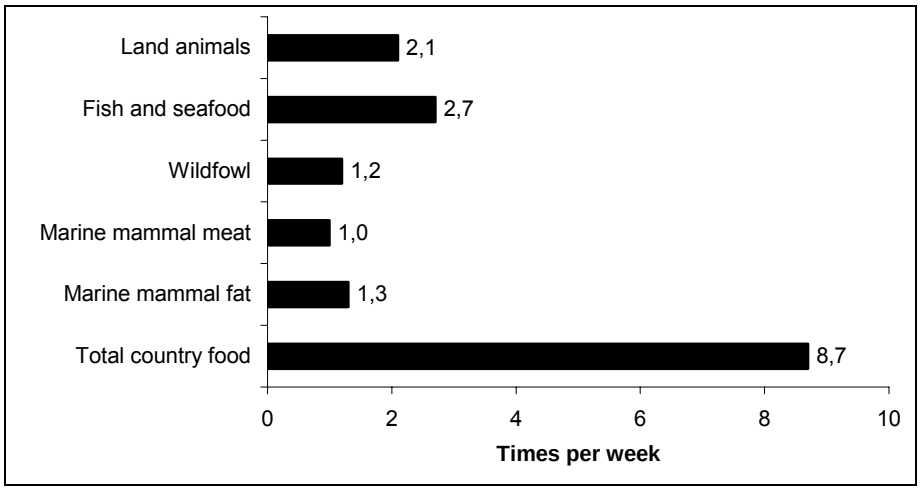
E Interpret with caution.

F Unreliable estimate.

Source: Nunavik Inuit Health Survey 2004.

The mean consumption frequency of the traditional food groups (excluding berries) on a weekly basis is shown in Figure 15. During the year before the survey, traditional foods were consumed nearly nine times a week. Fish and seafood were consumed about three times a week, land animals, which were mainly represented by caribou, were consumed twice a week. Birds and marine mammal meat and fat were consumed on average once a week.

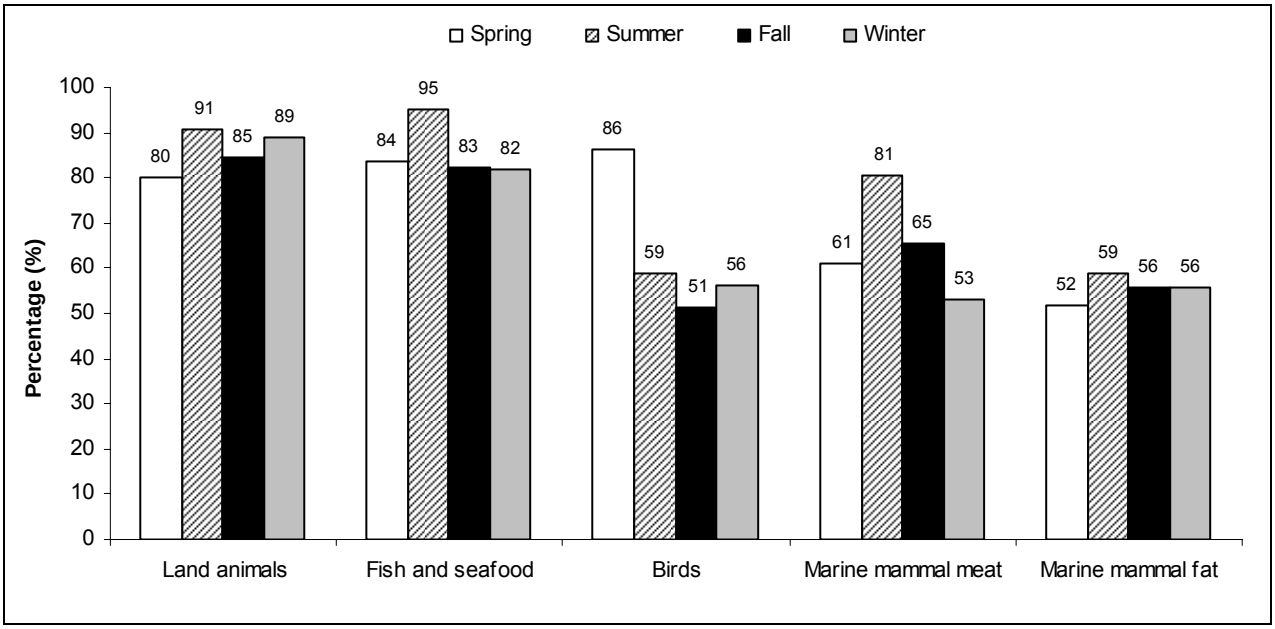
Figure 15 Consumption frequency of traditional food groups on a weekly basis, Nunavik, 2004



Source: Nunavik Inuit Health Survey 2004.

It is well known that the consumption frequency of traditional foods generally varies by season and this seasonal variation has been observed in the 2004 survey. In effect, this survey's results show that land animals, in particular caribou, were more frequently eaten in summer and winter than in spring and fall (Figure 16). All species of fish and seafood were eaten mostly in summer whereas the consumption frequency in other seasons was lower to a similar extent. The consumption frequency of birds was higher in spring. Goose was also consumed in fall and summer by about 44% and 39% of individuals, respectively. Ptarmigan was more often consumed in winter (52%) and also in spring (47%). Eggs from game birds were mostly consumed in spring and summer. Finally, marine mammal meats, e.g. beluga meat, muktuk and seal, were more frequently consumed in summer and much less in winter. There was no significant difference in seasonal consumption of marine mammal fat.

Figure 16 Percentage of individuals having consumed traditional foods in different seasons during the year before the survey, Nunavik, 2004



Source: Nunavik Inuit Health Survey 2004.

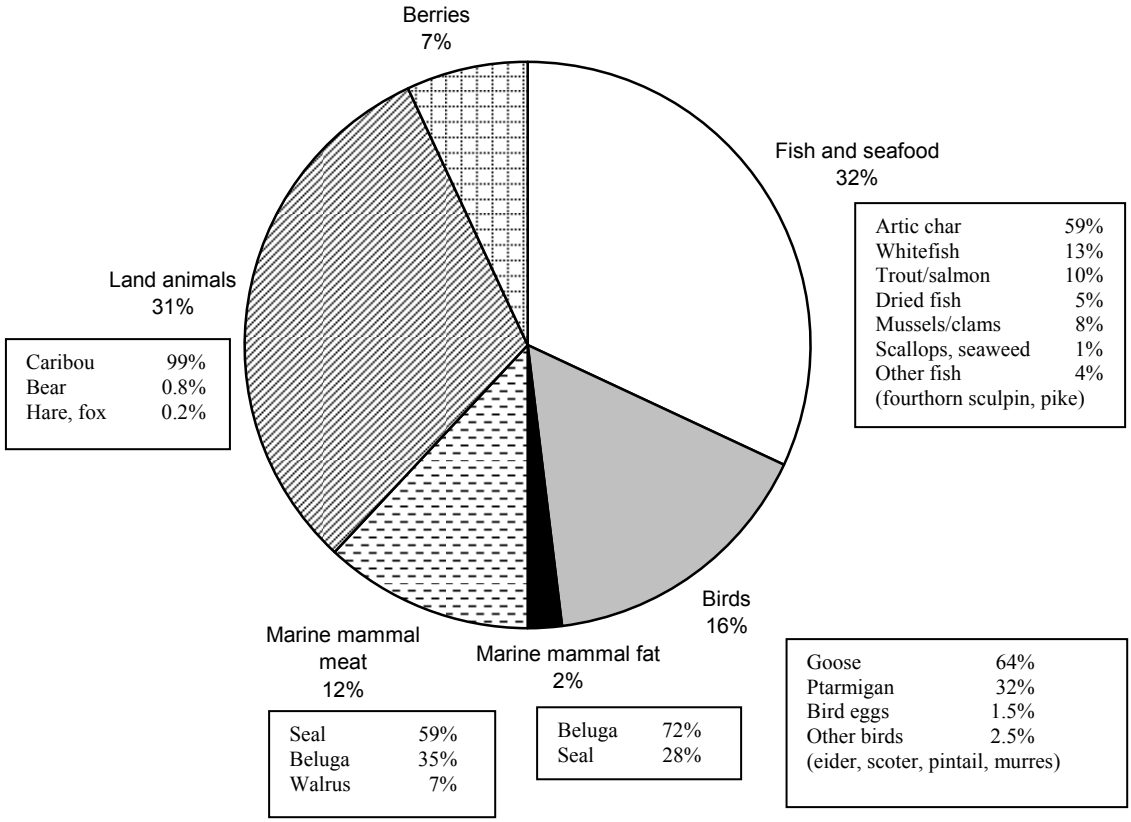
5.2. CONSUMPTION OF TRADITIONAL FOODS ON ANNUAL BASIS

5.2.1. Traditional foods consumed during the year before the survey

Figure 17 illustrates the distribution (mean percentage) of traditional foods consumed during the year before the survey. The fish and seafood group, followed by land animals, represented the main traditional foods consumed and accounted for 32% and 31%, respectively. Arctic char contributed the most to the consumption of foods from the fish and seafood group whereas caribou represented 99% of the consumption from the land animal group. Birds accounted for 16% of the total traditional food consumed; goose, followed by ptarmigan, mostly contributed to this consumption.

For marine mammal meat, which accounted for 12% of traditional food use, beluga was the most consumed marine mammal as compared with seal and walrus. Marine mammal fat represented only 2% of the total traditional food consumption and beluga blubber/misirak was consumed significantly more than seal blubber/misirak. Finally, berries, which are mainly eaten at the end of summer and the beginning of fall, accounted for 7% of the total traditional food consumption.

Figure 17 Distribution of traditional foods consumed the year before the survey, Nunavik, 2004



Source: Nunavik Inuit Health Survey 2004.

5.2.2. Traditional food consumption according to season

Table 21 shows the median and mean amounts of traditional foods consumed daily according to season. Globally, the median amounts of country meats (land and marine animals), fish and birds consumed by the Inuit during the 2004 year were estimated at 96 grams per day. The median daily amounts of total country meats, fish and birds consumed were higher in summer and spring than in winter and fall. The median daily amounts of land animals were lower in spring than in summer, fall and winter and, as mentioned before, caribou contributed the most to the consumption. For fish and seafood, consumption was significantly higher in summer as compared with the other seasons and arctic char was the main fish species consumed during the four seasons. Birds were mostly consumed in spring whereas the consumption was very low in other seasons. Marine mammal meats were also mostly consumed during summer. The consumption frequency of seal meat was of the same order during the other seasons whereas that of beluga meat was much lower in winter (data not shown). No seasonal variation was observed for marine mammal fat.

Table 21 Median and mean amounts of traditional foods daily consumed by season (in grams, annual basis), Nunavik, 2004

Traditional food group	Spring		Summer		Fall		Winter		Annual	
	Median (CI)	Mean (SE)	Median (CI)	Mean (SE)	Median (CI)	Mean (SE)	Median (CI)	Mean (SE)	Median (CI)	Mean (SE)
Land animals	15.7 (13.4-18.8)	45.4 (2.9)	22.4 (20.0-24.7)	58.2 (3.4)	20.0 (17.8-20.0)	50.9 (3.1)	20.4 (20.0-22.5)	56.4 (3.4)	22.0 (20.0-25.4)	52.6 (3.0)
Fish and seafood	19.4 (17.6 - 22.3)	49.7 (2.6)	38.9 (32.9–44.1)	76.6 (3.8)	19.4 (15.1–20.8)	47.5 (2.5)	19.2 (14.2–20.9)	44.9 (2.6)	27.7 (24.0–30.3)	54.8 (2.6)
Birds	20.0 (18.4–24.6)	54.3 (2.9)	0.9 (0.4–1.5)	17.9 (1.9)	1.2 (0.0–2.3)	15.7 (1.2)	2.3 (1.5–3.8)	20.2 (2.0)	12.3 (10.4–14.7)	27.8 (1.7)
Marine mammal Meat	2.3 (1.5–3.1)	19.3 (1.6)	8.1 (6.2–9.2)	32.3 (2.4)	3.1 (2.3–3.9)	21.8 (1.7)	1.2 (0.0–1.5)	11.1 (0.9)	6.2 (5.3-7.1)	21.5 (1.3)
Total country meats[a], fish and birds	96.3 (86.8–104)	175.1 (7.6)	111.8 (100–120)	187.3 (8.0)	73.8 (66.7–82.4)	139.5 (6.3)	70.7 (65.2–80.6)	136.3 (7.0)	96.4 (85.0-103)	160.6 (6.8)
Marine mammal fat	0.1 (0.0–0.3)	3.9 (0.3)	0.3 (0.2–0.5)	4.6 (0.4)	0.3 (0.1–0.5)	4.3 (0.3)	0.3 (0.1–0.5)	4.3 (0.3)	0.5 (0.4–0.6)	4.2 (0.3)

[a] Country meats include land and marine animals (meat and parts).

Source: Nunavik Inuit Health Survey 2004.

5.2.3. Traditional food consumption according to age and sex

Table 22 shows the median and mean amounts of traditional foods consumed daily during the year before the survey according to sex and age. As mentioned in Section 4.7.3, the medians are different from the means i.e. the median values are lower than the mean values because the variables have heavy-tailed asymmetric curves. Globally, men appear to have consumed country meats, fish and birds in higher amounts than did women, while there was no significant difference according to age group. However, younger individuals appear to have consumed lower amounts and Figure 18 shows an increasing consumption with age among men, although the difference was not significant. Among women, there was no trend among age groups; the amounts consumed among older women approaching those among younger women.

The median amounts of land animals consumed did not vary significantly according to sex and age (Figure 18). Land animal consumption was also relatively consistent between Inuit men and women and across age groups. However, men daily consumed higher amounts of fish and seafood than women and consumption increased significantly with age. Indeed, Figure 18 shows that this increasing consumption was mainly observed from the 30-49 age group and up. Men consumed birds in higher amounts than women but there was no significant difference among age groups. The median amount of birds consumed by men was consistent among age groups, whereas women aged 50-74 years consumed higher amounts of birds than younger women.

Inuit men also consumed higher amounts of marine mammal meat than women, especially men aged 50-74 years (Figure 18). Indeed, seal meat was eaten in higher amounts by people aged 50-74 years as compared with individuals in the younger age groups (data not shown). However, there was no significant difference according to sex and age for beluga consumption. The consumption of marine

mammal fat was similar among men and women. However, it was significantly higher among individuals in the 50-74 age group. Figure 18 shows that the median amounts of marine mammal fat consumed by men aged 18-49 years were relatively consistent, whereas with increasing age among women, the difference among the three age groups in the amounts consumed is more noticeable.

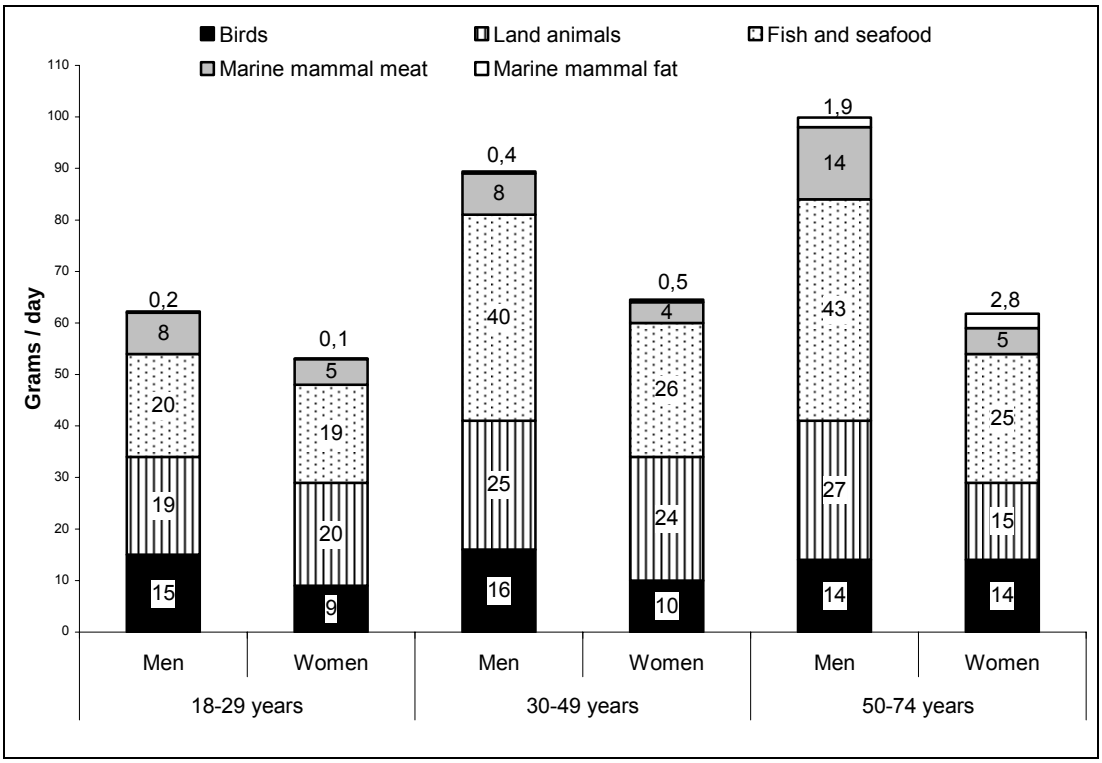
Table 22 Median and mean amounts of traditional foods daily consumed by sex and age (in grams, annual basis), Nunavik, 2004

Traditional food group	Men		Women		18-29		30-49		50-74	
	Median (CI)	Mean (SE)	Median (CI)	Mean (SE)	Median (CI)	Mean (SE)	Median (CI)	Mean (SE)	Median (CI)	Mean (SE)
Land animals	23.2 (20.0-28.3)	56.9 (5.3)	20.4 (17.4-24.8)	48.9 (3.3)	19.7 (15.0-24.5)	51.7 (5.3)	24.5 (20.0-27.8)	56.6 (5.1)	23.9 (20.4-29.2)	48.1 (4.8)
Fish and seafood	33.5 (28.0-40.7)	59.4 (3.7)	22.9 (20.8-26.3)	49.6 (2.9)	19.4 (14.5-24.2)	46.8 (4.4)	33.7 (26.4-39.1)	57.8 (3.4)	32.6 (27.4-43.3)	62.4 (5.9)
Birds	15.6 (12.8-17.8)	31.7 (2.9)	10.0 (8.3-11.8)	23.5 (1.8)	10.0 (8.6-13.1)	26.7 (3.1)	14.2 (10.6-16.4)	29.3 (2.7)	14.0 (10.8-20.2)	26.6 (2.4)
Marine mammal meat	9.0 (6.5-11.2)	24.9 (2.0)	4.6 (3.8-5.6)	17.8 (1.4)	6.2 (4.4-7.8)	21.9 (2.3)	5.4 (4.6-7.2)	22.1 (1.9)	7.2 (6.1-12.7)	19.5 (2.4)
Total country meats[a], fish and birds	108.3 (92.9-127.0)	177.6 (11.3)	83.7 (74.3-94.4)	141.7 (6.8)	87.0 (70.1-100.2)	152.0 (12.3)	102.8 (87.8-117.7)	169.0 (10.5)	98.1 (80.4-134.7)	158.0 (12.7)
Marine mammal fat	0.5 (0.3-0.7)	4.2 (0.4)	0.5 (0.4-0.7)	4.3 (0.4)	0.2 (0.1-0.3)	2.8 (0.4)	0.5 (0.3-0.9)	3.7 (0.4)	2.1 (1.4-4.1)	7.8 (1.0)

[a] Country meats include land and marine animals (meat and parts).

Source: Nunavik Inuit Health Survey 2004.

Figure 18 Median amounts of traditional foods daily consumed by age (in grams, annual basis), Nunavik, 2004



Source: Nunavik Inuit Health Survey 2004.

5.2.4. Traditional food consumption according to place of residence

Table 23 shows the median and mean daily amounts of traditional foods consumed according to the place of residence, i.e. coastal region and community size. Globally, country meats, fish and birds appeared to be consumed in higher amounts by residents of the Hudson coast than by those of the Ungava coast but no significant difference was observed between large and small communities. The median amounts of land animals consumed by individuals residing in Ungava were significantly higher than those in Hudson whereas no significant difference was observed between individuals residing in large or small communities. The consumption of fish and seafood was not significantly different according to coastal region but further analyses showed that individuals residing on the Hudson coast consumed whitefish in higher amounts than residents of Ungava (data not shown). Inversely, people of Ungava consumed greater amounts of salmon/trout and dried fish than those in Hudson.

Residents in small communities consumed fish and seafood, in particular dried fish, in higher amounts than people living in large communities where, in contrast, a higher consumption of mollusks (mainly mussels) was observed (data not shown). The consumption of birds, especially of goose, was significantly higher in Hudson than in Ungava but did not vary according to the size of the communities (Table 23). Residents in Hudson consumed beluga and seal meats in higher amounts than did individuals of Ungava. No significant difference was observed between individuals living in large versus small communities in the consumption of marine mammal meat.

Table 23 Median and mean amounts of traditional foods daily consumed by place of residence (in grams, annual basis), Nunavik, 2004

Traditional food group	Coastal region				Community size			
	Ungava		Hudson		Large		Small	
	Median (CI)	Mean (SE)	Median (CI)	Mean (SE)	Median (CI)	Mean (SE)	Median (CI)	Mean (SE)
Land animals	26.6 (23.2-31.0)	49.3 (3.5)	19.7 (15.5-22.1)	56.0 (4.7)	23.9 (20.0-28.5)	57.5 (4.2)	21.1 (17.3-26.5)	47.1 (4.2)
Fish and seafood	23.4 (20.3–28.9)	46.4 (2.9)	29.4 (26.1–35.9)	61.2 (4.0)	26.0 (21.9–29.6)	54.3 (3.4)	30.1 (25.6–38.9)	55.3 (3.6)
Birds	8.5 (6.4–10.6)	19.1 (2.0)	17.1 (14.4–20.0)	34.5 (2.7)	13.2 (11.2–15.6)	29.2 (2.2)	10.6 (8.7–15.3)	25.9 (2.6)
Marine mammal meat	3.7 (3.1–4.6)	17.1 (1.8)	9.6 (7.0–11.9)	24.9 (1.8)	5.6 (4.6–6.5)	18.7 (1.6)	7.2 (5.8–9.2)	25.4 (2.1)
Total country meats[a], fish and birds	86.4 (72.9–98.3)	135 (8.0)	102 (89.6–121)	180 (10.3)	95.2 (81.8–110)	161 (8.5)	97.5 (80.4–111)	160 (10.6)
Marine mammal fat	0.6 (0.4–1.0)	4.3 (0.4)	0.4 (0.2–0.6)	4.2 (0.4)	0.5 (0.3–0.6)	4.2 (0.4)	0.5 (0.4–0.9)	4.3 (0.5)

[a] Country meats include land and marine animals (meat and parts).

Source: Nunavik Inuit Health Survey 2004.

5.2.5. Traditional food consumption according to level of education and job status

Table 24 shows the median and mean daily amounts of traditional foods consumed during the year before the survey, according to level of education and job status. Globally, the consumption of country meats, fish and birds did not vary among levels of education although individuals in the lowest level appear to have consumed it in higher amounts while individuals having some years of secondary schooling appear to be the lowest consumers. The median amount of land animals consumed did not vary according to levels of education (Table 24). For fish and seafood, it can be seen that individuals in the highest level of education consumed these foods in greater amounts as compared with those in the lower levels. The consumption of birds was consistent among levels of education whereas marine mammal meat (in particular seal meat) was consumed in higher amounts among individuals with the lowest education level. These individuals also consumed marine mammal fat in higher amounts as compared with individuals with the higher levels of education. Finally, traditional food consumption did not vary significantly according to job status.

Table 24 Median and mean consumption of traditional foods daily consumed by level of education and job status (in grams, annual basis), Nunavik, 2004

Traditional food group	Education level						Job status			
	Elementary school completed or less		Secondary school not completed		Secondary school completed or higher		Work		Other[a]	
	Median (CI)	Mean (SE)	Median (CI)	Mean (SE)	Median (CI)	Mean (SE)	Median (CI)	Mean (SE)	Median (CI)	Mean (SE)
Land animals	22.0 (19.6-28.6)	58.8 (8.1)	21.0 (17.4-26.5)	54.8 (4.5)	20.7 (18.4-28.1)	40.5 (4.0)	21.1 (19.9-24.5)	51.2 (3.6)	25.4 (17.6-29.6)	53.5 (5.6)
Fish and seafood	28.4 (23.0–41.5)	61.8 (6.0)	22.4 (20.0–27.6)	52.6 (3.7)	35.7 (28.0–48.1)	52.8 (3.6)	30.1 (26.4–35.7)	55.5 (2.7)	22.1 (15.8–29.1)	55.9 (5.7)
Birds	13.9 (10.6–20.0)	33.7 (4.7)	10.7 (9.9–12.8)	26.2 (2.4)	15.4 (11.2–17.6)	25.8 (2.5)	13.1 (11.2–15.6)	29.1 (2.1)	11.2 (9.6–16.2)	26.8 (3.0)
Marine mammal meat	9.8 (6.9–13.9)	26.5 (2.9)	5.8 (4.5–7.3)	20.4 (1.7)	5.3 (3.5–6.9)	18.8 (2.3)	6.2 (5.1–7.6)	22.0 (1.5)	6.9 (5.3–9.2)	22.5 (2.9)
Total country meats[b], fish and birds	113 (85.0–139)	180 (17.3)	83.1 (72.4–97.1)	160 (10.3)	107 (86.4–127)	139 (8.6)	98.1 (83.7–108)	162 (8.1)	87.7 (73.9–1#2)	158 (13.0)
Marine mammal fat	1.3 (0.7–1.9)	6.5 (1.0)	0.3 (0.2–0.4)	3.5 (0.4)	0.5 (0.2–0.9)	4.0 (0.6)	0.5 (0.4–0.7)	4.2 (0.4)	0.4 (0.2–0.6)	4.7 (0.7)

[a] Other : hunter support program, housework, retired or on pension, unemployment insurance, social welfare, student or other.

[b] Country meats include land and marine animals (meat and parts).

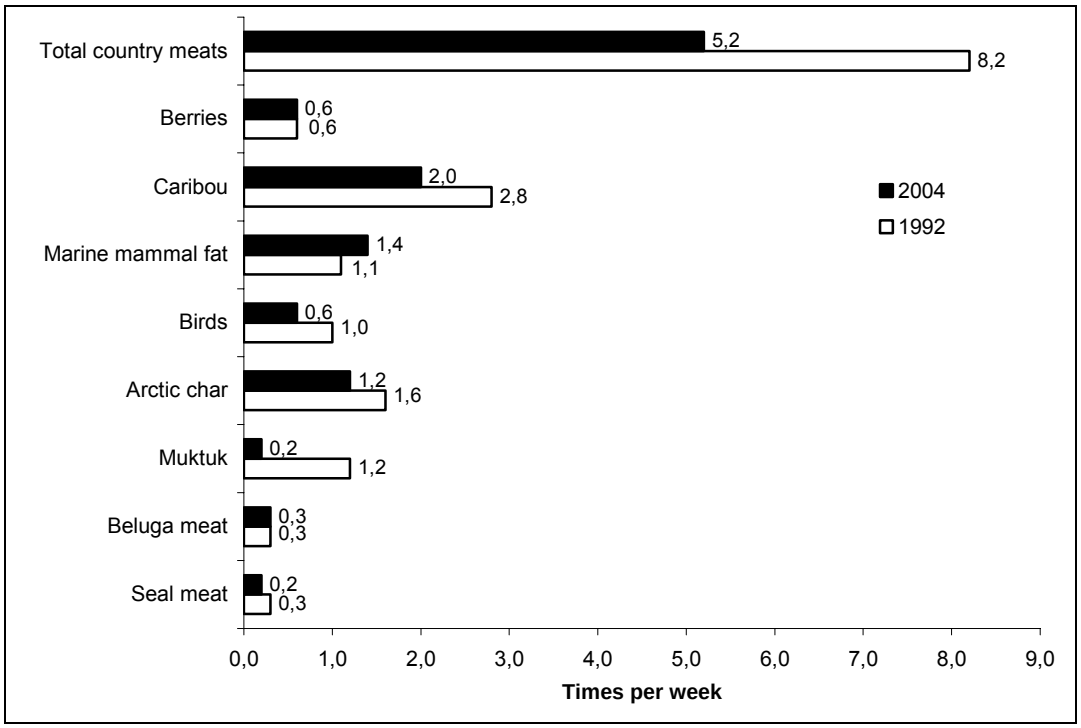
Source: Nunavik Inuit Health Survey 2004.

5.3. TRADITIONAL FOOD CONSUMPTION: COMPARISON OF RESULTS WITH THOSE OBSERVED IN 1992

The results relating to traditional food consumption derived from the food frequency questionnaire were compared with those found in 1992 within the framework of the Santé Québec Health Survey. Comparisons were made among women only since in 1992, the food frequency questionnaire was not completed by men. Moreover, the comparisons were made for the food items figuring in both questionnaires.

The comparison of the mean consumption frequency of traditional foods on a weekly basis as estimated in 1992 and in 2004 is illustrated in Figure 19. The consumption frequency of traditional meat was significantly higher in 1992 (8 times/week) than in 2004 (5 times/week). In fact, the mean consumption frequency of caribou, ptarmigan, arctic char, muktuk and seal meat was lower in 2004 as compared with 1992. In general, a reduction has been observed among all age groups, but for seal meat and ptarmigan, the reduction has been greater among women aged 30-49 years (data not shown).

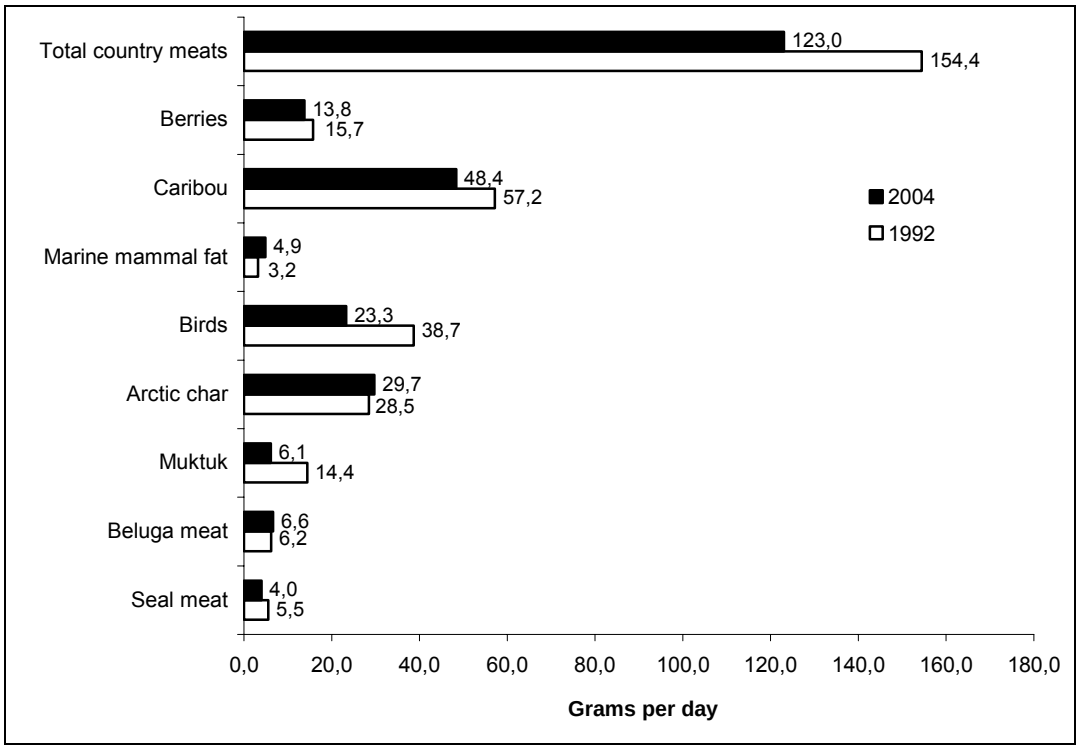
Figure 19 Comparison of weekly consumption frequency of traditional foods among Inuit women as estimated in 1992 and in 2004, Nunavik, 2004



Source: Nunavik Inuit Health Survey 2004.

Figure 20 shows the daily consumption of traditional foods (in grams) among Inuit women as estimated in 1992 and in 2004. Comparisons reveal that the consumption of traditional meat was significantly lower in 2004 than in 1992, particularly for birds and muktuk. The mean consumption of caribou appears to have decreased in 2004 but the difference is not significant. The consumption of marine mammal meat was 29 grams (CI = 24-33) in 1992 as compared with 17 grams (CI = 15-20) in 2004 and women aged 50-74 years had the greatest consumption reduction. This observation may be explained by their lower consumption of beluga muktuk (data not shown). In addition, the mean consumption of birds among Inuit women aged 30-49 years was significantly lower in 2004 as compared with 1992.

Figure 20 Comparison of daily traditional food consumption among Inuit women as estimated in 1992 and in 2004, Nunavik, 2004



Source: Nunavik Inuit Health Survey 2004.

5.4. CONSUMPTION FREQUENCY OF STORE-BOUGHT FOODS DURING THE MONTH PRIOR THE SURVEY

Table 25 shows that during the month preceding the survey, the consumption frequency of store-bought foods greatly varied among food items. The most frequently store-bought foods consumed (≥ 1 time/day) were, in descending order of importance, sweets (chocolate bars, candies or sugar), sweetened sodas (soft drinks), white bread, fruit juices, milk, tea and coffee.

During the month prior to the survey, the main store-bought meats consumed were beef, pork, chicken and luncheon meats. Fried chicken was consumed weekly by 46% of people. Nearly 88% of the Inuit consumed hen's eggs at least once a week and among them, 23% consumed this food daily. Other meats such as veal and lamb were consumed by only 10% of the Inuit. Nearly 56% of the Inuit consumed luncheon meats once or twice a week and 30% consumed it three times or more a week. Ham, wieners, bacon, sausage and salami were the main luncheon meats consumed. Concerning canned fish, 71% of the Inuit did not consume it during the month before the survey and, among the consumers (28%), salmon was the most frequently consumed canned fish (data not shown). Those who consumed dried beans and nuts generally did so once or twice per week and peanut butter contributed the most to this consumption.

Whole-grain bread was consumed by only 31% of the Inuit, white bread being the favourite bread eaten (Table 25). Bannock was eaten by 82% of the Inuit and 29% consumed it daily. Cold cereals were consumed by 57% of people, 20% of them having consumed them at least three times per week, while hot cereals were consumed once or twice per week by 20% of the Inuit. Pasta was frequently

consumed by the Inuit, spaghetti and cheese macaroni being the most popular pastas reported. Rice was mostly consumed once or twice per week. Oranges, apples, bananas, grapes or other fresh fruit such as peaches, kiwis or melons were infrequently consumed during the month before the survey (data not shown), whereas fruit juices were consumed daily by 46% of the adult population.

Table 25 Consumption frequency of store-bought foods during the month before the survey, Nunavik, 2004

	Never	Once or twice /week	3-6 times /week	Once or + /day
		%		
Meats and substitutes				
Beef	21.3	69.3	7.0	2.4 [E]
Pork	25.6	70.1	3.4 [E]	F
Chicken, turkey	19.3	71.5	6.8	2.4 [E]
Fried chicken	54.5	40.0	5.5	F
Canned or corned beef	48.8	47.2	2.6 [E]	1.4 [E]
Luncheon meats	13.5	56.2	17.0	13.2
Eggs	12.0	43.1	22.3	22.6
Dry beans and nuts	46.5	39.7	7.3	6.5
Bread and cereals				
White bread	5.7	25.0	18.9	50.4
Whole grain bread	68.7	18.8	4.7 [E]	7.8
Bannock	18.4	42.1	10.7	28.8
Cold cereals	43.1	37.3	10.6	9.0
Hot cereals	76.9	20.2	1.4 [E]	1.4 [E]
Pasta and rice	7.6	53.4	26.1	12.9
Fruits and fruit juices				
Oranges	26.8	54.3	12.1	6.8
Apples	36.0	45.6	9.1	9.4
Bananas	39.7	45.5	9.4	5.3
Grapes	71.6	25.4	2.3 [E]	F
Canned fruit	48.0	47.9	2.3 [E]	1.8 [E]
Fruit juices	17.9	23.9	12.1	46.1
Other fruit	80.4	15.6	1.9 [E]	2.0 [E]
Vegetables				
Potatoes	20.5	55.9	17.4	6.2
Carrots	39.1	49.0	8.2	3.7 [E]
Broccoli	61.3	34.3	3.4 [E]	1.1 [E]
Mixed vegetables	37.2	49.1	9.5	4.2
Tomatoes	45.8	46.6	4.9	2.7 [E]
Corn and peas	73.7	21.4	2.8 [E]	2.0 [E]
Other vegetables	64.8	29.4	4.4 [E]	1.4 [E]
Milk and dairy products				
Milk	20.4	24.2	10.5	44.9
Yogurt	48.4	41.8	6.5	3.3 [E]
Cheese	33.5	51.2	9.2	6.1

	Never	Once or twice /week	3-6 times /week	Once or + /day
			%	
Sweet foods and beverages				
Soft drinks (sweetened)	13.9	18.7	16.0	51.4
Soft drinks (diet)	85.6	7.4	1.9 [E]	5.0
Fruit beverages	43.8	27.5	8.5	20.2
Cake, cookies, donuts, pie	19.8	58.8	12.0	9.5
Chocolate bars, sweets	F	8.1	22.8	68.7
Sugar, jam, honey	11.2	13.8	5.5	69.6
Ice cream	42.4	52.2	3.8 [E]	1.6 [E]
Spread fats				
Butter	51.1	14.4	10.4	24.2
Margarine	70.3	8.4	5.9	15.4
Fatty foods				
French fries	25.4	58.6	11.1	4.9
Potato chips	22.2	45.2	13.9	18.7
Hot beverages				
Tea	38.9	9.2	5.1	46.8
Coffee	44.9	7.9	6.3	40.9

E Interpret with caution.

F Unreliable estimate.

Source: Nunavik Inuit Health Survey 2004.

The most popular vegetables consumed by the Inuit were, in descending order, potatoes, mixed vegetables, carrots and tomatoes (Table 25). Regarding the other vegetables consumed, broccoli was the vegetable more frequently reported, i.e. by 39% of individuals, corn and peas by 26% and cauliflower, cabbage and turnip by less than 10% of people. Milk was consumed daily by 45% of the Inuit and 20% declared no consumption during the month before the survey. Yogurt also appears unpopular and among those who ate it, it was generally consumed once or twice a week. Regarding the consumption of cheese, 34% of individuals did not consume any during the month, while less than 10% consumed cheese on a daily frequency. As was observed for yogurt, most of the people who consumed cheese did so at the frequency of once or twice per week.

Soft drinks (sweetened sodas) were consumed weekly by 86% of the Inuit and 51% of them consumed it at least once a day (Table 25). Inversely, diet sodas were infrequently consumed by the Inuit. Fruit beverages such as Tang, Punch Kool-Aid, Sunny Delight or Gatorade were consumed by 56% of individuals. Sweet foods, such as pastries, sweets and sugar, were also popular foods. The consumption frequency of these foods was relatively high during the month before the survey, especially for chocolate bars, sweets, candies and sugar, which more than 68% of the Inuit adults declared having consumed daily (data not shown).

The consumption frequency of butter as spread on bread was higher than that of margarine and 24% of people declared they consumed butter on a daily basis as compared to 15% for margarine. French fries and potato chips were consumed by about 75% of the Inuit and this, at least once a week. Finally, tea and coffee were consumed daily by more than 40% of individuals whereas herbal tea was unpopular and was consumed by only 1% of respondents.

5.4.1. Consumption frequency of store-bought foods according to socio-demographic characteristics

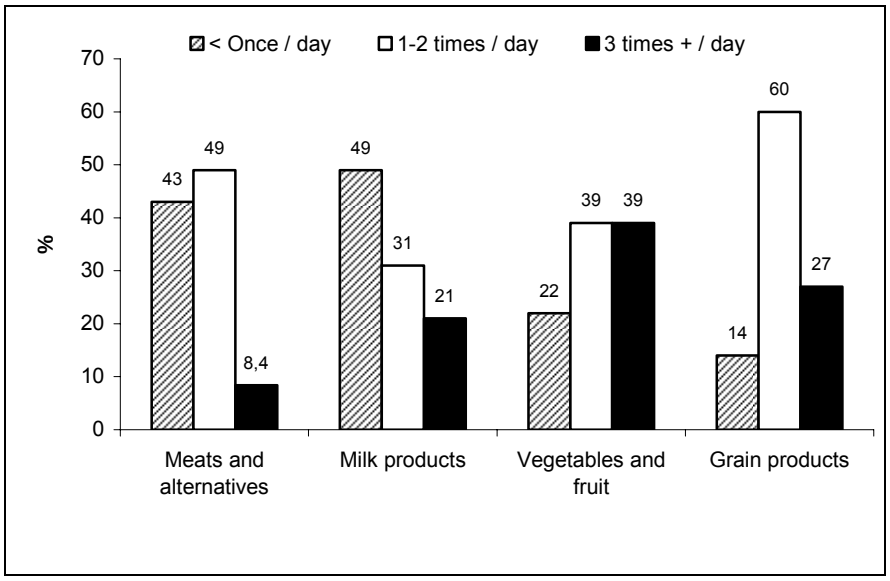
In general, men and women had similar consumption frequencies for most of the store-bought food items (data not shown). However, a higher proportion of Inuit women consumed fruit and vegetables daily as compared with men. The consumption frequency of store-bought foods varied according to age for several items. Hence, store-bought meat, fruit and vegetables were more frequently consumed by younger Inuit. Inversely, a greater proportion individuals aged 50-74 years consumed bread and cereals on a daily basis. Surprisingly, there was no difference among age groups in the consumption frequency of milk and dairy products. The Inuit under 50 years of age consumed sweet foods more frequently than people aged 50-74 years. Indeed, among the Inuit aged 18-29 and 30-49 years, the percentages having consumed these foods three or more times per day were 80% and 70%, respectively, whereas the corresponding percentage for older respondents was 45%. The consumption frequency of fat used as a spread on bread increased with age whereas that of French fries and chips decreased, all individuals aged 18-29 years having consumed it during the month before the survey. Finally, the daily consumption frequency of tea and coffee also increased with age.

The results also revealed that the daily consumption frequency of bread and cereals was higher among people with the lowest level of education (data not shown). In contrast, people with higher levels of education consumed fruit and vegetables more often than people with the lowest level. Individuals having some years of secondary level education daily consumed fries, potato chips and sweet foods in greater proportions as compared to other individuals. Moreover, a higher proportion (24%) of the Inuit with the lowest level of education did not consume fries and potato chips during the month before the survey as compared with those of the other groups. The consumption frequency of vegetables, milk and dairy products, sweet foods and beverages, fatty foods and hot beverages was related to place of residence. In effect, the Inuit residing on the Ungava coast daily consumed milk and dairy products, vegetables, tea and coffee and fat (butter and margarine) in a greater degree and French fries and potato chips to a lesser degree than did the Inuit living in Hudson. Finally, Inuit living in small communities daily consumed sweet foods in greater proportion than did those living in larger communities.

5.4.2. Consumption frequency of food groups

The daily consumption frequency of store-bought foods combined into four food groups is shown on Figure 21. During the month before the survey, store-bought meats and alternatives were consumed on average 1.4 times per day and 49% of individuals consumed them once or twice per day while 43% did so less than once a day. Nearly 50% of the Inuit did not consume milk and dairy products on a daily basis and the average consumption frequency was 1.7 times per day. Vegetables and fruit were daily consumed by about 78% of Inuit and the average frequency consumption was 2.9 times per day. Finally, most of the adult population consumed grain products once or twice a day with an average frequency of 2.4 times per day.

Figure 21 Daily consumption frequency of food groups during the month before the survey, Nunavik, 2004



Source: Nunavik Inuit Health Survey 2004.

5.4.3. Consumption of sweet foods

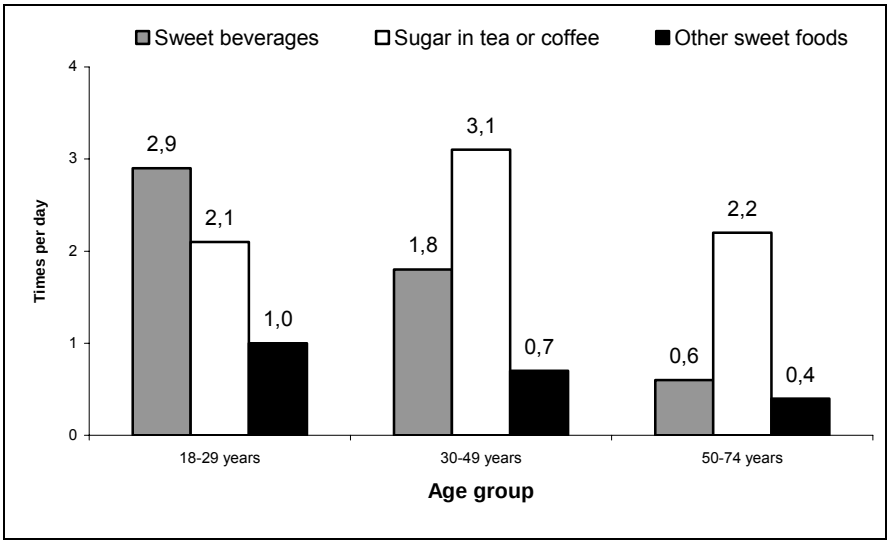
During the month before the survey, sugar added in tea or coffee was the most frequently sweet food reported, followed by sweet beverages for which sweetened sodas (soft drinks) accounted the most for this consumption. Figure 22 illustrates the mean daily consumption frequency of sweet foods by the Inuit adults. The consumption frequency of sweet foods was similar between Inuit men and women but decreased significantly with age, young people consuming it on average six times per day while the frequency was three times a day among the elders. In effect, the Inuit aged 18-29 years consumed sweet beverages such as sodas and fruit beverages more frequently whereas the Inuit aged 30-49 years daily more frequently consumed added-sugar in tea or coffee. Other sweet foods such as chocolate, cake, donuts, sweet and candies were also more frequently consumed by the younger people as compared with the Inuit aged 50-74 years.

Results from a verification of the daily consumption frequency of sweet foods according to other socio-demographic characteristics revealed that Inuit having the lowest level of education consumed sweet foods such as pastries, sweet beverages (sodas), chocolate or candies less frequently than the Inuit with higher levels (data not shown). The daily consumption frequency of sweet foods was slightly higher among the Inuit living in small communities than among those living in large communities but no significant difference was observed between regions.

The median amount of sweet beverages such as sodas and fruit beverages consumed was estimated at 444 ml (arithmetic mean = 764 ml), and sodas contributed the most to this consumption (355 ml/day) (Table 26). The consumption of sweet beverages did not vary according to sex but it was much higher among young people. In fact, the daily median amount of sweet beverages consumed by the Inuit aged 18-29 years approached one litre per day (median = 913 ml/day) whereas it was estimated at 442 ml/day for the Inuit aged 30-49 years and at 68 ml/day for people aged 50-74 years. Individuals having some years of secondary schooling were the greatest consumers of sweet beverages (median amount =

710 ml/day) as compared with those having completed secondary levels or more (median amount = 433 ml/day) and those with the lowest level of education (median amount = 175 ml/day). The consumption of sweet beverages did not vary according to job status nor by place of residence.

Figure 22 Daily consumption frequency of sweet foods according to age group, Nunavik, 2004



Source: Nunavik Inuit Health Survey 2004.

Table 26 Median and mean amounts of sweet beverages daily consumed by age group (ml/day), Nunavik, 2004

	18-29		30-49		50-74		Total	
	Median CI	Mean (SE)	Median CI	Mean (SE)	Median CI	Mean (SE)	Median CI	Mean (SE)
Sodas	710 (609-710)	912 (52)	355 (254-355)	536 (33)	47 (23-51)	148 (21)	355 (304-355)	596 (25)
Fruit beverages	47 (35-70)	233 (23)	17 (6-35)	145 (15)	0	60[E] (11)	17 (11-25)	160 (11)
Total	913 (733-1065)	1165 (59)	442 (355-553)	681 (36)	68 (51-134)	208 (24)	444 (380-532)	764 (28)

E Interpret with caution.

Source: Nunavik Inuit Health Survey 2004.

6. EATING PATTERNS

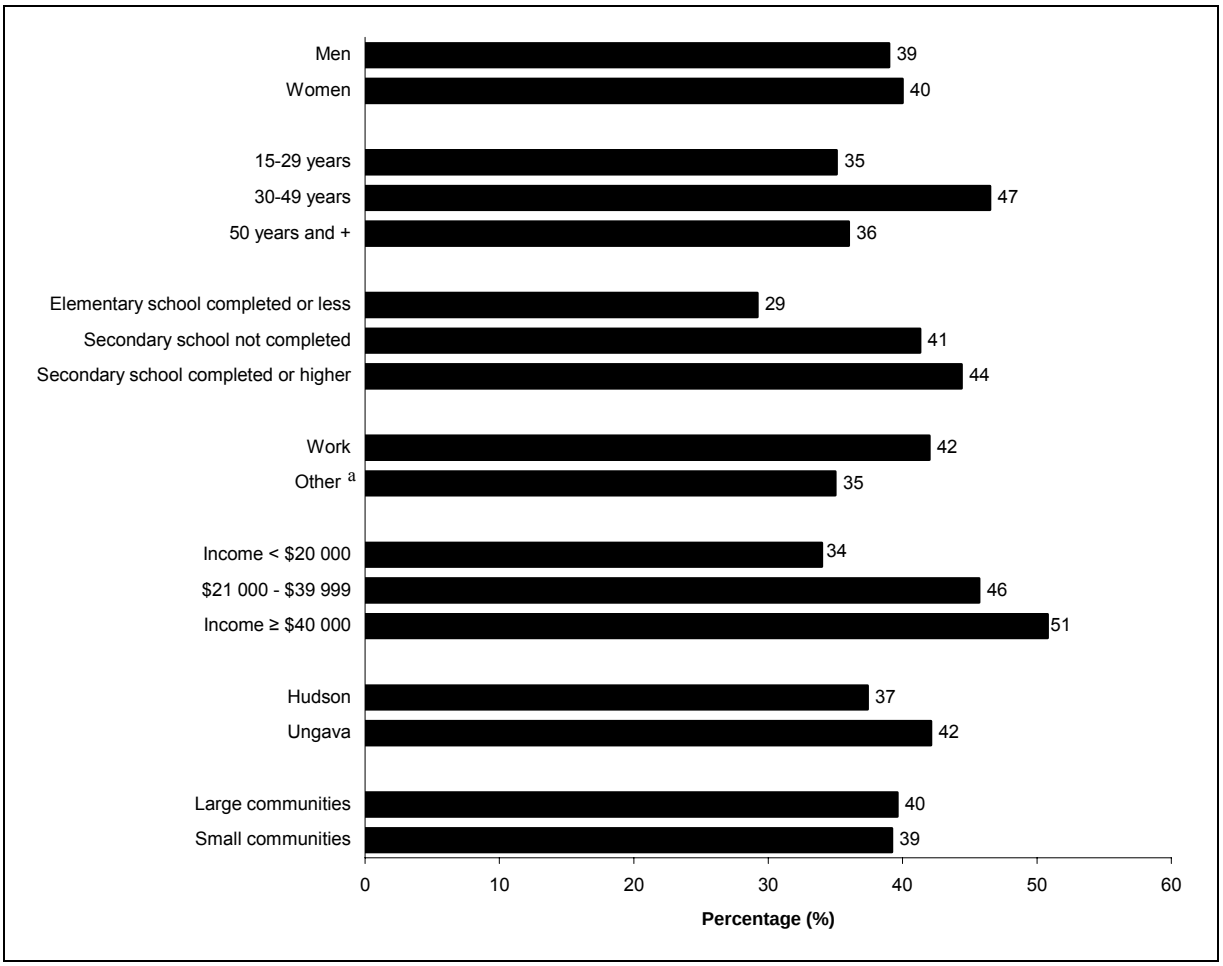
This section presents some of the eating patterns of the Inuit and their relationship with socio-demographic characteristics (e.g. household income, level of education, job status, marital status, etc.). The prevalence of household food insecurity was also examined according to these characteristics using the individual and household questionnaires. Several comparisons of food consumption and of the Inuit's eating patterns were made with data from the Santé Québec health survey (1992)[43].

6.1. SALT USE

Respondents who completed the individual questionnaire (15 years and over) were asked about the addition of salt to foods at the table. Nearly 40% of them declared often adding salt to their foods, 53% sometimes and only 7% never add salt to foods at the table. This practice was comparable between Inuit men and women but varied significantly according to age (Figure 23). The usual addition of salt was most popular among people aged 30-49 years, whereas the occasional addition of salt was more frequent among the Inuit aged between 15 and 29 years. Inuit aged 50 years and over were more numerous to report that they never add salt to foods at the table.

The frequent (often) addition of salt to foods was significantly less prevalent among the Inuit with the lowest level of education than among those having completed some years of secondary schooling or more (Figure 23). A higher percentage of the Inuit with jobs (42%) frequently added salt to their foods as compared with the jobless Inuit (35%). The proportion of individuals "often" adding salt to foods with a total annual income below $20 000 (34%) was lower when compared to individuals with an income higher than $20 000. However, the occasional addition of salt was more prevalent among the lowest salaried respondents (59%) as compared with higher salaried individuals. Finally, the frequent addition of salt to foods appears to be more widespread in Ungava (42%) than in Hudson (37%), whereas no difference was observed between large and small communities. Moreover, a comparison with the data obtained in 1992 reveals that the practice of adding salt to foods at the table did not change in the time from one survey to the other.

Figure 23 Percentage of frequent users of salt at the table by socio-demographic characteristics, Nunavik, 2004



[a] Other : hunter support program, housework, retired or on pension, unemployment insurance, social welfare, student or other.

Source: Nunavik Inuit Health Survey 2004.

6.2. FAT USE

Inuit who were responsible for household meal preparation were asked to report the type of fat used for cooking or used as spread (household questionnaire). For cooking, nearly 35% of respondents reported using butter, 23% reported vegetable oil, 22% lard and 14% margarine. The use of marine mammal fat for cooking was not frequent whereas shortening was mentioned by 3.5%^{E} of respondents (SD = 19.9). Furthermore, over 67% of them reported the use of butter as spread whereas 27% indicated margarine.

The ways of eating fish, marine mammals and other meats are presented in Table 27. Fish and beluga were mainly eaten raw, frozen or dried. Seal, walrus and other meats were more often eaten cooked, the primary type of cooking being boiling. Deep-frying of fish and other meats was not frequently done, this type of cooking being used about 20% of the time. The use of fat for cooking did not vary significantly according to socio-demographic characteristics. However, the use of fat as spread and the

ways of eating fish, marine mammal meat or other meat varied according to region and community size (data not shown). Butter was used as a spread more in Ungava than in Hudson where margarine was more popular.

A higher proportion of the Inuit living on the Ungava coast (29%) ate fried fish than did people living on the Hudson coast (14%) where fish was most often eaten raw, frozen or dried (59% vs. 44%). Moreover, cooked seal (especially boiled seal) was mainly consumed in Ungava (80%) and in large communities (73%) as compared with Hudson (60%) and small communities (64%) where raw, frozen or dried seal was mostly consumed. Inversely, walrus was most often eaten raw, frozen or dried on the Ungava coast (72%) and in small communities (67%) as compared with on the Hudson coast (50%) and in large communities (55%). Lastly, detailed information was impossible to obtain regarding the way beluga was eaten, consumers being not numerous enough to permit statistical analyses.

Table 27 Ways of eating fish, marine mammals and other meats reported by the person responsible for household meal preparation, Nunavik, 2004

	Ways of preparation / Cooking		
	Fried	**Boiled / Roasted**	**Raw / Frozen / Dried**
		%	
Fish	20.8	27.4	51.9v
Seal	F	69.4	30.6
Beluga	F	11.3	88.7
Walrus	F	38.9	61.1
Other meats	21.5	60.3	18.2

F Unreliable estimate.

Source: Nunavik Inuit Health Survey 2004.

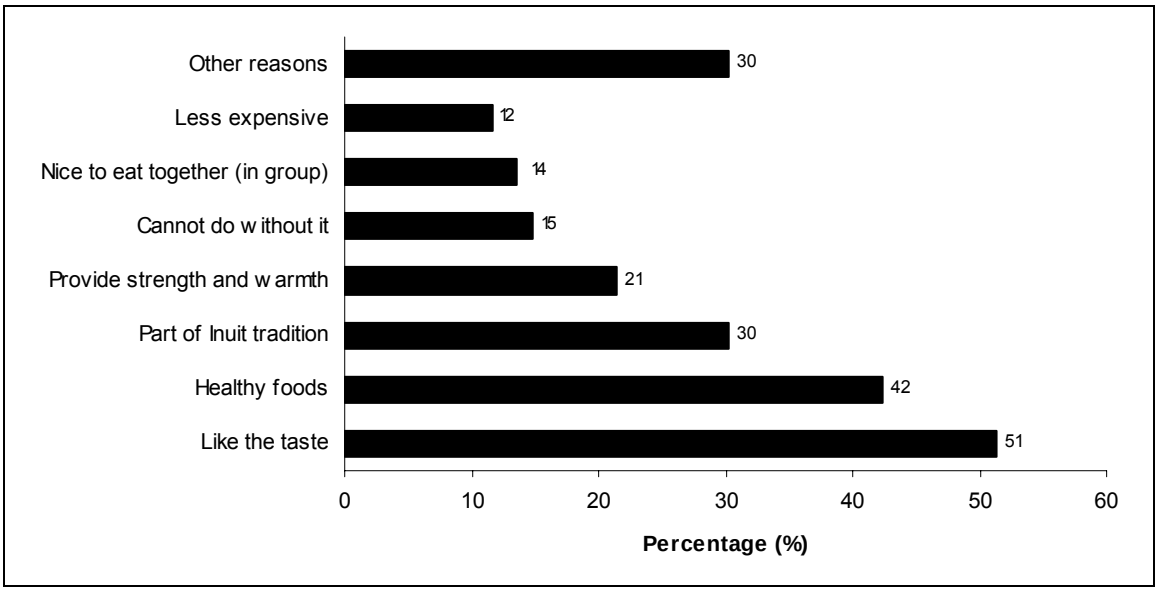
The people responsible for household meal preparation were also asked how bannock was eaten. More than half of them (59%) reported “stove top” as the main way of cooking bannock, deep-frying and baking being used by 18% and 6% of them, respectively. The way differed significantly according to the age groups, the Inuit aged 30 years and over more often eating stove-top prepared or baked bannock than young people. The residents of Ungava also consumed stove-top prepared or baked bannock (79%) more often than did the residents of Hudson (52%). Deep-fried bannock was more popular in Hudson where 32% of the people responsible for household meal preparation reported this way of cooking it, whereas very few people in Ungava responded this way. Deep-fried bannock was also less popular in small communities than in larger communities.

6.3. PERCEPTION OF TRADITIONAL FOODS AND STORE-BOUGHT FOODS

The Inuit completing the individual questionnaire were asked about their perception of traditional Inuit foods and store-bought foods. Figure 24 shows the opinions on traditional foods most often mentioned by the Inuit aged 15 years and over. Overall, 51% of the Inuit reported that they like the taste of traditional foods and this opinion was mainly reported by women, older Inuit and Inuit with a secondary or higher level of education. Furthermore, 42% of Inuit mentioned that traditional foods are healthy; among them, there was a greater proportion of older Inuit and individuals with less formal

education who reported this view as compared with younger and more educated people. Inuit from Hudson and those residing in large communities shared this opinion in greater proportions than the Inuit from Ungava or small communities. Nearly one third of individuals aged 15 years and over mentioned considering traditional foods as a part of the Inuit tradition; women and older Inuit reported this opinion in higher proportions. Furthermore, this point of view was more prevalent among Inuit with less formal education and among those with an annual income under $20,000. Nearly 20% of the Inuit mentioned that traditional foods provide strength and warmth and a greater proportion of Inuit from Hudson reported this opinion. The Inuit aged 50 years and over with a lower level of education stated this most frequently. Finally, about 14% of the Inuit mentioned that traditional foods are nice to eat together, i.e. in a group, nearly 12% considered that traditional foods are less expensive than store-bought foods and 30% expressed various other opinions.

Figure 24 Opinions expressed regarding traditional foods, Nunavik, 2004



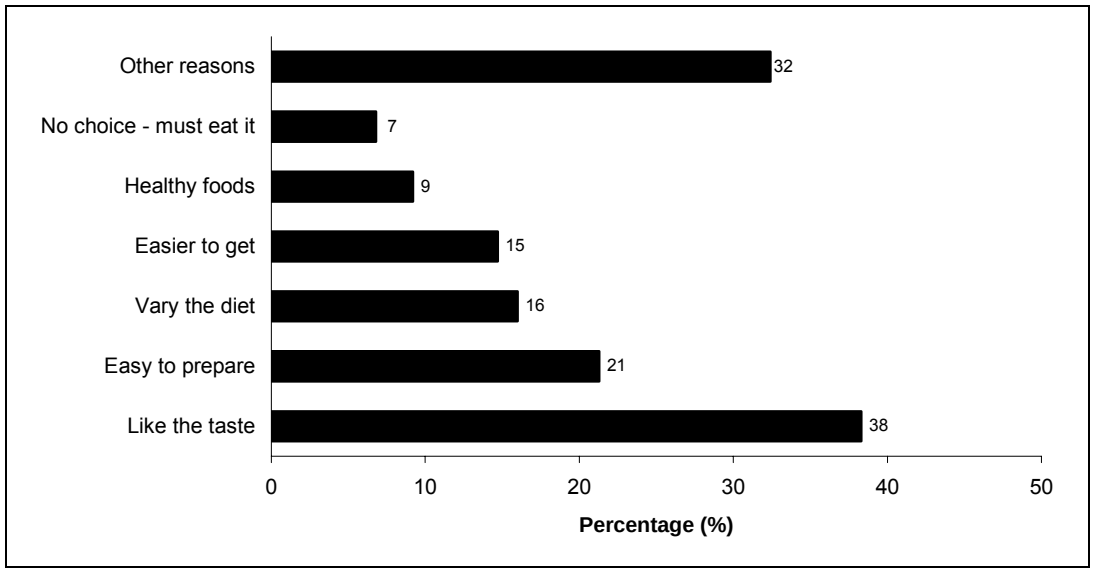
Source: Nunavik Inuit Health Survey 2004.

Figure 25 shows that 38% of the respondents stated they like the taste of store-bought foods and this opinion was more often expressed by the Inuit living in Hudson and those aged 15-29 years as compared with Ungava residents and older people. In contrast, the Inuit with a higher level of education, those with a job and those with an income over $40 000 mentioned the good taste of store-bought foods in smaller proportions. More than one Inuit in five (21%) considered that store-bought foods are easy to prepare and a higher percentage of women than men mentioned that. A greater proportion of the Inuit residing in Ungava and of those in large communities also mentioned this view compared to individuals from Hudson or small communities.

The Inuit with a higher level of education, those with a job, and those with an income higher than $20 000 reported this opinion in higher proportions than did individuals of other socio-demographic groups. Furthermore, 16% of the Inuit mentioned that store-bought foods permit varying their diet, and a higher proportion of individuals aged 50 years and over and of those with an annual income higher than $20 000 reported this point of view. Nearly 15% of the Inuit mentioned that store-bought foods are easier to get than traditional foods and the mention of this opinion increased with age. This point of

view was more prevalent among the Inuit with an annual income higher than $40 000. Furthermore, 9% mentioned that store-bought foods are healthy, nearly 7% declared that they have no choice but to eat them, and 32% reported other reasons. Finally, it is interesting to note that a greater proportion of the Inuit aged 15-29 years and those with some secondary schooling had no opinion on store-bought foods or did not answer this question.

Figure 25 Opinions expressed regarding store-bought foods, Nunavik, 2004

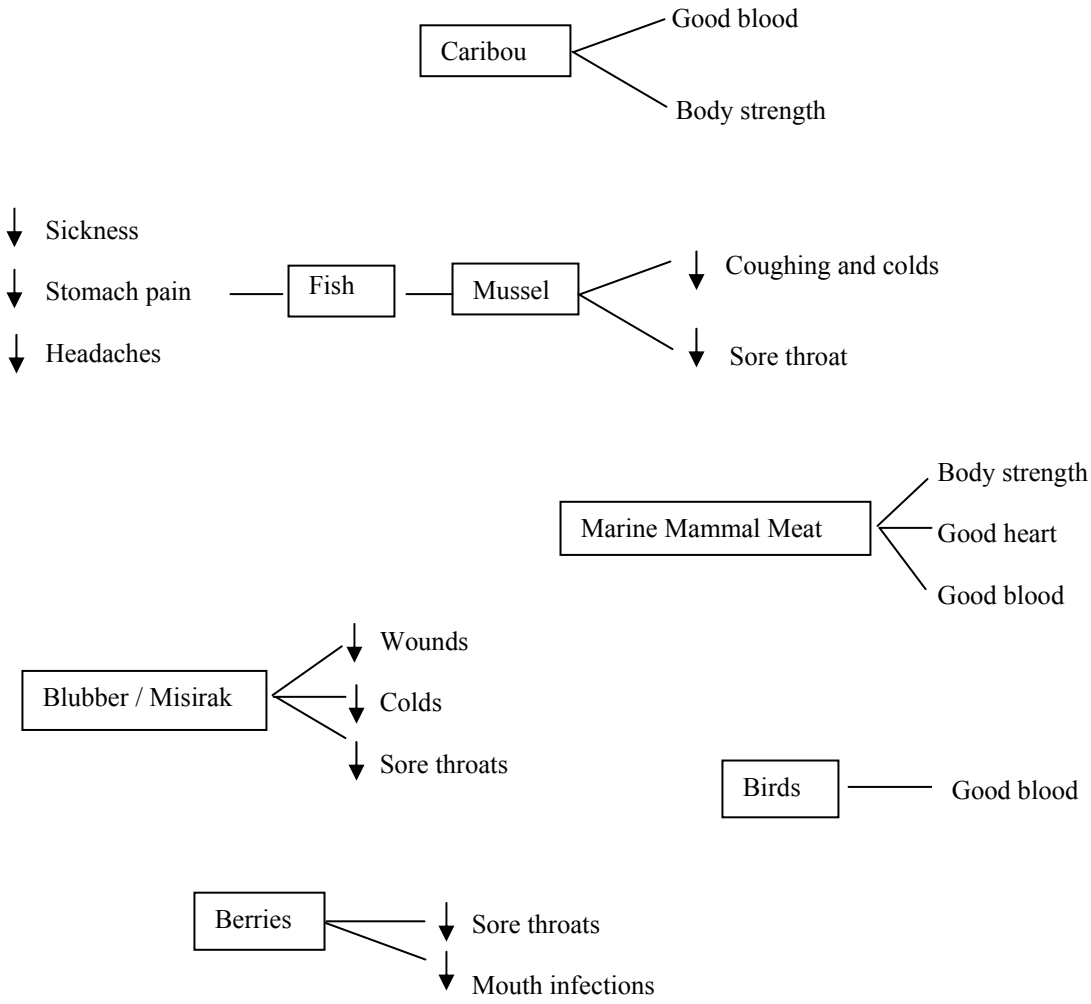


Source: Nunavik Inuit Health Survey 2004.

6.4. USE OF TRADITIONAL FOODS FOR MEDICINAL PROPERTIES

Individual questionnaire respondents were also asked about the use of traditional foods for medicinal properties and about a quarter of them (28%) stated they used them. The most frequently mentioned traditional foods used for medicinal properties were, in decreasing order, caribou, fish, traditional foods (mainly marine mammal meats), blubber, berries and birds (Figure 26). The main medicinal properties reported for caribou were to provide good blood and body strength. Fish were mentioned for their properties to reduce sickness, stomach pain and headaches, and mussels to relieve coughing, colds and sore throats. The meat of marine mammals is used to provide body strength, a strong heart and good healthy blood. Blubber and misirak were mainly reported for their proprieties to relieve wounds, colds and sore throats. The Inuit associate berries with treating sore throats and mouth infections. Finally, some Inuit reported using birds, especially ptarmigan, for their property to provide good blood.

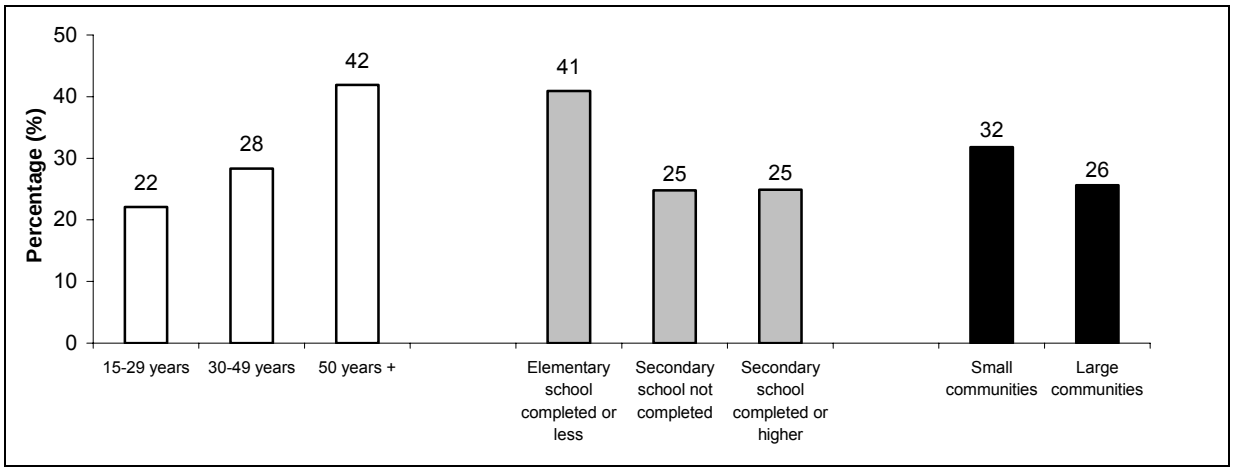
Figure 26 Use of traditional foods for medicinal properties, Nunavik, 2004



Source: Nunavik Inuit Health Survey 2004.

The use of traditional foods for their medicinal properties increased significantly with age, being twice as prevalent among the Inuit aged 50 years and over as among the Inuit aged 15-29 years (Figure 27). This practice did not differ between men and women, regions nor according to job status or income. However, the use of traditional foods for medicinal properties was significantly higher among the Inuit with a low level of formal education as compared with those having completed some years of secondary schooling or more. The practice was also more widespread in small Nunavik communities than in large communities.

Figure 27 Use of traditional foods for medicinal properties by socio-demographic characteristics, Nunavik, 2004

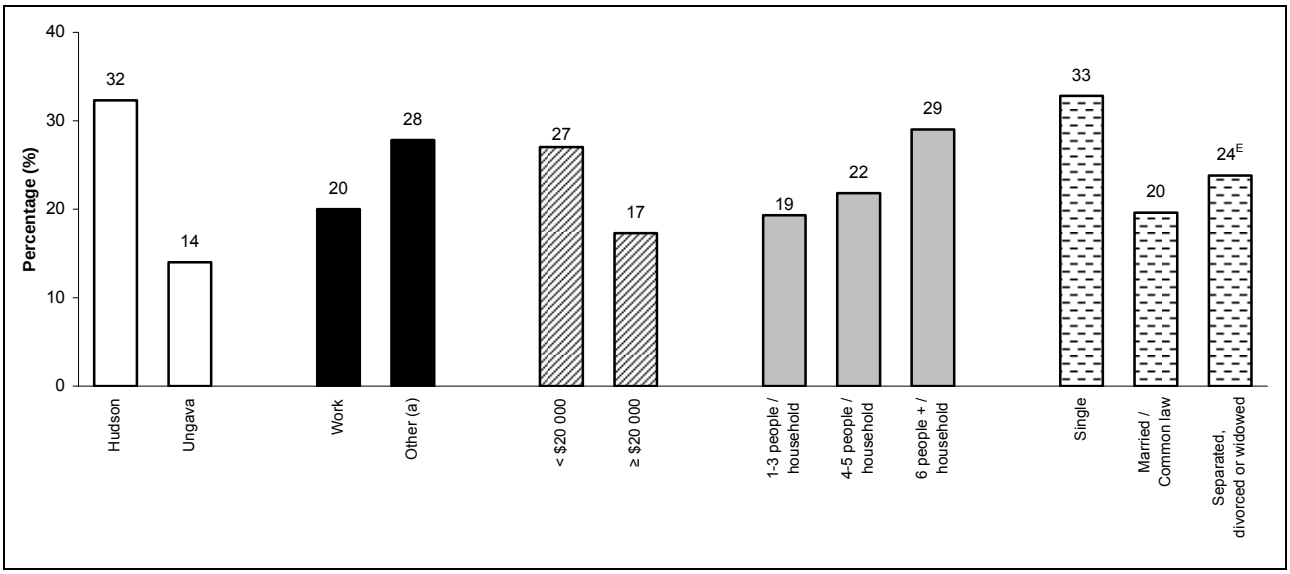


Source: Nunavik Inuit Health Survey 2004.

6.5. FOOD INSECURITY

Three questions concerning food insecurity were included in the household questionnaire and were answered by the people responsible for household meal preparation. Results revealed that nearly 24% of them declared that there was not enough to eat in the house during the month prior the survey. The prevalence of a lack of food did not vary according to age, gender or level of formal education. However, a greater proportion of households living in Hudson communities reported having lacked food as compared with those living in Ungava communities (Figure 28). The prevalence of a lack of food was slightly lower than that observed in 1992 (30%) which was also higher in Hudson than in Ungava. A greater proportion of the Inuit who were not working declared that their household lacked food during the month before the survey as compared with individuals who were working. A higher proportion of the Inuit with incomes under $20 000 appear to have lacked food as compared with higher salaried people. The lack of food also varied according to the number of persons living in household, the prevalence rising as the number of persons in household increased. Marital status was also associated with this condition. In fact, nearly 33% of single people and 24%^{E} of separated, divorced or widowed people declared having not had enough to eat during the month prior to the survey as compared with 20% of married or common-law respondents.

Figure 28 Food insecurity by socio-demographic characteristic, Nunavik, 2004



[a] Other : hunter support program, housework, retired or on pension, unemployment insurance, social welfare, student or other.

E Interpret with caution.

Source: Nunavik Inuit Health Survey 2004.

Nearly 88% of household respondents reported getting traditional foods from the community freezers, 75% did it occasionally and 13% often. Among the non-users, the main reason for not resorting to the community freezers was that they never needed to. The use of the community freezers was more frequent in 2004 than in 1992 when 74% of household respondents reported it. The use of the community freezers to obtain traditional foods is not related to age, gender, formal education, occupation, income or the size of community. However, a greater proportion of Ungava residents (93%) used traditional foods from the community freezers compared to Hudson coast residents (84%). Furthermore, a greater proportion of separated, divorced or widowed people (91%) declared going to the community freezers as compared to married or common-law individuals. Obtaining traditional foods from community freezers was not related to the lack of food in the household during the month prior to the survey.

Nearly 22% of the respondents in charge of household meal preparation reported receiving traditional foods from friends often, 68% sometimes and 10% never. Finally, although Inuit women reported receiving traditional foods from friends more frequently than men, this practice was not related to other socio-demographic characteristics.

7. DISCUSSION

The Nunavik Inuit Health Survey 2004 allowed gathering important information about food and nutrient intakes of the Inuit of Nunavik, their eating habits and food insecurity. The results will be very useful in establishing appropriate nutrition programs for the Inuit population.

7.1. FOOD AND NUTRIENT INTAKES

The day before the survey, intakes of protein, most of complex-B vitamins, iron, phosphorus and selenium were acceptable for more than 60% of the Inuit adults of Nunavik. However, intakes of vitamins A, C and D, folate, vitamin B-6, calcium, magnesium and fibre were particularly low among the Inuit for all age groups and both sexes, despite the fact that higher nutrient intakes were observed among people of some socio-demographic groups. Indeed, when comparing with data collected in 1992 during the Santé Québec survey, we observed that the 2004 intakes of vitamins A and D, niacin, vitamin B6 and iron had not significantly improved. Moreover, carbohydrate and sodium intakes were significantly higher in 2004 than in 1992, especially among young people[25].

These poor nutrient intakes reflect the low consumption of dairy products, fruit and vegetables, and whole-grain products by the Inuit. In effect, the findings of the 24-hour dietary recall analysis in relation to the consumption of these food groups as defined by the Canadian food guide are consistent with low nutrient intake findings. When the amounts of daily servings of food groups were compared to the new Canadian Food Guide (2007), the results showed that most of the Inuit met the recommended amounts for meat and alternatives. In contrast, most of the Inuit fell below the recommendations for milk products, vegetables and fruit, and grain products. Inversely, intakes of sweet and high-sodium foods exceeded the recommended moderate use.

According to the new edition of the Canadian Food Guide (Appendix V), a minimum of seven servings of vegetables and fruit a day are recommended but, the day before the survey, only 11% of the Inuit ate this quantity. The inadequate consumption of fruit and vegetables may explain the low intakes of vitamins A, C, folate and fibre. Furthermore, the majority of the Inuit adults did not daily consume at least one serving of milk products, the main contributors of calcium, vitamin D and also vitamin A in the case of fortified products. The results also showed that only 4% ate whole-grain products and that white bread and white flour represented 60% of the intake of grain products. This may explain the low fibre intake of the Inuit. Furthermore, fruit juices were consumed more often than whole fruit, and fruit juices contain less fibre than whole[44]. In addition to fibre, whole-grain products contain other essential nutrients such as folate, B-complex vitamins, iron and magnesium. When examining the contribution of food groups to the low nutrient intakes, it is not surprising to observe that other sources, which are generally poor sources of these nutrients, do contribute to nutrient intakes. For example, it is well known that milk products are the best source of calcium. Since the Inuit consume very few dairy products, the results showed that other sources such as items in the "Other food" category or grain products contributed significantly to the calcium intake, even though the total calcium intake was very low.

When estimating the usual consumption of dairy products, vegetables and fruit, and whole-grain products using the food frequency questionnaire, the results revealed that these foods were not frequently consumed during the month before the interview and the quantities consumed daily approached those estimated with the 24-hour dietary recall. Historically, the traditional Inuit diet did

not comprise such store-bought foods, the Inuit diet being mostly carnivorous. However, the results of the present survey revealed that 84% of energy was supplied by store-bought foods, revealing that these foods today represent the greatest part of the Inuit diet. The results also suggest that store-bought foods consumed the day before the survey did not provide the Inuit with a well-balanced diet and that training on nutrition is essential in Nunavik. It seems that the current recommendations regarding nutrition must be adapted to the Inuit context, since many factors such as the accessibility and availability of foods in Nunavik as well as food preferences or food tolerance may be different from those of southern populations. For example, it is known that many Inuit adults suffer from lactose intolerance when consuming milk, in particular. Alternatives such as lactose-free milk and processed milk products (yogurt, cheese) and dishes made with cooked milk should be proposed to the Inuit. As mentioned by Lawn and Harvey in their recent report, many Inuit do not know how to prepare and cook store-bought foods[23]. Thus, nutrition programs developed for Nunavik should also include training on preparing and cooking healthy store-bought foods.

The intakes of meat and alternatives calculated with the food frequency questionnaire were also similar to those estimated with the 24-hour recall and, for most of the Inuit, were within the recommended ranges. Meat and alternatives were the main sources of lipids and cholesterol and the second source of SFAs. The percentage of energy from fat appeared to be lower in 2004 than in 1992. However, for 25% of the Inuit, the contribution of fat to energy intake was as high as 35%. Fish, caribou and birds are lean meats and are consumed frequently by the Inuit. However, it appears that store-bought foods such as chicken (fried chicken, chicken skin, nuggets) and processed meats contributed to a high fat intake.

In addition, the meat and alternatives food group, which also includes traditional marine foods, was also a great source of omega-3 (n-3) fatty acids, the traditional "good" fat. The American Heart Association recommends a daily intake of at least 500 mg of EPA and DHA as protection against cardiovascular diseases[3]. The consumption of traditional marine foods, which are rich in n-3 polyunsaturated fatty acids, protects the Inuit against cardiovascular diseases, a major cause of mortality in industrialized countries. The n-3 fatty acids are also increasingly recognized as having a beneficial effect upon visual acuity and contributing to increased birth weight. As mentioned above, the Inuit intakes of these fatty acids are high compared to other populations because of the consumption of traditional foods[7, 11, 45-47]. However, the results also showed that the n-3 fatty acid intake of the older Inuit was higher than that of the younger Inuit, and this reflects the decreased consumption of traditional foods by young people.

The results also showed a high consumption of sweet foods and drinks and this was the case for the estimates from both the food frequency questionnaire and the 24-hour dietary recall. In particular, sweet beverages were the most important sources of carbohydrates and contributed to about 12% of the calorie intake the day before the interview. The median intake of sweet beverages such as sodas or fruit beverages was estimated at 444 ml (arithmetic mean = 764 ml), and soda contributed the most to this intake (355 ml/day or the equivalent of one can). It is important to note that a 355-ml can of soft drink contains about 40 grams of carbohydrates, corresponding to eight teaspoons of sugar. The consumption of sweet beverages was much higher among young people. As suggested by Nobmann, a reduction in soft drink consumption could substantially reduce the daily intake of sugar among the Inuit[44].

The high sodium intake of the Inuit was likely supplied by commercially prepared foods such as soups, snacks, sauces, prepared meals (fried chicken, hamburgers, French fries). Moreover, in addition to the consumption of these salty foods, nearly 40% of the Inuit indicated they often add salt to their foods.

7.2. TRADITIONAL FOOD CONSUMPTION

Traditional foods supplied 16% of the total energy intake the day before the survey, in comparison with 84% supplied by store-bought foods. The contribution of traditional foods to the Inuit diet was higher among older Inuit than among young people whereas store-bought foods contributed more to the diet of younger Inuit. Indeed, traditional food supplied 11% of the energy among young people aged 18-29 years, 15% of energy among people aged 30-49 years and 28% of energy among people between 50 and 74 years of age. Similar observations were made in other northern populations during recent decades[16, 48, 49]. The older Inuit also consumed more traditional fat than the younger people. Consequently, the contribution of traditional food to energy and nutrients increased with age.

In this report, we have presented the consumption frequency of traditional food items as the number of meals consumed weekly, in addition to absolute intakes. This resulted in a better picture of the extent of traditional food use by the Inuit of Nunavik on an annual basis. The consumption frequency of country meats, fish and birds was significantly higher in 1992 than in 2004. The median intakes of country meat and store-bought meat calculated with the food frequency questionnaire were also compared to those estimated with the 24-hour recall. It was interesting to find that meat consumption was comparable when comparing both instruments and that the amounts estimated by the 24-hour recall probably represented the usual consumption of the Inuit.

The results also revealed that traditional food consumption of the Inuit was higher among people residing in Hudson as compared with residents of Ungava. The results of the Santé Québec health survey also revealed that residents along the Hudson depended more on traditional foods than on store-bought foods[25]. Surprisingly, traditional food consumption did not vary according to the size of communities. Differences in traditional food consumption according to the degree of urbanization of Inuit communities have been reported by others[17, 18, 50, 51]. According to Kuhnlein, the use of traditional foods in the North depends on the remoteness of the community from urban centres, among other things[51]. The variation in traditional food consumption according to region may be also attributed to the territorial availability of wildlife species. In particular, the variation in abundance and availability of different species regionally, seasonally, and from year to year are natural sources of variation in traditional food consumption[24].

It has been suggested that higher formal education and employment among the Inuit can limit, but not necessarily eliminate, individual involvement in harvesting activities and therefore the consumption of traditional foods[24]. Freeman et al. reported than the level of education was inversely related with traditional food consumption[52]. Wage employment and household income also appear to have an influence on traditional food consumption[53-56]. The results of the present survey did not show significant differences in traditional food consumption for variables relating to job status. However, the consumption of marine mammals appeared to vary according to the level of education, the Inuit with the lowest level consuming more marine mammals on an annual basis than the Inuit in the higher levels. Furthermore, in terms of consumption frequency on annual basis, a higher proportion of Inuit with the lowest level of education reported having consumed marine mammals. Interestingly, a greater

proportion of these individuals also consumed traditional foods less popular in Nunavik such as cod, whitefish, birds such as eider, pintail, murres, and bird eggs.

The results showed that the older Inuit had a better perception of traditional foods than the younger Inuit, which may explain the greater consumption of traditional foods by the older Inuit. In the present survey, a greater proportion of the older Inuit as compared to the younger Inuit reported that traditional foods are healthy foods and considered them a part of Inuit tradition. In contrast, a higher proportion of young people indicated they like the taste of store-bought foods as compared with older Inuit. Pars et al. also reported that Greenlandic Inuit elders had higher preference ratings for traditional foods than younger Inuit, corresponding with the consumption frequency of traditional foods[48]. Among the Inuit of Aklavik (North West Territories), Wein and Freeman reported that children liked traditional foods just as much as adults. However, children rated most store-bought foods higher in preference than did adults, likely reflecting the greater availability of market foods in recent years[57]. Furthermore, the Santé Québec health survey (1992) also revealed that younger Inuit were less aware of the relationship between food and health than elders[25].

Igunak, which is fermented seal meat, has been associated with botulism and every year, some cases are declared in Nunavik. Data obtained from the food frequency questionnaire showed that about 17% of the Inuit reported having consumed igunak during the year before the survey and the consumption frequency increased with age. Igunak can be consumed in a secure way if it is prepared safely. Hence, several precautions have been identified to avoid botulism. The Inuit should consult the Nunavik health authorities in order to be well-informed of the safe preparation of igunak.

7.3. FOOD INSECURITY

There are different degrees of food insecurity, from anxiety to hunger, and different methods to measure it. Food insecurity is defined by the availability of nutritionally adequate and safe foods when the ability to acquire acceptable foods in socially acceptable ways is limited or uncertain[32]. It is important to note that food insecurity may lead to chronic health problems such as obesity, diabetes, and high blood pressure and may induce psychological and societal distress[32, 58].

In this survey, survey participants were asked the same question used in 1992 on whether they had lacked food during the month before the survey. In 2004, nearly one person in four (24%) indicated that they had lacked food during the month before the survey. The results also revealed that a greater proportion of the Inuit residing in Hudson communities, jobless Inuit, single people followed by separated/divorced or widowed Inuit stated they had lacked food in their house. Moreover, the prevalence of food insecurity rose as the number of people in the household increased. Similar observations were found when examining the data from the 1992 survey[20, 25]. Thus, data suggest that the more the household is crowded, the more it is difficult to get sufficient food to nourish the family.

Several factors may explain the food insecurity observed among the Inuit: the low income of many Inuit households, the high price of store-bought foods, the lack of availability of some food items, the general decrease of traditional food consumption in the Inuit population and the lack of information on nutrition and food choices. In the smaller, most northern Nunavik communities, food prices are higher and there are fewer people with full-time wage employment[23, 59]. Hence, it follows that food security is a serious problem for some families, especially those on social assistance and those with a low family income[60]. Lawn and Langner indicated that the substitution of traditional foods by store-bought foods such as prepared food items, is easier (less labour intensive), since store-bought foods require less

preparation, while Morrison et al. reported on the poor nutrient quality of many of the store-bought food items consumed among some northern populations[60, 61]. The recent report by Lawn and Harvey on nutrition and food security in Kangisujjuak also reveals that cost, quality, availability and lack of variety are major barriers to purchasing more fresh fruit and vegetables, bread, milk and eggs[23]. Their report also indicates that in 2002, about 30% of Inuit adults and children in this community had been food insecure in the past 12 months. Access to fishing and hunting equipment can limit the consumption of traditional foods. Recently, Lambden et al. reported that the non-affordability of store-bought foods and a lack of access to hunting and fishing in Arctic Canada are serious barriers to food security[58]. The substitution of traditional foods, which are excellent sources of several key nutrients, by store-bought foods is not always desirable, especially when the lower nutritional value of some store-bought food substitutes are considered. Less nutritious foods are often more available in the North and less expensive than nutritious foods. Chan et al. assessed community perceptions on the availability and accessibility of traditional and market foods in Nunavut[62]. Interestingly, participants suggested that food security could be gained through increased financial support for local community hunts, freezers and education programs, as well as better access to cheaper and higher quality store-bought foods.

7.4. LIMITS RELATED TO DIETARY DATA COLLECTION METHODOLOGY USED IN 2004

In order to well document the food consumption, nutrient intakes and the dietary habits of the Inuit of Nunavik, two dietary questionnaires were completed by the survey participants in 2004. However, any dietary survey has limits related to the questionnaires used to collect the information. Thus, there were potential limitations associated with the 2004 survey. The 24-hour dietary recall is generally considered the method of choice for assessing the food and nutrient intakes of population groups[28, 29]. As mentioned earlier, data collection was performed on the scientific research vessel, the Amundsen, and the complex logistics of the survey did not permit collecting a second 24-hour dietary recall among a certain percentage of participants. Hence, the data collected from the 24-hour recall do not represent the usual intake of the Inuit population and do not permit the identification of groups at risk of nutritional deficiencies. Inversely, the food frequency questionnaire allows for measuring long-term intakes, thus providing a representative idea of usual intakes of specific foods. The food frequency questionnaire used in 2004 (Appendix II) allowed the information to be gathered on the consumption of most of the traditional foods consumed by the Inuit over the year prior to the survey, and of some important store-bought foods such as fruit, vegetables, commercial meats, dairy products, grain products, as well as less nutritious foods such as fatty and sweetened foods.

Certain limitations related to the logistics of the survey may have made it impossible to get the same level of details and precision as in surveys conducted in southern or urban regions. This is a different culture that is not very prone to paying attention to details related to food; the Inuit are not aware of details regarding the food that they consume. Another factor was that being on a boat for dietary data collection did not permit participants to check food brands in their homes. Thus, it was sometimes difficult for participants to recollect the details on foods they had eaten since they could not check in their cupboards.

The nature of errors when reporting food intakes may be related to errors in portion-size estimation or to whether some types of foods are more likely to be under- or over-reported. Respondents with low energy intakes are more likely to report foods generally perceived as healthy (such as fruit, vegetables, salad, meat and fish) and fewer foods generally perceived as less healthy (cakes, cookies, candies and

fats) [42]. It is difficult to determine whether these patterns are due to social desirability, or more simply, because the less healthy foods are more likely to be forgotten. Among the Inuit, it is probable that traditional food consumption was sometimes over-reported. In effect, some interviewers observed that the older individuals were inclined to indicate very large serving sizes of traditional foods. Consequently, the over- or under-estimation of quantities of foods consumed may also affect the interpretation of nutrient intake data. Finally, the participants also got very tired of being questioned, making it difficult to get a detailed description of the foods they ate and accurate consumption frequencies in the food frequency questionnaire. Sometimes, because participants had to leave the boat before darkness, there was insufficient time to conduct in detailed interviews, which probably affected the quality of the data.

8. RECOMMENDATIONS

The results presented in this report highlight the importance of promoting good nutrition among the Inuit of Nunavik. Inadequate or imbalanced food intake are the results of many factors such as the susceptibility of individuals (e.g. pregnant women, the elderly, sick people) and environmental factors (poverty, lack of education, inadequate food supply, etc.). Public health nutrition is concerned with problems of nutrition that affect large numbers of people and that can be solved most effectively through group-focused activities. Indeed, nutrition programs developed in the context of public health could offer a great opportunity for the Inuit population to learn the essentials of nutrition in relation to health and to take action to improve the quality of their diet and thus their well-being. In addition to stressing the importance of sufficiency of all nutrients to meet individual needs, nutrition education should emphasize the importance of avoiding excesses of calories, fat, sugar, refined foods and salt.

Nutrition education must be an essential component of Nunavik public health programs in the school system (elementary and secondary) and must continue to be provided throughout the life cycles of residents. Nutrition education programs should also reach low-income families and provide practical tips to promote better nutrition such as how to prepare healthy store-bought foods, how to make the best use of food money, what to look for on a label, etc. Moreover, it is important that tools be developed that will allow Inuit people to make healthy food choices and have access to accurate information on nutrition. These tools should take into account the social and cultural values of the Nunavik Inuit population, and provide information on nutrients and on the preparation of traditional and store-bought foods[36, 63]. Given that community links are strong within the Inuit population, it is important that local health authorities and professionals work on an intensive education approach involving people for whom the programs are targeted. Moreover, in order to accomplish these numerous tasks in nutrition, Nunavik would benefit from hiring additional nutritionists on its territory.

The Nunavik Inuit Health Survey conducted in 2004 has allowed us to document the nutrient intakes and the food habits of the adult population and points to the need for Nunavik communities to develop appropriate nutrition interventions. The results have raised concerns about the nutritional status of residents and therefore the following principal recommendations have been formulated for the Inuit population:

- Maintain or increase the consumption of traditional foods because it has given the Inuit several advantages such as physical and social well-being, cultural identity, economic value and food security.
- Increase the consumption of healthy store-bought foods, particularly the good sources of vitamins A, C and D, folic acid, calcium and magnesium. These include fruit (in particular whole fruit), vegetables including certain yellow and green ones, milk products (milk, cheese, yogurt) and whole-grain products (bread, cereals, flour).
- Reduce the consumption of sweet foods, in particular soft drinks, salty foods and foods high in fat.
- Maintain healthy weights and increase physical activity.

9. CONCLUSION

The results of the survey conducted in Nunavik in 2004 indicate that food intakes of the Inuit differ in many respects from the Canadian Food Guide's recommendations. Specific findings of concern include low intakes of fruit and vegetables, whole-grain product, and milk products, which can reduce the risk of some chronic diseases, and high intakes of sweets, known to increase the risk of obesity and diabetes. The consequences of these insufficient consumptions are reflected in the low intakes of several important nutrients. Similar observations have been reported among several Aboriginal populations in which obesity and diabetes are known to be health problems of epidemic proportion. In addition, food insecurity is also a major problem for several Inuit households. Food insecurity may lead to chronic health problems such as obesity, diabetes and high blood pressure and may induce psychological and societal distress.

The 2004 survey revealed that important modifications must be made to improve the diet of the Inuit of Nunavik in order to enhance their nutritional status. It is hoped that the results of the present study will help public health authorities in Nunavik, such as the Nunavik Nutrition and Health Committee and the Nunavik Regional Board of Health and Social Services to design more effective food promotion strategies relating to traditional Inuit foods and store-bought foods. Without a doubt, nutrition programs should include education on healthy, store-bought food choices at low cost in order to reduce the food insecurity in Nunavik households.

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APPENDIX I

24 HOUR DIETARY RECALL

Appendix I - 24 Hour Dietary Recall

STUDY NO. | E | S | I | | | | |

INT. NO. | | |

Qanuippitaa?

ᖁᓄᐃᖅᓯᒃ?	*How are we?*
ᐃᓕᓴᕆᓂᖅᓱᑦ ᖁᐅᓴᓴᐅᑎᑦ ᐃᓄᐦᓂ ᓄᓇᕗᒻᒥᐅᓂ – 2004	*Health Survey of the INUIT of Nunavik – 2004*
ᐃᑲᐅᖅᓂᓂ ᐊᐢᑎᓪᓗ ᓴᑕᒪᓪᓗᓂ ᓂᓚᔨᕕᓂᑦ	*24 HOUR DIETARY RECALL*
ᐊᐱᖅᓴᔨᔪᑦ - ᐱᔨᓗᖅᑕᕐᕕᑦ ᐊᐱᖅᓴᓯᑎᑦ	*Interviewer-Completed Questionnaire*

INSPQ
Institut national de santé publique du Québec
945, rue Wolfe
Ste-Foy (Québec) G1V 5B3
Tel.: (418) 650-5115

Completion date _04_/____/____ (y m d)

Time: ____/____ (h m)

Page 1

ᖃᓕᓂᖏᓂᖅ **Time** 00:00 24:00				E	M	S	ᓄᓇᕗᑦᔨᐃᑦ ᓱᓇᐅᓂᖅᑎᑦ **Food description**	ᖃᓕᓴᐃᓕᓴᓂ ᐱᒋᐊᓕᖅᑭᒪᔪᓕᑦ **Number of servings**	ᓄᓕᓴᐅᑕᐅᔪᓂᑦ ᖃᓄᐃᒪᓕᖅᓂᖅ **Serving description** ᓄᓕᓴᐅᑕᐅᔪᓂᖅ **Serving Model**	ᐃᓕᓐᓂᖅ **Thickness**
1.										
2.										
3.										
4.										
5.										
6.										
7.										
8.										
9.										
10.										
11.										
12.										
13.										
14.										

ᖃᓕᓴᐅᓂᖅ ᐃᒥᔭᑎᓂᖅ ᐃᒪᓕᓂᖅ ᐃᒥᓪᑐᑦᑭᓪᓗᒍ? _____**(VE 3)**
How many glass(es) of water did you drink during the last day? _____(VE 3)

ᓇᓗᓴᕐᑯᓯᔨᖏᑦ E (√) ᓄᖅᑭᑦ ᓄᓇᕗᑦᓂᓪᓚᑕ ᓄᓇᓕᒫᒥ, ᑲᐱᑐᕐᓕᒥ, ᐅᕙᓪᓕᐅᑦ ᑎᑭᓵᑕᐅᓄᕐᓚᑕ ᓄᓇᓕᒫᒥᒥᑦ ᐊᑐᐃᓪᓛᐅᑎᕐᓂᑐᑦ.

Check column E (√) if foods were eaten in a restaurant, at a cafeteria, or taken out already prepared.

ᓄᖅᑭᑦ ᓄᓇᕗᑦᓂᓪᓚᑕ ᓄᓇᓪᓛᐅᑎᓐᓂᔭᔪ, ᐊᓪᓚᒥᑦ M ᓇᓗᓴᕐᑯᓯᔨᓕᖅᓂᓪ (M, ᓯᕗᓪᓕᓚᒥ ᓄᓇᒥᐊᖅᓱᒪᓄᑦᓕᐅᑦ M2 ᑐᖅᒪᓕᓇᓪᓂᓚᐅᑦ, ᐊᑕᖅᒪᓕᒫᖅ)

If food was eaten during a meal, write M in the M column (M, for a first meal, M2 for a second, etc.).

ᓄᖅᑭᑭ ᐅᖅᑯᐊᒥᔭᔭᔪᔭᓐᓇᔪ, ᐊᓪᓚᒥᑦ S ᓇᓗᓴᕐᑯᓯᔨᓕᖅᓂᓪ (S1, ᓯᕗᓪᓕᓚᒥ ᓄᓇᒥᐊᖅᓱᒪᓄᑦᓕᐅᑦ S2 ᑐᖅᒪᓄᓇᓕᖅᑭᑦᓚᐅᑦ, ᐊᑕᖅᒪᓕᒫᖅ.)

If food was eaten as a snack, write S in the S column (S1, for a first snack, S2 for a second, etc.).

ᖃᑦᓂᖅᔪᓂᖅ Time				E	M	S	ᓂᓗᐅᔨᐊᐃᑦ ᓯᓚᐅᓂᖅᑎᑦ Food description	ᖃᑦᓂᐊᕐᓂᓂ ᐱᒋᐊᓕᕐᓗᒪᖅᓯᒪᑦ Number of servings	ᓂᖅᓂᐅᑕᐃᓂᐅᑦ ᖃᓄᐃᓕᓕᖅᓯᒪᓂᖅ Serving description	
00:00 24:00									ᓂᖅᓂᐅᑕᑭᔪᓂᖅ Serving Model	ᐃᑦᔨᓂᖅ Thickness
15.										
16.										
17.										
18.										
19.										
20.										
21.										
22.										
23.										
24.										
25.										
26.										
27.										
28.										
29.										
30.										
31.										
32.										
33.										

ᖃᓕᓂᖅᔪᓂᖅ Time 00:00 24:00				E	M	S	ᓂᓗᐅᑦᐊᐃᑦ ᓯᓇᐅᓂᖅᑎᑦ Food description	ᖃᓕᓂᐊᕐᓂᓂ ᐱᒋᐊᓕᖅᑐᒥᒃᓴᓕᒃ Number of servings	ᓂᕿᓂᐅᑕᐃᓂᐅᑦ ᖃᓄᐃᓕᓴᐃᓂᖅ Serving description	
									ᓂᕿᓂᐅᑕᑯᔪᓂᖅ Serving Model	ᐃᑦᔨᓂᖅ Thickness
34.										
35.										
36.										
37.										
38.										
39.										
40.										
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49.										
50.										
51.										
52.										

APPENDIX II

FOOD FREQUENCY QUESTIONNAIRE

Food Frequency Questionnaire

STUDY NO. | E | S | I | | | | |

INT. NO. | | |

Qanuippitaa?

ᖃᓄᐃᑦᑎᒋᔭᖅ?	*How are we?*
ᐃᓕᓴᕆᓚᓂᖅᓯᒪᑦ ᖃᐅᔨᓴᐅᑎᑦ ᐃᓄᖕᓂ ᓄᓇᕗᒻᒥᐅᓂ **– 2004**	***Health Survey of the INUIT of Nunavik – 2004***
ᓂᓚᓕᑭᑕᖅᓂᓯᒪᑦ ᐊᐱᖅᓴᑎᑦ	***FOOD FREQUENCY QUESTIONNAIRE***
ᐊᐱᖅᓴᔨᑦ - ᐱᓱᓭᖅᑕᕐᒥᑦ ᐊᐱᖅᓴᑎᑦ	***Interviewer-Completed Questionnaire***

ᓂᓚᓱᐅᔪᑦ ᖃᓄᐃᒋᓕᐊᓂᕐᒥᑦ: PO-3, ᖃᒡᓕᑎᒃ, VE-3, ᖃᓄᖅᐅᑎᐊᓕᒃ, Creamer
Food Models to use: PO-3, Cup, VE-3, Tablespoon, Creamer

INSPQ
Institut national de santé publique du Québec
945, rue Wolfe
Ste-Foy (Québec) G1V 5B3
Tel.: (418) 650-5115

Completion date _04_/____/____ (y m d)

Time: ____/____ (h m)

1: ᓂᖅᑭᑐᐃᓐᓇᓕᖅ
Part 1: Country Food

ᓂᖅᑭᑐᐃᓐᓇᓕᖅ Country food	ᐊᐊ ᐊᐅᑲ Yes or No	ᐊᑯᓗᓐᓂᖅᓴᖅ ᐱᓱᒍᓂᖅᓴᒃᑕ ᓭᓪᓕᐅᑦ ᐊᓯᑦᕈᑕᖅᓂᖅᓴᖅ ᒪᓕᑦᓯᒍ How often by season				ᐅᖅᑲᐅᓯᑦᓴᖅ (ᓇᓗᓐᖅᓯᓗᒍ) Comments (Specify)
		ᐅᑭᐊᖅᑎ Fall	ᐅᑭᐅᑎ Winter	ᐅᐱᖅᓴᒃᓴᖅ-ᓴᖅᑎ Spring	ᐅᐱᖅᓴᒃᓴᑎ ᐊᐅᔨᖅᑎ Summer	
ᓇᑦᓯᐊᓂᑦ ᖃᓄᓕᓴᐊᓂᑦᓗ **Seal and whale**						
1. ᖃᓄᓕᓴᐊᓂᐅᑦ ᓂᖅᑭᑐᐃᓐᓇᑕᖅᓴᒃ (ᓄᑖᐊᓂᖅ, ᐃᓴᓯᒪᔨᖅ, ᖃᐊᖅᓵᓂᑦ) Beluga meat (fresh, cooked or frozen)	☐☐ Y N					
2. ᖃᓄᓕᓴᐊᓂᖅ ᓂᐅᐊᖅ Dried beluga	☐☐ Y N					
3. ᖃᓄᓕᓴᐊᓂᖅ ᒥᓯᕐᓴᒃ ᐅᓯᕐᓴᒃᓴᓗᓐᓂᑦ Beluga misirak/blubber	☐☐ Y N					
4. ᒪᑦᑕᖅᓴᒃ Beluga muktuk	☐☐ Y N					
5. ᓇᑦᓯᐊᓂᖅ (ᓄᑖᐊᓂᖅ, ᐃᓴᓯᒪᔨᖅ ᖃᐊᖅᓵᓂᑦ, ᐅᖅᓯᑦᑲᕐᓂᑦ) Seal meat (fresh, cooked or frozen, without blubber)	☐☐ Y N					
6. ᓇᑦᓯᐊᓂᖅ ᒥᓯᕐᓴᒃ/ᐅᖅᓯᐅᐃᓐᓇᓕᖅ Seal misirak/blubber	☐☐ Y N					
7. ᐅᐊᖅ Walrus	☐☐ Y N					ᒥᐱᒃᑲᓴ ᐃᓚᓚᔨᖅᓂᓂᑦ? Raw or cooked?
8. ᓇᑦᓯᐊᓂᖅ, ᖃᓄᓕᓴᐊᓂᖅ, ᐅᐊᐊᓂᖅᓴᓂᑦ (ᑎᓴᒍᓴᒪ, ᑕᖅᑐᖅᑭᑦ, ᐊᓯᓴᑦᓗ) Parts of seal, beluga or walrus (liver, kidney, etc.)	☐☐ Y N					ᓯᓇᓴᐃᓂᓂᒃ: Parts:
9. ᐃᒍᓇᖅ (ᓇᑦᓯᐊᓂᖅ) Igunak (seal)	☐☐ Y N					ᖃᓄᐃᓇᓐᓂᐊᑐᖅ: Servings: PO-3
10. ᓂᖅᑭᑐᐃᓐᓇᓕᕆᓂᖅᓴᐅᑦ ᖃᓄᓕᓴᐊᓂᖅᓴᒥᒃ, ᓇᑦᓯᐊᓂᖅᓴᒥᒃ ᐅᐊᓂᐊᓂᖅᓴᒥᓗᓐᓂᑦ ᖃᓄᐃᓇᓐᓂᐊᑐᖅᓴᒥᒃ ᓂᓇᒍᒍᓂᑦ? When you eat meat of beluga, seal or walrus, what is your usual serving size?						ᖃᓄᐃᓇᓐᓂᐊᑐᖅ: Servings: PO-3
11. ᐅᖅᓯᐅᐃᓐᓇᓕᕆᓂᖅᓴᐅᑦ ᖃᓄᓕᓴᐊᓂᖅᓴᒥᒃ, ᓇᑦᓯᐊᓂᖅᓴᒥᒃ ᐅᐊᓂᐊᓂᖅᓴᒥᓗᓐᓂᑦ ᖃᓄᐃᓇᓐᓂᐊᑐᖅᓴᒥᒃ ᐱᓱᒍᓂᑦ? When you eat blubber of beluga, seal or walrus, what is your usual serving size?						ᖃᓄᐃᓇᓐᓂᐊᑐᖅ: Servings: Cup/Tbsp
12. ᒪᑦᑕᑐᓂᕆᓂᑦ, ᓂᖅᑯᑐᕆᓂᖅᓴᓂᓐᓂᑦ ᖃᓄᓕᓴᐊᓂᖅᓴᒥᒃ, ᖃᓄᐃᓇᓐᓂᐊᑐᖅᓴᒥᒃ ᐱᓱᒍᓂᑦ? When you eat muktuk or dried beluga, what is your usual serving size?						ᖃᓄᐃᓇᓐᓂᐊᑐᖅ: Servings: PO-3
ᐅ=ᐅᓐᓂᒥ D = DAY		ᑕ=ᑕᕐᖁᒥ M = MONTH				ᖃᓄ=ᖃᓄᐅᕆᒪᔨᖅᑎᑐᖅ/ᐊᐅᓚᕆᔨᖅᑎᑐᖅ U = UNKNOWN / DON'T REMEMBER
ᐱ=ᐱᓇᓱᐊᕆᔨᕐᒥ W = WEEK		ᓴ=ᓴᖅᑭᒧᑦ ᐊᓯᑦᕈᑕᖅᓂᖅᓴᖅ ᒪᓕᑦᓯᒍ S = SEASON				

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ᓂᕆᑐᐃᓐᓇᖅ Country food	ᐊᐊ ᐊᐅᑲ Yes or No	ᐊᑯᓗᓐᓂᖅᓴᒃ ᐱᓱᒍᓂᖅᓴᒃᑕ ᓱᓕᐅᑦ ᐊᓱᑦᑎᐊᓂᖅᓴᒃ ᒪᓕᕐᓱᒍ **How often by season**				ᐅᖅᑲᓱᑦᓯᖅ (ᓇᓗᓍᕐᓗᒍ) Comments (Specify)
		ᐅᑭᐊᖅᑎ Fall	ᐅᑭᐅᑎ Winter	ᐅᐱᖅᓴᒃᓴᑦ Spring	ᐅᐱᖅᓴᒃᒪᑎ ᐊᐅᒃᖅᑎ Summer	
13. ᐊᓱᕐᕈᓐᓂᒃ ᓂᓚᓕᕋᔭᓴᑦ ᖃᓄᓕᒫᔭᓂᕐᑎᒃ, ᓇᑦᓱᔭᓂᕐᑎᒃ ᐁᔭᓂᔭᓴᑎᓕᓐᓂᑦ, ᖃᓄᔭᓂᕐᓗᓂᑦ ᐱᓱᒍᓂᖅ?						ᖃᓄᓇᐃᓐᓇᐊᑐᖅ: Servings: PO-3
When you eat other parts of beluga, seal or walrus, what is your usual serving size?						
ᐃᖃᓄᓇᐃᑦ (ᓇᒫᒃᓴᑦ ᖃᐅᑭᖃᓄᑦ) **Fish (fresh, frozen or cooked):**						
14. ᐃᖃᓄᓇᑦᐱᖅ Arctic char	☐☐ Y N					
15. ᐅᒪᖅ Cod	☐☐ Y N					
16. ᑲᐱᓂᓕᒃ/ᑲᓴᓂᓕᒃ Whitefish	☐☐ Y N					
17. ᐊᓱᕐᕈᓐᓂᑦ ᐊᑐᑦ ᖁᒧᓗ Other trout and Salmon	☐☐ Y N					
18. ᐊᓱᕐᕈᓐᓂᑦ ᐃᖃᓄᓇᓴᓂᑦ Other fish (Pike, cisco, walleye, etc.)	☐☐ Y N					
19. ᐱᑦᓱᒃ Dried fish	☐☐ Y N					
20. ᐊᒃᒎᒪᓚᐊᐃᑦ, ᐅᓴᓗᐃᑦ, scallops Clams, mussels, scallops	☐☐ Y N					
21. ᐃᖃᓄᓇᓴᓂᑐᓕᕋᔭᓂᑦ, ᖃᓄᓇᐃᓐᓇᐊᑐᖅᑎᒃ ᐱᓱᒍᓴᑦ? When you eat fish, what is your usual serving size?						ᖃᓄᓇᐃᓐᓇᐊᑐᖅ: Servings: PO-3
22. ᐱᑦᓱᑐᓕᕋᔭᓂᑦ, ᖃᓄᓇᐃᓐᓇᐊᑐᖅᑎᒃ ᐱᓱᒍᓴᑦ? When you eat dried fish, what is your usual serving size?						ᖃᓄᓇᐃᓐᓇᐊᑐᖅ: Servings: PO-3
23. ᐊᒃᒎᒪᓚᑦᑐᓕᕋᔭᓂᑦ, ᐅᓴᓗᑦᑐᓕᕋᔭᓂᒃ, scallops-ᑐᓕᕋᔭᓂᑦ, ᖃᓄᓇᐃᓐᓇᐊᑐᖅᑎᒃ ᐱᓱᒍᓴᑦ? When you eat clams, mussels, scallops, what is your usual serving size?						ᖃᓄᓇᐃᓐᓇᐊᑐᖅ: Servings: PO-3
ᓄᓇᒥ ᐱᓱᑦᑎᓂᑦ ᐅᒪᓚᐊᐃᑦ **Game Animals:**						
24. ᑐᑦᑐᓴᓂᐅᑦ ᓂᕆᑭᖅᓚ (ᓇᒫᒃᓴᑦ, ᐃᓚᒪᓚᐊᖅ, ᖃᓄᖅᓇᓂᑦ) Caribou meat (fresh, cooked or frozen)	☐☐ Y N					
25. ᑐᑦᑐᓴᓂᖅ ᓂᒃᑯᖅ Dried caribou meat	☐☐ Y N					
26. ᑐᑦᑐᕈᓴᓂᐅᑦ ᑎᖅᔪᖅᓚ ᑕᖅᑐᖅᓯᓂᑦ Caribou liver or kidney	☐☐ Y N					
ᐅ=ᐅᓯᓗᒥ D = DAY ᐱ=ᐱᓇᓴᐊᕈᓴᒥ W = WEEK		ᑕ=ᑕᕆᑭᒥ M = MONTH ᐊ=ᐊᑦᕃᔪᑦ ᐊᓱᑦᑎᐊᓂᖅᓴᒃ ᒪᓕᕐᓱᒍ S = SEASON			ᖃᓄ=ᖃᓄᐅᑦᒪᖅᑐᖅ/ᐊᐅᓕᕆᖅᖅᑐᖅ U = UNKNOWN / DON'T REMEMBER	

ᓂᕿᑭᑐᐃᓐᓇᖅ Country food	ᐊᐊ ᐊᐅᑲ Yes or No	ᐊᑯᓗᓐᓂᖅᓱᒪᑕ ᐱᓱᒍᓂᖅᓱᒪᑕ ᓯᓚᐅᑦ ᐊᓯᑦᑕᒋᓂᖅᓱᒪᑕ ᒪᓕᒋᓱᒍ How often by season				ᐅᕿᑲᓯᒋᔪᑦ (ᓇᓗᓀᕿᓗᒍ) Comments (Specify)
		ᐅᑭᐊᕿᒥ Fall	ᐅᑭᐅᒥ Winter	ᐅᐱᕿᖏᓚ-ᓴᕿᒥ Spring	ᐅᐱᕿᖏᓚᒥ ᐊᐅᒃᓴᕿᒥ Summer	
27. ᐊᓯᖏᑎᑦ ᐅᒪᓐᔪᓵᓂᑦ (ᐅᑲᓕᓵᓂᖅ, ᓇᓄᓵᓂᖅ ᐊᓯᖏᑎᒃᓗ ᓄᑖᓵᓂᑦ, ᐃᒪᒪᓐᔪᑦ ᖃᐊᕿᓗᓂᑦ) Other game animals (hare, bear, etc. fresh, cooked or frozen)	☐☐ Y N					
28. ᑐᑦᑐᓵᓂᕿᑐᓕᕿᓵᓂᑦ ᐊᓯᖏᑎᒃᓂᓗᒃᓂᑦ ᓂᕿᑭᑐᐃᓐᓇᖅᓂᒃ ᖃᑲᓇᐃᒃᓗᐊᑐᒥᒃ ᐱᓱᒍᓵᓂᑦ? When you eat meat of caribou or other game animal, what is your usual serving size?						ᖃᑲᓇᐃᒃᓗᐊᑐᖅ: Servings: PO-3
29. ᑐᑦᑐᓵᓂᕿᒥᒃ ᓂᒃᐊᑐᓕᕿᓵᓂᑦ, ᖃᑲᓇᐃᒃᓗᐊᑐᒥᒃ ᐱᓱᒍᓵᓂᑦ? When you eat dried caribou, what is your usual serving size?						ᖃᑲᓇᐃᒃᓗᐊᑐᖅ: Servings: PO-3
ᑎᒥᒋᐊᓵᓂᑦ, ᓂᑮᓵᓂᑦ ᖃᐊᕿᔭᓂᑦ **Game birds and wildfowl**						
30. ᐊᕿᑭᒥᓵᓂᖅ, partridge Ptarmigan, partridge	☐☐ Y N					
31. ᓂᕿᓂᒃ (ᓂᕿᓂᓵᓂᖅ ᑲᖏᔪᓵᕿᓂᑦ) Goose (Canada goose, white goose)	☐☐ Y N					
32. ᐊᓯᖏᑎᑦ ᑎᒥᒋᐊᑦ (ᐊᒡᒋᐊᑲᒃᓴᓵᓂᑦ, merganser, ᐊᓯᖏᑎᒃᓗ) Other birds (Pintail, scoter, merganser, etc.)	☐☐ Y N					
33. ᑎᒥᒋᐊᓵᓂᕿᑐᓕᕿᓵᓂᑦ, ᖃᑲᓇᐃᒃᓗᐊᑐᒥᒃ ᐱᓱᒍᓵᓂᑦ? When you eat game birds, what is your usual serving size?						ᖃᑲᓇᐃᒃᓗᐊᑐᖅ: Servings: PO-3
34. ᑎᒥᒋᐊᑦ ᒪᓕᓂᖅᑎᑦ Eggs of game bird	☐☐ Y N					ᖃᑲᓇᐃᒃᓗᐊᑐᖅ: Servings: Piece
35. ᓄᓂᒃᓵᓂᑦ Wild berries:	☐☐ Y N					ᖃᑲᓇᐃᒃᓗᐊᑐᖅ: Servings: Cup

ᐅ=ᐅᒃᓗᒥ D = DAY	ᑕ=ᑕᖅᑭᒥ M = MONTH	ᖃᑲ=ᖃᑲᓇᐃᒃᓗᐊᑐᖅ/ᐊᐅᓚᓕᖅᑎᑐᖅ U = UNKNOWN / DON'T REMEMBER
ᐱ=ᐱᓇᓱᐊᓕᖅᑎᒥ W = WEEK	ᐊ=ᐊᖅᖃᒍᑦ ᐊᓯᖏᑎᒃᓂᖅᓱᒪᑕ ᓯᓚᐅᑦ S = SEASON	

2: ᓂᐅᕕᖃᕕᒥ/ᓂᐅᕕᖃᓂᕕᓚᒥ ᓂᖅᑭᑦ ᓂᐅᕕᐊᕕᓱᑦ
Part II: Store bought foods

ᓂᐅᕕᖃᕕᒥ/ᓂᐅᕕᖃᓂᕕᓚᒥ ᓂᖅᑭᑦ ᓂᐅᕕᐊᕕᓱᑦ Store bought food	ᐊᐊ ᐊᐅᑲ Yes or No	ᖃᑲᓂᕕᖃᑎᒌᑦ ᑕᖅᑭᐅᓪᓗᐅᑦᑐᒥ How often during the past month	ᐱᐅᓂᓚᒥᒋᔭᒍ ᓂᓪᓂᔪᖓ Usual serving	ᐅᖃᐅᓯᑦᓯᖏᑦ Comments
ᓂᐅᕕᖃᕕᒥ/ᓂᐅᕕᖃᓂᕕᓚᒥ ᓂᖅᑭᑦ ᓂᐅᕕᐊᕕᓱᑦ (ᓄᑕᕕᓱᑦ ᖃᐊᕕᓱᓂᔪᓱᑦ) ᐊᒻᒪᓗ ᐊᓯᑦᔨᐅᑎᖅᑎᓪᓗ **Store bought meats (fresh or frozen) and substitutes:**				
36. ᑐᑦᑐᐊᓗᒃᑯᕕᓂᖅ Beef (steak, ground beef/patties)	☐☐ Y N		Steak/patty	
37. ᑐᑦᑐᐊᓗᒃᑯᕕᓂᖅ ᖃᐅᒻᒧᐊᒋᑦᑐᑦ Beef (canned, stewed, or corned)	☐☐ Y N		ᖃᐅᒻᒧᐊᖅᓯᒪᔪᑦᓗᑎᒃ Can/Cup	
38. ᑯᑦᑯᓯᕕᓂᖅ Pork, pork chops, roast pork	☐☐ Y N		PO-3	
39. ᐊᖏᒻᒥᑎᐅᒃᑯᕕᓂᖅ/ᐊᖏᒻᒥᑎᐅᒃᑯᓪᓚᕕᓂᖅ (ᖃᑲᑕᖅᓱᒃ, ᓂᐅᖅᓱᒃ ᐃᓚᐅᑎᑦᓗᑎᑦ ᐅᖃᐅᒻᒥᓗᐊᓚᒃᑯᓯᑦ ᐊᒻᒪᓗ ᐅᖃᓯᒧᑦ ᐃᒪᒪᔨᐃᑦ ᐊᖏᒻᒥᑎᐅᒃᑯᕕᓂᑦ: ᓇᓗᓴᖃᓗᑎᑦ) Chicken/turkey (breast, legs, including nuggets and fried chicken: specify)	☐☐ Y N		ᐃᓗᐃᖅᑲᖅ Piece	
40. ᐊᓯᖏᑦ ᓂᖏᑐᐃᓐᓴᑦ (ᓴᐅᒪᕕᓂᑦ, veal, ᐊᓯᖏᑦᓗ) Other meat (lamb, veal, etc.)	☐☐ Y N		PO-3	
41. ᓂᐊᖏᐅᓴᒧᑦ ᐃᑭᐊᖏᑎᐅᑌᑦ ᑫᓯᖏᒧᒪ, ᑫᖏᒧᒪ, ᑐᑦᖅᒧᒪ, ᐅᖏᒧᓗᖏᒧᒪᓂ, ᐊᓯᖏᑦᓗᐅ Luncheon or sliced meats (Ham, Kam, Spam, salami, bologna, etc.)	☐☐ Y N		ᓴᑦᓂᓯᒪᔪᖏᑦ/ᖃᐅᒻᒧᔪᖏᑦ Slice/Can	
42. ᐅᓯᔪᑦ/ Sausage/wieners/bacon	☐☐ Y N		ᓴᑦᓂᓯᒪᔪᖏᑦ/ᐃᓗᐃᖅᑲᖅ Piece/Slice	
43. ᐃᖏᒃᓗᕕᓂᑦ ᖃᐅᒻᒧᔪᖏᑎᑐᑦ (ᓴᒧᐃᑦ, ᑐᓚ ᐊᓯᖏᑦᓗ) Canned fish (salmon, tuna, etc.)	☐☐ Y N		ᖃᐅᒻᒧᔪᖏᑎᑐᑦ Can/cup	
44. ᒪᓴᓂᑦ (ᐊᖏᒻᒥᑎᐅᒃᑯᕕᓂᑦ) Eggs (chicken)	☐☐ Y N		ᒪᓴᓂᑦ Eggs	
ᓄᑖᕕᓂᑦ **Fruits:**				
45. ᑯᐳᐃᑦ, ᐱᐊᖏᑦ, ᐸᓴᓄᑦ Apples, pears, bananas	☐☐ Y N		ᓄᑖᕕᓂᖅᑭᑦᓗᑎᒃ Fruit/cup	
46. ᐸᐅᖏᖓᓗᐃᑦ, ᐸᐅᖏᖓᓗᐊᓗᕆᑦ Oranges, grapefruit	☐☐ Y N		ᓄᑖᕕᓂᖅᑭᑦᓗᑎᒃ Fruit/cup	
47. ᐊᓯᖏᑦ ᓄᑖᕕᓂᑦ ᖃᐅᒻᒧᔪᖏᑎᑐᑦ: Other fresh fruits	☐☐ Y N		ᓄᑖᕕᓂᖅᑭᑦᓗᑎᒃ Fruit/cup	

ᐅ=ᐅᑦᓗᒥ D = DAY ᐱ=ᐱᓇᓯᐊᔪᓯᒥ W = WEEK	ᑕ=ᑕᖅᑭᒥ M = MONTH ᖃᖓ=ᖃᖓᐅᔨᒪᖏᖏᑐᖅ/ᐊᐅᓪᓚᖏᖏᑐᖅ U = UNKNOWN / DON'T REMEMBER

ᓂᐅᕕᖃᕕᒥ/ᓂᐅᕕᖃᐅᓕᕕᓴᒥ ᓂᖅᑭᑦ ᓂᐅᕕᐊᕕᓂᑦ **Store bought food**	ᐊᐊ ᐊᐅᒃ **Yes or No**	ᖃᒧᑉᓱᕕᖅᑕᐅᓂᑦ ᑕᖅᑭᐅᓪᓚᐅᖅᑎᑐᑦ **How often during the past month**	ᐱᐅᓯᓗᒥᑦᓯᒪᔪ ᓂᓪᓕᔪᖓ **Usual serving**	ᐅᖃᐅᓯᖏᓐᓄᑦ **Comments**
48. ᓄᑖᕕᓂᑦ ᖃᐅᔨᒪᔭᕐᑎᑐᑦ: Canned fruit	☐☐ Y N		ᖃᓄᐃᓕᐅᕆᓂᖅ Cup	
49. ᐃᒥᕋᑦᓴᓴᑦ ᓄᑖᕕᓂᓪᓗᑐᖅᑭᓯᐅᕆᓂᖅ (ᖃᐅᔨᒪᔭᕐᑎᑐᑦ ᖃᐅᐊᓪᓗᓂᑦ) Real fruit juices (canned or frozen)	☐☐ Y N		ᐃᒥᑭᐅᓂ Glass	
50. ᐃᒥᕋᑦᓴᓴᑦ ᐱᑕᑦᓴᓪᓕᑦ/ᒪᒪᑦᓴᐅᑎᓪᓕᑦ Tang, Punch, Koolaid, Sunny Delight, Gatorade etc.	☐☐ Y N		ᐃᒥᑭᐅᓂᖅ Glass	
ᐱᑭᑐᐃᕕᓂᑦ: **Vegetables**				
51. ᑕᑎᑐᐃᑦ (ᓄᑖᕕᓂᑦ) Potatoes (fresh)	☐☐ Y N		ᑕᑎᑐ Potato	
52. Carrots, turnips	☐☐ Y N		PO-3	
53. Broccoli, cauliflower, cabbage	☐☐ Y N		PO-3	
54. ᑐᒻᒪᑐᐃᑦ (ᓄᑖᕕᓂᑦ ᖃᐅᔨᒪᔭᕐᑎᑐᑦᑐᐃᓪᓗᓂᑦ) Tomatoes (fresh or canned)	☐☐ Y N		PO-3	
55. ᐅᐊᑭᑎᑎᑦ ᐱᑭᑐᕕᓂᑦ (ᓄᑖᕕᓂᑦ ᖃᐅᔨᒪᔭᕐᑎᑐᑦᑐᐃᑦ ᖃᐅᐊᑦᓗᓂᑦ) Mixed vegetables (fresh, canned or frozen)	☐☐ Y N		PO-3	
56. ᐊᓯᖏᑎᑦ ᐱᑭᑐᕕᓂᑦ (ᐃᓕᓴᑦ, ᑭᒧᑎᐅᔭᖅᑦ, ᐊᓯᖏᑎᓪᓗ) Other vegetables (Peas, corn, etc.)	☐☐ Y N		PO-3	
ᐃᒪᒧᒥ ᐃᓕᒪᔨᐃᑦ: **Dairy products:**				
57. ᐃᒪᒧᖅ (Whole, 3.25% 2% ᐊᓯᖏᑎᓪᓗ Grand Pré, ᕿᓂᑐᖅ ᐅᕐᓂᓪᓗᓂᑦ ᖃᐅᔨᒪᔭᕐᑎᑐᑦ) • ᐃᒥᖅᓯᒧ ᐅᓪᓴᓄᑕᑦᓴᓂᓪᓗᓂᑦ • ᑲᐱᒥ ᑎᒥᓪᓗᓂᑦ Milk (Whole, 3.25% or 2% or skim including Grand Pré, Powered or Carnation): • As drink or in cereals: • In coffee or tea:	☐☐ Y N		ᐃᒥᑭᐅᓂᖅ _____ Glass _____ Tbsp/Creamer	ᓇᓗᓕᖅᑐᒃᓗᒍ Specify
58. ᔨᑯᑦ Yogurt	☐☐ Y N		ᖃᓄᐃᓕᐅᕆᓂᖅ Cup	
59. ᐁᖅ ᑯᕐᓴᑦ Ice Cream	☐☐ Y N		ᖃᓄᐃᓕᐅᕆᓂᖅ Cup	
ᐅ=ᐅᓪᓗᒥ D = DAY ᐱ=ᐱᓇᓯᐊᑭᓯᒥ W = WEEK		ᑕ=ᑕᖅᑭᒥ M = MONTH ᖃᓄ=ᖃᓄᐅᕐᒪᖑᓂᖅᓱᐊᓇᕐᓂᖑᓂᖅ U = UNKNOWN / DON'T REMEMBER		

Page 6

ᓂᐅᕕᖃᕕᒥ/ᓂᐅᕕᖃᓂᐊᕕᖃᒥ ᓂᖅᑭᑦ ᓂᐅᕕᖃᕕᓱᑦ Store bought food	ᐊᐊ ᐊᐅᖅ Yes or No	ᖃᖅᑎᓂᕕᖃᓂᒃᑎᑦ ᑕᖅᑭᐅᓪᓚᐅᑦᑐᒥ How often during the past month	ᐱᐅᓂᓪᒥᒋᓂᒍᒍ ᓂᓪᓂᓱᖏᓪ Usual serving	ᐅᖅᑲᐅᑎᓪᓗᒍ Comments
60. ᓂᓂ (ᓴᑦᓪᓂᒍᒪᔨᖅ, cheddar, mozza, Cheese Whiz) Cheese (slice, cheddar, mozza, Cheese Whiz)	☐☐ Y N		ᓴᑦᓪᓂᒍᒪᔨᖅᓯᖏᓪᓗᐅᑎᐊᓕᒃ Slice/Tbsp	
ᓂᐊᖅᑯᓱᖅ, ᐅᑦᓭᑭᒥᑕᖅᑦ **Bread, cereals, pasta, legumes and nuts:**				
61. ᓂᐊᖅᑯᓱᖅ, ᖃᑯᖅᑕᖅ Bread, white	☐☐ Y N		ᐊᑕᐅᓂᖅ ᓇᑲᓂᒪᔨᖅ Slice	
62. ᓂᐊᖅᑯᓱᖅ, ᑲᔨᖅ Bread, whole wheat	☐☐ Y N		ᐊᑕᐅᓂᖅ ᓇᑲᓂᒪᔨᖅ Slice	
63. ᓂᖅᑭᑦᓴᓱᖅ Bannock	☐☐ Y N		ᐃᓗᐃᑦᑲᖅ Piece	
64. ᐅᑦᓭᑭᒥᑕᖅᑦ ᐃᑦᒧᓪᑕᐅᓂᑦ (cornflakes, etc) Cold cereals (cornflakes, etc)	☐☐ Y N		PO-3	
65. ᐅᑦᓭᑭᒥᑕᖅᑦ ᐅᓇᖅᑐᐃᑦ (ᖃᑲᓪᑕᓴᓱᖅ, ᐊᓂᖅᑎᑦᓗ) Hot cereals (oatmeal, etc.)	☐☐ Y N		PO-3	
66. ᐃᖅᑭᐅᓱᖅ, ᒪᑲᔨᓂ, ᓴᕿᑭᐊᑎ Rice, macaroni, spaghetti	☐☐ Y N		PO-3	
67. ᒪᑲᔨᓂ ᓂᓂᒥᑦ ᐃᓕᓐᓄᑦ Macaroni and cheese dinner	☐☐ Y N		PO-3	
68. ᐱᓂᑦ ᐊᑦᐳᑎᖅᑎᑐᑦ Beans, peas, chick peas, etc.	☐☐ Y N		ᖃᑦᓗᑎᑦ PO-3/Cup	
69. Peanut butter, nuts, seeds	☐☐ Y N		ᖃᑲᓴᐅᑎᐊᓗᑦ PO-3/Tbsp	
ᓂᐃᑎᕐᒪᒪᖅᑐᐃᑦ **Sweets:**				
70. ᑭᑦ, ᓂᑦᓗᓄᑦ, V, ᖃᑦᖅᑯᐊᓗᐃᑦᓗ Cakes, donuts, pies and cookies	☐☐ Y N		ᐃᓗᐃᑦᑲᖅ Piece	
71. ᓱᒣᑦ Syrup, jam, honey, marmalade	☐☐ Y N		ᖃᑲᓴᐅᑎᐊᓗᑦ Tbsp	
72. ᐃᒥᕋᐃᓐᓇᖅ Pop (soda) regular	☐☐ Y N		ᐃᒥᑭᑎᑦ Glass	
73. ᐃᒥᕋᖅ ᒪᒪᖅᐳᑎᖅᑲᖅᖅᑎᑐᖅ/ ᐱᑕᖅᓴᖅᖅᑎᑐᖅ Pop (soda) diet	☐☐ Y N		ᐃᒥᑭᑎᑦ Glass	

ᐅ=ᐅᑦᓗᒥ D = DAY	ᑕ=ᑕᖅᑭᒥ M = MONTH
ᐱ=ᐱᓇᓯᐊᑭᓯᒥ W = WEEK	ᖃᓄᖅᑲᐅᒪᖅᑎᑐᖅ/ᐊᐅᓪᓚᐅᖅᖅᑎᑐᖅ U = UNKNOWN / DON'T REMEMBER

ᓂᐅᕕᖃᕕᒥ/ᓂᐅᕕᖃᐊᕕᒥ ᓂᖅᑕ ᓂᐅᕕᐊᕕᓂᑦ **Store bought food**	ᐊᐊ ᐊᐅᑲ **Yes or No**	ᖃᑦᓯᕕᖃᓯᑎᑦ ᑕᖅᑭᐅᓪᓚᐅᖅᑐᑦ **How often during the past month**	ᐱᐅᓯᓗᒋᓯᒍ ᓂᓗᓯᖏᓐᓄᑦ **Usual serving**	ᐅᖃᖅᑎᑦᓯᓂᖅ **Comments**
74. ᐊᐅᖏᖏᒍᐊᑦ/ᐊᐅᑯᓗᐃᑦ, ᒪᒪᖅᑐᐃᑦ, ᐅᖃᓕᒋᐊᑦ Chocolate bars, sweets, candies	☐☐ Y N		ᐃᓗᐃᓕᑲᖅ Piece	
ᐊᓯᖏᑦ: **Miscellaneous:**				
75. ᐸᑎᑐᐃᑦ ᐊᒋᑦᑐᑲᐅᓕᕆᓯᒋᑦᓯᑎᓕᕆᓂᖅ ᐅᖃᓯᒍᑦ ᐃᒪᒪᓵᐃᑦ French fries	☐☐ Y N		PO-3	
76. ᖃᖅᖁᑯᓪᑦ Chips	☐☐ Y N		PO-3	
77. ᐸᑕ ᐸᑕᐅᓴᖅᓗᓂᑦ ᓂᐊᖁᓴᖅᒋᒥ Butter or margarine on bread	☐☐ Y N		ᖃᓄᓕᕆᐅᑎᐊᓗᓄᖅ Tbsp	
78. ᑎᑦ/ᑎᑦᓗᐃᑦ/ᑲᐱ Tea/Herbal tea/Coffee	☐☐ Y N		ᖃᓄᑦᓗᑎ Cup	ᓇᓗᓴᖅᓗᒍ Specify
79. ᒪᒪᖅᓴᐅᑎ/ᐱᑕᑦᓴᖅ ᑎᒥ ᑲᐱᒥᑦᓗᓂᑦ White sugar in tea or coffee	☐☐ Y N		ᖃᓄᓕᕆᐅᑎᐊᓗᓄᖅ Tbsp	

ᑎᒥᒍᑦ ᐃᓱᐊᖅᑯᑎᓂᐅᓄᖅ ᐱᓱᒍᓂᖅᓚ
FREQUENCY OF NUTRITION SUPPLEMENT

ᑎᒥᒍᑦ ᐃᓱᐊᖅᑯᑎᑦ (ᖃᓄᓂᐃᑦᑐᓂᖅᑎᑦ) **Nutrition supplement (type)**	ᐊᐊ ᐊᐅᑲ **Yes or No**	ᖃᓄᓂᐃᑦᓗᐊᑐᓂᓄᖅ ᑕᖅᑭᒥ **How often during the past month**	ᐊᖏᑎᓂᖅᓚ **Quantity**	ᐅᖃᖅᑎᑦᓯᓂᖅ **Comments**
80.	☐☐ Y N			
81.	☐☐ Y N			
82.	☐☐ Y N			
83.	☐☐ Y N			
84.	☐☐ Y N			

ᐅ=ᐅᑦᓗᒥ
D = DAY
ᐱ=ᐱᓇᓱᐊᕐᓯᒥ
W = WEEK

ᑕ=ᑕᖅᑭᒥ
M = MONTH
ᖃᓄ=ᖃᓄᐅᕆᒪᖏᖏᑎᑐᖅ/ᐊᐅᓇᕆᖏᖏᑎᑐᖅ
U = UNKNOWN / DON'T REMEMBER

Thank you very much for your cooperation! ᖁᑎᒪᓚᐊᓗᓄᑦ ᐃᓄᓴᖅᓯᓱᐊᕎᕆᔨᑦ!

Language of the interview

1- Inuktitut only
2- English only
3- Inuktitut and English
4- French only
5- Inuktitut and French

APPENDIX III

EVENTS CALENDAR IN NUNAVIK IN 2004

Events Calendar in Nunavik (2004)

Fall 2003:	Blueberries, Blackberries and Cloudberries (Arpik) Picking Mussels, Clams and Scallops Picking Beginning of School Orange and Red Colors on Toundra Caribou Passing Through
Winter 2003-2004:	Ice Fishing Ptarmigan Hunting Caribou Hunting Seal Hunting at Breathing Holes Mussels, Clams and Scallops Picking Christmas Hockey Tournaments March: Dog Team Race
Spring 2004:	Geese Hunting Seal Hunting by canoe on ice blocks Ice Fishing Ptarmigan Hunting (sometimes) Mussels, Clams and Scallops Picking Snow Festival Snowmobile Rides **Easter and Easter Games** Ice Break (June), End of School (end of June)
Summer 2004:	Fishing Beluga Hunting Seal Hunting (by canoe on water) Mussels, Clams and Scallops Picking Blueberries, Blackberries and Cloudberries (Arpik) Cotton Flowers and other flowers Music Festivals Camping to cabins Golf Tournaments Bugs: Mosquitos, Black Flies

<u>Exemples for other points of reference for the last year:</u>

Birthdate
Special events in the family, etc.

APPENDIX IV

DIETARY REFERENCE INTAKES

Dietary Reference Intakes

A-3.1 Macronutrient Distribution Ranges (AMDR) established by the Institute of Medicine[34]

Macronutrients	Adequate macronutrient distribution range (AMDR*)
Total protein	10% - 35%
Total carbohydrates	45% - 65%
Total fat	**20% - 35%**

* The AMDR is a range of intake for a particular energy source (protein, fat, or carbohydrate) expressed as a percentage of total energy.

A-3.2 Estimated Average Requirement (EAR) and the Adequate Intake* (AI) in order to approximate percentage of Nunavik population who may have insufficient nutrient intakes [34]

Nutrients	*EAR, AI* or *UL*	Unit	MEN				WOMEN			
			Age (years)				Age (years)			
			19-30	30-50	51-70	71+	19-30	30-50	51-70	71+
Vitamins										
Vitamin A (Retinol) *(RAE)*	*EAR*	µg/d	625				500			
Vitamin C (Ascorbic acid)	*EAR*	mg/d	75				60			
Vitamin D (Calciferol)	*AI*	µg/d	5		10	15	5		10	15
Vitamin B1 (Thiamin)	*EAR*	mg/d	1.0				0.9			
Vitamin B2 (Riboflavin)	*EAR*	mg/d	1.1				0.9			
Vitamin B3 (Niacin) *(NE)*	*EAR*	mg/d	12				11			
Vitamin B6 (Pyridoxin)	*EAR*	mg/d	1.1		1.4		1.1		1.3	
Vitamin B9 (Folate)	*EAR*	µg/d	320				320			
Vitamin B12 (Cobalamin)	*EAR*	µg/d	2.0				2.0			
Total fibre	*AI*	g/d	38		30		25		21	
Mineral elements										
Calcium	*AI*	mg/d	1000		1200		1000		1200	
Iron	*EAR*	mg/d	6				8.1		5	
Magnesium	*EAR*	mg/d	330	350			255	265		
Phosphorus	*EAR*	mg/d	580				580			
Selenium	*EAR*	mg/d	45				45			
Zinc	*EAR*	µg/d	9.4				6.8			

AI: Adequate intake is expected to meet or exceed the needs of each individual and is derived when there is not sufficient scientific evidence available to estimate EAR

EAR: Estimated Average Requirement is the median daily intake value that is estimated to meet the requirements of half of the individuals in a life-stage and gender group.

RAE: Retinol Activity Equivalent

NE: Niacin Equivalent

A-3.3 Tolerable Upper Intake Level (UL): Excessive Intakes

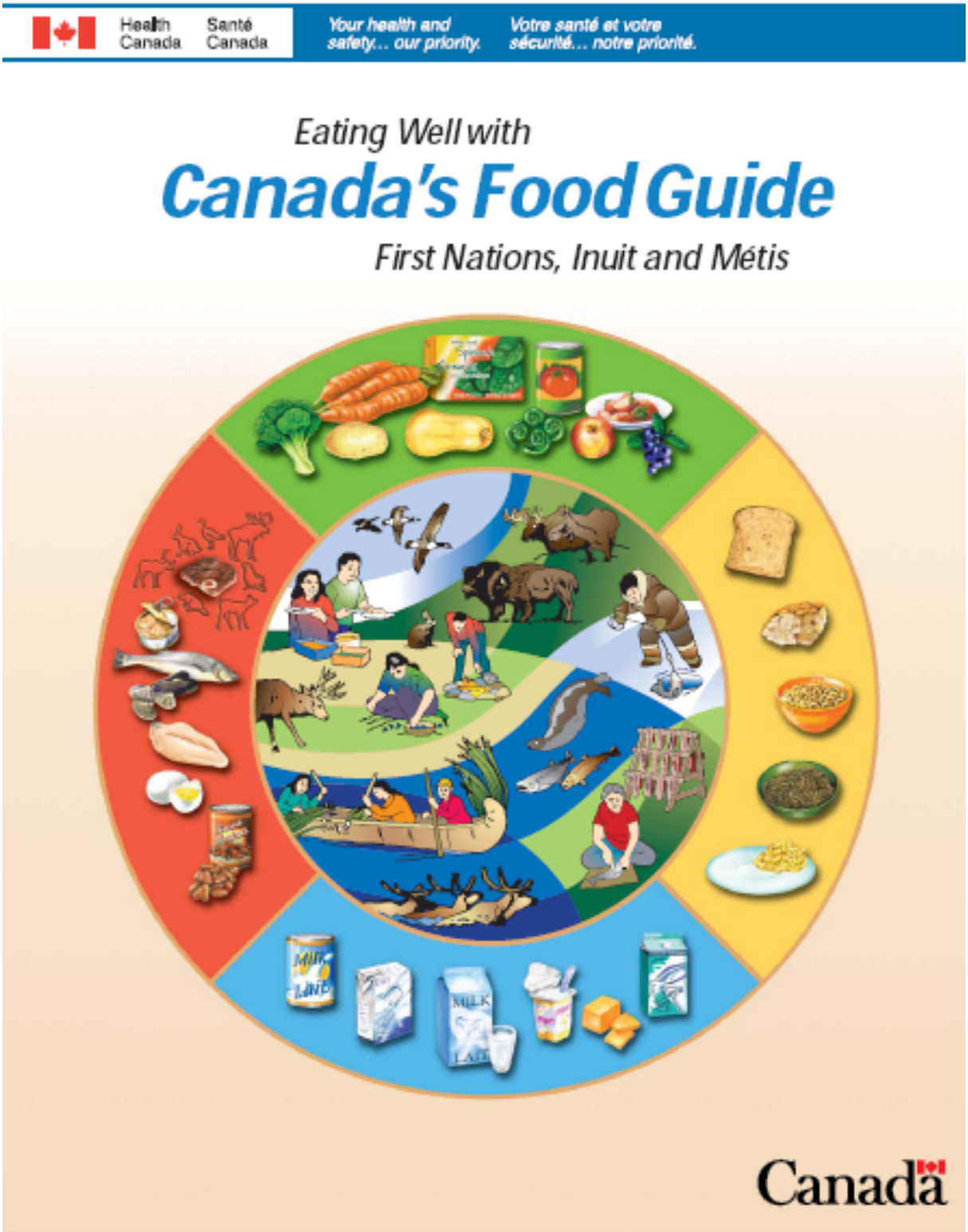
Nutrient	*Unit*	Tolerable Upper Intake Level (UL)
Sodium	*mg/d*	2300

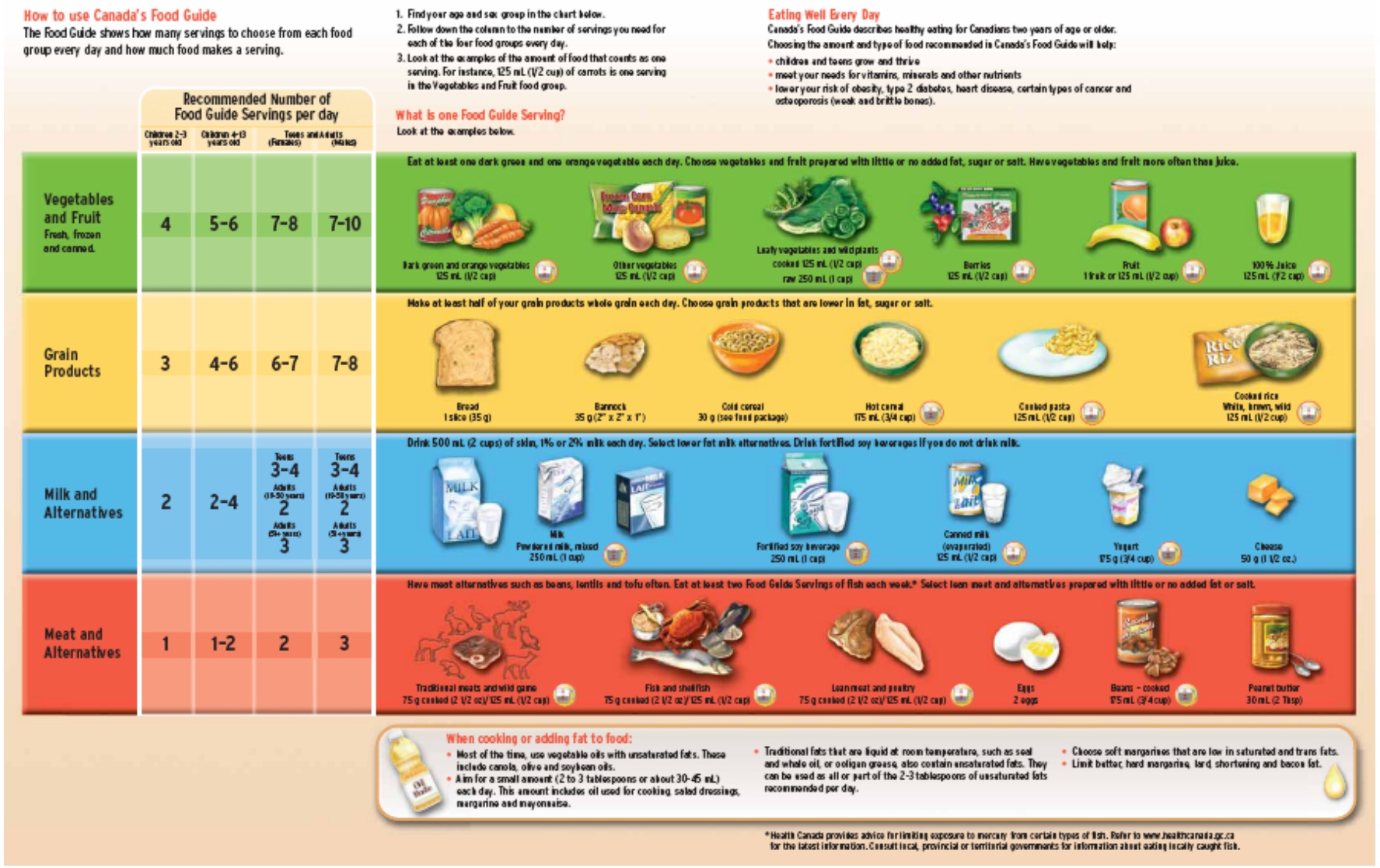
UL: Tolerable Upper Intake Limit is the highest daily nutrient intake level likely to pose no risk of adverse health effects

APPENDIX V

EATING WELL WITH CANADA'S FOOD GUIDE FIRST NATIONS, INUIT AND MÉTIS

Eating well with Canada's Food Guide First Nations, Inuit and Métis




How to use Canada's Food Guide
The Food Guide shows how many servings to choose from each food group every day and how much food makes a serving.
1. Find your age and sex group in the chart below.
2. Follow down the column to the number of servings you need for each of the four food groups every day.
3. Look at the examples of the amount of food that counts as one serving. For instance, 125 mL (1/2 cup) of carrots is one serving in the Vegetables and Fruit food group.
What is one Food Guide Serving?
Look at the examples below.
Eating Well Every Day
Canada's Food Guide describes healthy eating for Canadians two years of age or older.
Choosing the amount and type of food recommended in Canada's Food Guide will help:
• children and teens grow and thrive
• meet your needs for vitamins, minerals and other nutrients
• lower your risk of obesity, type 2 diabetes, heart disease, certain types of cancer and osteoporosis (weak and brittle bones).
Recommended Number of Food Guide Servings per day
Children 2-3 years old
Children 4-13 years old
Teens and Adults (Females)
Teens and Adults (Males)
Vegetables and Fruit
Fresh, frozen and canned.
4
5-6
7-8
7-10
Eat at least one dark green and one orange vegetable each day. Choose vegetables and fruit prepared with little or no added fat, sugar or salt. Have vegetables and fruit more often than juice.
Dark green and orange vegetables 125 mL (1/2 cup)
Other vegetables 125 mL (1/2 cup)
Leafy vegetables and wild plants cooked 125 mL (1/2 cup) raw 250 mL (1 cup)
Berries 125 mL (1/2 cup)
Fruit 1 fruit or 125 mL (1/2 cup)
100% Juice 125 mL (1/2 cup)
Grain Products
3
4-6
6-7
7-8
Make at least half of your grain products whole grain each day. Choose grain products that are lower in fat, sugar or salt.
Bread 1 slice (35 g)
Bannock 35 g (2" x 2" x 1")
Cold cereal 30 g (see food package)
Hot cereal 175 mL (3/4 cup)
Cooked pasta 125 mL (1/2 cup)
Cooked rice White, brown, wild 125 mL (1/2 cup)
Milk and Alternatives
2
2-4
Teens 3-4
Adults (19-50 years) 2
Adults (51+ years) 3
Teens 3-4
Adults (19-50 years) 2
Adults (51+ years) 3
Drink 500 mL (2 cups) of skim, 1% or 2% milk each day. Select lower fat milk alternatives. Drink fortified soy beverages if you do not drink milk.
Milk Powdered milk, reconstituted 250 mL (1 cup)
Fortified soy beverage 250 mL (1 cup)
Canned milk (evaporated) 125 mL (1/2 cup)
Yogurt 175 g (3/4 cup)
Cheese 50 g (1 1/2 oz.)
Meat and Alternatives
1
1-2
2
3
Have meat alternatives such as beans, lentils and tofu often. Eat at least two Food Guide Servings of fish each week.* Select lean meat and alternatives prepared with little or no added fat or salt.
Traditional meats and wild game 75 g cooked (2 1/2 oz)/ 125 mL (1/2 cup)
Fish and shellfish 75 g cooked (2 1/2 oz)/ 125 mL (1/2 cup)
Lean meat and poultry 75 g cooked (2 1/2 oz)/ 125 mL (1/2 cup)
Eggs 2 eggs
Beans - cooked 175 mL (3/4 cup)
Peanut butter 30 mL (2 Tbsp)
When cooking or adding fat to food:
• Most of the time, use vegetable oils with unsaturated fats. These include canola, olive and soybean oils.
• Aim for a small amount (2 to 3 tablespoons or about 30-45 mL) each day. This amount includes oil used for cooking, salad dressings, margarine and mayonnaise.
• Traditional fats that are liquid at room temperature, such as seal and whale oil, or caribou grease, also contain unsaturated fats. They can be used as all or part of the 2-3 tablespoons of unsaturated fats recommended per day.
• Choose soft margarines that are low in saturated and trans fats.
• Limit butter, hard margarine, lard, shortening and bacon fat.
*Health Canada provides advice for limiting exposure to mercury from certain types of fish. Refer to www.healthcanada.gc.ca for the latest information. Consult local, provincial or territorial governments for information about eating locally caught fish.

Respect your body... Your choices matter

Following Canada's Food Guide and limiting foods and drinks which contain a lot of calories, fat, sugar or salt are important ways to respect your body. Examples of foods and drinks to limit are:

- pop
- fruit flavoured drinks
- sweet drinks made from crystals
- sports and energy drinks
- candy and chocolate
- cakes, pastries, doughnuts and muffins
- granola bars and cookies
- ice cream and frozen desserts
- potato chips
- nachos and other salty snacks
- french fries
- alcohol

People who do not eat or drink milk products must plan carefully to make sure they get enough nutrients.

The traditional foods pictured here are examples of how people got, and continue to get, nutrients found in milk products. Since traditional foods are not eaten as much as in the past, people may not get these nutrients in the amounts needed for health.

People who do not eat or drink milk products need more individual advice from a health care provider.

Women of childbearing age

All women who could become pregnant, and pregnant and breastfeeding women, need a multivitamin with folic acid every day. Pregnant women should make sure that their multivitamin also contains iron. A health care provider can help you find the multivitamin that is right for you.

When pregnant and breastfeeding, women need to eat a little more. They should include an extra 2 to 3 Food Guide Servings from any of the food groups each day.

For example:

- have dry meat or fish and a small piece of bannock for a snack, or
- have an extra slice of toast at breakfast and an extra piece of cheese at lunch.

Women and men over the age of 50

The need for vitamin D increases after the age of 50.

In addition to following Canada's Food Guide, men and women over the age of 50 should take a daily vitamin D supplement of 10 μg (400 IU).

For strong body, mind and spirit, be active every day.

This guide is based on *Eating Well with Canada's Food Guide.*

For more information, interactive tools or additional copies visit Canada's Food Guide at: www.healthcanada.gc.ca/foodguide

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Également disponible en français sous le titre : Bien manger avec le Guide alimentaire canadien – Premières Nations, Inuit et Métis

This publication can be made available on request on diskette, large print, audio-cassette and braille.

APPENDIX VI

LIST OF FOODS AND THEIR CODES DECLARED IN THE 24-HOURS DIETARY RECALL (CANADIAN NUTRIENT FILE - 2005)

List of foods and their codes declared in the 24-hours dietary recall (Canadian Nutrient File - 2005)

Food group	Food code	Description
Grain Product	4501	GRAIN, WHEAT FLOUR, WHITE, ALL PURPOSE
Grain Product	4066	BREAD, WHITE (INCLUDES SOFT CRUMBS), COMMERCIAL
Grain Product	3732	BREAD, WHITE, COMMERCIAL, TOASTED
Grain Product	4507	PASTA, MACARONI (ELBOW), ENRICHED, COOKED
Grain Product	3872	CRACKER, SALTINE (+OYSTER, SODA, SOUP)
Grain Product	4466	PASTA, SPAGHETTI, ENRICHED, COOKED, SALT ADDED
Grain Product	1108	SOUP, CHICKEN NOODLE, DEHYDRATED, +WATER
Grain Product	4419	GRAIN, CORNSTARCH
Grain Product	3985	ROLL, HAMBURGER / HOTDOG, PLAIN
Grain Product	4523	GRAIN, RICE, WHITE, LONG-GRAIN, REGULAR, COOKED
Grain Product	4067	BREAD, WHOLE WHEAT, COMMERCIAL
Grain Product	4083	CRACKER, BARGE PILOT BISCUIT
Grain Product	4446	GRAIN, WHEAT FLOUR, WHITE, CAKE FLOUR
Grain Product	3735	BREAD, WHITE, PREPARED FROM RECIPE W/ 2% MILK
Grain Product	1265	CEREAL, RTE, RICE KRISPIES, KELLOGG'S
Grain Product	3754	CAKE, CHOCOLATE (DEVIL'S FOOD), COMMERCIAL, W/ CHOCO ICING
Grain Product	1242	CEREAL, RTE, CORN FLAKES, KELLOGG'S
Grain Product	3849	COOKIE, SUGAR, COMMERCIAL
Grain Product	4068	BREAD, WHOLE WHEAT, COMMERCIAL, TOASTED
Grain Product	4072	CRACKER, STANDARD SNACK-TYPE
Grain Product	3812	COOKIE, CHOCOLATE CHIP, COMMERCIAL, 18-28% FAT
Grain Product	3831	COOKIE, OATMEAL (+ OR - RAISINS), COMMERCIAL
Grain Product	4069	BREAD CRUMBS, DRY, GRATED, PLAIN
Grain Product	4481	GRAIN, RICE, WHITE, LONG-GRAIN, PRECOOKED/INSTANT, EN, DRY
Grain Product	1080	SOUP, BEEF NOODLE, DEHYDRATED, +WATER
Grain Product	1248	CEREAL, RTE, FROOT LOOPS, KELLOGG'S
Grain Product	3803	COOKIE, ANIMAL CRACKERS (ARROWROOT, SOCIAL TEA)
Grain Product	3819	COOKIE, CHOCOLATE SANDWICH, CREME FILLING, REGULAR
Grain Product	1257	CEREAL, RTE, HONEYCOMB, POST
Grain Product	1422	CEREAL, HOT, OATS, INSTANT: MAPLE/BROWN SUGAR, PPD, QUAKER
Grain Product	3855	COOKIE, VANILLA SANDWICH W/ CREME FILLING
Grain Product	3916	MUFFIN, BLUEBERRY, COMMERCIAL
Grain Product	3930	PANCAKE, PLAIN (+BUTTERMILK), FROZEN, READY-TO-HEAT

Food group	Food code	Description
Grain Product	3935	PANCAKE, PLAIN, PREPARED FROM RECIPE
Grain Product	1267	CEREAL, RTE, SPECIAL K, KELLOGG'S
Grain Product	1268	CEREAL, RTE, CORN POPS, KELLOGG'S
Grain Product	3882	CROISSANT, BUTTER
Grain Product	4035	WAFFLE, PLAIN (+BUTTERMILK), FROZEN, READY-TO-HEAT, TOASTED
Grain Product	4464	PASTA, SPAGHETTI, ENRICHED, COOKED
Grain Product	1414	CEREAL, HOT, OATS, INSTANT: REGULAR, PPD, QUAKER
Grain Product	1437	CEREAL, HOT, OATS, ONE MINUTE, DRY, QUAKER
Grain Product	3671	BAGEL, PLAIN (+ ONION, POPPY SEED, SESAME SEED)
Grain Product	3788	CAKE, WHITE, PUDDING-TYPE, DRY MIX
Grain Product	3797	CAKE, YELLOW, DRY MIX, REGULAR
Grain Product	4470	GRAIN, CORNMEAL (YELLOW), DEGERMED
Grain Product	4525	GRAIN, RICE, WHITE, LONG-GRAIN, REGULAR, COOKED, SALT ADDED
Grain Product	5244	SOUP, CHICKEN NOODLE, CUP-A-SOUP, MIX, +WATER
Grain Product	1055	SOUP, CHICKEN NOODLE, CANNED, CONDENSED, +WATER
Grain Product	1264	CEREAL, RTE, JUST RIGHT, KELLOGG'S
Grain Product	1269	CEREAL, RTE, FROSTED FLAKES, KELLOGG'S
Grain Product	1413	CEREAL, HOT, OATS, INSTANT: REGULAR, DRY, QUAKER
Grain Product	1475	CEREAL, RTE, CHEERIOS, GENERAL MILLS
Grain Product	3708	BREAD, PITA, WHITE
Grain Product	3714	BREAD, RAISIN
Grain Product	3804	COOKIE, BROWNIE, COMMERCIAL
Grain Product	3838	COOKIE, PEANUT BUTTER, COMMERCIAL
Grain Product	3875	CRACKER, WHEAT
Grain Product	4445	GRAIN, WHEAT FLOUR, WHITE, BREAD FLOUR
Grain Product	4458	PASTA, NOODLES, EGG, COOKED, ENRICHED
Grain Product	4473	GRAIN, RICE, WHITE, LONG-GRAIN, PARBOILED, COOKED
Grain Product	1056	SOUP, CHICKEN RICE, CANNED, CONDENSED, +WATER
Grain Product	1239	CEREAL, RTE, FRUIT & FIBRE: DATES, RAISINS AND WALNUTS, POST
Grain Product	1360	CEREAL, RTE, MUSLIX: ALMOND RAISIN, KELLOGG'S
Grain Product	1362	CEREAL, RTE, MUSLIX: BANANA NUT, KELLOGG'S
Grain Product	1368	CEREAL, RTE, OATMEAL CRISP MAPLE WALNUT, GENERAL MILLS
Grain Product	1372	CEREAL, RTE, RAISIN BRAN, KELLOGG'S
Grain Product	3702	BREAD, MIXED-GRAIN (+ WHOLE-GRAIN, 7-GRAIN)
Grain Product	3776	CAKE, PINEAPPLE UPSIDE-DOWN, PREPARED FROM RECIPE
Grain Product	3794	CAKE, YELLOW, COMMERCIAL, W/ VANILLA ICING

Food group	Food code	Description
Grain Product	3811	COOKIE, CHOCOLATE CHIP, COMMERCIAL, 12-17% FAT
Grain Product	3826	COOKIE, GRAHAM CRACKER, PLAIN OR HONEY (CINNAMON)
Grain Product	3829	COOKIE, MARSHMALLOW (INCLUDES PIES), CHOCOLATE-COATED
Grain Product	3867	CRACKER, MILK
Grain Product	3878	CRACKER, WHOLE-WHEAT
Grain Product	3885	CROUTONS, PLAIN
Grain Product	3915	MUFFIN, PLAIN, PREPARED FROM RECIPE, MADE W/ 2% MILK
Grain Product	3933	PANCAKE, PLAIN (+BUTTERMILK), DRY MIX, INCOMPLETE
Grain Product	3994	TACO SHELL, BAKED
Grain Product	4040	CRACKER, SALTINE (+OYSTER, SODA, SOUP), UNSALTED TOP
Grain Product	4486	GRAIN, BARLEY, PEARLED, COOKED
Grain Product	4497	GRAIN, RICE, BROWN, LONG-GRAIN, COOKED
Grain Product	4521	PASTA, NOODLES, EGG, UNENRICHED, DRY
Grain Product	4871	CORN FLOUR, DEGERMED, UNENRICHED,YELLOW
Grain Product	1231	CEREAL, RTE, ALPHA-BITS, POST
Grain Product	1247	CEREAL, RTE, SHREDDIES, POST
Grain Product	1256	CEREAL, RTE, CHEERIOS: HONEY NUT, GENERAL MILLS
Grain Product	1259	CEREAL, RTE, SUGAR COATED LUCKY CHARMS, GENERAL MILLS
Grain Product	1270	CEREAL, RTE, SUGAR CRISP, POST
Grain Product	1314	CEREAL, RTE, HONEY BUNCHES OF OATS, POST
Grain Product	1361	CEREAL, RTE, MUSLIX: APPLE CRISP, KELLOGG'S
Grain Product	1363	CEREAL, RTE, MUSLIX: HARVEST FRUIT, KELLOGG'S
Grain Product	1416	CEREAL, HOT, OATS, INSTANT: APPLE/CINNAMON, PPD, QUAKER
Grain Product	1439	CEREAL, HOT, OATS, QUICK, DRY, QUAKER
Grain Product	1440	CEREAL, HOT, OATS, QUICK, PPD, QUAKER
Grain Product	1474	CEREAL, RTE, CAPN CRUNCH, QUAKER"
Grain Product	1478	CEREAL, RTE, MINI-WHEATS: + WHITE FROSTING, KELLOGG'S
Grain Product	3322	SOY FLOUR, FULL-FAT, RAW
Grain Product	3675	BAGEL, CINNAMON-RAISIN
Grain Product	3700	BREAD, ITALIAN
Grain Product	3703	BREAD, MIXED-GRAIN (+ WHOLE-GRAIN, 7-GRAIN), TOASTED
Grain Product	3740	BREAD STUFFING, DRY MIX, PREPARED
Grain Product	3755	CAKE, CHOCOLATE, PUDDING-TYPE, DRY MIX
Grain Product	3784	CAKE, SNACK CAKE, CREME-FILLED, CHOCOLATE W/ FROSTING
Grain Product	3792	CAKE, WHITE, PREPARED FROM RECIPE WO/ FROSTING
Grain Product	3808	COOKIE, BUTTER, COMMERCIAL

Food group	Food code	Description
Grain Product	3821	COOKIE, CHOCOLATE SANDWICH, EXTRA CREME FILLING
Grain Product	3859	CRACKER, CHEESE
Grain Product	3868	CRACKER, RUSK TOAST
Grain Product	3879	CRACKER MEAL
Grain Product	3886	CROUTONS, SEASONED
Grain Product	3996	TOASTER PASTRY, FRUIT(APPLE,BLUEBERRY,CHERRY,STRAWBERRY)
Grain Product	4000	WAFFLE, PLAIN, PREPARED FROM RECIPE
Grain Product	4009	COOKIE, OATMEAL, PREPARED FROM RECIPE, WO/ RAISINS
Grain Product	4010	COOKIE, CHOCOLATE CHIP, FROM RECIPE, MADE W/ BUTTER
Grain Product	4063	BREAD, FRENCH OR VIENNA (+ SOURDOUGH)
Grain Product	4082	BANNOCK
Grain Product	4085	SHAKE AND BAKE, DRY
Grain Product	4425	GRAIN, RICE, WHITE, GLUTINOUS, COOKED
Grain Product	4449	GRAIN, RICE, WILD, RAW
Grain Product	4471	GRAIN, RICE, WHITE, LONG-GRAIN, REGULAR, RAW
Grain Product	4475	GRAIN, RICE, WHITE, MEDIUM-GRAIN, COOKED
Grain Product	4477	GRAIN, RICE, WHITE, SHORT-GRAIN, COOKED
Grain Product	4482	GRAIN, RICE, WHITE, LONG-GRAIN, PRECOOKED/INSTANT, EN, PPD
Grain Product	4483	PASTA, NOODLES, EGG, ENRICHED, COOKED, SALT ADDED
Grain Product	4500	GRAIN, WHEAT FLOUR, WHOLE-GRAIN
Grain Product	4506	PASTA, MACARONI (ELBOW), ENRICHED, DRY
Grain Product	4512	PASTA, NOODLES, EGG, ENRICHED, DRY
Grain Product	4517	PASTA, SPAGHETTI, WHOLE-WHEAT, COOKED
Grain Product	4838	GRANOLA BARS, SOFT, CEREAL BAR, FRUIT
Grain Product	5067	CEREAL, RTE, CHEX: HONEY NUT, GENERAL MILLS
Grain Product	5092	CEREAL, RTE, CORN FLAKES: HONEY CRUNCH, KELLOGG'S
Grain Product	5143	CEREAL, HOT, OATS, QUICK: ROBIN HOOD, DRY, ROBIN HOOD
Grain Product	5200	CEREAL, HOT, OATS, INSTANT: SIZZLING CINNAMON, PPD, QUAKER
Grain Product	5201	CEREAL, HOT, OATS, INSTANT: BAKED APPLE, PPD, QUAKER
Grain Product	5253	SOUP, ORIENTAL FLAVOR, INSTANT CUP NOODLES, RAMEN, +WATER
Fruit/Vegetables	2422	POTATOES, BOILED, COOKED, WO/ SKIN, FLESH, DRAINED
Fruit/Vegetables	1725	ORANGE JUICE, FROZEN CONCENTRATE, DILUTED
Fruit/Vegetables	2462	TOMATOES, RED, RIPE, CANNED, WHOLE
Fruit/Vegetables	2334	POTATO, FRENCH-FRIED, FROZEN, HOME PREPARED / OVEN, SALT ADDED
Fruit/Vegetables	2259	TOMATO PUREE, CANNED

Food group	Food code	Description
Fruit/Vegetables	2426	POTATOES, MASHED, FLAKES WO/ MILK, DRY
Fruit/Vegetables	2417	POTATOES, RAW, FLESH
Fruit/Vegetables	1752	APPLE JUICE, CANNED OR BOTTLED, ADDED VITAMIN C
Fruit/Vegetables	1696	APPLES, RAW, W/ SKIN
Fruit/Vegetables	1754	APPLE JUICE, FROZEN CONCENTRATE, DILUTED, ADDED VITAMIN C
Fruit/Vegetables	2258	TOMATO PASTE, CANNED
Fruit/Vegetables	1610	MULBERRIES, RAW
Fruit/Vegetables	1723	ORANGE JUICE, CANNED
Fruit/Vegetables	2398	LETTUCE, ICEBERG, RAW
Fruit/Vegetables	1704	BANANAS, RAW
Fruit/Vegetables	1515	BLACKBERRIES, RAW
Fruit/Vegetables	1705	BLUEBERRIES, RAW
Fruit/Vegetables	1720	GRAPE JUICE, FROZEN CONCEN, SUGAR + VIT C ADDED, DILUTED
Fruit/Vegetables	2390	CORN, SWEET, CANNED, VACUUM PACK, NIBLETS
Fruit/Vegetables	1589	LEMON JUICE, RAW
Fruit/Vegetables	1722	ORANGES, ALL COMMERCIAL VARIETIES, RAW
Fruit/Vegetables	2144	ONIONS, SPRING (GREEN), RAW
Fruit/Vegetables	1718	GRAPES, EUROPEAN TYPE (ADHERENT SKIN), RAW
Fruit/Vegetables	2436	POTATOES, FRENCH-FRIED, FROZEN, RESTAURANT-PPD, VEG OIL
Fruit/Vegetables	2460	TOMATOES, RED, RIPE, RAW
Fruit/Vegetables	2483	ONIONS, BOILED, SALT ADDED, DRAINED
Fruit/Vegetables	1620	ORANGE JUICE, CHILLED
Fruit/Vegetables	2401	ONIONS, RAW
Fruit/Vegetables	2411	PEAS, GREEN, CANNED, DRAINED SOLIDS
Fruit/Vegetables	2067	CORIANDER (CILANTRO), RAW
Fruit/Vegetables	2387	CELERY, BOILED, DRAINED
Fruit/Vegetables	961	SOUP, VEGETABLE, CHUNKY, CANNED, READY-TO-SERVE
Fruit/Vegetables	1691	WATERMELON, RAW
Fruit/Vegetables	2489	TOMATOES, RED, RIPE, RAW, JUNE TO OCTOBER
Fruit/Vegetables	2272	VEGETABLES, MIXED, FROZEN, BOILED, DRAINED
Fruit/Vegetables	2470	TURNIPS, RAW
Fruit/Vegetables	2380	CARROTS, RAW
Fruit/Vegetables	2402	ONIONS, BOILED, DRAINED
Fruit/Vegetables	2413	PEPPER, SWEET, GREEN, RAW
Fruit/Vegetables	2484	PEPPER, SWEET, RED, RAW
Fruit/Vegetables	1025	SAUCE, SALSA, READY-TO-SERVE

Food group	Food code	Description
Fruit/Vegetables	1713	FRUIT SALAD, CANNED, LIGHT SYRUP PACK, SOLIDS + LIQUID
Fruit/Vegetables	2008	BEANS, MUNG, MATURE SEEDS, SPROUTED +SEED, RAW
Fruit/Vegetables	2048	CAULIFLOWER, FROZEN, BOILED, DRAINED
Fruit/Vegetables	2274	WATERCHESTNUTS, CHINESE, RAW
Fruit/Vegetables	2389	CORN, SWEET, CANNED, CREAM STYLE
Fruit/Vegetables	1576	GRAPE JUICE, CANNED/BOTTLED
Fruit/Vegetables	1590	LEMON JUICE, CANNED/BOTTLED
Fruit/Vegetables	1740	PLUMS, RAW
Fruit/Vegetables	2262	TURNIP, BOILED, DRAINED
Fruit/Vegetables	2446	TOMATO SAUCE FOR SPAGHETTI, CANNED
Fruit/Vegetables	2465	TOMATO SAUCE, CANNED
Fruit/Vegetables	4579	FAST FOOD, SALAD, VEGETABLE, NO DRESSING
Fruit/Vegetables	4735	SAUCE, PASTA, SPAGHETTI / MARINARA, READY-TO-SERVE
Fruit/Vegetables	939	SOUP, CHICKEN VEGETABLE, CHUNKY, CANNED, READY-TO-SERVE
Fruit/Vegetables	1128	SOUP, TOMATO, CANNED, CONDENSED, +WATER
Fruit/Vegetables	1611	NECTARINES, RAW
Fruit/Vegetables	1717	GRAPEFRUIT JUICE, FROZEN CONCENTRATE, DILUTED
Fruit/Vegetables	1728	PEACHES, RAW
Fruit/Vegetables	1747	RASPBERRIES, RAW
Fruit/Vegetables	2009	BEANS, MUNG, MATURE SEEDS, SPROUTED +SEED, BOILED, DRAINED
Fruit/Vegetables	2068	CORN, SWEET, ON/OFF COB, BOILED, DRAINED
Fruit/Vegetables	2123	MUSHROOM, BOILED, DRAINED
Fruit/Vegetables	2205	SEAWEED, DULSE (LAVER, NORI), RAW
Fruit/Vegetables	2361	CABBAGE, RAW
Fruit/Vegetables	2363	CUCUMBER, RAW
Fruit/Vegetables	2374	BROCCOLI, RAW
Fruit/Vegetables	2391	CORN, SWEET, YELLOW, FROZEN, KERNELS CUT OFF COB, UNPREPARED
Fruit/Vegetables	2394	GARLIC, RAW
Fruit/Vegetables	2425	POTATOES, CANNED, DRAINED SOLIDS
Fruit/Vegetables	2435	POTATOES, FRENCH FRIED, FRZ, HOME-PREPARED / OVEN, -NA
Fruit/Vegetables	4848	CUCUMBER, PEELED, RAW
Fruit/Vegetables	1495	APPLE JUICE, CANNED/BOTTLED, WO/ ADDED VITAMIN C
Fruit/Vegetables	1497	APPLE JUICE, FROZEN CONCENTRATE, DILUTED, WO/ ADDED VIT C
Fruit/Vegetables	1531	CHERRIES, SWEET, RAW
Fruit/Vegetables	1532	CHERRIES, SWEET, CANNED, WATER PACK, SOLIDS + LIQUID

Food group	Food code	Description
Fruit/Vegetables	1538	CRANBERRIES, RAW
Fruit/Vegetables	1544	ELDERBERRIES, RAW
Fruit/Vegetables	1573	GRAPES, CANADIAN TYPE (SLIP SKIN), RAW
Fruit/Vegetables	1578	GUAVAS, COMMON, RAW
Fruit/Vegetables	1585	KIWIFRUIT, RAW
Fruit/Vegetables	1603	MANGOS, RAW
Fruit/Vegetables	1608	MIXED FRUIT, DRIED
Fruit/Vegetables	1632	PASSION-FRUIT JUICE, YELLOW, RAW
Fruit/Vegetables	1731	PEARS, RAW, W/ SKIN
Fruit/Vegetables	1734	PINEAPPLE, RAW
Fruit/Vegetables	1749	STRAWBERRIES, RAW
Fruit/Vegetables	1991	ASPARAGUS, BOILED, DRAINED
Fruit/Vegetables	2019	BEANS, SNAP (ITALIAN/GREEN/YELLOW), FROZEN, BOILED, DRAINED
Fruit/Vegetables	2026	BROCCOLI, FROZEN, SPEARS, BOILED, DRAINED
Fruit/Vegetables	2090	ESCAROLE OR ENDIVE (CICHORIUM ENDIVIA) RAW
Fruit/Vegetables	2117	LETTUCE, LOOSELEAF, RAW
Fruit/Vegetables	2204	SEAWEED, KELP (KOMBU, TANGLE), RAW
Fruit/Vegetables	2226	SQUASH, SUMMER, ZUCCHINI, BOILED, DRAINED
Fruit/Vegetables	2375	BROCCOLI, BOILED, DRAINED
Fruit/Vegetables	2377	BROCCOLI, FROZEN, CHOPPED, BOILED, DRAINED
Fruit/Vegetables	2386	CELERY, RAW
Fruit/Vegetables	2400	MUSHROOM, CANNED, DRAINED SOLIDS
Fruit/Vegetables	2409	PEAS, GREEN, RAW
Fruit/Vegetables	2461	TOMATOES, RED, RIPE, BOILED
Fruit/Vegetables	2472	TURNIPS, FROZEN, BOILED, DRAINED
Fruit/Vegetables	2474	VEGETABLES, MIXED, CANNED, DRAINED SOLIDS
Fruit/Vegetables	2480	BROCCOLI, BOILED, SALT ADDED, DRAINED
Fruit/Vegetables	2491	CORN, SWEET, WHITE, FROZEN KERNELS OFF COB, UNPREPARED
Fruit/Vegetables	2496	PIMENTO, CANNED
Fruit/Vegetables	4664	FAST FOOD, POTATO, FRENCH FRIED IN VEGETABLE OIL
Fruit/Vegetables	4736	TOMATOES, CRUSHED, CANNED
Fruit/Vegetables	4860	PEPPER, JALAPENO, RAW
Fruit/Vegetables	5593	CRANBERRY JUICE, UNSWEETENED
Fruit/Vegetables	1496	APPLE JUICE, FROZEN CONCENTRATE, UNDILUTED, WO/ VIT C
Fruit/Vegetables	1511	AVOCADOS, RAW, ALL COMMERCIAL VARIETIES
Fruit/Vegetables	1527	CHERRIES, SOUR, RED, CANNED, WATER PACK, SOLIDS + LIQUID

Food group	Food code	Description
Fruit/Vegetables	1533	CHERRIES, SWEET, CANNED, JUICE PACK, SOLIDS + LIQUID
Fruit/Vegetables	1542	CURRANTS, ZANTE, DRIED
Fruit/Vegetables	1554	FRUIT COCKTAIL, CANNED, LIGHT SYRUP PACK, SOLIDS + LIQUID
Fruit/Vegetables	1572	GRAPEFRUIT JUICE, WHITE, RAW
Fruit/Vegetables	1607	MIXED FRUIT, CANNED, HEAVY SYRUP PACK, SOLIDS + LIQUID
Fruit/Vegetables	1619	ORANGE JUICE, RAW
Fruit/Vegetables	1623	TANGERINES (MANDARINS), RAW
Fruit/Vegetables	1657	PINEAPPLE JUICE, CANNED, ADDED VITAMIN C
Fruit/Vegetables	1687	STRAWBERRIES, FROZEN, SWEETENED, SLICED
Fruit/Vegetables	1697	APPLES, RAW, WO/ SKIN
Fruit/Vegetables	1698	APPLES, RAW, WO/ SKIN, SLICED, COOKED, BOILED
Fruit/Vegetables	1712	FRUIT SALAD, CANNED, JUICE PACK, SOLIDS + LIQUID
Fruit/Vegetables	1714	GRAPEFRUIT, PINK, RED OR WHITE, ALL AREAS, RAW
Fruit/Vegetables	1724	ORANGE JUICE, FROZEN CONCENTRATE, UNDILUTED
Fruit/Vegetables	1726	TANGERINES (MANDARINS), CANNED, JUICE PACK, SOLIDS + LIQUID
Fruit/Vegetables	1727	TANGERINES (MANDARINS), CANNED, LIGHT SYRUP PACK, SOL+LIQ
Fruit/Vegetables	1730	PEACHES, CANNED HALVES/SLICES, LIGHT SYRUP PACK, SOL+LIQ
Fruit/Vegetables	1737	PINEAPPLE, CANNED, LIGHT SYRUP PACK, SOLIDS + LIQUID
Fruit/Vegetables	1745	RAISINS, SEEDLESS (SULTANA)
Fruit/Vegetables	1746	RAISINS, SEEDED
Fruit/Vegetables	2034	CABBAGE, RED, RAW
Fruit/Vegetables	2046	CAULIFLOWER, BOILED, DRAINED
Fruit/Vegetables	2057	CHICORY GREENS (CICHORIUM INTYBUS), RAW
Fruit/Vegetables	2059	CHIVES, RAW
Fruit/Vegetables	2073	CORNSALAD (LAMB'S LETTUCE), RAW
Fruit/Vegetables	2086	DANDELION GREENS, RAW
Fruit/Vegetables	2089	EGGPLANT (AUBERGINE, BRINJAL), BOILED, DRAINED
Fruit/Vegetables	2116	LETTUCE, COS OR ROMAINE, RAW
Fruit/Vegetables	2151	PEAS, GREEN, FROZEN, UNPREPARED
Fruit/Vegetables	2154	PEAS AND CARROTS, CANNED, SOLIDS AND LIQUID
Fruit/Vegetables	2156	PEAS AND CARROTS, FROZEN, BOILED, DRAINED
Fruit/Vegetables	2184	POTATOES, WHOLE, FROZEN, BOILED, DRAINED
Fruit/Vegetables	2194	PURSLANE, RAW
Fruit/Vegetables	2213	SPINACH, RAW
Fruit/Vegetables	2256	TOMATO, RED, RIPE, CANNED, WEDGES IN TOMATO JUICE
Fruit/Vegetables	2344	PEPPER, SWEET, YELLOW, RAW

Food group	Food code	Description
Fruit/Vegetables	2345	RADICCHIO, RAW
Fruit/Vegetables	2370	BEANS, SNAP (ITALIAN/GREEN/YELLOW), RAW
Fruit/Vegetables	2372	BEANS, SNAP (ITALIAN/GREEN/YELLOW), CANNED, DRAINED SOLIDS
Fruit/Vegetables	2381	CARROTS, BOILED, DRAINED
Fruit/Vegetables	2382	CARROTS, CANNED, DRAINED SOLIDS
Fruit/Vegetables	2384	CARROTS, FROZEN, BOILED, DRAINED
Fruit/Vegetables	2385	CAULIFLOWER, RAW
Fruit/Vegetables	2392	CORN, SWEET, YELLOW, FROZEN KERNELS OFF COB, BOILED, DRAINED
Fruit/Vegetables	2397	LEEKS (BULB AND LOWER-LEAR PORTION), BOILED, DRAINED
Fruit/Vegetables	2399	MUSHROOM, RAW
Fruit/Vegetables	2404	ONION RINGS, BREADED, FROZEN, HEATED IN OVEN
Fruit/Vegetables	2405	PARSLEY, FRESH
Fruit/Vegetables	2410	PEAS, GREEN, BOILED, DRAINED
Fruit/Vegetables	2412	PEAS, GREEN, FROZEN, BOILED, DRAINED
Fruit/Vegetables	2414	PEPPER, SWEET, GREEN, BOILED, DRAINED
Fruit/Vegetables	2415	PEPPER, SWEET, RED/GREEN, FROZEN, CHOPPED, UNPREPARED
Fruit/Vegetables	2419	POTATOES, BAKED, FLESH ONLY
Fruit/Vegetables	2427	POTATOES, MASHED, FLAKES WO/ MILK, + MILK + BUTTER
Fruit/Vegetables	2431	POTATOES, HASHED BROWN, FROZEN, PLAIN, PREPARED
Fruit/Vegetables	2443	RADISHES, RAW
Fruit/Vegetables	2463	TOMATOES, RED, RIPE, CANNED, STEWED
Fruit/Vegetables	2464	TOMATO JUICE, CANNED
Fruit/Vegetables	2473	VEGETABLE JUICE COCKTAIL, CANNED
Fruit/Vegetables	2486	PEPPER, SWEET, RED, BOILED, DRAINED
Fruit/Vegetables	2499	SEAWEED, DULSE (LAVER, NORI), DRIED
Fruit/Vegetables	2505	POTATOES, RAW, FLESH AND SKIN
Fruit/Vegetables	2506	POTATOES, BOILED, COOKED IN SKIN, FLESH AND SKIN, DRAINED
Fruit/Vegetables	2956	CRANBERRY JUICE COCKTAIL, + VITAMIN C, BOTTLED
Fruit/Vegetables	4556	FAST FOOD, BREAKFAST, POTATOES, HASHED BROWN
Fruit/Vegetables	4653	FAST FOOD, COLESLAW
Fruit/Vegetables	4656	FAST FOOD, ONION RINGS, BREADED AND FRIED
Fruit/Vegetables	4662	FAST FOOD, POTATO, FRENCH FRIED IN BEEF TALLOW
Dairy	61	MILK, FLUID, PARTLY SKIMMED, 2% B.F.
Dairy	111	CHEESE, MOZZARELLA, PART SKIM, (52% WATER, 16.5% B.F.)
Dairy	94	CHEESE, PROCESSED FOOD, CHEDDAR

Food group	Food code	Description
Dairy	153	MILK, EVAPORATED, PARTLY SKIMMED, CANNED, UNDILUTED, 2% FAT
Dairy	119	CHEESE, CHEDDAR
Dairy	113	MILK, FLUID, WHOLE, PASTURIZED, HOMOGENIZED, 3.3% B.F.
Dairy	110	CHEESE, MOZZARELLA, (52% WATER, 22.5% B.F.)
Dairy	115	MILK, DRY, SKIM, POWDER, INSTANTIZED
Dairy	150	CREAM, CEREAL (HALF AND HALF), 10% B.F.
Dairy	165	YOGOURT, FRUIT, STIRRED/SWISS STYLE
Dairy	43	CHEESE, RICOTTA, W/ WHOLE MILK
Dairy	144	YOGOURT, FRUIT BOTTOM, 1% -> 2% B.F.
Dairy	151	CREAM, TABLE (COFFEE), 15% B.F.
Dairy	4163	DESSERT, FROZEN, ICE CREAM, VANILLA, 11% B.F.
Dairy	95	CHEESE, PROCESSED SPREAD, CHEDDAR
Dairy	134	MILK, SKIM, POWDER, REGULAR
Dairy	5559	YOGOURT, FRUIT VARIETY, NONFAT
Dairy	34	CHEESE, MONTEREY
Dairy	39	CHEESE, PARMESAN, GRATED
Dairy	114	MILK, FLUID, SKIM
Dairy	120	CHEESE, COTTAGE, (2% B.F.)
Dairy	146	YOGOURT, FRUIT BOTTOM, 2% -> 4% B.F.
Dairy	152	CREAM, SOUR, CULTURED, 18% B.F.
Dairy	4254	DESSERT, PUDDING, VANILLA, READY-TO-EAT
Dairy	4288	DESSERT, FROZEN, ICE CREAM, CHOCOLATE
Dairy	4711	MILK, FLUID, CHOCOLATE, PARTLY SKIMMED, 1% B.F.
Dairy	20	CHEESE, BRIE
Dairy	35	CHEESE, MOZZARELLA, (48% WATER, 25% B.F.)
Dairy	41	CHEESE, PORT-SALUT
Dairy	47	CHEESE, SWISS (EMMENTAL)
Dairy	63	MILK, FLUID, PARTLY SKIMMED, 1% B.F.
Dairy	108	CHEESE, FETA
Dairy	124	MILK, FLUID, BUTTERMILK, CULTURED
Dairy	136	CREAM, TABLE (COFFEE), 18% B.F.
Dairy	140	MILK, EVAPORATED, WHOLE, CANNED, UNDILUTED, 7.8% B.F.
Dairy	142	YOGOURT, PLAIN, <1% B.F.
Dairy	143	YOGOURT, COFFEE AND VANILLA FLAVOURS, 1.9% B.F.
Dairy	156	YOGOURT, BEVERAGE

Food group	Food code	Description
Dairy	164	YOGOURT, FROZEN
Dairy	4237	DESSERT, PUDDING, CHOCOLATE, READY-TO-EAT
Dairy	4289	DESSERT, FROZEN, ICE CREAM, STRAWBERRY
Meats/Substitutes	125	EGG, CHICKEN, WHOLE, FRESH/FROZEN, RAW
Meats/Substitutes	3577	GAME MEAT, CARIBOU (REINDEER), RAW
Meats/Substitutes	3230	ARCTIC CHAR, RAW
Meats/Substitutes	1856	PORK, CURED, BACON, BROILED, PAN-FRIED OR ROASTED
Meats/Substitutes	2693	BEEF, GROUND, MEDIUM, BROILED, MEDIUM
Meats/Substitutes	2699	BEEF, GROUND, REGULAR, BROILED, MEDIUM
Meats/Substitutes	2686	BEEF, GROUND, LEAN, BROILED, MEDIUM
Meats/Substitutes	4565	FAST FOOD, CHICKEN, BREADED+FRIED, LIGHT MEAT (BREAST/WING)
Meats/Substitutes	5209	GOOSE, WILD (CANADA GOOSE), FLESH ONLY, RAW
Meats/Substitutes	4564	FAST FOOD, CHICKEN, BREADED+FRIED, DARK MEAT (DRSTK/THIGH)
Meats/Substitutes	5806	GAME MEAT, NATIVE, CARIBOU (REINDEER), MEAT, DRIED
Meats/Substitutes	1884	PORK, FRESH, LOIN, CENTRE CUT (BONE-IN), LEAN+FAT, PAN-FRIED
Meats/Substitutes	1186	WIENER (FRANKFURTER), BEEF AND PORK
Meats/Substitutes	614	CHICKEN, BROILER, LEG, MEAT, ROASTED
Meats/Substitutes	1148	HAM, SLICED, EXTRA LEAN (APPROXIMATELY 5% FAT)
Meats/Substitutes	5766	GAME MEAT, NATIVE, BELUGA, MUKTUK, RAW
Meats/Substitutes	1775	PORK, FRESH, LOIN, WHOLE, LEAN+FAT, BROILED
Meats/Substitutes	3399	PEANUT BUTTER, SMOOTH TYPE, FAT, SUGAR AND SALT ADDED
Meats/Substitutes	615	CHICKEN, BROILER, LEG, MEAT, STEWED
Meats/Substitutes	1774	PORK, FRESH, LOIN, WHOLE, LEAN+FAT, BRAISED
Meats/Substitutes	3115	MUSSEL, BLUE, RAW
Meats/Substitutes	5783	GAME MEAT, NATIVE, RINGED SEAL, MEAT, BOILED
Meats/Substitutes	1890	PORK, FRESH, LOIN, TENDERLOIN CHOP (-BONE), L+F, PAN-FRIED
Meats/Substitutes	5864	FAST FOODS, CHICKEN, BREADED AND FRIED, BONELESS, PLAIN
Meats/Substitutes	1885	PORK, FRESH, LOIN, CENTRE RIB (BONE-IN), LEAN+FAT, PAN-FRIED
Meats/Substitutes	1898	PORK, FRESH, LOIN, CENTRE RIB (BONELESS), LEAN+FAT,PAN-FRIED
Meats/Substitutes	130	EGG, CHICKEN, WHOLE, BOILED IN SHELL, HARD-COOKED
Meats/Substitutes	1199	SAUSAGE, PORK, FRESH, COOKED
Meats/Substitutes	1155	LUNCHEON MEAT, PORK, CANNED
Meats/Substitutes	126	EGG, CHICKEN, WHITE, FRESH OR FROZEN, RAW
Meats/Substitutes	1174	VIENNA SAUSAGE (COCKTAIL), CANNED, BEEF AND PORK
Meats/Substitutes	3006	FISH PORTIONS AND STICKS, FROZEN AND REHEATED
Meats/Substitutes	629	CHICKEN, BROILER, WING, MEAT+SKIN, ROASTED

Food group	Food code	Description
Meats/Substitutes	2695	BEEF, GROUND, MEDIUM, PAN-FRIED, MEDIUM
Meats/Substitutes	3208	WHITEFISH, LAKE, MIXED SPECIES, RAW
Meats/Substitutes	5794	GAME MEAT, NATIVE, WALRUS, MEAT, BOILED
Meats/Substitutes	634	CHICKEN, BROILER, WING, MEAT, STEWED
Meats/Substitutes	893	CHICKEN, ROASTING, BREAST, MEAT, STEWED
Meats/Substitutes	3194	COD (SCROD), ATLANTIC, RAW
Meats/Substitutes	5225	GOOSE, WILD (CANADA GOOSE), LEG+SKIN, BOILED
Meats/Substitutes	5769	GAME MEAT, NATIVE, BELUGA, MEAT, DRIED
Meats/Substitutes	5854	CHICKEN, WING, FROZEN, GLAZED, BARBECUE FLAVOUR, HEATED IN CONVENTIONAL OVEN
Meats/Substitutes	1790	PORK, FRESH, LOIN, CENTRE RIB (BONE-IN), LEAN+FAT, BRAISED
Meats/Substitutes	2700	BEEF, GROUND, REGULAR, BROILED, WELL DONE
Meats/Substitutes	2732	BEEF, CHUCK, CROSS RIB ROAST, LEAN+FAT, 1/4 TRIM, RAW"
Meats/Substitutes	5009	BEEF, GROUND, LEAN, CRUMBLED, PAN-FRIED, WELL DONE
Meats/Substitutes	568	CHICKEN, BROILER, FLESH ONLY, STEWED
Meats/Substitutes	610	CHICKEN, BROILER, LEG, MEAT+SKIN, ROASTED
Meats/Substitutes	633	CHICKEN, BROILER, WING, MEAT, ROASTED
Meats/Substitutes	644	CHICKEN, ROASTING, LIGHT MEAT, ROASTED
Meats/Substitutes	821	CHICKEN, STEWING, FLESH ONLY, STEWED
Meats/Substitutes	1903	PORK, FRESH, LOIN, CENTRE RIB (BONELESS), LEAN, PAN-FRIED
Meats/Substitutes	1934	PORK, FRESH, SPARERIBS, LEAN+FAT, BRAISED
Meats/Substitutes	2690	BEEF, GROUND, MEDIUM, RAW
Meats/Substitutes	3362	PEANUTS, ALL TYPES, DRY-ROASTED
Meats/Substitutes	4738	BEEF, LOIN, T-BONE STEAK, LEAN + FAT, 1/4 TRIM, BROILED"
Meats/Substitutes	640	CHICKEN, ROASTING, FLESH ONLY, ROASTED
Meats/Substitutes	919	CHICKEN, GROUND, LEAN, COOKED
Meats/Substitutes	1141	BOLOGNA (BALONEY), PORK
Meats/Substitutes	1162	PEPPERONI, PORK, BEEF
Meats/Substitutes	1778	PORK, FRESH, LOIN, WHOLE, LEAN, BRAISED
Meats/Substitutes	1886	PORK, FRESH, LOIN, TENDERLOIN CHOP (-BONE), LEAN, PAN-FRIED
Meats/Substitutes	2677	BEEF, BRISKET, LEAN, 1/4 TRIM, BRAISED"
Meats/Substitutes	2713	BEEF, BRISKET, LEAN, 0 TRIM, BRAISED"
Meats/Substitutes	2721	BEEF, HIP, EYE OF ROUND ROAST, LEAN+FAT, 0 TRIM, ROASTED"
Meats/Substitutes	2763	BEEF, HIP, EYE OF ROUND ROAST, LEAN+FAT, 1/4 TRIM, ROASTED"
Meats/Substitutes	2801	BEEF, CHUCK, STEWING BEEF, LEAN+FAT, 1/4 TRIM, SIMMERED"
Meats/Substitutes	3116	MUSSEL, BLUE, BOILED/STEAMED

Food group	Food code	Description
Meats/Substitutes	4750	BEEF, CHUCK, BLADE ROAST, LEAN + FAT, 1/8 TRIM, BRAISED"
Meats/Substitutes	4767	BEEF, HIP, INSIDE (TOP) ROUND, LEAN + FAT, 1/8 TRIM,BRAISED"
Meats/Substitutes	5213	GOOSE, WILD (CANADA GOOSE), FLESH ONLY, BOILED
Meats/Substitutes	5215	GOOSE, WILD (CANADA GOOSE), BREAST+SKIN, RAW
Meats/Substitutes	592	CHICKEN, BROILER, LIGHT MEAT, ROASTED
Meats/Substitutes	593	CHICKEN, BROILER, LIGHT MEAT, STEWED
Meats/Substitutes	597	CHICKEN, BROILER, DARK MEAT, STEWED
Meats/Substitutes	905	CHICKEN, ROASTING, DRSTK, MEAT, STEWED
Meats/Substitutes	1164	POULTRY SALAD SANDWICH SPREAD, CHICKEN AND/OR TURKEY
Meats/Substitutes	1180	BOLOGNA, BEEF AND PORK
Meats/Substitutes	1221	PEPPERONI, SAUSAGE, PORK AND BEEF
Meats/Substitutes	1776	PORK, FRESH, LOIN, WHOLE, LEAN+FAT, ROASTED
Meats/Substitutes	1831	PORK, FRESH, COMP. CUTS, LEG+LOIN+SHOULDER, LEAN, COOKED
Meats/Substitutes	2567	FILBERTS OR HAZELNUTS, DRIED, UNBLANCHED
Meats/Substitutes	2590	WALNUTS, ENGLISH OR PERSIAN, DRIED
Meats/Substitutes	2696	BEEF, GROUND, MEDIUM, PATTY, PAN-FRIED, WELL DONE
Meats/Substitutes	2791	BEEF, CURED, CORNED BEEF, CANNED
Meats/Substitutes	3081	TUNA, LIGHT, CANNED/WATER, DRAINED, SALT ADDED
Meats/Substitutes	3109	CLAM, MIXED SPECIES, RAW
Meats/Substitutes	3645	GAME MEAT, SEAL, HARP, RAW
Meats/Substitutes	5212	GOOSE, WILD (CANADA GOOSE), FLESH ONLY, ROASTED
Meats/Substitutes	5220	GOOSE, WILD (CANADA GOOSE), LEG+SKIN, RAW
Meats/Substitutes	5784	GAME MEAT, NATIVE, RINGED SEAL, MEAT, AGED
Meats/Substitutes	5839	ARCTIC CHAR, NATIVE, DRIED
Meats/Substitutes	596	CHICKEN, BROILER, DARK MEAT, ROASTED
Meats/Substitutes	630	CHICKEN, BROILER, WING, MEAT+SKIN, STEWED
Meats/Substitutes	901	CHICKEN, ROASTING, DRSTK, MEAT+SKIN, ROASTED
Meats/Substitutes	1163	SAUSAGE, PORK AND BEEF, FRESH, COOKED
Meats/Substitutes	1818	PORK, FRESH, SHOULDER, PICNIC (ARM), LEAN+FAT, BRAISED
Meats/Substitutes	1821	PORK, FRESH, SHOULDER, PICNIC (ARM), LEAN, BRAISED
Meats/Substitutes	1824	PORK, FRESH, SHOULDER, BUTT (BLADE +BONE), LEAN+FAT, BRAISED
Meats/Substitutes	2678	BEEF, HIP, OUTSIDE (BOTTOM) ROUND STEAK, L+F, 1/4, BRAISED"
Meats/Substitutes	2683	BEEF, GROUND, LEAN, RAW
Meats/Substitutes	2685	BEEF, GROUND, LEAN, BAKED, WELL DONE
Meats/Substitutes	2694	BEEF, GROUND, MEDIUM, BROILED, WELL DONE
Meats/Substitutes	2737	BEEF, CHUCK, BLADE ROAST, LEAN+FAT, 1/4 TRIM, POT ROASTED"

Food group	Food code	Description
Meats/Substitutes	2771	BEEF, HIP, INSIDE (TOP) ROUND STEAK, LEAN+FAT, 1/4, BROILED"
Meats/Substitutes	2817	BEEF, HIP, EYE OF ROUND STEAK, LEAN+FAT, 1/4 TRIM, BROILED"
Meats/Substitutes	3049	SALMON, ATLANTIC, WILD, RAW
Meats/Substitutes	3050	SALMON, CHINOOK (SPRING), SMOKED
Meats/Substitutes	3212	SHRIMP, MIXED SPECIES, BOILED/STEAMED
Meats/Substitutes	3215	TROUT, MIXED SPECIES, BAKED/BROILED
Meats/Substitutes	3314	REFRIED BEANS, CANNED
Meats/Substitutes	3410	CHICKPEAS (GARBANZO BEANS, BENGAL GRAM), BOILED, SALT ADDED
Meats/Substitutes	3578	GAME MEAT, CARIBOU (REINDEER), ROASTED
Meats/Substitutes	4742	BEEF, LOIN, T-BONE STEAK, LEAN, 0 TRIM, BROILED"
Meats/Substitutes	5010	BEEF, GROUND, REG., CRUMBLED, NO RINSE, PAN-FRIED, WELLDONE
Meats/Substitutes	5011	BEEF, GROUND, REG, CRUMBLED, PAN-FRIED, RINSED, WELL DONE
Meats/Substitutes	83	EGG, CHICKEN, DRIED, WHOLE
Meats/Substitutes	132	EGG, CHICKEN, WHOLE, POACHED
Meats/Substitutes	133	EGG, CHICKEN, WHOLE, SCRAMBLED (+ WHOLE MILK + MARGARINE)
Meats/Substitutes	560	CHICKEN, BROILER, FLESH+SKIN, RAW
Meats/Substitutes	567	CHICKEN, BROILER, FLESH ONLY, ROASTED
Meats/Substitutes	579	CHICKEN, BROILER, LIVER, SIMMERED
Meats/Substitutes	594	CHICKEN, BROILER, DARK MEAT, RAW
Meats/Substitutes	627	CHICKEN, BROILER, WING, MEAT+SKIN, FRIED, BATTER DIPPED
Meats/Substitutes	639	CHICKEN, ROASTING, FLESH ONLY, RAW
Meats/Substitutes	643	CHICKEN, ROASTING, LIGHT MEAT, RAW
Meats/Substitutes	648	CHICKEN, STEWING, FLESH AND SKIN, STEWED
Meats/Substitutes	668	DUCK, WILD, BREAST, MEAT ONLY, RAW
Meats/Substitutes	892	CHICKEN, ROASTING, BREAST, MEAT, ROASTED
Meats/Substitutes	1149	HAM, SLICED, REGULAR (APPROXIMATELY 11% FAT)
Meats/Substitutes	1150	HAM, CURED, MINCED
Meats/Substitutes	1154	LUNCHEON MEAT, BEEF, THIN SLICED
Meats/Substitutes	1168	SMOKED LINK SAUSAGE, PORK AND BEEF
Meats/Substitutes	1173	TURKEY HAM, CURED TURKEY THIGH MEAT
Meats/Substitutes	1175	ITALIAN SAUSAGE, FRESH PORK, COOKED
Meats/Substitutes	1201	SALAMI, COOKED, BEEF AND PORK
Meats/Substitutes	1756	PORK, FRESH, COMPOSITE CUTS, LEG+LOIN+SHOULDER, LEAN, RAW
Meats/Substitutes	1807	PORK, FRESH, LOIN, TENDERLOIN CHOP (-BONE), L+F, BROILED
Meats/Substitutes	1816	PORK, FRESH, SHOULDER, WHOLE, LEAN, ROASTED

Food group	Food code	Description
Meats/Substitutes	1872	PORK, CURED, HAM, WHOLE, LEAN+FAT, ROASTED
Meats/Substitutes	1873	PORK, CURED, HAM, WHOLE, LEAN, ROASTED
Meats/Substitutes	1888	PORK, CURED, HAM, BONELESS, LEAN AND REGULAR, ROASTED
Meats/Substitutes	1889	PORK, CURED, HAM, LEAN, CANNED, ROASTED
Meats/Substitutes	1896	PORK, FRESH, LOIN, CENTRE RIB (BONELESS), LEAN+FAT, BRAISED
Meats/Substitutes	1901	PORK, FRESH, LOIN, CENTRE RIB (BONELESS), LEAN, BRAISED
Meats/Substitutes	1924	PORK, FRESH, COMP CUTS, LOIN+SHOULDER BLADE, L+F, COOKED
Meats/Substitutes	2522	SESAME SEED KERNELS, TOASTED, DECORTICATED
Meats/Substitutes	2526	SUNFLOWER SEED KERNELS, DRIED
Meats/Substitutes	2535	ALMONDS, DRIED, BLANCHED
Meats/Substitutes	2628	CASHEW NUTS, OIL ROASTED, SALT ADDED
Meats/Substitutes	2640	ALMOND BUTTER, HONEY AND CINNAMON, SALT ADDED
Meats/Substitutes	2687	BEEF, GROUND, LEAN, BROILED, WELL DONE
Meats/Substitutes	2692	BEEF, GROUND, MEDIUM, BAKED, WELL DONE
Meats/Substitutes	2729	BEEF, LOIN, TOP SIRLOIN STEAK, LEAN, 0 TRIM, BROILED"
Meats/Substitutes	2735	BEEF, CHUCK, CROSS RIB ROAST, LEAN, 1/4 TRIM,POT ROASTED"
Meats/Substitutes	2736	BEEF, CHUCK, BLADE ROAST, LEAN+FAT, 1/4 TRIM, RAW"
Meats/Substitutes	2739	BEEF, CHUCK, BLADE ROAST, LEAN, 1/4 TRIM, POT ROASTED"
Meats/Substitutes	2747	BEEF, RIB, STANDING RIB ROAST, LEAN, 1/4 TRIM, ROASTED"
Meats/Substitutes	2770	BEEF, HIP, INSIDE (TOP) ROUND STEAK, LEAN+FAT, 1/4, RAW"
Meats/Substitutes	2783	BEEF, LOIN, TOP SIRLOIN STEAK, LEAN+FAT, 1/4 TRIM, BROILED"
Meats/Substitutes	2792	BEEF, CURED, PASTRAMI
Meats/Substitutes	2800	BEEF, CHUCK, STEWING BEEF, LEAN+FAT, 1/4 TRIM, RAW"
Meats/Substitutes	2807	BEEF, CHUCK, BLADE STEAK, LEAN, 1/4 TRIM, BRAISED"
Meats/Substitutes	2809	BEEF, HIP, RUMP ROAST, LEAN+FAT, 1/4 TRIM, ROASTED"
Meats/Substitutes	2821	BEEF, HIP, INSIDE (TOP) ROUND ROAST, LEAN+FAT, 1/4, ROASTED"
Meats/Substitutes	2823	BEEF, HIP, INSIDE (TOP) ROUND ROAST, LEAN, 0 TRIM, ROASTED"
Meats/Substitutes	2829	BEEF, CHUCK, STEWING BEEF, LEAN, 0 TRIM, SIMMERED"
Meats/Substitutes	3045	ROE, MIXED SPECIES, RAW
Meats/Substitutes	3058	SEATROUT (WEAKFISH), MIXED SPECIES, RAW
Meats/Substitutes	3191	OYSTER, EASTERN (BLUE POINT), FARMED, RAW
Meats/Substitutes	3203	SARDINE, ATLANTIC, CANNED/OIL, DRAINED SOLIDS W/ BONE
Meats/Substitutes	3204	TROUT, MIXED SPECIES, RAW
Meats/Substitutes	3205	TROUT, RAINBOW, WILD, RAW
Meats/Substitutes	3213	SCALLOP, MIXED SPECIES, RAW
Meats/Substitutes	3251	BEANS, BAKED, CANNED, W/ PORK AND SWEET SAUCE

Food group	Food code	Description
Meats/Substitutes	3264	BEANS, KIDNEY, LIGHT RED, BOILED
Meats/Substitutes	3317	SOYBEAN KERNELS, ROASTED, SALTED
Meats/Substitutes	3374	BEANS, BAKED, CANNED, W/ PORK
Meats/Substitutes	3382	BEANS, KIDNEY, DARK RED, BOILED
Meats/Substitutes	3392	LENTILS, RAW
Meats/Substitutes	3409	BEANS, WHITE, BOILED, SALT ADDED
Meats/Substitutes	3431	LAMB, AMERICAN, LEG, WHOLE, L+F, 1/4 TRIM, ROASTED"
Meats/Substitutes	3457	LAMB, AMERICAN, SHOULDER, WHOLE, LEAN+FAT, 1/4 TRIM, ROASTED"
Meats/Substitutes	3479	LAMB, AMERICAN, CUBED FOR STEW OR KABOB, LEAN, BRAISED
Meats/Substitutes	3508	VEAL, COMPOSITE CUTS, LEAN+FAT, COOKED
Meats/Substitutes	3562	VEAL, GROUND, BROILED
Meats/Substitutes	3648	GAME MEAT, WHALE, RAW
Meats/Substitutes	4748	BEEF, CHUCK, CROSS RIB ROAST, LEAN + FAT, 1/8 TRIM, BRAISED"
Meats/Substitutes	4756	BEEF, RIB, RIB STEAK, LEAN + FAT, 1/8 TRIM ,BROILED"
Meats/Substitutes	4995	BEEF, GROUND, MEDIUM, CRUMBLED, PAN-FRIED, WELL DONE
Meats/Substitutes	5223	GOOSE, WILD (CANADA GOOSE), LEG+SKIN, ROASTED
Meats/Substitutes	5229	GOOSE, WILD (CANADA GOOSE), LIVER, ROASTED
Meats/Substitutes	5775	GAME MEAT, NATIVE, NARWHAL, SKIN (MUKTUK), RAW
Meats/Substitutes	5813	GAME MEAT, NATIVE, CARIBOU (REINDEER), STOMACH, RAW
Meats/Substitutes	5815	GAME MEAT, NATIVE, CARIBOU (REINDEER), LIVER, RAW
Other	4318	SWEETS, SUGARS, GRANULATED
Other	2909	TEA, BREWED
Other	2933	WATER, MUNICIPAL
Other	2920	CARBONATED DRINK, COLA
Other	2873	COFFEE, BREWED
Other	4003	LEAVENING AGENT, BAKING POWDER, DOUBLE ACTING, PHOSPHATE
Other	122	COFFEE WHITENER (NONDAIRY), POWDERED
Other	118	BUTTER, REGULAR
Other	2922	FRUIT PUNCH JUICE DRINK, FROZEN, CONCENTRATE, + WATER
Other	2875	COFFEE, INSTANT, REGULAR, POWDER, + WATER
Other	4117	SNACKS, POTATO CHIPS, BARBECUE-FLAVOR
Other	2857	CARBONATED DRINK, LEMON-LIME SODA
Other	4407	SNACKS, POTATO CHIPS, PLAIN
Other	475	MARGARINE, TUB, CANOLA & SOYA OIL, IMPERIAL
Other	419	VEGETABLE OIL, SOYBEAN

Food group	Food code	Description
Other	2981	FRUIT PUNCH FLAVOUR DRINK, POWDER + WATER
Other	2494	TOMATO KETCHUP (CATSUP)
Other	4007	LEAVENING AGENT, YEAST, BAKER'S, COMPRESSED
Other	552	SHORTENING, HOUSEHOLD, UNSPECIFIED VEGETABLE OIL
Other	5768	ANIMAL FAT, NATIVE, BELUGA OIL
Other	4295	SWEETS, JAMS AND PRESERVES
Other	990	SAUCE, CHEESE, DEHYDRATED
Other	2943	ALCOHOLIC, BEER, REGULAR (5% ALCOHOL BY VOLUME)
Other	535	ANIMAL FAT, SEAL OIL
Other	4128	SNACKS, TORTILLA CHIPS, NACHO-FLAVOUR
Other	216	VANILLA EXTRACT
Other	2972	ORANGE FLAVOUR DRINK, + VITAMIN C, POWDER + WATER
Other	2926	CARBONATED DRINK, COLA, + ASPARTAME
Other	527	SALAD DRESSING, COMMERCIAL, MAYONNAISE TYPE, >35% OIL
Other	4186	CANDIES, BARS OR CHIPS, MILK CHOCOLATE, PLAIN
Other	446	SHORTENING, HOUSEHOLD, SOYBEAN (HYDROGENATED) AND PALM
Other	547	SHORTENING, INDUSTRIAL, ALL PURPOSE, SOY AND PALM
Other	4008	LEAVENING AGENT, YEAST, BAKER'S, ACTIVE, DRY
Other	531	SALAD DRESSING, COMMERCIAL, MAYONNAISE, >65% OIL
Other	548	SHORTENING, INDUSTRIAL, ALL PURPOSE, CANOLA AND PALM
Other	195	OREGANO, GROUND
Other	4002	LEAVENING AGENT, BAKING POWDER, DOUBLE-ACTING, NA AL SULFATE
Other	2959	FRUIT PUNCH DRINK, + VITAMIN C, CANNED
Other	4175	CANDIES, HARD
Other	4177	CANDIES, BARS, KIT KAT WAFER BAR
Other	171	BASIL, GROUND
Other	92	BUTTER, UNSALTED
Other	4319	SWEETS, SUGARS, ICING (POWDERED)
Other	214	SALT, TABLE
Other	471	MARGARINE, TUB, UNSPECIFIED VEGETABLE OILS
Other	2889	CITRUS FRUIT JUICE DRINK, FROZEN CONCENTRATE, + WATER
Other	414	ANIMAL FAT, BEEF TALLOW
Other	2138	ONIONS, DEHYDRATED FLAKES
Other	2858	CARBONATED DRINK, ORANGE SODA
Other	4184	CANDIES, BARS, OH HENRY!

Food group	Food code	Description
Other	4984	FRUIT PUNCH JUICE DRINK, READY-TO-DRINK
Other	188	GARLIC POWDER
Other	2846	ALCOHOLIC, VODKA (40% ALCOHOL BY VOLUME)
Other	3403	SOY SAUCE (MADE W/ SOY AND WHEAT), SHOYU, REGULAR
Other	4092	SNACKS, CORN-BASED, EXTRUDED, PUFFS/TWISTS, CHEESE-FLAVOR
Other	5330	SALAD DRESSING, RANCH DRESSING, COMMERCIAL, REGULAR
Other	3330	SOY SAUCE, (MADE W/ HYDROLYZED VEGETABLE PROTEIN)
Other	4144	CANDIE, BAR, CADBURY'S CARAMELLO
Other	4196	CANDIES, BARS, MILK CHOCOLATE W/ RICE CEREAL
Other	4193	SWEETS, SYRUP, TABLE BLEND, PANCAKE
Other	4230	DESSERT, GELATIN, DRY MIX, + WATER
Other	197	PARSLEY, DRIED
Other	418	VEGETABLE OIL, PEANUT
Other	2893	LEMONADE, WHITE, FROZEN CONCENTRATE, + WATER
Other	4118	SNACKS, POTATO CHIPS, SOUR CREAM AND ONION FLAVOR
Other	4174	CANDIES, GUMDROPS
Other	4190	CANDIES, MILK CHOCOLATE COATED PEANUTS
Other	4324	SWEETS, SYRUPS, CORN, HIGH-FRUCTOSE
Other	4970	SAUCES, READY-TO-SERVE, MUSTARD, PREPARED, YELLOW
Other	4981	COFFEE, BREWED, PREPARED W/ MUNICIPAL WATER, DECAFFEINATED
Other	5805	ANIMAL FAT, NATIVE, CARIBOU (REINDEER), FAT, RAW
Other	2888	CITRUS FRUIT JUICE DRINK, FROZEN CONCENTRATE
Other	2974	ORANGE DRINK, BREAKFAST TYPE, FROZEN CONCENTRATE + WATER
Other	4115	SNACKS, POPCORN, CHEESE-FLAVOR
Other	4209	CANDIES, REESE'S PEANUT BUTTER CUPS
Other	4005	LEAVENING AGENT, BAKING SODA
Other	4120	SNACKS, POTATO CHIPS, DRIED POTATOES, SOUR-CREAM & ONION
Other	4834	SWEETENER, LOW-CALORIE, NUTRASWEET, EQUAL
Other	193	NUTMEG, GROUND
Other	211	TURMERIC, GROUND
Other	422	VEGETABLE OIL, OLIVE
Other	1001	GRAVIES, BEEF, CANNED
Other	1133	SAUCE, WORCESTERSHIRE, READY-TO-SERVE
Other	1613	OLIVES, RIPE, CANNED, SMALL -> EXTRA LARGE
Other	2731	BEEF, FAT, COOKED
Other	2861	CARBONATED DRINK, ROOT BEER

Food group	Food code	Description
Other	4212	CANDIES, AFTER EIGHT CHOCOLATE MINTS
Other	4323	SWEETS, SYRUPS, CORN, LIGHT
Other	28	CHEESE, CREAM
Other	1063	SOUP, CREAM, MUSHROOM, CANNED, CONDENSED, +WATER
Other	2300	PEPPER, SWEET, RED/GREEN, FREEZE-DRIED
Other	2850	ALCOHOLIC, WINE, TABLE, RED (11.5% ALCOHOL BY VOLUME)
Other	2874	COFFEE, INSTANT, REGULAR, POWDER
Other	2938	CARBONATED DRINK, NONCOLA SODA, + ASPARTAME
Other	4087	SNACKS, CORN-BASED, EXTRUDED, CHIPS, PLAIN
Other	4183	CANDIES, MARSHMALLOWS
Other	4197	CANDIES, BARS, MARS
Other	4211	CANDIES, ROLO CARAMELS IN MILK CHOCOLATE
Other	4317	SWEETS, SUGARS, BROWN
Other	4326	SWEETS, SYRUPS, MAPLE
Other	5778	ANIMAL FAT, NATIVE, RINGED SEAL, BLUBBER, RAW
Other	179	CLOVES, GROUND
Other	423	VEGETABLE OIL, PALM
Other	451	VEGETABLE OIL, CANOLA
Other	472	MARGARINE, STICK, UNSPECIFIED VEGETABLE OILS
Other	1003	GRAVIES, CHICKEN, CANNED
Other	1053	SOUP, CREAM, CHICKEN, CANNED, CONDENSED, +WATER
Other	4074	LEAVENING AGENT, BAKING POWDER, CONTINUOUS ACTION
Other	4147	SWEETS, BAKING CHOCOLATE, UNSWEETENED, SQUARE
Other	4148	CANDIES, BAR / CHIPS, SEMISWEET CHOCOLATE
Other	4195	CANDIES, BARS, HERSHEY'S, MILK CHOCOLATE W/ ALMONDS
Other	4203	CANDIES, BARS, MOUNDS
Other	4291	DESSERT, FROZEN, ICE POP
Other	4394	SNACKS, PRETZELS, HARD, PLAIN, SALTED
Other	4779	COFFEE, BREWED, ESPRESSO, RESTAURANT-PREPARED
Other	4958	MIXED DISHES, HAMBURGER HELPER, CHEESEBURGER MACARONI, DRY MIX
Other	4985	TEA, BREWED, PREPARED W/ MUNICIPAL WATER, DECAFFEINATED
Other	13	VINEGAR, CIDER
Other	198	PEPPER, BLACK
Other	207	SAVORY, GROUND
Other	463	SHORTENING, MULTIPURPOSE, HYDROGENATED SOYBEAN AND PALM

Food group	Food code	Description
Other	520	MARGARINE, TUB, CANOLA & LINOLA OIL, ENERGY REDUCED, BECEL
Other	967	SOUP, BROTH/BOUILLON, BEEF, DEHYDRATED
Other	1017	SAUCE, BARBECUE, READY-TO-SERVE
Other	1120	SOUP, ONION, DEHYDRATED
Other	2852	ALCOHOLIC, WINE, TABLE, WHITE (11.5% ALCOHOL BY VOLUME)
Other	2917	THIRST QUENCHER DRINK (GATORADE TYPE), BOTTLED
Other	2961	GRAPE JUICE DRINK, + VITAMIN C, CANNED
Other	3800	CHEESECAKE, COMMERCIAL
Other	3893	DOUGHNUT, CAKE-TYPE, PLAIN, SUGARED OR GLAZED
Other	4088	SNACKS, CORN-BASED, EXTRUDED, CHIPS, BARBECUE
Other	4182	CANDIES, BARS, MARS ALMOND
Other	4202	CANDIES, M & M'S, PLAIN CHOCOLATE CANDIES
Other	4360	SNACKS, POTATO CHIPS, DRIED POTATOES, PLAIN
Other	4361	SNACKS, POTATO CHIPS, DRIED POTATOES, CHEESE
Other	5000	SAUCE, SWEET AND SOUR, READY-TO-SERVE
Other	5764	ANIMAL FAT, NATIVE, BELUGA, BLUBBER, RAW
Other	54	CREAM, WHIPPED, CREAM TOPPING, PRESSURIZED
Other	464	ANIMAL FAT, LARD (PORK)
Other	468	MARGARINE, TUB, SOYBEAN
Other	490	MARGARINE, TUB, UNSPECIFIED VEGETABLE OILS, GOLDEN GIRL
Other	532	SALAD DRESSING, COMMERCIAL, ITALIAN (REGULAR)
Other	533	SALAD DRESSING, COMMERCIAL, FRENCH (REGULAR)
Other	546	SHORTENING, INDUSTRIAL, FOR BAKING (PASTRY), SOYBEAN
Other	927	SOUP, BEEF, BROTH/BOUILLON, CANNED, READY-TO-SERVE
Other	949	SOUP, CREAM, MUSHROOM, CANNED, CONDENSED
Other	972	SOUP, BROTH/BOUILLON, CHICKEN, DEHYDRATED
Other	997	SAUCE, TERIYAKI, READY-TO-SERVE
Other	1052	SOUP, BROTH, CHICKEN, CANNED, CONDENSED, +WATER
Other	1090	SOUP, MINESTRONE, DEHYDRATED, +WATER
Other	1094	SOUP, TOMATO, DEHYDRATED, +WATER
Other	1095	SOUP, TOMATO VEGETABLE, DEHYDRATED, +WATER
Other	1592	LEMON PEEL, RAW
Other	2337	PICKLES, CUCUMBER, SWEET
Other	2351	PICKLE RELISH, HAMBURGER
Other	2495	PICKLES, CUCUMBER, DILL (INCLUDES KOSHER AND POLISH)
Other	2845	ALCOHOLIC, RUM (40% ALCOHOL BY VOLUME)

Food group	Food code	Description
Other	2958	FRUIT PUNCH FLAVOUR DRINK, + VIT C, POWDER + WATER
Other	2960	GRAPE DRINK, + VITAMIN C, CANNED
Other	2967	ORANGE DRINK, + VITAMIN C, CANNED
Other	3899	ECLAIR, CUSTARD FILLED W/ CHOCOLATE GLAZE, FROM RECIPE
Other	4089	SNACKS, CORN-BASED, EXTRUDED, CONES, PLAIN
Other	4127	SNACKS, TORTILLA CHIPS, PLAIN
Other	4160	CANDIES, NIBS, CHERRY
Other	4180	CANDIES, TWIZZLERS (LICORICE), STRAWBERRY
Other	4191	CANDIES, MILK CHOCOLATE COATED RAISINS
Other	4204	CANDIES, BARS, MR. GOODBAR
Other	4206	CANDIES, BARS, NESTLE CRUNCH
Other	4207	CANDIES, BARS, PEANUT
Other	4335	CANDIES, SKITTLES
Other	4364	SNACKS, POTATO STICKS
Other	4722	CHEESE, CREAM, FAT FREE
Other	4729	SAUCE, HOISIN, READY-TO-SERVE
Other	5529	CANDIES, CHEWING GUM, SUGARLESS
Other	5563	CHEESE, CREAM, LOW FAT
Other	5792	ANIMAL FAT, NATIVE, WALRUS, BLUBBER, BOILED
Other	16	BUTTER, WHIPPED
Other	59	DESSERT TOPPING (NONDAIRY), PRESSURIZED
Other	60	DESSERT TOPPING (NONDAIRY), SEMISOLID (FROZEN)
Other	78	WHEY, ACID, DRY
Other	169	ALLSPICE, GROUND
Other	178	CINNAMON, GROUND
Other	192	MUSTARD SEED, YELLOW
Other	196	PAPRIKA
Other	428	SALAD DRESSING, PREPARED FROM RECIPE, VINEGAR AND OIL
Other	434	VEGETABLE OIL, PALM KERNEL
Other	437	VEGETABLE OIL, CORN
Other	473	MARGARINE, TUB, CANOLA, LINOLA & UNSPEC VEG OILS, BECEL
Other	478	MARGARINE, STICK, CANOLA & SOYA OIL, IMPERIAL
Other	526	SALAD DRESSING, COMMERCIAL, THOUSAND ISLAND, (REGULAR)
Other	539	SHORTENING, HOUSEHOLD, UNSPECIFIED VEGETABLE+ANIMAL OILS
Other	831	CHICKEN, BROILER, SEPARABLE FAT, RAW
Other	1078	SOUP, BROTH/BOUILLON, BEEF, DEHYDRATED, +WATER

Food group	Food code	Description
Other	1621	ORANGE PEEL, RAW
Other	1979	PORK, CURED, BACON BITS, COOKED
Other	2338	PICKLES, CUCUMBER, SOUR
Other	2339	PICKLE RELISH, HOT DOG
Other	2340	PICKLE RELISH, SWEET
Other	2848	ALCOHOLIC, WINE, DESSERT, SWEET (18.8% ALCOHOL BY VOLUME)
Other	2855	CARBONATED DRINK, GINGER ALE
Other	2871	HOT CHOCOLATE, MIX, UNENRICHED, POWDER, + WATER
Other	2919	WATER, MINERAL, POLAND SPRINGS, BOTTLED
Other	2921	FRUIT PUNCH JUICE DRINK, FROZEN, CONCENTRATE
Other	2940	LEMONADE, PINK, FROZEN CONCENTRATE, + WATER
Other	3315	SIMULATED MEAT PRODUCTS, BACON
Other	3888	DANISH PASTRY, CHEESE
Other	3897	DOUGHNUT, YEAST-LEAVENED (HONEY BUN), GLAZED
Other	4086	SNACKS, BEEF JERKY, CHOPPED AND FORMED
Other	4094	SNACKS, CRISPED RICE BAR, CHOCOLATE CHIP
Other	4110	SNACKS, POPCORN, AIR-POPPED
Other	4143	CANDIES, CARAMEL
Other	4145	CANDIES, CARAMELS, CHOCOLATE-FLAVOR ROLL
Other	4216	CANDIES, TURTLES
Other	4218	CANDIES, BARS, TWIX CARAMEL COOKIE
Other	4221	CANDIES, CHEWING GUM
Other	4223	SWEETS, COCOA, POWDER, UNSWEETENED
Other	4224	SWEETS, COCOA, POWDER, UNSWEETENED, DUTCH PROCESS
Other	4255	DESSERT, PUDDING, VANILLA, DRY MIX, INSTANT
Other	4283	FROSTING, VANILLA, CREAMY, DRY MIX
Other	4294	SWEETS, HONEY, STRAINED OR EXTRACTED
Other	4296	SWEETS, JELLIES
Other	4298	SWEETS, MARMALADE, ORANGE
Other	4299	SWEETS, MOLASSES
Other	4331	SWEETS, TOPPINGS (SPREAD), BUTTERSCOTCH OR CARAMEL
Other	4369	SNACKS, POTATO CHIPS, CHEESE-FLAVOR
Other	4374	FROSTING, CHOCOLATE, CREAMY, READY-TO-EAT
Other	4378	FROSTING, VANILLA, CREAMY, READY-TO-EAT
Other	4396	CANDIED FOODS, CHERRIES, MARASCHINO, BOTTLED, SOLIDS+LIQUID
Other	4727	SAUCE, PLUM, READY-TO-SERVE

Food group	Food code	Description
Other	4832	CANDIES, M&M'S MINI MILK CHOCOLATE
Other	4887	SNACKS, RICE KRISPIES TREATS SQUARES
Other	5295	HOT CHOCOLATE, RICH, MIX, POWDER, WATER ADDED
Other	5332	SALAD DRESSING, MAYONNAISE, LIGHT
Other	5391	OLIVE, PICKLED, CANNED OR BOTTLED, GREEN
Other	5491	CANDIES, BARS, MILKY WAY DARK BAR
Other	5736	SWEETS, TOPPING, CHOCOLATE-FLAVOURED HAZELNUT SPREAD
Other	5791	ANIMAL FAT, NATIVE, WALRUS, BLUBBER, RAW
Other	5804	GAME MEAT, NATIVE, CARIBOU (REINDEER), BONE MARROW, COOKED

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HOW ARE WE?