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What's on the plate?

Exploring dietary intakes in Ontario in relation to the 2019 Canada's Food Guide

Report

December 2021

Public Health Ontario

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Supplemental Files

The authors have provided additional Canada specific and sex-based analyses:

Supplemental Files Canada Analyses

Supplemental Files Sex-based Analyses

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List of Acronyms

24HR: 24 hour recall

BNS: Bureau of Nutritional Sciences

BF: Butter Fat

CCHS-N: Canadian Community Health Survey – Nutrition

CFG: Canada's Food Guide

CNF: Canadian Nutrient File

HCST: Health Canada's Surveillance Tool, Tier System

MF: Milk Fat

NSS: Nutrition Survey System

PUMF: Public Use Micro File

Executive Summary

Poor diets are an economic burden in Ontario and Canada.[1,2] Canada has national dietary guidelines which provide healthy eating recommendations to help people meet nutrient needs and optimize health.[3] Dietary guidance in Canada is used to inform nutrition education, policies and programs, and provide a standard benchmark for dietary assessment of Canadians. Shifting population diets towards recommended intakes through policies and programs is recommended to reduce the burden of disease.[2] In 2019, a new version of Canada's Food Guide (CFG) was released. The 2019 CFG includes a new pictorial representation of dietary intake - the CFG Plate[4]. In addition to including healthy eating habits, the CFG Plate demonstrates proportions of recommended food groupings where: (i) half of the plate is vegetables and fruits, (ii) quarter of the plate is protein foods, and (iii) quarter of the plate is whole grain foods.[4]

The purpose of this report is to answer the following research questions:

1. What is the mean dietary intake of Ontarians according to food groupings that align (Vegetables and Fruits, Whole Grain Foods, Protein Foods) and do not align (Non-Whole Grain Foods, Other Foods) with the 2019 CFG?

2. How does Ontarians' dietary intake of Vegetables and Fruits, Whole Grain Foods, Non-Whole Grain Foods, Protein Foods, and Other Foods differ by age, sex, and meal occasion?

3. What types of foods are most consumed (by volume) within each food grouping by age, sex, and meal occasion?

The 2015 Canadian Community Health Survey –Nutrition (CCHS-N), was used for all analyses. Data from 4,221 individuals (aged one year and older) who completed a 24 hour dietary recall for the CCHS-N in Ontario were included.

Foods were classified into three food grouping that were intended to align with the 2019 CFG: Vegetables and Fruits, Whole Grain Foods, and Protein Foods. For this report, two additional groupings were created, Non-Whole Grain Foods and Other Foods, which represent commonly consumed foods that do not fit on the CFG plate. Other Foods were foods high in saturated fat, sugar, or sodium that did not meet nutritional criteria to be placed within the other food groupings (e.g., fried potatoes, fried chicken, confectionary, salty snacks). The weight of foods consumed was converted to volume using densities calculated or estimated from the CCHS-N CFG Descriptive File, the Canadian Nutrient File, and other sources. The volume of food was used to calculate percent contributions of each food groupings to total daily intake and percent contributions of most consumed foods within each food groupings. Results were calculated for all Ontarians and stratified by age and meal occasion (i.e., breakfast/brunch, lunch, supper, snack).

On a single day, Vegetables and Fruits made up 29% of the volume of all foods consumed by all Ontarians. Protein Foods made up 22% of the volume of all foods consumed. Over 90% of Protein Foods

consumed were animal-based; plant-based Protein Foods intake contributed only 1-2% of total food intake by volume. Intake of Whole Grain Foods was low, contributing only 8% of the volume of all foods consumed by Ontarians on a single day. The remaining dietary intake of Ontarians (41%) is made up of Non-Whole Grain Foods and Other Foods.

Dietary intakes of food groupings differed by age and meal occasion. Ontarians 18 years and older consumed more Vegetables and Fruits by volume than children one to 17 years old (30-33% of total daily intake by volume compared to 22-25%). Compared to all other ages, intake of Animal-based Protein Foods was highest in 1-6 year olds (30% of total daily intake compared to 19-22% for other age groups), who also consumed the greatest volume of cow's milk (62% of total Protein Foods compared to 28-53% for other age groups). Compared to other meal occasions, there were higher intakes of Whole Grains (18% versus 6-14%) but lower intakes of Vegetables and Fruit (15% versus 30-35%) at breakfast. Intake of Other Foods was higher (by volume) at snack (34%) than all other meal occasions (10-14%).

Overall, this report found that a substantial proportion of "plates" were made up of Non-Whole Grain Foods and Other Foods – food types that are not aligned with the 2019 CFG recommendations. Other Foods and Non-Whole Grain Foods may displace intakes of Vegetables and Fruits, Protein Foods, and Whole Grain Foods for meals or snacks. Different proportions of food groupings between age groups and meal occasions reveal opportunities for public health interventions that focus on improving intake of particular foods, at certain meal times, and/or for specific age groups (e.g., reducing Other Food intake at snack or increasing Whole Grain Foods intake at lunch and supper).

The findings presented here highlight opportunities to generate supportive public health programs and policies to promote healthy eating for young children, school-aged children, as well as younger and older adults. Given the negative health impact of diets high in red and processed meats, and processed foods that contain excessive saturated fat, sugar, and sodium, and the consequences of inadequate intake of vegetables and fruit, whole grains, and plant-based proteins,[14] it is important for public health interventions to address the imbalance between recommended and non-recommended foods.

Background

Diet-related diseases, such as cardiovascular disease, cancer, and diabetes,[2,12,15,16] are the leading causes of disability and death for adults in Canada[17] and worldwide.[18] In 2014, the estimated national annual economic burden of not meeting dietary recommendations was $13.8 billon, with the greatest costs arising from inadequate intake of nuts and seeds, fruit, and vegetables, and excessive processed meat intake.[2] In Ontario, inadequate vegetable and fruit intake, a proxy for dietary quality,[19] was estimated to cost $5.6 billion CAD in direct and indirect costs annually.[1] Shifting population diets towards recommended intakes through policies and programs is recommended to reduce the burden of disease.[2]

Dietary guidelines are sets of recommendations that translate nutritional science into basic food intake and eating behaviour guidance to help people meet nutrient needs and optimize health.[3,20,21] Since 1941, Canada has had national dietary guidelines that provide healthy eating recommendations for Canadians.[3] These guidelines are often used to inform healthy eating programs or policies at various institutions,[22] such as menus at schools, child care centres, or long term care facilities. In 2019, Canada released new dietary guidelines that provide evidence-based recommendations on what and how Canadians should eat to promote healthy diets and healthy food environments.[23]

2019 Canada's Food Guide

The objective of the 2019 Canada's Food Guide (CFG) is to promote healthy eating and nutritional wellbeing, and support improvements to the Canadian food environment.[23] The 2019 Canada's Food Guide (CFG) includes recommendations for choosing foods, navigating food environments, and employing attributes of food literacy.[23]

Health Canada has provided several healthy eating recommendations (Table 1). The 2019 CFG also includes a new pictorial representation of dietary intake - the CFG Plate.[4] In addition to including healthy eating habits, the CFG Plate demonstrates proportions of recommended food groupings where: (i) half of the plate is vegetables and fruits, (ii) quarter of the plate is protein foods, and (iii) quarter of the plate is whole grain foods.[4] The proportions can be used to guide meal and snack food choices, and can be applied to plates, bowls, lunch boxes, family meals, and even mixed dishes.[24]

Although the plate pictograph is new to the CFG, many dietary recommendations have used a plate (or circle) graphic and aspects of proportionality to recommend what foods should be consumed and in what amounts for meals or over full days.[25,26] Health Canada has promoted the "Eat Well Plate"[24] which presents the same proportions of food groupings as in the 2019 CFG Plate. Dietary guidelines for the United Kingdom,[27] the United States of America,[27] Jamaica,[27] and Malta[25] use a plate to visually represent recommended dietary intake. Similarly, the plate method has historically been used for meal planning for individuals managing diabetes.[28-30] Most recently, the 2019 Eat-Lancet Commission developed a Planetary Health Plate to recommend a sustainable dietary pattern.[31]

Table 1: Canada's Food Guide Healthy Eating Recommendations[22]

Make it a habit to eat a variety of healthy foods each day.	**Healthy eating is more than the foods you eat. It is also about where, when, why and how you eat.**
Eat plenty of vegetables and fruits, whole grain foods and protein foods. Choose protein foods that come from plants more often. • Choose foods with healthy fats instead of saturated fat	Be mindful of your eating habits • Take time to eat • Notice when you are hungry and when you are full
Limit highly processed foods. If you choose these foods, eat them less often and in small amounts. • Prepare meals and snacks using ingredients that have little to no added sodium, sugars or saturated fat • Choose healthier menu options when eating out	Cook more often • Plan what you eat • Involve others in planning and preparing meals
Make water your drink of choice • Replace sugary drinks with water	Enjoy your food • Culture and food traditions can be a part of healthy eating
Use food labels	Eat meals with others
Be aware that food marketing can influence your choices	

Shifting population diets towards plates filled with plant-based foods (vegetables and fruit, whole grains, and plant-based proteins) and reduced amounts of saturated fat, refined grains, highly processed foods, and added sugar, is recommended in the 2019 CFG to improve population health.[22] The focus on vegetables and fruits, protein foods, whole grains foods, and highly processed foods in the 2019 CFG is briefly reviewed below.

Vegetables and Fruits

The 2019 CFG recommends that the majority of foods eaten should be a variety of colourful fresh, frozen, or canned vegetables and fruits prepared with little or no added sugars or sodium.[22] On the CFG Plate, Vegetables and Fruit take up half of the space. Fruit juices are not recommended.

Protein Foods

A variety of protein foods are recommended by the 2019 CFG including lean meats, poultry, fish, beans, nuts, seeds, lower fat milk and dairy, and fortified soy beverages, tofu and other soy products. While the

2019 CFG acknowledges many foods from animal sources are nutritious, plant-based protein foods are recommended as a means to increase dietary fibre intake, and decrease processed meats and saturated fat intake.[22] Some health benefits associated with plant-based foods include lower risks of developing chronic diseases, such as colon cancer, type 2 diabetes, and cardiovascular diseases.[14,21,32,33] The 2019 CFG also recommends limiting processed meats,[22] given that processed meats are associated with an increased risk of cancer.[14] Many other national dietary guidelines are recommending more plant-based foods as a means to reduce environmental impact of diets.[34] The 2019 CFG recommends to consume plant-based protein foods more often, however there is no explicit goal in terms of what proportion of protein food intake or total food intake should be from plant-based protein foods.

Whole Grain Foods

Whole grains refer to grains that have all three parts of the kernel intact.[22] The previous CFG from 2007 recommended selecting whole grain foods for at least half of the grain products consumed in a day.[35] The 2019 CFG places whole grain products within their own food grouping, suggesting, but not explicitly stating, that foods made with non-whole (refined) grains are not recommended. The recommendation to include whole grain foods in one's diet is in line with the increased emphasis on plant-based foods and evidence associating a high dietary fibre intake with lowered risk of cardiovascular disease, colon cancer, and type 2 diabetes.[36]

Highly Processed Foods

The 2019 CFG explicitly recommends limiting highly processed foods and beverages.[22] Highly processed foods and beverages are those that contain excess sodium, free sugars, or saturated fats.[15] As such, consumption of processed meats, deep-fried foods, sugary cereals, biscuits, cakes, confectionaries, sugary drinks, and pre-packaged meals is discouraged.[22] Access to and consumption of highly processed foods has increased significantly in recent years; with the consumption of these foods being associated with the rise in obesity and many chronic diseases.[37,38] Instead of highly processed foods, the 2019 CFG recommends that consumers select foods with little to no added sodium, sugars, or saturated fats.[22]

Research and Evidence Gap

Research has shown that previous versions of CFG have been poorly followed.[39-43] Poor diets and nutrient intakes that do not meet recommended guidelines may be influenced by a variety of determinants of diet including individual, environmental, or policy factors[38,44-47] related to the social determinants of health (e.g., food insecurity due to inadequate income[48]) and the food system (e.g., high availability and promotion of unhealthy foods and beverages).[38] At the time of this report, no assessments of dietary intake in relation to the 2019 CFG have been completed, although some are underway (Personal communication, Health Canada, October 28, 2020). As dietary guidelines are used to inform public health nutrition policies and programs,[22,27] understanding population diets in relation to the new CFG can provide useful information to guide public health practice. However, existing gaps in local dietary intake data make it challenging for public health practitioners to effectively assess population health and to plan and evaluate public health interventions.[13] Public health practitioners are

calling for access to recent, high quality, representative data to support the planning of healthy eating initiatives in order to enhance population health across the various areas of public health practice including chronic disease prevention, healthy growth and development, school health, healthy environments, and health equity.[13]

Purpose

The purpose of this report is to explore the dietary intake of Ontarians using the most recent and comprehensive dietary data – the 2015 Canadian Community Health Survey – Nutrition (2015 CCHS-N). Dietary recommendations outlined in the 2019 CFG informed plate-based measurements of healthy eating used in this report. The exploratory analyses provide a starting point for population health assessments, healthy eating program planning and evaluation, and future research.

Research Questions

To explore Ontarians' dietary "plate", the research questions of this report are:

1. What is the mean dietary intake of Ontarians according to food groupings that align (Vegetables and Fruits, Whole Grain Foods, Protein Foods) and do not align (Non-Whole Grain Foods, Other Foods) with the 2019 CFG?

2. How does Ontarians' dietary intake of Vegetables and Fruits, Whole Grain Foods, Non-Whole Grain Foods, Protein Foods, and Other Foods differ by age, sex and meal occasion?

3. What types of foods are most consumed (by volume) within each food grouping by age, sex and meal occasion?

Methods

The 2015 CCHS-N was a cross-sectional survey that collected information from Canadians on their dietary intake, eating habits, use of nutritional supplements, health, and sociodemographics.[49] The Public Use Micro File (PUMF) 2015 CCHS-N, was used for all analyses. The 2015 CCHS-N was designed to be nationally and provincially representative of individuals one year of age and over living in all ten Canadian provinces according to age-sex DRI groups. Those excluded from the study's sampling frame were individuals living on reserves (or other Aboriginal settlements), living in the territories, or residing in collective dwellings, and those who were institutionalized or full-time members of the Canadian Armed Forces.[50] In total, data on 20,487 individuals who completed the CCHS-N were available, of which 4,229 resided in Ontario.[50] Additional details regarding the 2015 CCHS-N and its objectives, survey content, sample design, data collection, data processing, and guidelines can be found in the supporting documentation provided by Health Canada.[49]

Data Collection

The survey was completed between January and December 2015.[49] The survey, including a 24 hour recall (24HR), was conducted in person in the respondent's home and was administered by a trained interviewer.[49] Approximately one-third of the sample was randomly selected and asked to complete a second 24HR over the phone within three to ten days of the first interview.[49]

The 24HR collected information on the foods and beverages respondents consumed during the 24 hour period the previous day (midnight to midnight), including the name and amount of the food consumed; the time the food was consumed; the name of the eating occasion; items added to foods; and the location of food consumption.[49] Following the 24HR, respondents were asked about socio-demographic characteristics (e.g., age, sex), anthropometrics, and other health-related factors.[49]

Respondents aged 12 years and older were asked to provide their own information for the survey unless the individual had a health condition that required another person to respond on the individual's behalf.[49] Parents or guardians provided a proxy interview for children under six years of age.[49] Children between the ages of six and 11 years completed the survey, with the assistance of a parent or guardian.[49] For all analyses, we removed individuals who only ate foods or beverages that were excluded from our food groupings (e.g., meal replacement beverages). The nutrient contents of foods and beverages reported were obtained from the 2015 Canadian Nutrient File (CNF), a database of 5,690 foods with detailed nutrient information.[49] Items within the 2015 CNF were previously assessed according to Health Canada's Surveillance Tool, Tier System (HCST).[51] Each food is assigned a tier classification according to its alignment with the 2007 CFG[51] which is available in the CFG file of the PUMF.[50] The HCST classification was used to recode foods into food groupings (described below).

Analysis

Several steps were taken to prepare the 2015 CCHS-N data for analyses according to our objectives, including: merging data files, categorizing foods, calculating volume of foods consumed, and calculating population proportions of food groupings and food types within food groupings. All data preparation and analyses were conducted using SAS Enterprise Guide, version 7.1 (SAS Institute, Cary, N.C., USA, 2014).

MERGING FILES

The 2015 CCHS-N is comprised of several data files that were appended and merged prior to data analyses. This was necessary in order to have a complete dataset of foods consumed by respondents classified by the HCST and linked to respondent characteristics. The Food and Ingredient Dictionary (FID), Food Recipe Level (FRL), Food Description Codebook (FDC), Canada's Food Guide (CFG), and General Health and Summary Survey (HS) files were combined, in that order, following procedures outlined by Statistic Canada.[50] A description of these files is available in Appendix A and more details are available from Statistics Canada.[50]

CATEGORIZING FOODS

For the purposes of the analyses, we reclassified foods reported by respondents to create food groupings: Vegetables and Fruits, Whole Grain Foods, and Protein Foods. Two additional food groupings were created, Non-Whole Grain Foods and Other Foods (i.e., foods high in fat, sugar, and sodium that do not meet nutritional criteria to be placed within the food groupings). Two sub-food groupings were created in Protein Foods: Animal-based Protein Foods and Plant-based Protein Foods. References to Canada's Food Guide are derived based on the interpretation of the authors.

At the time of this publication, the 2019 CFG contains limited guidance on what foods fit into what food groupings, which required the creation of the food groupings to be based on professional expertise and adapt previous groupings from the 2007 CFG to align with the 2019 CFG. Three variables available in the 2015 CCHS-N dataset were used to reclassify all foods into food groupings: Health Canada's Surveillance Tool, Tier System (HCST) food groups; Bureau of Nutritional Sciences (BNS) food types; and Nutrition Survey System (NSS) individual food codes (linked to food names in the CNF). Briefly, foods that were consider to be "in line" or "partially in line" with the 2007 CFG according to the HCST were classified into appropriate food groupings. For example, plain chicken breast, a Meat and Alternatives food that contained little to no total fat, saturated fat, sugar, or sodium, was placed in the Protein Foods grouping). Foods that were considered "not in line" with the 2007 CFG because they exceed allowable total fat, saturated fat, sugar, and sodium, were classified as Other Foods (e.g., fried chicken). Consultations were completed with registered dietitians working in public health to verifiy appropriateness of updated food classifications.

A new version of the HCST that aligned with the 2019 CFG was not yet available. Therefore, in some cases, it was necessary to adapt the HCST categories using BNS food categories and NSS food codes to align foods within food groupings that align with the 2019 CFG. Of the 3,550 unique foods included after merging CCHS-N files, 3,100 (87.3%) were reclassified according to HCST food groups, 366 (10.3%) required further reclassification using BNS food categories, and 84 (2.4%) individual foods required further reclassification according to their NSS code. A summary of recoding foods into food groupings using the HCST, BNS and NSS codes is available in Appendix B.

Examples of foods by food grouping are available in Table 2. Beverages (with the exception of unsweetened animal milk and fortified soy beverage), meal replacements, protein powders, supplements, breast milk, condiments and sauces, spices, baking ingredients (e.g., baking powder, yeast), and non-classifiable items (n=866, 24.4%) were excluded from all analyses.

Table 2: Examples of Food Types by Food Grouping

Vegetables and Fruits[a]	Protein Foods[a]	Whole Grain Foods[a,c]	Non-Whole Grain Foods[c,c]	Other Foods[a]
Leafy greens (e.g., kale, lettuce) Deep yellow or orange vegetables (e.g., squash) Starchy vegetables (e.g., potatoes) Fruit (e.g., apples, berries) (Fruit and vegetable juices were not included)	<u>Animal-based</u>: Red meat Poultry Seafood Dairy products (e.g., yogourt, cheese) Eggs Cow's milk[b] <u>Plant-based</u>: Beans Legumes Nuts Seeds Soy products Unsweetened soy beverage	Whole grain (and whole wheat[d]) breads and buns Brown and wild rice Oats Quinoa Barley Popcorn	White breads/buns White rice White pasta Pancakes	Vegetables and Fruit, Protein Foods, Whole Grains and Non-Whole Grains that contain excessive fat, sugar, or sodium[a] Highly processed foods high in total fat, saturated fat, sugars, and sodium (e.g., deep-fried foods, baked goods[c], frozen desserts, confectionary, processed meat)

[a]Vegetables and Fruit, Protein Foods, Whole Grains, and Non-Whole grains that exceeded cut-offs for total fat, saturated fat, sugar, and sodium, according to the HCST were classified as Other Foods as they would not be generally considered nutritious choices.

[b]'Cow's milk' protein food type includes unsweetened cow's milk, as well as unsweetened enriched goat's milk (which contributes less than 0.01% of all animal milk [cow's and goat's milk] consumed by all Ontario respondents).

[c]Includes commercial and homemade products. The classification of grain products is based on their nutritional content (i.e., grains that exceed cut-offs for total fat, saturated fat, sugar, and sodium prepared are classified as Other Foods, regardless of how they are) and the refinement of the grain (i.e., whole grain versus non-whole grain, regardless of how they are prepared).

[d]Although whole wheat is not equivalent to whole grain, whole wheat products are still considered a healthier choice than refined grain products.[22] Whole wheat products were included in the Whole Grains to increase the cell size.

CONVERTING FOOD WEIGHT TO FOOD VOLUME

Volumes of foods consumed were calculated from food weights using food densities. Food volume was used as the unit of analysis because the CFG Plate guides consumers to fill their plates (or bowls or other dishes) according to the space that food takes up. The weight, nutrient density and energy density of foods are important determinants of the nutritional quality of diets, however, these features were not considered in how consumers may 'balance' their plate in our analyses.

The densities of 4,603 foods were obtained from multiple sources. First, the CFG Descriptive file available with the PUMF was used to calculate densities when weights and volumes of foods were available for a reference amount (n=1,160 foods, 25.2%). Food densities were calculated by dividing the weight of a food in grams per reference amount into the volume of that food in millilitres per reference amount. If weights and volumes for a food were not available in the CFG Descriptive file, the Conversion Factor Value from the 2015 Canadian Nutrient File, which is equivalent to the density of a food per 100 mL, was used for 2,218 foods (48.2%) when there was a value for 100 mL portion or only one portion size for a food. When there were multiple portion sizes in the Canadian Nutrient File with various Conversion Factor Values (n=159, 3.5%), the average of the conversion factor was obtained from a third database of foods (FoodFocus Version 4.2 Winnipeg, MB: FoodFocus; 2019) which includes foods from the 2015 Canadian Nutrient File, the United States Department of Agriculture (USDA) National Nutrient Database for Standard Reference, Release SR27, and other sources. When no density value could be found or calculated from any of these sources, we used a food with a similar name (n=170, 3.7%) or a substitute food (n=625, 13.6%). If there was no comparable food, we used the average of a food type (n=165, 3.6%). For example, densities were not available for many cookies. In these instances, we used the average of the densities of the cookies for which density values were available. Finally, we used a default density of 1 gram per mL for 106 foods (2.3%) where the other options were not available. Depending on the frequency with which these foods are consumed by Ontarians, the selected density may have a large or minimal impact on overall volume analyses.

The weight of each food consumed by every respondent was divided by the density value for that food to calculate the volume of that food where 1 mL = 1 cm^3. The volume of food consumed was used for all analyses.

CALCULATING POPULATION PROPORTION OF FOODS CONSUMED

PERCENT CONTRIBUTION OF FOOD GROUPINGS TO TOTAL INTAKE

The percent contributions of food groupings to total daily intake were estimated for Vegetables and Fruits, Whole Grain Foods, Non-Whole Grain Foods, Protein Foods (Animal- and Plant-based), and Other Foods. The volume intake of a food grouping reported by all respondents was summed and then divided by the sum of total daily intake reported by all respondents. This yielded a population proportion for each food grouping, or the percent that the food grouping contributes to total intake in a single day[52,53]. This population proportion is reported to be a better estimate of the true population mean than the mean of ratios on an individual basis (e.g., a ratio is calculated for each individual respondent and then averaged),[52] although it has not been used for volume-based analyses.

PERCENT CONTRIBUTION OF FOOD TYPES BY FOOD GROUPING

Sub-analyses were conducted within each food grouping to identify the top contributing food types by volume. For example, a percent contribution of Vegetables and Fruits according to BNS food type codes[54] within the Vegetables and Fruits food grouping was calculated. The total volume intake of each BNS code within the Vegetables and Fruits food grouping reported by all respondents was summed and then divided by the sum of total daily intake of Vegetables and Fruits by volume reported by all respondents. Similar analysis have been completed by Kirkpatrick et al. to identify the top sources of energy (calories) by food categories.[55]

The 2019 CFG recommends to consume plant-based protein foods more often.[56] Additional analyses were completed for Protein Foods to identify how much of all Protein Foods consumed were plant-based. We created eight protein food types (cow's milk[a], other dairy, red meat, poultry, eggs, seafood, and plant-based) using BNS food type codes and calculated population proportions of these food categories in order to understand their percent contribution to total Protein Food intake by volume.

Multiple population proportions of food groupings were run in order to understand intakes for the full day for all respondents as well as by age group (1-6 year olds; 7-12 year olds; 13-17 year olds; 18-64 year olds 65+ year olds) and sex (males, females). These age groups were selected as they align with population health target age groups (early years, younger and older school-aged children, adults, and older adults, respectively). However, they are different than the age-sex groups for the Dietary Reference Intakes (DRIs) which may overlook unique nutrient needs specified in the DRIs and may change the representativeness of the data. Population proportions for all food groupings were also calculated by reported meal occasion (breakfast/brunch; lunch; supper; snack) for all respondents, and by age group.

No adjustments were made to account for misreporting in order to maintain sample size because there is no agreed upon best practice method of adjusting for misreporting.[49] Adjusting for misreporting can also introduce bias into the data and impact sample representativeness.[55]

Sampling weights provided by Statistics Canada for each respondent were applied to produce provincially and nationally representative estimates.[50] Bootstrapping was used to generate standard errors for 95% confidence intervals around population proportions.[50] Comparisons between age groups and meal occasions were made using 95% CIs calculated around the point estimate.

This report focuses on the dietary intake of Ontarians. Data tables for all Ontario analyses are available in Appendix C. Data tables for Canada are available in supplemental materials.

[a] 'Cow's milk' protein food type includes unsweetened cow's milk, as well as unsweetened enriched goat's milk (which contributes less than 0.01% of all animal milk (cow's and goat's milk) consumed by all Ontario respondents).

Interpretation Cautions

All population proportions were run using the first recall only. A second 24HR collected as part of the 2015 CCHS-N was excluded from the present analyses to retain the full sample size while remaining methodologically appropriate to calculate mean values.[49] A single 24HR is insufficient to assess usual intake of an individual's diet due to day-to-day variation and within-person variability, however a single 24HR can be used to assess mean intakes of groups.[52]

Population proportions are mean intakes of a group which can be used to estimate the mean intake of a population.[52] These proportions, however, do not reveal any information about the extent to which a population is meeting, or not meeting, a defined benchmark or criteria. It is inappropriate to classify an individual as meeting dietary recommendations based on a single day recall because dietary intake varies day-to-day. Therefore, survey respondents were not classified as to whether they "met" the 2019 CFG Plate plate (e.g., 50% of intake Vegetables and Fruit, 25% Protein Foods, and 25% Whole Grains). Rather, the results presented here provide a description of the mean diet of Ontarians, including specific age groups, at the population level.

Results

There were 4,221 survey respondents included from Ontario. Adults 18 years and older made up 72.5% of the sample in Ontario. The remaining included 381 pre-school aged children (one to six years, including children who were breastfeeding), and 778 children school-aged children seven to 17 years. A breakdown of age groups for Ontario is provided in Table 3. Fifty-three percent (n=2,253) of respondents were female.

Table 3: Survey Respondents for Full Day in Ontario by Age

Age Group	N	% of all respondents
1-6 years	381	9.0%
7-12 years	378	9.0%
13-17 years	400	9.5%
18-64 years	2,225	52.7%
65 years and older	837	19.8%

Intake of Food groupings

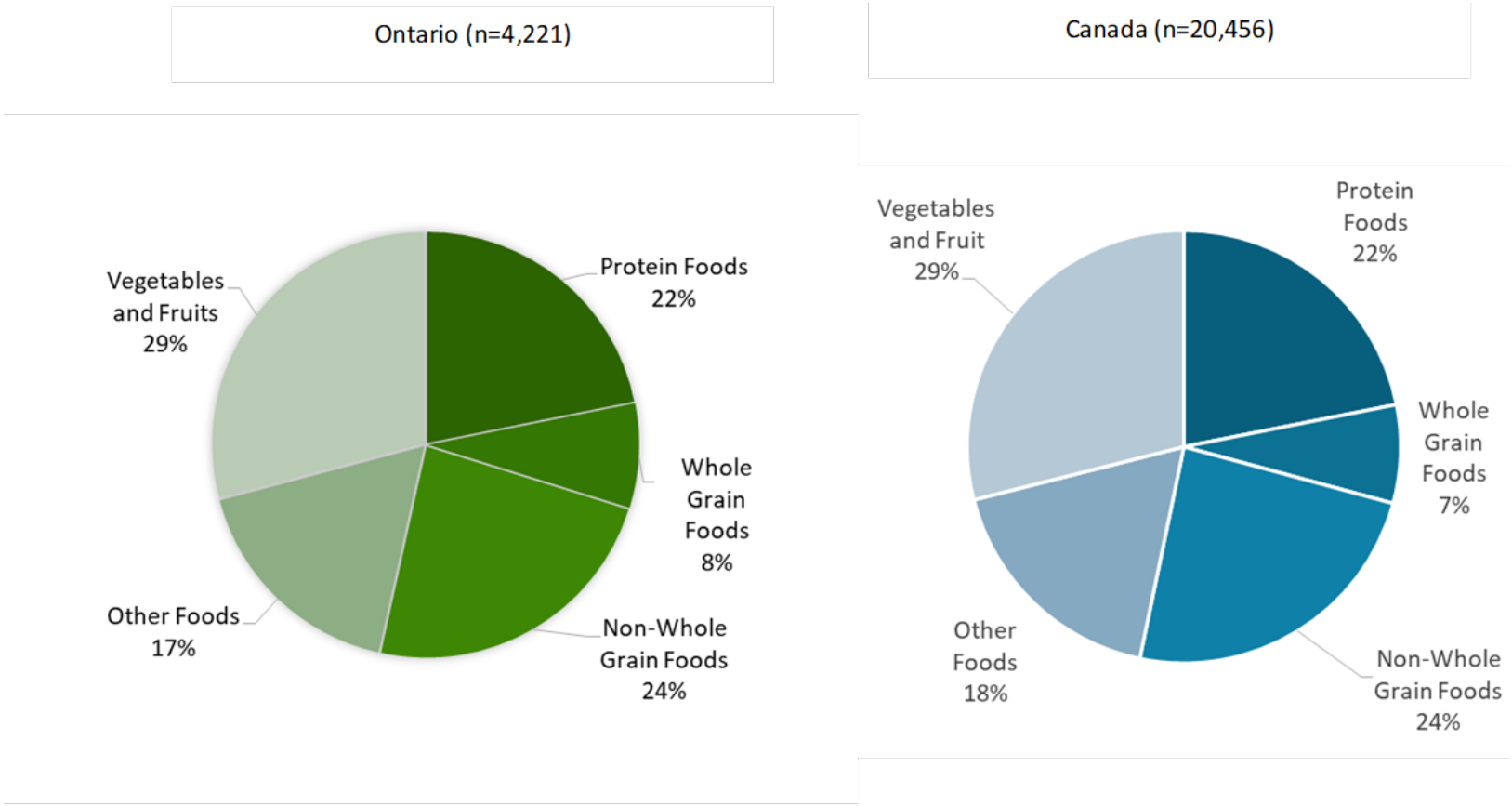
Almost all respondents reported that they consumed 'any' (i.e., not zero) Vegetables and Fruits (94.4%), Protein Foods (98.1%), and Non-Whole Grain Foods (90.9%) on a single day. Only one-third (32.0%) consumed 'any' Plant-based Protein Foods. The majority of respondents also said they consumed any Other Foods (83.1%) on a single day. Fewer than half of respondents stated that they consumed any Whole Grain Foods (45.0%).

The percent contributions of food groupings to total daily intake by volume are presented in pie charts ('plates') in Figure 1 for Ontario and Canada. Similar pie charts ("plates") for each age group are available in Appendix C. Top foods contributing to each food grouping for Ontario are displayed in Figures 2-6. (See Appendix C, Tables 7-8 for more details.)

Simple visual comparison of Ontario and Canada population proportions of food groupings suggests that the dietary intake of food groupings is similar between these two samples (although this has not been confirmed with statistical analyses). As the research questions of this report focus on Ontario, only Ontario data will be presented in the other analyses undertaken. However, in some cases, there is high risk of sampling error in the Ontario sample which lowers confidence in the results (denoted with footnotes and symbols)[50]. As a result of this limitation with Ontario data, nationally-representative data, which is more stable in sub-analyses, is provided in Supplemental Materials.

The 'plates' for females and males in Ontario differed only for the contribution of Vegetables and Fruits by volume for all foods consumed that day: females had a higher proportion of Vegetables and Fruit (31.7, 95% CI: 29.8, 22.7) than males (26.8, 95% CI: 24.9, 28.8). Due to limitations in sample size for sub-group analyses, sex was not included in the following analyses but are available in supplemental materials for Ontario.

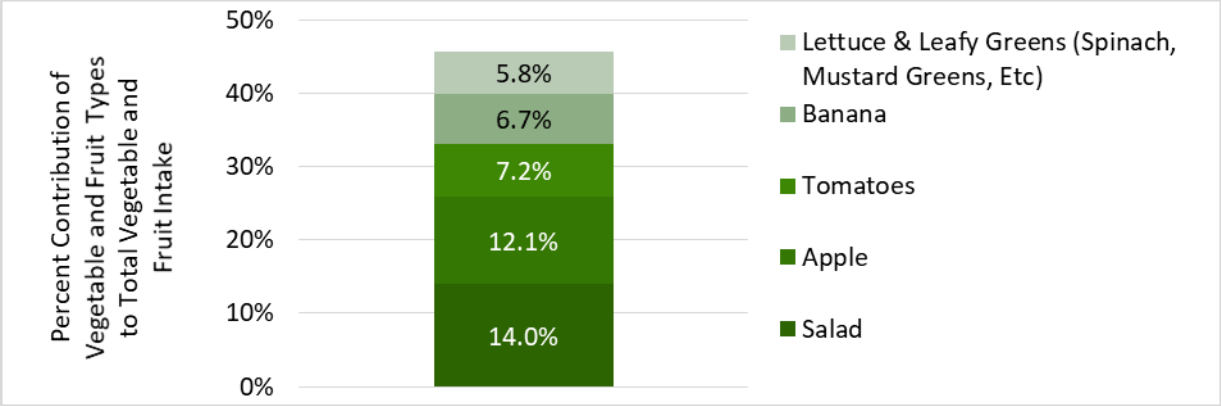
Figure 1: Percent Contributions of Food Groupings to Total Daily Intake by Volume, one year and older



Vegetables and Fruits

The contribution of Vegetables and Fruits for all Ontarians to total food intake by volume on a single day was 29.1% (95% CI: 27.5%, 30.8%). **Salads** and **apples** were the most consumed vegetables and fruit by volume across consumers of Vegetables and Fruits, reported on a single day (Figure 2).

Figure 2: Top Five Sources of Vegetables and Fruits by Volume, Ontario, one year and older (n=3,984)

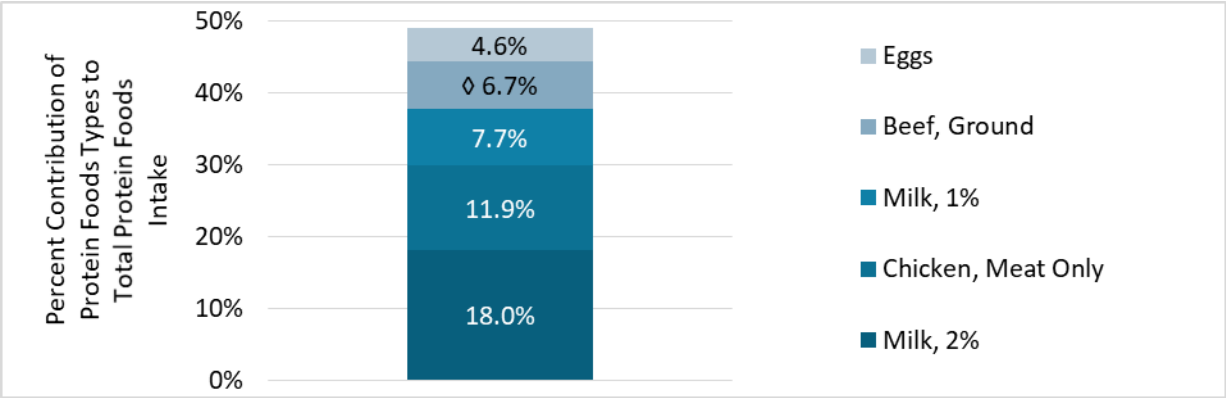


Note: Only includes respondents who reported consuming any Vegetables and Fruits on a single day

Protein Foods

Animal-based Protein Foods intake made up 20.1% of total intake by volume reported on a single day for Ontarians (95% CI: 19.4%, 20.8%). The intake of Plant-based Protein Foods contributed only 1.7% of total daily intake by volume (95% CI: 1.5%, 1.9%). The top sources of Protein Foods were 2% and 1% milk fat (MF) **cow's milk** and **chicken** (Figure 3). Of those who consumed any Plant-based Protein Foods (n=1,351), the top foods consumed by volume were **legumes**, **nuts**, and **peanut butter and other nut spreads**, reported on a single day (See Appendix C, Table 9)

Figure 3: Top Five Sources of Protein Foods by Volume, Ontario, one year and older (n=4,139)

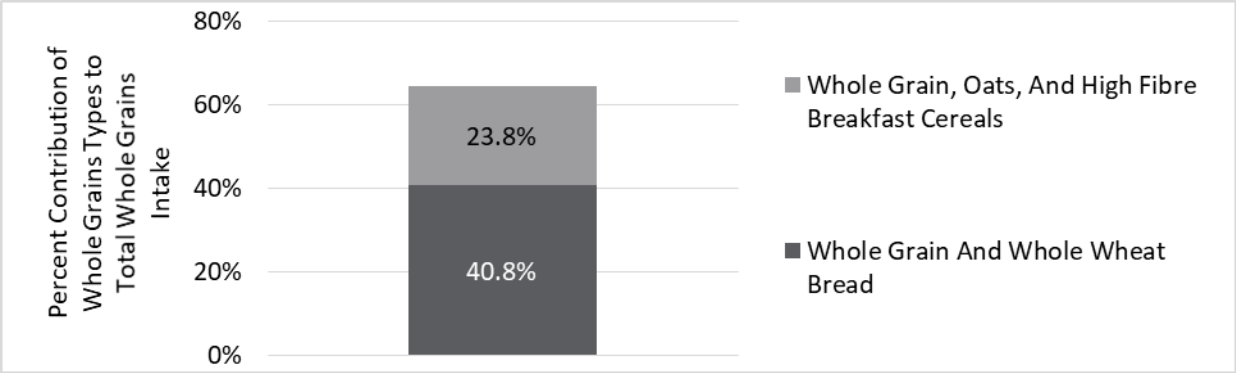


Note: Only includes respondents who reported consuming any Protein Foods on a single day; ◊=Interpret with caution due to coefficient of variation between 0.166-0.333

Whole Grain and Non-Whole Grain Foods

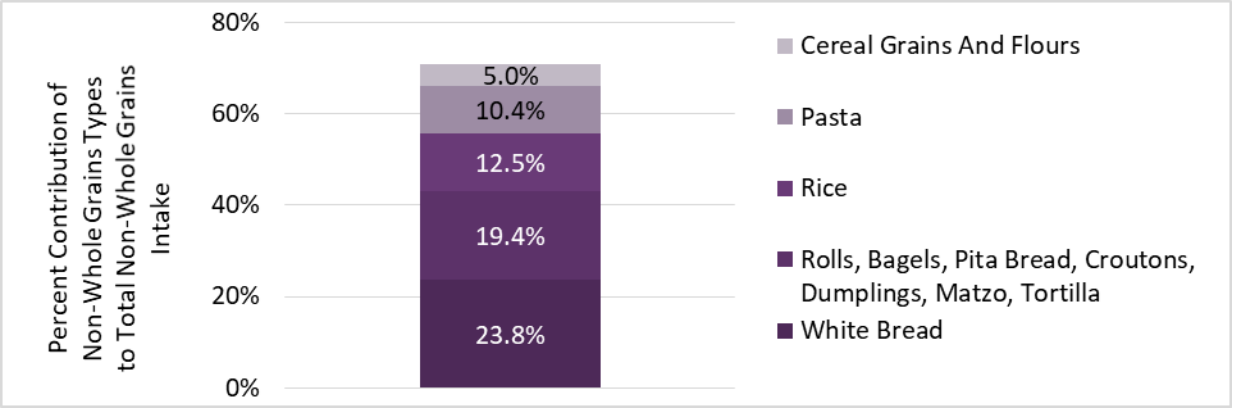
Whole Grain Foods intake made up 8.0% (95% CI: 6.9%, 9.1%) of total intake by volume reported on a single day, of which a large proportion was from **bread** (Figure 4). Non-Whole Grain Foods made up 23.6% of total daily intake (95% CI: 22.6%, 24.7%) by volume, of which **white bread** and other **bread-like products** (e.g., rolls, bagels, pita, etc.) were top sources by volume (Figure 5).

Figure 4: Top Five Sources of Whole Grain Foods by Volume, Ontario, one year and older (n=1,900)



Note: Only includes respondents who reported consuming any Whole Grains on a single day

Figure 5: Top Five Sources of Non-Whole Grain Foods by Volume, Ontario, one year and older (n=3,838)

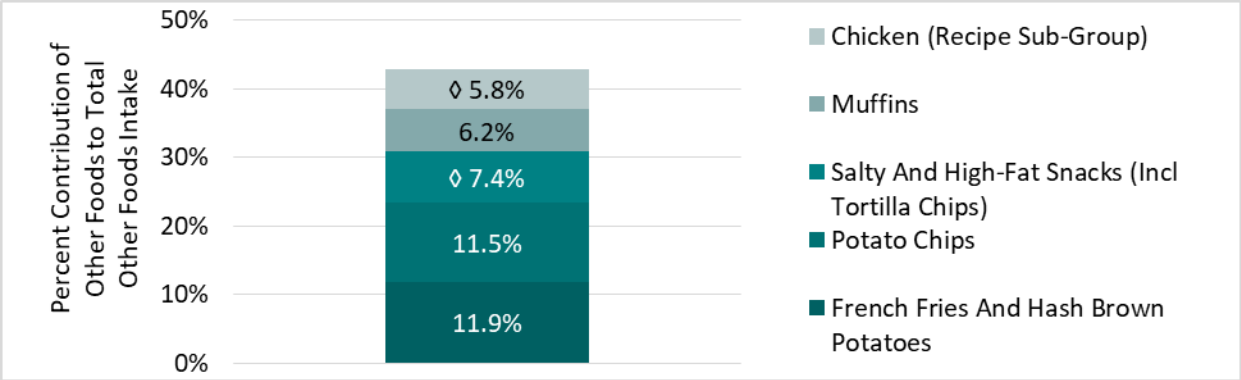


Note: Only includes respondents who reported consuming any Non-Whole Grains on a single day

Other Foods

Other Foods contributed 17.5% (95% CI: 14.6%, 20.2%) to the total daily intake by volume for all Ontarians reported on a single day. **French fries and hash brown potatoes** and **potato chips** were the top sources of Other Foods by volume (Figure 6).

Figure 6: Top Five Sources of Other Foods by Volume, Ontario, one year and older (n=3,509)

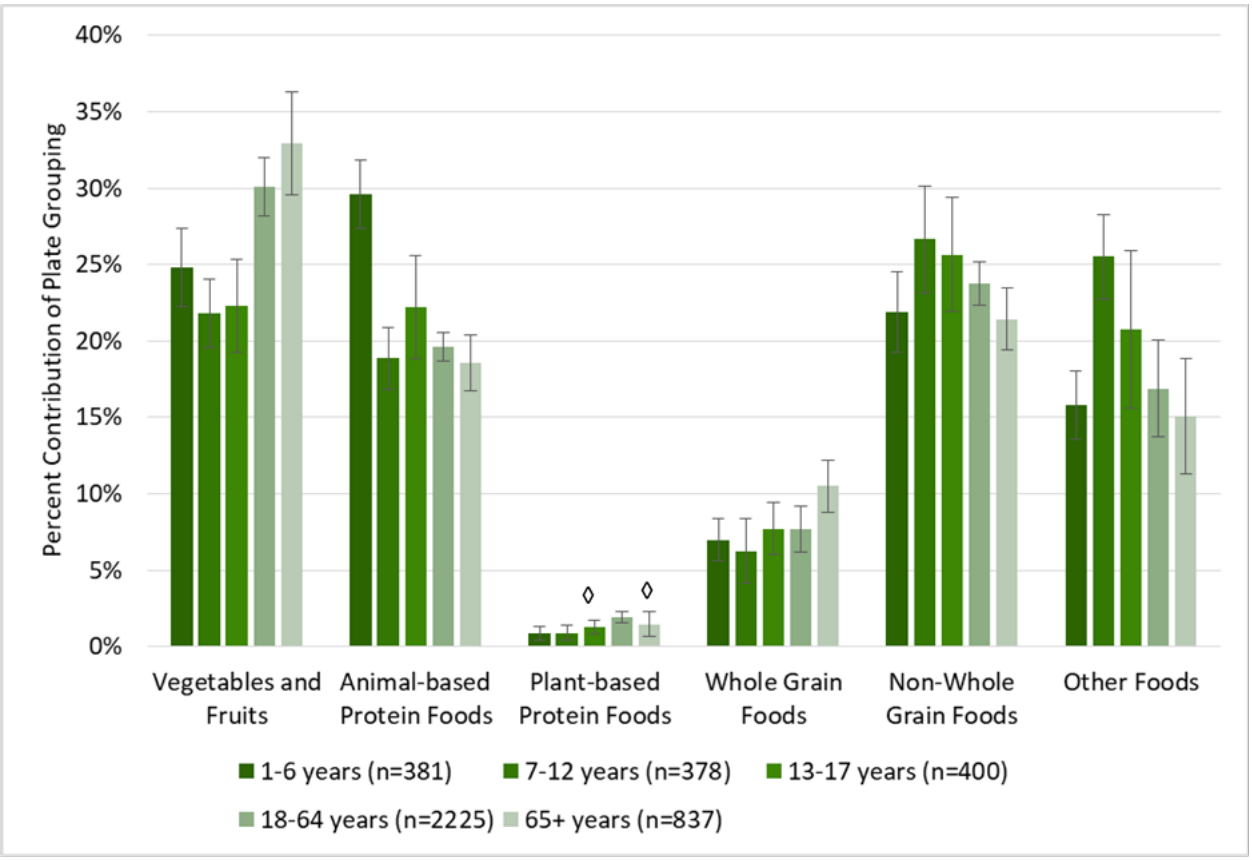


Note: Only includes respondents who reported consuming any Whole Grains on a single day; ◊=Interpret with caution due to coefficient of variation between 0.166-0.333

Intake of Food Groupings by Age

The percent contribution of food groupings to total dietary intake on a single day varies according to age (Figure 7) (see Appendix C, Table 10 for more details). Pie charts with the population proportions of food groupings for a single day by age group for Ontario are available in Appendix C (Figure 15).

Figure 7: Percent Contribution of Food Groupings to Total Intake by Age, Ontario, one year and older (n=4,221)



Note: Error bars extend below and above the percent contribution of food grouping and represent the 95% Confidence Interval limits. ◊=Interpret with caution due to coefficient of variation between 0.166-0.333

Vegetables and Fruits

Vegetables and Fruits intake was higher in adults compared to children for all age groups. By volume, Vegetables and Fruits contributed 30.1% (95% CI: 28.2%, 32.0%) of total daily intake for adults 18 to 64 years old and 32.9% (95% CI: 29.5%, 36.3%) for adults 65 years and older. In comparison, Vegetables and Fruits made up less than one-quarter of total daily intake by volume for all child age groups (1-6 years: 24.8%, 95%CI: 22.3% to 27.3%; 7-12 years: 21.8%, 95%CI: 19.6%, 24.0%; 13-17 years: 22.3%, 95%CI: 19.2%, 25.4%). See Appendix C, Table 10 for more details.

Among consumers of Vegetables and Fruits, **apples** were the top Vegetables and Fruits by volume for children; **salads** were the top Vegetables and Fruits by volume for adults, followed by **apples**. Other top

Vegetables and Fruits included **tomatoes** (all ages except 65 years and older) and **bananas**[b]. **Potatoes** was a top Vegetable and Fruits for 65 years and older only (not including deep-fried potatoes, potato chips, or other potatoes prepared with high amounts of total fat, saturated fat, sugar, or sodium which are considered Other Foods). See Appendix C, Table 11 for more details.

Protein Foods

Animal-based Protein Foods intake was higher in 1-6 year olds (29.6%, 95% CI: 27.3%, 31.8%) compared to all other ages (7-12 years: 18.9%, 95%CI: 16.8%, 20.9%; 13-17 years: 22.2%, 95%CI: 18.9%, 25.6%; 18-64 years: 19.6%, 95%CI: 18.7%, 20.6%; 65 years and older: 18.6%, 95%CI: 16.8%, 20.4%).

Plant-based Protein Foods intake was low by volume across all age groups (approximately 1-2%, see Appendix C, Table 12 for more details). By volume, **cow's milk**[c] (34.8%, 95% CI: 32.6%, 37.0%) accounted for the largest proportion of the total Protein Foods intake across all age groups, followed by **red meat** (16.4%, 95% CI: 12.9%, 19.9%), **poultry** (16.3%, 95%CI: 14.4%, 18.3%), and **other dairy** (cheese, yogourt) (13.6%, 95% CI: 12.3%, 14.8%) (Figure 8).

The percent contribution of food types within the Protein Foods groupings varied between age groups (Figure 8). Compared to all other age groups, children 1-6 years had the highest intake of **cow's milk** (62.4% [95% CI: 57.8%, 67.0%]) and the lowest intake of **red meat** (5.8% [95%CI: 3.4%, 8.3%])[d]. See Appendix 3, Table 9 for more details.

Cow's milk (2% MF) was the top consumed protein food by all age groups, ranging from 14.6% to 29.0%. Intakes of 2% MF cow's milk were lower in adults aged 18-64 years (14.6%, 95%CI: 10.9%, 18.2%) than children aged 1-13 years (1-6 years: 27.4%, 95%CI: 21.9%, 32.9%; 7-13 year: 29.0%, 95%CI: 22.1%, 36.0%).

Other top Protein Foods for younger children (1-12 year olds) included whole and 1% MF **cow's milk**[e] and **yogourts** (greater than 2.1% Butter Fat (BF))[f]. Other top Protein Foods for children aged 13-17 years and all adult age groups were 1% MF **cow's milk**, **chicken** and **ground beef**[g]. **Cheese** (10%-25% BF) was a top Protein Foods for school aged children (7-17 years)[h]. (See Appendix C, Table 13 for more details).

Plant-based Protein Foods contributed 7.7% (95% CI: 6.6%, 8.8%) of total Protein Foods intake by volume in Ontario. By age group, Plant-based Protein Foods contributed between 2.9% to 9.0% of total

[b] Interpret with caution due to high coefficient of variation between 0.166 and 0.333 for 1-6 year olds and 13-17 year olds

[c] 'Cow's milk' protein food type includes unsweetened cow's milk, as well as unsweetened enriched goat's milk (which contributes less than 0.01% of all animal milk (cow's and goat's milk) consumed by all Ontario respondents).

[d] Interpret with caution due to high coefficients of variation between 0.166 and 0.333

[e] Interpret with caution due to high coefficients of variation between 0.166 and 0.333 for 1-6 year olds and 7-12 year olds

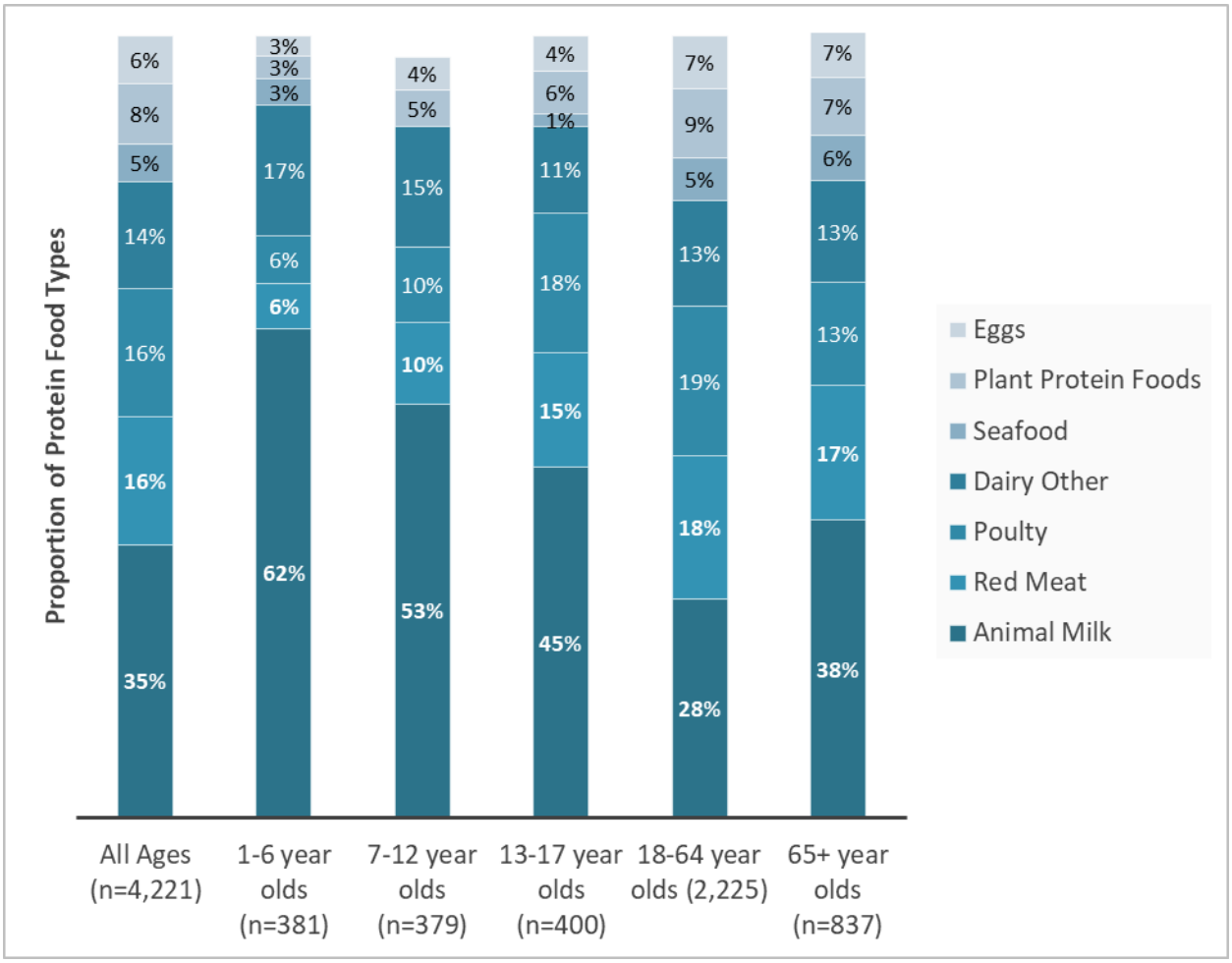
[f] Interpret with caution due to high coefficient of variation between 0.166 and 0.333 for 7-12 year olds

[g] Interpret with caution due to high coefficients of variation between 0.166 and 0.333 for 13-17 year olds, 18-64 year olds, 65 years and older

[h] Interpret with caution due to high coefficient of variation between 0.166 and 0.333 for 13-17 year olds

Protein Foods intake, however, results must be interpreted with caution for all ages except children age 1-6 years and adults aged 18-65 year olds[d] (Appendix C, Table 12). Due to high sampling variability in Plant-based Protein Foods intake, the top foods cannot be reported for Ontario. Please see Supplemental Materials for results for Canada.

Figure 7: Distribution of Protein Foods Type Intake by Volume by Age Group, Ontario, one year and older (n=4,221)



Note: ◊=Interpret with caution due to high coefficients of variation between 0.166 and 0.333. Values for Seafood intake are suppressed due to very high coefficients of variation above 0.333 for 7-12 year olds. 'Cow's milk' protein food type includes unsweetened cow's milk, as well as unsweetened enriched goat's milk (which contributes less than 0.01% of all animal milk (cow's and goat's milk) consumed by all Ontario respondents).

Whole Grain Foods and Non-Whole Grain Foods

Whole Grain Foods intake was much lower than Non-Whole Grain Foods, ranging from 6.2% to 10.5% versus 21.9% to 26.7% of total intake by volume, respectively (Appendix C, Table 10). There were no differences across age groups for Whole Grain Foods or Non-Whole Grain Foods intake in Ontario.

Nationally, adults 65 years and older had higher Whole Grain Foods intake compared to other age groups (see Supplemental Materials).

Across all ages, whole grain and whole wheat **bread**[i] was the top Whole Grains Food by volume among those who consumed any Whole Grain Foods. Whole grain, oats, and high fibre breakfast **cereals**[j] were the second most consumed Whole Grains Foods by all ages. **White bread**[k] and **bread-like products**[l] (rolls, bagels, pita bread, etc.) were top Non-Whole Grain Foods consumed by all ages. See Appendix C, Tables 14 and 15 for more details.

Other Foods

Other Foods intake ranged from 15.8% to 25.5% of total daily intake by volume as reported on a single day. There were no differences across age groups for Other Foods in Ontario. Nationally, school aged children (7-17 years) had higher Other Foods intake compared to other age groups (see Supplemental Materials).

Due to high sampling variability, the top Other Foods cannot be reported by age groups with confidence (See Appendix C, Table 16 for more details). See Supplemental Materials for population proportion of top Other Foods in Canada by age group.

Intake of Food Groupings by Meal Occasion

The percent contribution of food groupings varies according to meal occasion assessed for a single day for Ontario (Figure 9). Pie charts ("plates") with the population proportions of food groupings for a single day by meal occasion for Ontario are available in Appendix C, Figure 16. Data tables of food grouping percent contribution analyses stratified by occasion and age group are provided for Ontario in Appendix C, Table 17. Please see Supplemental Materials for nationally-representative data. Top sources of each food grouping were calculated by meal occasion but were not stratified according to age group due to high sampling variations.

Supper was the most reported meal consumed (n=4,010 [95.0%]) in Ontario. Breakfast was consumed by 89.1% of Ontarians (n=3,759). Lunch was consumed by 85.8% of Ontarians (n=3,621). Snack(s) were reportedly consumed by 77.9% (n=3,290) of Ontarians. A breakdown of meal occasions stratified by age group is provided in Appendix C, Table 18. The proportion of respondents who reported consuming 'any' intake (i.e., more than 0 grams of any food) of each food grouping differs by meal occasion. For example, only one-third of respondents who ate breakfast or brunch stated they consumed Vegetables or Fruit at that meal occasion on the day of the recall, compared to 80.9% of those who consumed

[i] Interpret with caution due to high coefficient of variation between 0.166 and 0.333 for 7-12 years, 13-17 years, 65 years and older

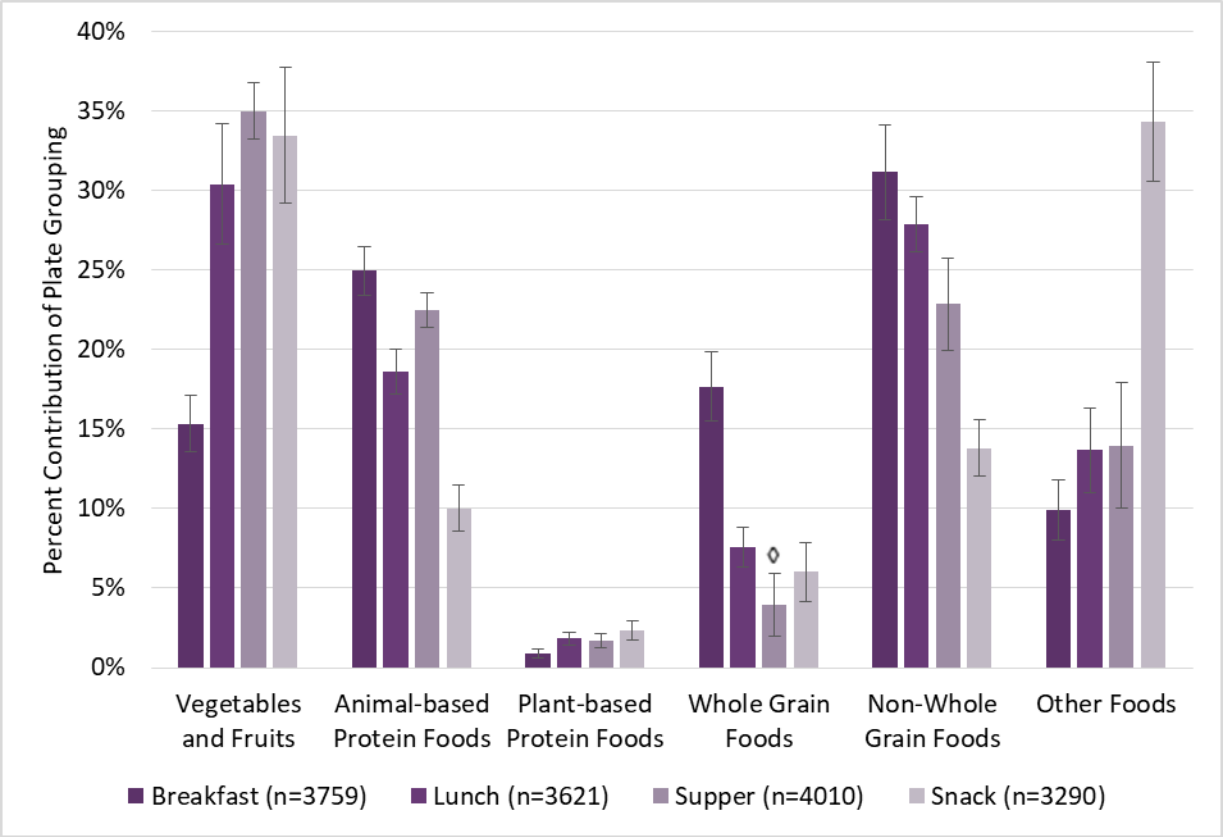
[j] interpret with caution due to high coefficient of variation between 0.166 and 0.333 for 1-6 years, 13-17 years, 18-65 years, 65 years and older

[k] Interpret for caution due to high coefficient of variation between 0.166 and 0.333 for 1-6 year olds, 7-12 year olds, 13-17 year olds

[l] Interpret with caution due to high coefficient of variation between 0.166 and 0.333 for 7-12 year olds

supper identifying that they ate Vegetables and Fruit at that meal. Only 10.3% of respondents who ate supper said they ate Whole Grains at that meal occasion on the day of the recall, compared to 34.5% of respondents who ate breakfast or brunch who said that they ate Whole Grains at that meal occasion. See Appendix C, Table 19 for more details.

Figure 8: Percent Contributions of Food Groupings to Total Daily Intake by Meal Occasion, Ontario, one year and older (n=4,221)



Note: Error bars extend below and above the percent contribution of food grouping and represent the 95% Confidence Interval limits ◊=Interpret with caution due to high coefficients of variation between 0.166 and 0.333

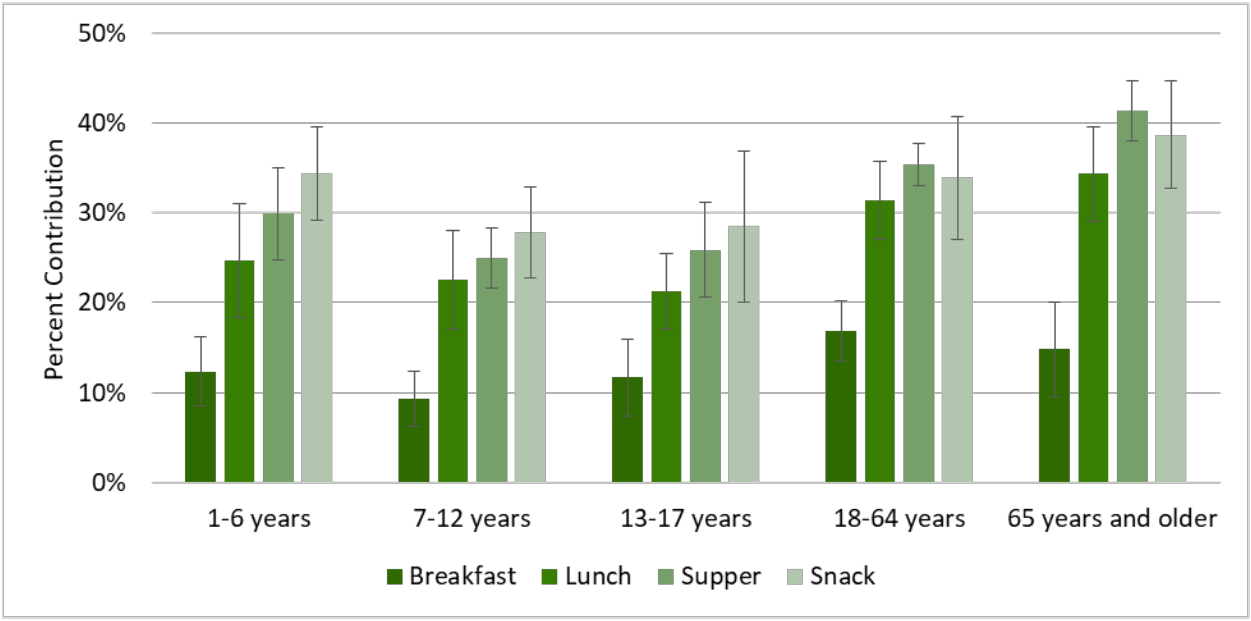
Vegetables and Fruits

Across all ages, Vegetables and Fruits contributed the least (by volume) to total intake at breakfast (15.3%, 95% CI: 13.6%, 17.1%), compared to lunch (30.4%, 95% CI: 26.6%, 34.2%), supper (35.0%, 95% CI: 33.2%, 36.8%), and snack (33.5%, 95%CI: 29.2%, 37.8%) (Figure 9). This pattern was consistent across each age group in Ontario (see Figure 10).

At supper, adults aged 65 years and older had a higher intake of Vegetables and Fruits (41.4%, 95% CI: 38.0%, 44.7%) than all other age groups (Figure 10). See Appendix C, Table 20 for more details on age groups.

By volume, fruits were most consumed at breakfast (**bananas**, **apples**[m], **other fruits**[n], and **citrus fruits**[n]) and snack (**apples**, **bananas**, **citrus fruits**, **melons**[n], **other fruits**[n]). **Salads** were the top contributing Vegetables and Fruits item at lunch and supper by volume. **Tomatoes**, **lettuce and leafy greens**, **other vegetables**[n] (e.g., cucumber, beans) were also top foods at lunch and supper. **Potatoes** were the second most consumed vegetable at supper. (See Appendix C, Table 21 for more details.)

Figure 9: Percent Contribution of Vegetables and Fruits Intake to Total Daily Intake by Meal Occasion, Ontario, one year and older (n=4,221)



Protein Foods

The percentage contribution of Animal-based Protein Foods was lowest at snack (10.0%, 95 CI: 8.6%, 11.5%) and highest at breakfast (25.0%, 95% CI: 23.5%, 26.5%) and supper (22.5%, 95% CI: 21.4%, 23.6%) across all respondents in Ontario (Figure 9).

Animal-based Protein Foods contributed 38.5% (95% CI: 32.7%, 44.3%) of total intake by volume at breakfast consumed by for 1-6 year olds - higher than all other meal occasions for that age group (See Figure 11). Furthermore, the intake of Animal-based Protein Foods by 1-6 year olds at breakfast was higher than that consumed by all adults (22.3%, 95% CI: 21.1%, 25.6% for 18-64 year olds; 22.3%, 95% CI: 18.2%, 26.5% for 65 years and older) at breakfast. Children aged 1-6 years also consumed more

[m] Value suppressed due to high coefficient of variation above 0.333 for Ontario data. In the national dataset, apples are the top contributor to vegetables and fruit at snack (See supplemental materials).
[n] Interpret with caution due to high coefficient of variation between 0.166 and 0.333

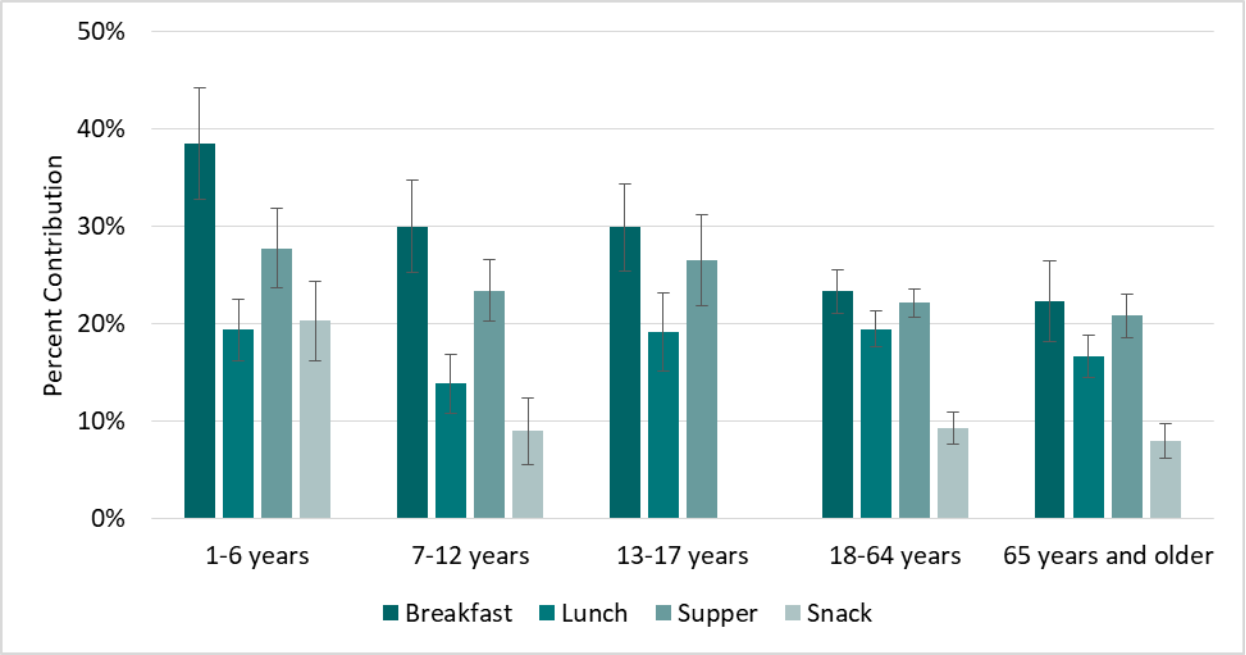
Animal-based Protein Foods at snack (20.3%, 95%CI: 16.2%, 24.4%) compared to other age groups (Figure 11). (See Appendix C, Table 22 for more details.)

The intake of Plant-based Protein Foods was lower at breakfast (0.9%, 95%CI: 0.6%, 1.2%) than lunch (1.8%, 95%CI: 1.4%, 2.2%), supper (1.7%, 95%CI; 1.2%, 2.1%), and snack (2.3%, 95%CI: 1.7%, 3.0%), by volume. Nevertheless, Plant-based Protein Foods intake was consistently very low relative to Animal-based Protein Foods across all meal occasions. (See Appendix C, Table 23 for more details.)

It is not possible to report on Plant-based Protein Foods intake for age groups by meal occasions for Ontario due to data suppression for extreme sampling variability. Please see Supplemental Materials for national data.

The top sources of Protein Foods at breakfast were **cow's milk** (2% MF, 1% MF) and **eggs** (including egg dishes[o]). At lunch and supper, **chicken** and **ground beef**[o] were the top Protein Foods, followed by **cow's milk**, **cheese** (10-25% BF) and **lean beef**. **Cow's Milk** (2% MF and 1% MF)[p], **yogourt** (greater than 2.1% BF), **nuts**[o], and **cheese** (greater than 25% BF) were the top sources of Protein Foods at snack. (See Appendix C, Table 24 for more details.)

Figure 10: Percent Contribution of Animal-based Protein Foods Intake to Total Daily Intake by Meal Occasion, Ontario, one year and older (n=4,221)



[o] Interpret with caution due to coefficient of variation between 0.166-0.333
[p] Value suppressed due to coefficient of variation above 0.333

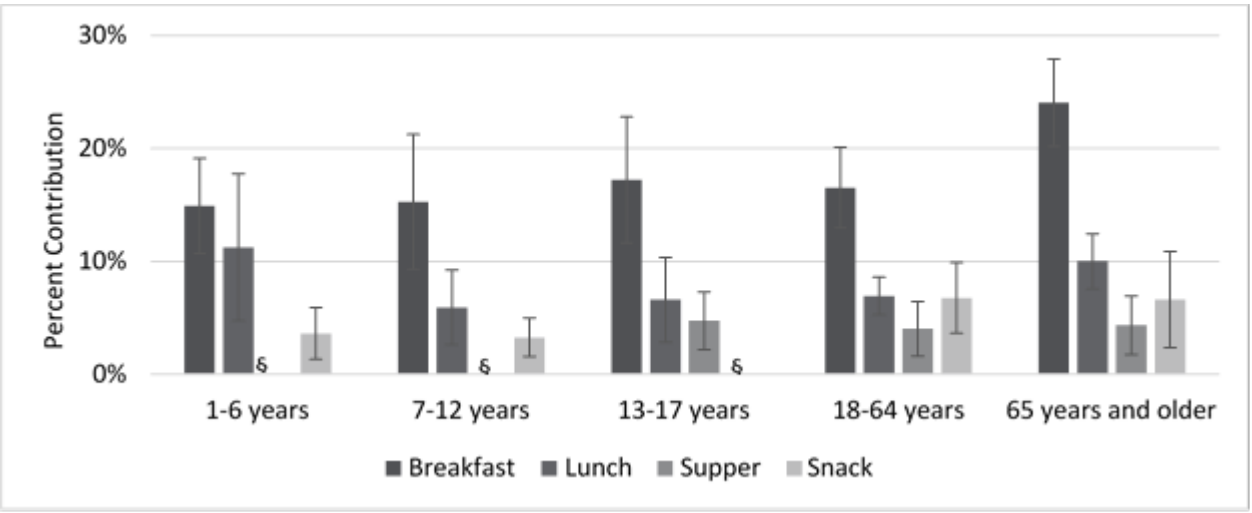
Whole Grain Foods and Non-Whole Grain Foods

The percent contribution of Whole Grain Foods and Non-Whole Grain Foods at breakfast accounted for nearly 50% of the total intake by volume (Whole Grain Foods: 17.7%, 95% CI: 15.5%, 19.9%; and Non-Whole Grain Foods: 31.2%, 95% CI: 28.2%, 34.1%) in Ontario. At other meal occasions, total grain intake ranged from approximately 20% of total intake at snack (Whole Grain Foods: 6.0%, 95%CI: 4.2%, 7.9%; Non-Whole Grain Foods: 13.8%, 95%CI: 12.0%, 15.6%) to 36% of total intake at lunch (Whole Grain Foods: 7.6%, 95% CI:6.3%, 8.8%; Non-Whole Grain Foods: 27.9%, 95%CI: 26.2%, 29.6%). Whole Grain Foods intake was higher at breakfast (17.7%, 95%CI: 15.5%, 19.9%) than all other meal occasions (Figure 9). This pattern was consistent across all age groups, except 1-6 year olds (Figure 12). (See Appendix C, Tables 25 and 26 for more details.)

Whole grain, oats, and high fibre breakfast **cereals** were the top Whole Grains Foods at breakfast by volume. Whole grain and whole wheat **bread** and **bread-like products** (rolls, bagels, pitas, etc.)[q] were the top Whole Grains Foods at lunch and supper. **White bread** and **other bread-like products** (rolls, bagels, pitas, etc.) were the top Non-Whole Grain Foods at breakfast (followed by **cereals**) and lunch (followed by **rice**[q] and **pasta**[q]). **Rice** and **pasta** were the top Non-Whole Grain Foods items at supper, followed by **bread-like products** (rolls, bagels, pitas, etc.) and **white bread**.

Whole Grain Foods at snack cannot be reported due to extreme sampling variability; top Non-Whole Grain Foods at snack included salty snacks and high-fat snacks (e.g., tortilla chips)[q], bread-like products (rolls, etc.)[q], white bread[q], cereal[q], and granola bars. (See Appendix C, Tables 27 and 28 for more details.)

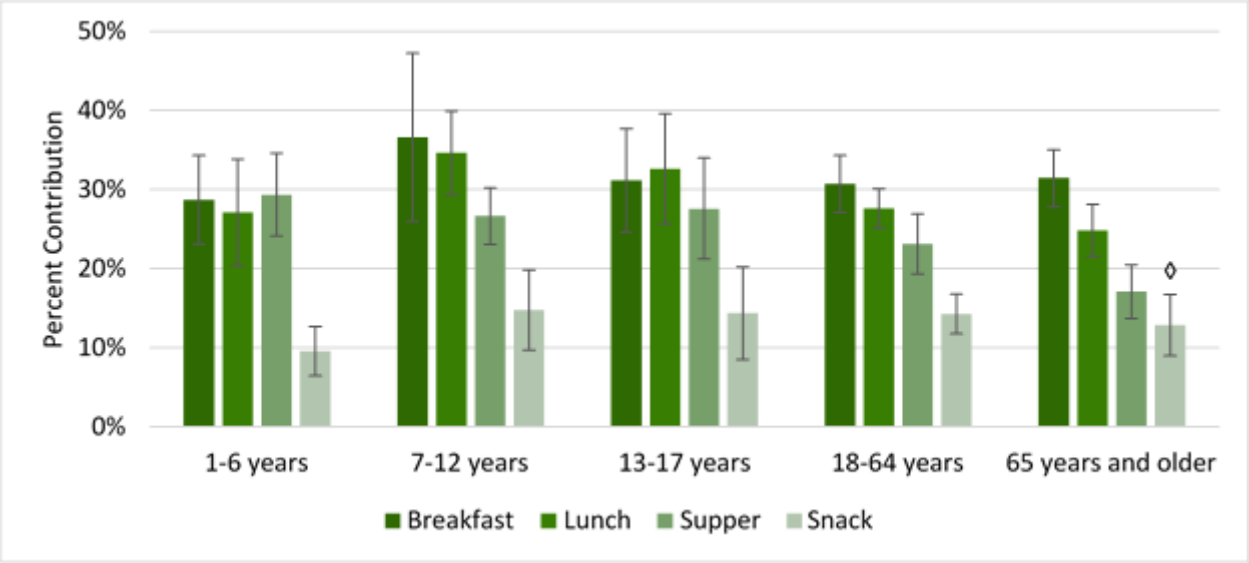
Figure 11: Percent Contribution of Whole Grain Foods Intake to Total Daily Intake by Meal Occasion, Ontario, 1 year and older (n=4,221)



Note: § = Value suppressed due to high coefficient of variation above 0.333

[q] Interpret with caution due to high coefficient of variations between 0.166 and 0.33

Figure 12: Percent Contribution of Non-Whole Grain Foods Intake to Total Daily Intake by Meal Occasion, Ontario, 1 year and older (n=4,221)



Note: ◊=Interpret with caution due to high coefficients of variation between 0.166 and 0.333

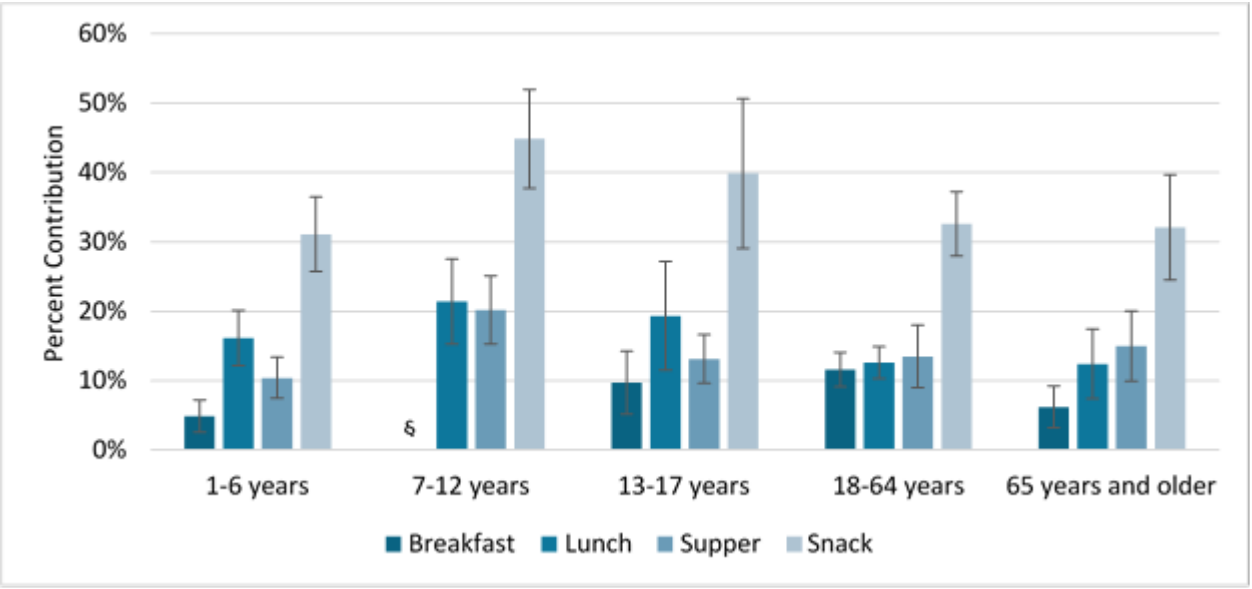
Other Foods

The proportion of Other Foods intake was highest at snack at 34.3% (95% CI: 30.6%, 38.1%) compared to other occasions in Ontario (breakfast: 9.9%, 95%CI: 8.0%, 11.8%; lunch: 13.7%, 95%CI: 11.0%, 16.3%; supper: 14.0%, 95%CI: 10.0%, 17.9%) (Figure 9). This pattern was consistent across all age groups (Figure 14, Appendix C, Table 29).

Baked goods (e.g., muffins[r], croissants[s], sweet rolls[s]), **French fries and hashbrown potatoes[s], and bacon[s]** were top Other Foods at breakfast by volume. **French Fries and hash brown potatoes** were the top Other Foods at lunch[r] and supper, followed by **luncheon meat** at lunch and **chicken recipes** (e.g., fried chicken) at supper. The top Other Foods at snack were **potato chips, salty and high-fat snacks[r], ice cream**, **muffins**[r], and commercial **cookies**. See Appendix C, Table 30.

[r] Interpret with caution due to high coefficient of variation between 0.166 and 0.333
[s] Values suppressed due to very high coefficient of variation above 0.333 for Ontario. Values are to be interpreted with caution due to a high coefficient of variation between 0.166 and 0.333 in the national dataset for croissant, French fries and hashbrown potatoes, and bacon (see supplemental materials).

Figure 13: Percent Contribution of Other Foods Intake to Total Daily Intake by Meal Occasion, Ontario, 1 year and older (n=4,221)



Note: § = Value suppressed due to high coefficient of variation above 0.333

Discussion

This project used provincially representative dietary intake data from 24 hour dietary recalls in the 2015 CCHS-N to explore dietary intakes of Ontarians relative to the 2019 CFG Plate. [4] Analyses of full day intake for all Ontarians revealed that Vegetables and Fruits made up 29% of the volume of all foods consumed on a single day. Protein Foods made up 22% of the volume of all foods consumed by Ontarians on a single day. Over 90% of Protein Foods consumed were from animal-based sources; plant-based Protein Foods contributed very little to total intake of Protein Foods. Intake of Whole Grain Foods was low, contributing only 8% of the volume of all foods consumed by Ontarians. The remaining dietary intake of Ontarians (41%) reported on a single day was made up of Non-Whole Grain Foods and Other Foods (e.g., fried potatoes, processed meat, foods high in fat, sugar, or sodium), which are not included on the 2019 CFG Plate.[4]

There appeared to be a greater variety in the top Vegetables and Fruit and Other Foods consumed compared to the variety of Whole Grain Foods, Non-Whole Grain Foods, and Protein Foods consumed. The top five Vegetables and Fruit foods (salad, apple, tomato, banana[t], lettuce and leafy greens) contributed 46% to all Vegetables and Fruit consumed by volume. Similarly, the top five Other Foods

[t]Interpret with caution due to high coefficient of variations between 0.166 and 0.33

(French fries and hash brown potatoes, potato chips, salty and high-fat snacks[t], muffins, and fried chicken[t]) made up only 43% of all Other Foods consumed by volume. On the other hand, breads alone made up 41% of all Whole Grain Foods consumed and white bread and bread-like products (rolls, etc.) made up 43% of all Non-Whole Grains consumed by volume. Over 50% of the consumed Protein Foods were cow's milk and red meat, by volume.

Dietary intake of food groupings by volume differed by age. Ontarians 18 years and older consumed more Vegetables and Fruit than children (1-6 years; 7-17 years). Compared to all other ages, the consumption of Protein Foods, especially Animal-based Protein Foods, was highest in 1-6 year olds in Ontario who also consumed the greatest volume of cow's milk out of all the Protein Foods consumed. This pattern appears to hold true when cow's milk was not counted as a Protein Food (91% of Protein Foods [excluding cow's milk] were animal-based for 1-6 year olds compared to approximately 85-87% for all other age groups, data not shown). On the other hand, when cow's milk was not counted as a Protein Food, the overall contribution of Protein Foods to total daily intake by volume was more similar across age groups, ranging from 10% of total daily intake by volume for 7-12 year olds to 17% of total daily intake by volume for adults 18-64 years; 14% of total daily food volume intake for 1-6 year olds was Protein Foods excluding cow's milk (data not shown). No differences existed between age groups for Whole Grain Foods or Other Foods. National data shows that Whole Grain Foods intake was higher in adults 65 years and older than all other ages, and that Other Foods intake was higher in school-aged children 7-17 years (see Supplemental Materials).

The top foods consumed for each food grouping also differed by child and adult age groups. For example, apples were the top Vegetables and Fruits consumed for all child age groups and salads were the most consumed Vegetables and Fruit for all adult age groups (followed by apples), by volume. Children consumed higher amounts of dairy products (especially cow's milk) as their top sources of Protein Foods, whereas chicken[u] and ground beef[v] were top Protein Foods for adults (in addition to cow's milk) by volume. Potato-based foods (French fries and hash brown potatoes[w], and chips[x21]) were the top consumed Other Foods for all adult age groups by volume. Children consumed a variety of Other Foods, in addition to French fries and potato chips[x].

Dietary intakes of food groupings differed by meal occasion. By volume, there were higher intakes of Whole Grains but lower intakes of Vegetables and Fruit at breakfast compared to all other meal occasions for all Ontarians. This pattern was consistent across age groups. Intake of Other Foods was higher at snack than all other occasions for all Ontarians and across all age groups.

The top foods consumed for each food grouping also differed by meal occasion. Fruits were consumed at breakfast and snack, whereas salads were consumed at lunch and supper. Cow's milk and eggs were most consumed at breakfast, but chicken, beef[w], cheese, and cow's milk[w] were most consumed at lunch

[u] Interpret with caution due to high coefficient of variations between 0.166 and 0.33 for 65 years and older
[v] Interpret with caution due to high coefficient of variations between 0.166 and 0.33 for 18-64 year olds; very high coefficient of variation above 0.333 for 65 years are older
[w] Interpret with caution due to high coefficient of variations between 0.166 and 0.33
[x] Value suppressed due to coefficient of variation above 0.333

and supper. Protein Foods at snack varied and included cow's milk[w], yogourt, nuts[w], and cheese. There was a wide variety of Other Foods consumed across meal occasions. Other Foods consumed varied by occasion in ways one may expect: Other Foods at lunch and supper were typical meal-like foods that are commonly high in total fat, saturated fat, sugar, and sodium (e.g., French fries), and processed or high saturated fat/sodium meats (e.g., fried chicken); Other Foods at snack were foods often referred to as 'junk' foods (e.g., chips, salty snacks[y], ice cream, baked goods).

The findings of this report highlight a few noteworthy characteristics of Ontarians' diets. First, a substantial proportion of 'plates' were made up of Non-Whole Grain Foods and Other Foods – two groupings that are not included in the 2019 CFG. Analogous high intake of these foods has been established in previous research in Canada. In assessments of CCHS-N from 2004[42] and 2015[57] using the 2007 CFG classification, researchers found that adults aged 19 years and older consumed approximately one-quarter of total energy from Tier 4 and "other foods" and beverages. In another assessment of the CCHS-N Cycle 2.2 (2004), almost half of the daily energy intake consumed by Canadians aged two years and older was from ultra-processed foods[58] – foods with many added ingredients that undergo multiple processes or manipulation before consumption, such as chips, confectionary, ice cream, processed meats, frozen foods, sweetened breakfast cereals, and sugary drinks[59]. Similar to the findings presented here, Moubarac et al. found that many foods contributed to the intake of calories from ultra-processed foods including: mass-produced breads, confectionary, and fast food dishes (e.g., burgers, hot dogs, fries, and pizza from fast food outlets), breakfast cereals, milk-based products (e.g., ice cream, flavoured milk, flavoured yogourt), chips and other salty snacks, and reconstituted meats (e.g., sausage, luncheon meat, bacon).[58] Between 20% and 30% of Canadians consumed food from a fast food or take-out establishment on a single day, according to the 2004 CCHS-N 2.2, which may contribute to higher intakes of foods high in saturated fat, sugar, and sodium.[60]

The findings may suggest that that Other Foods and Non-Whole Grains Foods may physically displace intakes of Vegetables and Fruits, Protein Foods, and Whole Grain Foods at meals or snacks. Since this report only reports mean intakes of Ontarians' on a single day, the proportion of individual Ontarians who meet or do not meet the 2019 CFG recommendation (e.g., consume half of all foods as vegetables and fruit) in their usual diet cannot be determined. Nonetheless, inadequate vegetables and fruit intake is a common and persistent public health concern.[43,61] In Ontario, 72% are considered to have inadequate intakes of vegetables and fruit, defined as eating vegetables and fruit fewer than five times per day.[62] Ekwaru et al. estimated that 84% of Canadians consumed inadequate amounts of vegetables and fruit using higher cut-offs as per age-sex recommendations in the 2007 CFG (5 to 8 servings per day depending on age and sex).[43] Ekwaru et al. concluded that reducing the proportion of the Canadian population who consume inadequate amounts of vegetables and fruit per day by a single percentage point would avoid up to $10.8 billion in direct and indirect health care costs over the following 20 years.[43] If Canadians consumed one additional vegetables and fruit serving per day, $9.2 billion would be saved over 20 years.[43] However, changing dietary intake may be extremely difficult due to a variety of individual, environmental, and policy factors that impact dietary choices.[38,44-47,63] A comparison of

[y]Interpret with caution due to high coefficient of variations between 0.166 and 0.33

vegetables and fruit intake measured annually in the CCHS survey revealed that vegetables and fruit intake (excluding juice) has not changed between 2007 and 2014.[61]

Intakes of Whole Grain Foods and Plant-based Protein Foods contributed very little to total daily intake by volume across the Ontario population in our analyses. Fewer than half and one-third of respondents ate 'any' (i.e., more than zero) Whole Grain Foods and Plant-based Protein Foods on a single day, respectively. Lieffers et al. found that only 1-9% of Canadians aged two years and older met recommendations for whole grains (2.5-4 servings/day), according to the CCHS-N Cycle 2.2 (2004).[2] Only 1-4% of Canadians aged two years and older met recommendations for nuts and seeds (30 g per day as per the 2016 Canadian Cardiovascular Society Guidelines for the Management of Dyslipidemia for the Prevention of Cardiovascular Disease in the Adult).[2] These two items contributed the most to the economic burden of poor diets, followed by inadequate intakes of fruit and vegetables.[2] Similarly, Jessri et al. reports that whole grains contributed to approximately 16% of calories consumed from the 2007 CFG Grain Products food group.[42] Nuts and seeds and legumes contributed only approximately 5% and 12% of calories in the 2007 CFG Meat and Alternatives food group, respectively.[42] Interventions to increase plant-based protein food intake should be carefully planned to ensure nutrient adequacy and consumer acceptability. Nutrient bioavailability is generally better from animal-based foods than plant-based foods thus the quantity, quality, and combination of plant-based and animal-based foods must be considered in order to ensure nutrient adequacy diets,[65,66] including adequate protein intake and amino acid profiles.[66] This is particularly important during growth and to avoid muscle loss with aging.[66,67]Plant-based protein foods may be less commonly consumed in certain populations, such as Indigenous populations For example, First Nations, Inuit, and Métis communities tend to focus on animal sources of protein related to traditional hunting, fishing and trapping.[64] Traditional Indigenous diets and food systems provide many cultural, spiritual, economic, and health benefits.[64] It may also be difficult for geographically remote and northern communities to increase Plant-based Protein Foods intake due to barriers in food access and availability.[64]

The second notable finding pertaining to the characteristics of Ontarians' diets, is that the 'plate', or the proportion of food group and type consumed on a single day, differs between children and adults. Differences in food group and food type intake may have important nutrient implications. For example, adolescents and adults with diets lower in vegetables tend to have lower intakes of fibre, potassium, folate and vitamins A, C, E, and K.[68,69] Higher intakes of cow's milk in toddlers is associated with reduced iron status; children with low iron status drank 130mL (95%CI: 50-210 mL) more cow's milk per day than children with adequate iron status.[70] Higher intakes of calories from Tier 4 and "other foods" in adults is associated with significantly higher daily intakes of total calories, total fat and saturated fat and significantly lower daily intakes of fibre, vitamins A, D, and C, potassium, iron, and zinc.[57] Although this report did not assess nutrient intake, the nutrient implications of varying food intakes by age group are important public health considerations.

The recommendation to use the CFG Plate to balance dietary intake is applicable to all anyone consuming food across all age-sex groups. Even though the food intake of young children may be supplemented by breastmilk or formula beverages, the CFG Plate can be used to inform the foods a parent or caregiver chooses to offer children. Nonetheless, it is important to reflect how intake of

various food types and food groupings may impact nutrient adequacy since the age groups used in this report do not perfectly align with the age-sex groups of the Dietary Reference Intakes. Achieving nutritional adequacy is of critical importance during critical developmental periods. This report is unable to confirm whether simply following the CFG Plate would ensure nutrient adequacy for all DRI age-sex groups.

It may be challenging or unreasonable for people to meet the 'plate' at all meals and snacks, however the chances of one's average diet meeting dietary recommendations may increase the more often one's 'plate' aligns with the 2019 CFG Plate.[4] Future research should consider assessing usual or habitual dietary intake rather than a single CFG Plate.[71] Nonetheless, occasion-based sub-analyses can reveal useful knowledge about how and when people are eating to inform targeted healthy eating interventions in a variety of settings (e.g., home, school, childcare, work, restaurants).

As Charlebois and colleagues concluded from a representative survey of Canadians eating habits, the "traditional notion of three meals a day is becoming an ideal for many, rather than a daily reality".[5 (p.75)] Nishi et al. found that only 60% of Canadians aged 13 years and older and 80% of children under 13 years consumed three meals per day plus snacks.[60] Reported meal consumption varied by multiple socio-demographic factors (e.g., sex, age, income, education, household composition).[5] For example, the likelihood that a Canadian reported skipping breakfast increased as their income decreased and respondents earning under $40,000 CAD per year were more likely to report consuming breakfast outside of the home.[5] Lunch was consumed on-the-go or at a restaurant by 40% of Canadians, with women, singles, and those with a high school education being more likely to eat lunch out of the home than other groups.[5]

Meal skipping and out-of-home meals may have important implications for public health nutrition.[5] The frequency of meals and snacks over the course of a day has been positively associated with dietary quality,[72] as has the preparation and consumption of home-cooked meals.[73-75] On the other hand, the frequency of meals away from the home is inversely associated with dietary quality.[76] Furthermore, when meals are skipped, the number of opportunities one has to consume the variety of foods needed to meet nutrient requirements is reduced. Thus, the decision as to what one puts on their plate at each meal and snack becomes arguably more important in terms of meeting nutritional needs when fewer meals and snacks are consumed in a day. There is also evidence to suggest that waiting long periods of time between meals and snacks is associated with a decrease in recognizing fullness and satiety cues which can further impact healthful food-related decision making such as the increased likelihood of more convenient processed foods to be selected at the next meal occasion.[77] People who earn lower incomes may eat less often[5] which may contribute to nutrient inadequacy and health inequities that have been identified in populations that experience food insecurity.[78,79]

Nutritious food choices at individual meal and snack times can be a goal for many programs and policies to promote healthy eating in a variety of settings such as schools, child care centres, recreation facilities, workplaces, and restaurants. For example, Canadian children consume approximately one-third of their daily calories at schools.[80] Tugault-Lafleur et al. state that the nutritional quality of the average diet consumed by children during school hours was ranked at only 53 out of 100 as per the Canadian Healthy

Eating Index adapted for school hours.[80] Between 2004 and 2015, the dietary quality of food consumed by Canadian children aged 6 to 17 years during school hours increased, but remained classified as "requiring improvement".[81] Similarly, nutrition environments in Canadian home and centre –based child care centres has been found to "require improvement".[82] This is crucial as, with more than half of Canadian pre-schoolers attending child care, their consumption in these centres tends to be between half and two thirds of their total daily energy intake.[82] How and where people eat are important contextual features that can have implications on population level interventions to improve dietary intake, and require further examination. A mix of interventions that generate supportive food environments across various settings, so that Ontarians of all ages are empowered to consume foods that align with Canada's dietary recommendations at any eating occasion, are fundamental to promoting healthy diets on a population level.[63,83]

Conclusion

The 'plates' of Ontarians measured on a single day include a significant portion of foods not included in the 2019 CFG which may displace the intake of recommended foods - Vegetables and Fruits, Whole Grain Foods, and Protein foods, including plant-based sources. At the population level, intakes of Whole Grains were lower than Non-Whole Grain Foods, Plant-based Protein Foods contributed negligible amounts to the total volume of food eaten, and Vegetables and Fruits contributed less than one-third of total volume of food eaten on a single day. The proportions and types of foods consumed differed slightly between children and adults and between meal occasions, which may have important nutrient and health implications. Small shifts in Ontarians' food choices to reduce Non-Whole Grain Foods and Other Foods intake and increase Vegetables and Fruits, Whole Grain Foods, and plant-based Protein Foods may generate meaningful benefits in nutritional intake, health and economic costs.

Implications for Public Health

Healthy eating has broad impacts on health including mental wellbeing[6-8] as well as reducing the risk of cancer, diabetes, and cardiovascular disease.[2,12,15,16] Opportunities to support public health through healthy eating are embedded across multiple areas of practice including chronic disease prevention, healthy growth and development, healthy schools, healthy environments and climate change, mental health promotion, health equity, and even injury prevention.[13]

The findings presented here highlight opportunities to generate supportive public health programs and policies to promote healthy eating for young children, school-aged children, and younger and older adults. Given the health impacts of diets high in red and processed meats and processed foods, and the consequences of inadequate intake of vegetables and fruit, whole grains, and plant-based proteins,[14] it is important that public health interventions address the imbalance between recommended and non-recommended food intake. In addition to the promotion of vegetables and fruit commonly undertaken by public health, interventions to increase intakes of whole grains and quality protein foods, including plant-based protein foods (e.g., nuts, seeds, legumes) are recommended to promote health and reduce

chronic disease risk.[2] Interventions can target various settings and populations, as there is room to improve diets across the life stages. Consistent with socio-ecological models for health promotion[84] and healthy eating,[85] a myriad of interventions, such as those that support food literacy, create healthy food environments (physical, economic, social) in homes, institutions, and communities, restrict unhealthy food marketing to children, generate resilient healthy food systems, and reduce food insecurity, are fundamental to promote healthy eating behaviours in populations. Although differences in dietary intake by socio-demographic factors (e.g., income) were not assessed in this report, the implications of interventions on dietary and health inequities are important considerations to ensure that those who can benefit the most from changing dietary intake (e.g., children, individuals and families with low income, racialized populations, newcomers) are supported and not further disadvantaged.

Strengths and Limitations

There are several strengths and limitations to this study. First, the 2015 CCHS-N data is the most recent, comprehensive and detailed data of the dietary intake of Ontarians. By using sample weights provided by Statistics Canada, the findings are provincially representative. This report provides a novel, high-level analysis of dietary intake by volume to understand the proportionate intake of food groupings that are intended to align with the 2019 CFG. The findings are anticipated to be useful for the promotion of healthy eating by presenting dietary intake in a metric ("plate") that has real-life applicability. Ontarians aged one year and older are included in the analysis which provides a comprehensive assessment of dietary intake across all life stages. The findings on ages one to six years help to fill a gap in data on dietary intake of young children identified by the Ontario public health field, an age range that is reportedly often excluded from some surveillance (e.g., CCHS annual survey which includes Canadians 12 years and older) and research (i.e. school-aged children are more commonly researched) in Canada.[13]

There are also important limitations to consider when interpreting these results. Given that data collection for this dataset occurred in 2015, changes in dietary intake may have since occurred. Further, since the new CFG is from 2019, one may not expect respondents to follow a dietary guideline that did not exist during data collection. Since this is the first project to attempt to classify food intake consistent with 2019 CFG food groupings, there is risk of misclassification of foods and random measurement error. (At the time of this report, a new classification of foods according to the 2019 CFG was under development.). Using volume to measure intakes is both a strength and a limitation of this analysis. One strength is that this allows the reader to conceptualize the space the food takes up on a plate. However, it must also be considered that these results may differ considerable from analysis done using gram weight or by Reference Amount (a regulated unit of measure that considers both the weight and volume of a food that is typically eating in one sitting). Volume-based assessments may emphasize certain foods that are spatially significant (e.g., leafy greens, potato chips) but dietary analyses based on calorie- or nutrient-density may not reveal the same significance for those items. The validity and reliability of the new "plate" indicator developed here has not been assessed, nor is it clear from the 2019 CFG as to whether building meals based on the CFG Plate achieves nutritional adequacy in populations and age-sex groups. Further, since this report use age groups different than the DRI age-sex groups, and misreporting was not accounted for, nutrient implications of the findings are imperfect. The analyses are

based on food intake rather than nutrient intake which limits the conclusions that can be made about the nutritional quality of dietary intake.

All beverages (with the exception of unsweetened animal milk and soy beverage) were excluded which may impact dietary quality or overall volume consumed, especially in high-consuming populations of sugar-sweetened beverages such as adolescents.[86] Furthermore, energy or nutrient density were not considered, which may have important implications for the interpretation of certain food groupings. For example, certain Other Foods such as potato chips, chocolate or theatre-style popcorn may present very differently in volume based analyses but have similar nutrient and energy contributions. Future research should consider how energy density could be incorporated into plate-based analyses.

Additionally, only the first dietary recall was used which prevents assessing usual dietary intake as could be done when multiple dietary recalls from a single person are used to account for the variation in individuals' diets day-to-day. Thus, the results simply indicate mean intakes of a population on a single day and do not indicate the proportion of the population that meet or do not meet dietary recommendations.

Finally, we were unable to assess differences in dietary intake according to socio-demographic factors due to small sample sizes. Caution should be taken when interpreting age group or meal occasion sub-analyses due to small sample sizes which resulted in high data variability and reduced certainty of findings. National estimates are available in supplemental files for all analyses which have fewer sampling issues.

Future directions

There are many opportunities for further analyses of dietary intake, as well as the risk factors and outcomes of dietary intake. However, ongoing surveillance of dietary intakes in Ontario and Canada with sample sizes large enough for small area analyses (e.g., public health region) is a prerequisite for population diet and health assessments. Sufficient sample sizes of population sub-groups is important to enable reliable quantitative assessments of how dietary intake differs by socio-demographic characteristics (e.g., income, food insecurity, household composition). Robust analyses on dietary inequities between populations will enhance practitioners, researhers, and policy-makers abilities to design interventions that effectively improve healthy eating in Ontario communities.

A simple assessment of the 2019 CFG Plate suggested that the foods presented in the visual graphic may be inadequate in calcium and vitamin D when compared to nutrient recommendations.[87] Future research should seek to validate 'plate'-based assessments that reflect the 2019 CFG such as the one presented in this report. The validation process should also include establishing whether meeting recommended 'plates' using actual dietary intake data achieves nutritional adequacy across various populations. Advanced analyses should be conducted using the 2015 CCHS-N or future population representative dietary intake data to estimate usual intake and the proportion of Ontarians and Canadians who are meeting recommendations in the 2019 CFG. The 2019 CFG includes more recommendations beyond the 'plate', including how you eat (e.g., mindful eating, eating together),

which should be assessed in conjunction with dietary intake data. Assessment of nutrient intake (not just food-based analyses) should be conducted in order to understand nutrients of concern for age-sex groups, such as iron intakes in young children.

Finally, dietary intake should be assessed in relation to public health programs, policies, and interventions. With high quality, ongoing, detailed dietary assessment with adequate power for sub-analyses, local public health agencies, researchers, and policy-makers will be better equipped to understand the impacts of their work on nutritional health. Subsequently, they will also be better able to improve population diets which can have long term beneficial implications for the reduction of chronic diseases and their concomitant economic burdens.

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Appendices

Appendix A – CCHS-N Files

The Food and Ingredient Dictionary (FID) contains nutrient information for every basic food level and ingredient food level recalled by respondents in the amounts consumed by respondents.[50] Basic foods are items that either (1) cannot be further broken down into another food item (e.g., apple, chicken breast) or do not have nutritional information for the ingredients that make up the recipe (e.g., store-bought cookie).[50] Ingredient foods are items which make up a recipe. For example, homemade bread can be broken down to ingredient level foods (e.g., flour, water, yeast, and salt).[50]

The Food Recipe Level file (FRL) contains the nutrient information for every main *recipe* level and sub-recipe level food recalled by respondents[50]. The nutrient information for the ingredients of a recipe level item are listed in the FID, but the total nutrition information for recipe level foods are reported in the FRL.[50] To remove duplications, only foods with a CFG code were kept, while all other were removed. Sub-recipe level foods are recipes that are nested within the main recipe and have their own set of foods in the ingredient level.[50] For example, a peanut sauce added to a dish would be categorized as a sub-recipe level.[50]

The Food Description Codebook (FDC) contains the nutrient values for every one gram weight value for each unique basic food or recipe.[50] In addition, the FDC file also contains both the code and a text description of the food item and food group it belongs to.[50] This file contains codes and descriptions of food according to the Nutrition Survey System (NSS), Canadian Nutrient File (CNF), and Bureau of Nutritional Sciences (BNS).[50]

The Canada's Food Guide (CFG) file contains the 2007 CFG code for each ingredient and recipe recalled.[50] The CFG file was used to link the FID, FRL, and FDC to the codes and information for the 2007 CFG.[50] The CFG file was used in this study to categorize food according to the CFG food groups, food subgroups, and Health Canada's Surveillance Tool, Tiers System (HCST) (See Appendix B) before being further categorized into food groupings (and sub-groupings) that were used for these analyses.

The General Health and Summary Survey (HS) file contains data from the health component of the CCHS-N.[50] This file also contains data summarizing the total nutrients from the foods respondents reported to have consumed for each recall.[50] The HS also contains summary data for nutrients consumed through supplements that were not used for the purpose of this study.[50]

Appendix B – Recoding Foods

1. Health Canada's Surveillance Tool, Tier System (HCST) Food Group Recoding

All foods in the 2015 CCHS-N file were pre-classified with the HCST, which categorizes foods and beverages according to the food groups of the 2007 Canada's Food Guide:[51] Vegetables and Fruit, Grain Products, Milk and Alternatives, Meat and Alternatives. The HCST assigned foods within Vegetables and Fruit, Grain Products, Milk and Alternatives, and Meat and Alternatives to one of the following tiers: Tiers 1 and 2 were foods "in line with the CFG guidance"; Tier 3 were foods "partially in line with the CFG guidance"; and Tier 4 were foods "not in line with CFG guidance", referring to the 2007 Canada's Food Guide.[51] The tiers were based primarily on the total fat, saturated fat, sugar, and sodium content in foods, but were also adjusted according to other 2007 CFG guidance[43.] Building off the tiered categorization of 2007 CFG food groups, the HCST categories were adapted to recode foods into food groupings that were intended to align with the 2019 Canada's Food Guide.

Specifically, any food that was a Vegetable or Fruit rated as tier 1, 2, or 3 in the HCST was classified as a Vegetables and Fruit food groupings. Any Tier 4 Vegetable or Fruit was classified as Other Foods. All fruit and vegetable juices regardless of tier were excluded from the Vegetables and Fruit food grouping as the 2019 CFG does not recommend juice, and our analyses excluded all beverages with the exception of unsweetened animal milk and soy-based beverages. Some types of potatoes were recoded according to BNS food types to align with the 2019 CFG recommendation to avoid highly processed foods (e.g., French fries).

Any whole grain product (Tier 1, 2, or 3) was classified as Whole Grains in our food groupings. Any Tier 4 Whole Grains product was classified as Other Foods. The same pattern applies for Non-Whole Grains. Certain types of non-whole grain and whole grain products were recoded according to BNS food types to align with the 2019 CFG. Although whole wheat is not equivalent to whole grain, whole wheat products are still considered a healthier choice than refined grain products.[22] Whole wheat products were included in the Whole Grains to increase the cell size.

Tier 1, 2, and 3 Milk and Alternatives products and Tier 1, 2, and 3 Meat and Alternatives products were combined into one food grouping: Protein Foods, with the exception of processed meats. To align with the 2019 CFG that suggests limiting highly processed food intake[22], including processed meats, any foods coded as "Processed Meats – Tier 1, 2, or 3" were classified as Other Foods. All Milk and Alternatives and Meat and Alternatives that were coded as Tier 4 as per the HCST was classified as Other Foods. Some types of Milk and Alternatives were recoded according to BNS food types and individual NSS food codes to align with the 2019 CFG.

The HCST also includes several other food categories when items have insufficient information or do not meet nutritional requirements to be classified within one of the 2007 CFG food groups. All items in "No CFG group – beverages lower calorie"; "No CFG group - beverages higher calorie"; "No CFG – alcoholic beverages" were excluded as only animal milk (cow's and goat's) and soy beverages are included the analyses. Other HCST categories were completely excluded due to missing information resulting in an inability to re-categorize ("Recipes – not classified; "Not stated"), items being minor ingredients ("No CFG group – saturated and/or trans fats"; "Unsaturated fats and oils"), and items being non-food ("Meal replacements"; "Supplements"). All foods within "No CFG group – high fat and/or high sugar"; "No CFG group – uncategorized ingredients"; were reviewed individually and recoded by BNS food type or NSS code or excluded as appropriate.

2. BNS Food TYPE Recoding

Additional recoding of foods by BNS type were undertaken to improve alignment with new recommendations in the 2019 CFG. Twenty (8.3%) BNS food type codes were used to recode foods to Other Foods. For 18 BNS food type codes, all foods within each groups were recoded to Other Foods. Within two BNS food type codes, most foods were recoded to Other Foods; the remaining foods were recoded at the individual food level using NSS codes (see next). Specifically, food types that would be

considered highly processed as per the 2019 CFG regardless of HCST tier were recoded as Other Foods (commercial cookies, pies, cakes, pastries, sweet baked goods, frozen desserts, and fried potatoes) (see appendix). Eleven (4.6%) BNS food type codes that included minor ingredients (creams, sauces, etc.) or beverages were excluded from further analysis (3 completely; 2 most foods excluded – see next), as they were not excluded at the first level of coding through the HCST.

3. Code foods according to NSS Codes

In cases when it did not make sense to classify all foods in a BNS food type code in the same way, the food level NSS code was used to reclassify individual foods as appropriate. Twenty-one foods (0.6% of all unique foods) were recoded into a different category than the HCST or BNS had initially grouped it. For example, within HCST food code for "fluid milk and fortified soy-based products", soy beverages were recoded at the food level so as to differentiate from other plant-based beverages that provide little to no protein (e.g., almond, coconut). Also, within this HCST food type code, sweetened animal milks and sweetened soy beverages were removed and excluded like all other sugary beverages. Sixty-three foods (1.8% of all unique foods) were recoded to be excluded from further analysis as they were not considered major ingredients (e.g., added fats, sugars, sauces, and condiments).

Table 4: Recoding Categories according to CFG Food Grouping Names

CFG code	CFG name	Recoded into Food Grouping	Additional recoding by food type (BNS) and/or food name (NSS) required
1121	Fruit - other than juice - Tier 1	Vegetables & Fruit	
1122	Fruit - other than juice - Tier 2	Vegetables & Fruit	
1123	Fruit - other than juice - Tier 3	Vegetables & Fruit	
1124	Fruit - other than juice - Tier 4	Other Foods	
1132	Fruit - juice - Tier 2	Excluded	
1133	Fruit - juice - Tier 3	Excluded	
1211	Vegetables - dark green - Tier 1	Vegetables & Fruit	
1212	Vegetables - dark green - Tier 2	Vegetables & Fruit	
1213	Vegetables - dark green - Tier 3	Vegetables & Fruit	
1221	Vegetables - deep yellow / orange - Tier 1	Vegetables & Fruit	
1222	Vegetables - deep yellow /orange - Tier 2	Vegetables & Fruit	
1223	Vegetables - deep yellow / orange - Tier 3	Vegetables & Fruit	
1231	Vegetables - potatoes - Tier 1	Vegetables & Fruit	
1232	Vegetables - potatoes - Tier 2	Vegetables & Fruit	
1233	Vegetables - potatoes - Tier 3	Vegetables & Fruit	BNS
1234	Vegetables - potatoes - Tier 4	Other Foods	
1241	Vegetable - other - Tier 1	Vegetables & Fruit	NSS
1242	Vegetables - other - Tier 2	Vegetables & Fruit	
1243	Vegetables - other - Tier 3	Vegetables & Fruit	

CFG code	CFG name	Recoded into Food Grouping	Additional recoding by food type (BNS) and/or food name (NSS) required
1244	Vegetables - other - Tier 4	Other Foods	
1252	Vegetables - juice / cocktail - Tier 2	Excluded	
1253	Vegetables - juice / cocktail - Tier 3	Excluded	
2101	Grain products - whole - Tier 1	Whole Grains	
2102	Grain products - whole - Tier 2	Whole Grains	
2103	Grain products -whole -Tier 3	Whole Grains	BNS
2104	Grain products - whole - Tier 4	Other Foods	
2201	Grain products - non whole - enriched - Tier 1	Non-Whole Grains	
2202	Grain products - non whole - enriched - Tier 2	Non-Whole Grains	BNS
2203	Grain products - non whole - enriched - Tier 3	Non-Whole Grains	BNS
2204	Grain products - non whole - enriched - Tier 4	Other Foods	
2302	Grain products - non whole - not enriched - Tier 2	Non-Whole Grains	
2303	Grain products - non whole - non enriched - Tier 3	Non-Whole Grains	
2304	Grain products - non whole - non enriched - Tier 4	Other Foods	
3101	Fluid milk and fortified soy-based products - Tier 1	Protein Foods	NSS
3102	Fluid milk and fortified soy-based products - Tier 2	Protein Foods	NSS
3103	Fluid milk and fortified soy-based products - Tier 3	Protein Foods	NSS
3201	Other milk alternatives - cheese/yogourt - Tier 1	Protein Foods	
3202	Other milk alternatives - cheese/yogourt - Tier 2	Protein Foods	BNS; NSS
3203	Other milk alternatives - cheese/yogourt - Tier 3	Protein Foods	BNS; NSS
3204	Other milk alternatives - cheese/yogourt - Tier 4	Other Foods	
4101	Meat - beef / game / organ - Tier 1	Protein Foods (Animal)	
4102	Meat - beef / game / organ - Tier 2	Protein Foods (Animal)	
4103	Meat - beef / game / organ - Tier 3	Protein Foods (Animal)	
4104	Meat - beef / game / organ - Tier 4	Other Foods	
4201	Meat - other - pork/veal/lamb - Tier 1	Protein Foods (Animal)	
4202	Meat - other - pork/veal/lamb - Tier 2	Protein Foods (Animal)	
4203	Meat - other - pork/veal/lamb - Tier 3	Protein Foods (Animal)	
4204	Meat - other - pork/veal/lamb - Tier 4	Other Foods	
4301	Poultry - Tier 1	Protein Foods (Animal)	
4302	Poultry - Tier 2	Protein Foods (Animal)	

CFG code	CFG name	Recoded into Food Grouping	Additional recoding by food type (BNS) and/or food name (NSS) required
4303	Poultry - Tier 3	Protein Foods (Animal)	
4304	Poultry - Tier 4	Other Foods	
4401	Fish - Tier 1	Protein Foods (Animal)	
4402	Fish - Tier 2	Protein Foods (Animal)	
4403	Fish - Tier 3	Protein Foods (Animal)	
4404	Fish - Tier 4	Other Foods	
4501	Legumes - Tier 1	Protein Foods (Plant)	
4502	Legumes - Tier 2	Protein Foods (Plant)	
4503	Legumes - Tier 3	Protein Foods (Plant)	
4054	Legumes - Tier 4	Other Foods	
4601	Nuts and seeds - Tier 1	Protein Foods (Plant)	
4602	Nuts and seeds - Tier 2	Protein Foods (Plant)	
4603	Nuts and seeds - Tier 3	Protein Foods (Plant)	
4701	Eggs - Tier 1	Protein Foods (Animal)	
4702	Eggs - Tier 2	Protein Foods (Animal)	
4703	Eggs - Tier 3	Protein Foods (Animal)	
4704	Eggs - Tier 4	Other Foods	
4802	Processed meats - Tier 1	Other Foods	
4803	Processed meats - Tier 2	Other Foods	
4804	Processed meats - Tier 3	Other Foods	
4901	Shellfish - Tier 1	Protein Foods (Animal)	
4902	Shellfish - Tier 2	Protein Foods (Animal)	
4903	Shellfish - Tier 3	Protein Foods (Animal)	
4904	Shellfish - Tier 4	Other Foods	
5100	No CFG group - saturated and/or trans fats and oils	Excluded	
5410	No CFG group - beverages higher calorie	Excluded	
5420	No CFG group - beverages lower calorie	Excluded	
5500	No CFG group - uncategorized ingredients	Multiple	BNS; NSS
5600	No CFG group - alcoholic beverages	Excluded	
5800	No CFG group - high fat and/or high sugar foods	Multiple	BNS; NSS

CFG code	CFG name	Recoded into Food Grouping	Additional recoding by food type (BNS) and/or food name (NSS) required
6100	Meal replacements	Excluded	
6200	Supplements e.g., energy bar	Excluded	
7100	Unsaturated fats and oils	Excluded	
7200	Water	Excluded	
8000	Recipes - not classified	Excluded	
9999	Not stated	Excluded	

Table 5: Recoding Categories according to BNS Name

BNS Code	BNS Name	Recoded into Food Grouping	Additional recoding by food type (BNS) and/or food name (NSS) required
07A	Cookies, Commercial	Other Foods	
08A	Pies, Commercial	Other Foods	
08B	Cakes, Commercial (Frozen Cake)	Other Foods	
09A	Ice Cream	Other Foods	
09B	Ice Milk	Other Foods	
09C	Frozen Yogourt	Other Foods	
13A	Whipping Cream	Exclude	
13B	Table Cream	Exclude	
13C	Half & Half Cream	Exclude	
13D	Sour Cream	Exclude	
38A	Potato Chips	Other Foods	
38B	Fried Or Roasted Potatoes	Other Foods	
43C	Gelatin, Dessert Toppings And Pudding Mixes, Commercial	Other Foods	NSS
46D	Other Beverages (Malted Milk, Chocolate Beverage)	Excluded	
50D	Sauces (White, Bearnaise, Soya, Tartar, Ketchup, Etc)	Excluded	NSS
51B	Coffee	Excluded	
150A	Cakes, Cheesecakes, Shortcakes, And Brownies	Other Foods	
150B	Cookies, Commercial	Other Foods	
150C	Danishes, Turnovers, & Pastries	Other Foods	

BNS Code	BNS Name	Recoded into Food Grouping	Additional recoding by food type (BNS) and/or food name (NSS) required
150D	Donuts	Other Foods	
150E	Muffins	Other Foods	
150F	Pies (Including Pie Shells)	Other Foods	
150G	Squares & Bars	Other Foods	
150H	Sweet Rolls And Breads	Other Foods	
150I	Filled Crepes, Blintzes, Cobblers	Other Foods	
201A	Cream (Recipe Sub-Group)	Excluded	
220B	French Fries And Hash Brown Potatoes	Other Foods	
229A	Sweet Snacks, Sugar, Candies (Recipe Sub-Group)	Other Foods	NSS
231B	Tea (Recipe Sub-Group)	Excluded	
231C	Coffee (Recipe Sub-Group)	Excluded	
231D	Milk-Based Bev. (Milk Shakes, Malted Drink, Hot Cocoa, Instant Breakfast, Etc)	Excluded	NSS

Table 6: Recoding Categories according to NSS Name

NSS Code	NSS Name	Food Grouping
66	Milk, Dry Whole	Protein Foods (Animal)
113	Milk, Fluid, Whole, Pasteurized, Homogenized, 3.25% MF	Protein Foods (Animal)
123	Milk, Fluid, Whole, Producer, 3.7% MF	Protein Foods (Animal)
69	Milk, Fluid, Chocolate, Whole	Excluded
61	Milk, Fluid, Partly Skimmed, 2% MF	Protein Foods (Animal)
70	Milk, Fluid, Chocolate, Partly Skimmed, 2% MF	Excluded
63	Milk, Fluid, Partly Skimmed, 1% MF	Protein Foods (Animal)
404021	Milk, Fluid, Partly Skimmed, 1% MF, With 35% More Calcium	Protein Foods (Animal)
4711	Milk, Fluid, Chocolate, Partly Skimmed, 1% MF	Excluded
67	Milk, Dry, Buttermilk, Sweet Cream	Protein Foods (Animal)
124	Milk, Fluid, Buttermilk, Cultured, 1% MF	Protein Foods (Animal)
5487	Milk, Fluid, Buttermilk, Cultured, 2% MF	Protein Foods (Animal)
7024	Milk, Fluid, Buttermilk, Cultured, Whole	Protein Foods (Animal)

NSS Code	NSS Name	Food Grouping
55	Eggnog, 7% MF, Canadian Product, 4% To 8% MF	Excluded
6330	Plant-Based Beverage, Soy, Enriched, All Flavours, Unsweetened	Protein Foods (Plant)
6329	Plant-Based Beverage, Soy, Enriched, Chocolate	Excluded
6720	Plant-Based Beverage, Soy, Enriched, All Flavours	Excluded
5563	Cheese, Cream, Light	Excluded
28	Cheese, Cream	Excluded
5565	Cheese Spread, Cream Cheese Base, Flavoured	Excluded
504127	Dip, Cream Cheese Base	Excluded
504989	Shrimp Dip, Cream Cheese Base (Clam Dip, Crab Dip)	Excluded
500756	Sauce, Lobster	Excluded
501216	Sauce, Sesame	Excluded
502547	Gravy, Beef, Homemade	Excluded
502549	Gravy, Chicken, Homemade	Excluded
502551	Gravy, Pork, Homemade	Excluded
504180	Sauce, Mustard	Excluded
504188	Sauce, Pesto	Excluded
504308	Sauce, Alfredo	Excluded
504403	Sauce, Horseradish	Excluded
504486	Sauce, Peanut	Excluded
504754	Rosé Sauce	Excluded
504420	Sauce, Lemon-Butter	Excluded
501117	Gravy, Meat, With Wine	Excluded
501120	Gravy, Giblet (Any Poultry Gravy With Pieces Of Meat)	Excluded
501121	Gravy Or Sauce, Chinese (Soy Sauce, Stock Or Bouillon, Cornstarch)	Excluded
501182	Sauce, Black Bean	Excluded
501195	Sauce, Miso	Excluded
502685	Gravy, Dehydrated, Au Jus, Made With Water	Excluded
502687	Gravy, Dehydrated, Chicken, Made With Water	Excluded
502688	Gravy, Dehydrated, Mushroom, Made With Water	Excluded
502689	Gravy, Dehydrated, Onion, Made With Water	Excluded
502690	Gravy, Dehydrated, Pork, Made With Water	Excluded
502691	Gravy, Dehydrated, Turkey, Made With Water	Excluded

NSS Code	NSS Name	Food Grouping
502692	Gravy, Dehydrated, Unspecified, Made With Water	Excluded
500095	Sauce, White (Milk Sauce)	Excluded
502678	Sauce, Dehydrated, Curry, Milk Added	Excluded
504270	Sauce, Cheese	Excluded
502377	Sugar, Cinnamon	Excluded
502378	Sugar Replacement Or Substitute, Saccharin-Based, Liquid	Excluded
502379	Syrup, NFS	Excluded
502380	Cane And Corn Syrup	Excluded
502381	Buttered Blends Syrup	Excluded
502382	Sugar (White) And Water Syrup (Simple Syrup)	Excluded
502383	Sugar (Brown) And Water Syrup	Excluded
502386	Topping, Peanut Butter, Thick, Fudge Type	Excluded
502395	Guava Paste	Excluded
504587	Topping, Butterscotch Or Caramel	Excluded
505175	Fruit Syrup (Strawberry, Blueberry)	Excluded
505176	Topping, Dietetic	Excluded
502390	Sauce, Fruit (All Fruits)	Excluded
504448	Milk, NFS	Protein Foods (Animal)
59	Dessert Topping (Non Dairy), Pressurized	Excluded
60	Dessert Topping (Non Dairy), Frozen, Semisolid	Excluded
4230	Dessert, Gelatin Dry Mix, Prepared With Water	Excluded
5464	Dessert Topping (Non Dairy), Frozen, Low Fat	Excluded
5560	Whipped Cream Substitute, Dietetic, Powder, Prepared	Excluded
6309	Cream, Substitute, Flavoured, Liquid	Excluded
6640	Dessert Topping (Non Dairy), Powdered, Prepared With 2% Milk	Excluded
1025	Sauce, Salsa, Ready-To-Serve	Vegetables & Fruit
285	Babyfood, Cereal, Mixed Grain, Dry	Whole Grains
291	Babyfood, Cereal, Oat, Dry	Whole Grains
394	Babyfood, Cereal, Rice, Dry	Whole Grains
7557	Babyfood, Cereal, Wheat, Dry	Whole Grains
404194	Babyfood, Babyfood Product, Toddler Snacks Puffs, All Flavours	Other Foods
404195	Babyfood, Babyfood Product, Toddler Snacks Crunchies, All Flavours	Other Foods

NSS Code	NSS Name	Food Grouping
404198	Babyfood, Babyfood Product, Toddler Snacks Yogourt Melts, All Flavours	Other Foods
404199	Babyfood, Babyfood Product, Toddler Snacks Fruit And Veggie Melts, All Flavours	Other Foods
4727	Sauce, Plum, Ready-To-Serve	Excluded
56	Coffee Whitener (Non Dairy), Liquid	Excluded
5465	Coffee Whitener (Non Dairy), Powdered, Light	Excluded
5470	Coffee Whitener, Liquid, Light	Excluded
122	Coffee Whitener (Non Dairy), Powdered	Excluded
7477	Beverage Mix, Chocolate Flavour, Powder, No Added Sugar, With 2% MF Milk	Excluded

Appendix C – Data Tables

Table 7: Percent Contributions of Food Groupings to Total Daily Food Volume Intake, Ontario and Canada, one year and older

Food Grouping	Percent Contribution (95% CI) Ontario (n=4,221)	Percent Contribution (95% CI) Canada (n=20,456)
Vegetables and Fruits	29.1% (27.5%, 30.8%)	28.9% (28.2%, 29.6%)
Animal Protein Foods	20.2% (19.5%, 20.8%)	20.2% (19.8%, 20.6%)
Plant-based Protein Foods	1.7% (1.5%, 1.9%)	1.6% (1.5%, 1.8%)
Whole Grain Foods	8.0% (6.9%, 9.1%)	7.3% (6.8%, 7.9%)
Non-Whole Grain Foods	23.6% (22.6%, 24.7%)	24.1% (23.5%, 24.6%)
Other Foods	17.4% (14.6%, 20.3%)	17.8% (16.6%, 18.9%)

CI: Confidence Interval. Animal-based Protein Foods and Plant-based Protein Foods together make up the Food Grouping Protein Foods. Based on a single 24 hour recall. Source: *Canadian Community Health Survey (CCHS) - Nutrition, 2015*

Table 8a: Top Five Sources of Vegetable and Fruits Consumed by Percent Contribution of Food Volume, Ontario, one year and older

Top Vegetable and Fruits Consumed	Percent Contributions (95% CI) (n=3,984)
Salads	14.0% (11.7%, 16.2%)
Apple	12.1% (10.9%, 13.3%)
Tomatoes	7.2% (6.3%, 8.0%)
Banana	6.7% (5.9%, 7.5%)
Lettuces And Leafy Greens	5.8% (4.9%, 6.7%)

Note: CI = Confidence Interval. Based on a single 24 hour recall. *Source: Canadian Community Health Survey (CCHS) - Nutrition, 2015*

Table 8b: Top Five Sources of Protein Foods Consumed by Percent Contribution of Food Volume, Ontario, one year and older

Top Protein Foods Consumed	Percent Contributions (95% CI) (n=4,139)
Milk, 2%	18.0% (15.4%, 20.6%)
Chicken, Meat Only	11.9% (9.7%, 14.1%)
Milk, 1%	7.7% (5.7%, 9.8%)
Beef, Ground	◊ *6.7% (3.9%, 9.6%)*
Egg	4.6% (3.7%, 5.4%)

Note: ◊=Interpret with caution due to coefficient of variation between 0.166 and 0.333. CI = Confidence Interval. Based on a single 24 hour recall. *Source: Canadian Community Health Survey (CCHS) - Nutrition, 2015.*

Table 8c: Top Five Sources of Whole Grain Foods Consumed by Percent Contribution of Food Volume, Ontario, one year and older

Top Whole Grain Foods Consumed	Percent Contributions (95% CI) (n=1,900)
Whole Grain Bread	40.8% (34.5%, 47.0%)
Whole Grain Breakfast Cereals	23.8% (16.7%, 30.8%)
Rolls, Bagels, Pita, etc.	§
Plain Popcorn And Pretzels	§
Rice	◊ *6.3% (2.7%, 9.9%)*

Note: §=Suppressed due to coefficient of variation above 0.333. ◊=Interpret with caution due to coefficient of variation between 0.166 and 0.333. CI = Confidence Interval. Based on a single 24 hour recall. *Source: Canadian Community Health Survey (CCHS) - Nutrition, 2015.*

Table 8d: Top Five Sources of Non-Whole Grain Foods Consumed by Percent Contribution of Food Volume, Ontario, one year and older

Top Non-Whole Grain Foods Consumed	Percent Contributions (95% CI) (n=3,838)
White Bread	23.8% (20.3%, 27.2%)
Rolls, Bagels, Pita, etc.	19.4% (16.8%, 21.9%)
Rice	12.5% (8.4%, 16.6%)
Pasta	10.4% (8.7%, 12.0%)
Cereal Grains And Flours	5.0% (4.0%, 6.0%)

Note: CI = Confidence Interval. Based on a single 24 hour recall. *Source: Canadian Community Health Survey (CCHS) - Nutrition, 2015.*

Table 8e: Top Five Sources of Other Foods Consumed by Percent Contribution of Food Volume, Ontario, one year and older

Top Other Foods Consumed	Percent Contribution (95% CI) (n=3,509)
French fries	11.9% (9.3%, 14.5%)
Potato Chips	11.5% (9.1%, 13.8%)

Top Other Foods Consumed	Percent Contribution (95% CI) (n=3,509)
Salty And High-Fat Snacks	◊ *7.4% (5.3%, 9.6%)*
Muffins	6.2% (4.9%, 7.5%)
Chicken	◊ *5.8% (2.5%, 9.0%)*

Note: ◊=Interpret with caution due to coefficient of variation between 0.166 and 0.333. CI = Confidence Interval. Based on a single 24 hour recall. *Source: Canadian Community Health Survey (CCHS) - Nutrition, 2015.*

Table 8: Top Five Sources of Plant-based Protein Foods by Percent Contribution of Food Volume, Ontario, one year and older

Plant-based Protein Food Type	Percent Contribution (95% CI)
Legumes	39.5% (29.6%, 49.4%)
Nuts	21.2% (15.8%, 26.6%)
Peanut Butter And Other Nut Spreads	10.4% (7.3%, 13.4%)
Foods Made With Vegetable Proteins (Tofu)	◊ *10.2% (5.8%, 14.6%)*
Seeds	◊ *6.5% (2.4%, 10.5%)*

Note: ◊=Interpret with caution due to coefficient of variation between 0.166 and 0.333. CI= confidence interval. Based on a single 24 hour recall. *Source: Canadian Community Health Survey (CCHS) - Nutrition, 2015*

Table 9: Percent Contribution of Food Groupings to Total Daily Food Volume Intake by Age, Ontario, one years and older

Food Grouping	1-6 year olds, Percent Contribution (95% CI) (n=381)	7-12 year olds, Percent Contribution (95% CI) (n=378)	13-17 year olds, Percent Contribution (95% CI) (n=400)	18-64 year olds, Percent Contribution (95% CI) (n=2,225)
Vegetables and Fruits	24.8% (22.3%, 27.3%)	21.8% (19.6%, 24.0%)	22.3% (19.2%, 25.4%)	30.1% (28.2%, 32.0%)
Animal-based Protein Foods	29.6% (27.3%, 31.8%)	18.9% (16.8%, 20.9%)	22.2% (18.9%, 25.6%)	19.6% (18.7%, 20.6%)
Plant-based Protein Foods	0.9% (0.4%, 1.4%)	0.9% (0.4%, 1.4%)	◊ *1.3%* *(0.8%, 1.8%)*	1.9% (1.6%, 2.3%)
Whole Grain Foods	7.0% (5.6%, 8.4%)	6.2% (4.1%, 8.4%)	7.7% (6.0%, 9.4%)	7.7% (6.2%, 9.2%)
Non-Whole Grain Foods	21.9% (19.3%, 24.5%)	26.7% (23.2%, 30.1%)	25.7% (21.9%, 29.4%)	23.8% (22.4%, 25.2%)
Other Foods	15.8% (13.6%, 18.1%)	25.5% (22.7%, 28.3%)	20.8% (15.6%, 25.9%)	16.9% (13.7%, 20.1%)

Note: ◊=Interpret with caution due to coefficient of variation between 0.166 and 0.333. CI=Confidence Interval. Based on a single 24 hour recall. *Source: Canadian Community Health Survey (CCHS) - Nutrition, 2015*

Figure 14: Percent Contribution of Food Groupings to Total Daily Food Volume Intake by Age, Ontario, one years and older

Note: Based on a single 24 hour recall. *Source: Canadian Community Health Survey (CCHS) - Nutrition, 2015*

Table 11a: Top Five Sources of Vegetables and Fruits by Percent Contribution of Food Volume by Age Group, Ontario, 1-6 year olds

Top Vegetable and Fruits Consumed by Age Group 1-6 year olds	Percent Contributions (95% CI) (n=368)
Apple	21.4% (15.5%, 7.2%)
Banana	◊ *9.7% (6.5%, 12.9%)*
Tomatoes	7.4% (5.3%, 9.6%)
Other Fruit	◊ *6.3% (3.7%, 8.8%)*
Grapes And Raisins	◊ *5.9% (3.7%, 8.1%)*

Note: ◊=Interpret with caution due to coefficient of variation between 0.166 and 0.333. CI = Confidence Interval. Based on a single 24 hour recall. *Source: Canadian Community Health Survey (CCHS) - Nutrition, 2015.*

Table 11b: Top Five Sources of Vegetables and Fruits by Percent Contribution of Food Volume by Age Group, Ontario, 7-12 year olds

Top Vegetable and Fruits Consumed by Age Group 7-12 year olds	Percent Contributions (95% CI) (n=354)
Apple	20.6% (15.8%, 5.4%)
Tomatoes	8.1% (6.2%, 10.0%)
Banana	6.8% (4.7%, 8.9%)
Lettuces And Leafy Greens	◊ *6.4% (2.8%, 10.1%)*
Other Veg	§

Note: §=Suppressed due to coefficient of variation above 0.333. ◊=Interpret with caution due to coefficient of variation between 0.166 and 0.333. CI = Confidence Interval. Based on a single 24 hour recall. *Source: Canadian Community Health Survey (CCHS) - Nutrition, 2015*

Table 11c: Top Five Sources of Vegetables and Fruits by Percent Contribution of Food Volume by Age Group, Ontario, 13-17 year olds

Top Vegetable and Fruits Consumed by Age Group 13-17 year olds	Percent Contributions (95% CI) (n=376)
Apple	◊ *19.5% (13.6%, 5.5%)*
Melons	§
Salads	◊ *9.8% (4.9%, 14.7%)*
Tomatoes	◊ *7.5% (4.7%, 10.3%)*
Banana	◊ *5.7% (3.4%, 8.0%)*

Note: §=Suppressed due to coefficient of variation above 0.333. ◊=Interpret with caution due to coefficient of variation between 0.166 and 0.333. CI = Confidence Interval. Based on a single 24 hour recall. *Source: Canadian Community Health Survey (CCHS) - Nutrition, 2015*

Table 11d: Top Five Sources of Vegetables and Fruits by Percent Contribution of Food Volume by Age Group, Ontario, 18-64 year olds

Top Vegetable and Fruits Consumed by Age Group 18-64 year olds	Percent Contributions (95% CI) (n=2,088)
Salads	14.4% (11.4%, 7.3%)
Apple	10.7% (9.5%, 11.9%)
Tomatoes	7.6% (6.4%, 8.7%)
Lettuces And Leafy Greens	6.8% (5.5%, 8.1%)
Banana	6.3% (5.5%, 7.2%)

Note: CI = Confidence Interval. Based on a single 24 hour recall. *Source: Canadian Community Health Survey (CCHS) - Nutrition, 2015*

Table 11e: Top Five Sources of Vegetables and Fruits by Percent Contribution of Food Volume by Age Group, Ontario, 65 years and older

Top Vegetable and Fruits Consumed by Age Group 65 years and older	Percent Contributions (95% CI) (n=798)
Salads	18.4% (14.5%, 22.3%)
Apple	10.1% (8.0%, 12.2%)
Banana	7.8% (5.4%, 10.1%)
Potato	7.2% (5.0%, 9.3%)
Other Veg	◊ *5.8% (2.9%, 8.6%)*

Note: ◊=Interpret with caution due to coefficient of variation between 0.166 and 0.333. CI = Confidence Interval. Based on a single 24 hour recall. *Source: Canadian Community Health Survey (CCHS) - Nutrition, 2015*

Table 10: Distribution of Protein Food Type Intake by Volume by Age Group, Ontario, one year and older

Protein Food Type	All ages, Proportion of Intake (95% CI) (n=4,221)	1-6 year olds, Proportion of Intake (95% CI) (n=381)	7-12 year olds, Proportion of Intake (95% CI) (n=379)	13-17 year olds, Proportion of Intake (95% CI) (n=400)	18-64 year olds, Proportion of Intake (95% CI) (n=2,225)	65 years and older, Proportion of Intake (95% CI) (n=837)
Cow's Milk	34.8% (32.6%, 37.0%)	62.4% (57.8%, 67.0%)	52.8% (48.0%, 57.6%)	44.7% (37.3%, 52.0%)	27.9% (25.4%, 30.4%)	37.9% (27.8%, 48.0%)
Red Meat	16.4% (12.9%, 19.9%)	◊ *5.8% (3.4%, 8.3%)*	10.4% (7.0%, 13.8%)	14.7% (10.2%, 19.2%)	18.3% (13.8%, 22.7%)	17.3% (13.9%, 20.7%)
Poultry	16.3% (14.4%, 18.3%)	6.0% (4.0%, 8.0%)	9.6% (6.8%, 12.5%)	◊ *17.8% (12.4%, 23.2%)*	19.2% (16.7%, 21.6%)	◊ *11.6% (6.5%, 16.6%)*
Dairy Other	13.6% (12.3%, 14.8%)	16.8% (14.0%, 19.6%)	15.4% (1.7%, 19.1%)	11.1% (8.2%, 13.9%)	13.4% (11.6%, 15.2%)	13.1% (11.1%, 15.0%)

Protein Food Type	All ages, Proportion of Intake (95% CI) (n=4,221)	1-6 year olds, Proportion of Intake (95% CI) (n=381)	7-12 year olds, Proportion of Intake (95% CI) (n=379)	13-17 year olds, Proportion of Intake (95% CI) (n=400)	18-64 year olds, Proportion of Intake (95% CI) (n=2,225)	65 years and older, Proportion of Intake (95% CI) (n=837)
Plant Protein Foods	7.7% (6.6%, 8.8%)	◊ *2.9% (1.4%, 4.4%)*	◊ *4.6% (2.5%, 6.8%)*	◊ *5.6% (3.5%, 7.6%)*	9.0% (7.0%, 10.9%)	◊ *7.3% (3.5%, 11.2%)*
Eggs	6.1% (5.3%, 6.8%)	◊ *2.6% (1.6%, 3.5%)*	4.2% (3.0%, 5.4%)	◊ *4.5% (3.0%, 6.0%)*	6.7% (5.5%, 7.9%)	6.7% (4.8%, 8.6%)
Seafood	4.9% (3.4%, 6.3%)	◊ *3.3% (1.1%, 5.4%)*	§	◊ *1.5% (0.6%, 2.4%)*	◊ *5.4% (3.3%, 7.6%)*	◊ *5.7% (3.4%, 8.0%)*

Note: §=Suppressed due to coefficient of variation above 0.333. ◊=Interpret with caution due to coefficient of variation between 0.166 and 0.333. CI= Confidence Interval. *Source: Canadian Community Health Survey (CCHS) - Nutrition, 2015*

Table 13a: Top Five Sources of Protein Foods by Percent Contribution of Food Volume by Age Group, Ontario, 1-6 year olds

Top Protein Foods Consumed by Age Group 1-6 year olds	Percent Contributions (95% CI) (n=379)
Cow's Milk, 2%	27.4% (21.9%, 2.9%)
Cow's Milk, Whole	◊ *19.4% (13.4%, 25.5%)*
Cow's Milk, 1%	◊ *13.4% (6.3%, 20.5%)*
Yogourts , >2.1% BF	9.4% (7.0%, 11.8%)
Chicken, Meat Only	4.5% (3.0%, 5.9%)

Note: ◊=Interpret with caution due to coefficient of variation between 0.166 and 0.333. CI=Confidence Interval. Based on a single 24 hour recall. *Source: Canadian Community Health Survey (CCHS) - Nutrition, 2015*

Table 13b: Top Five Sources of Protein Foods by Percent Contribution of Food Volume by Age Group, Ontario, 7-12 year olds

Top Protein Foods Consumed by Age Group 7-12 year olds	Percent Contributions (95% CI) (n=371)
Cow's Milk, 2%	29.0% (22.1%, 6.0%)
Cow's Milk, 1%	◊ *14.8% (8.7%, 20.9%)*
Chicken, Meat Only	◊ *7.0% (4.7%, 9.4%)*
Yogourts , >2.1% BF	◊ *6.1% (3.0%, 9.1%)*
Cheese, 10% BF To 25% BF	◊ *4.9% (3.0%, 6.8%)*

Note: ◊=Interpret with caution due to coefficient of variation between 0.166 and 0.333. CI=Confidence Interval. Based on a single 24 hour recall. *Source: Canadian Community Health Survey (CCHS) - Nutrition, 2015*

Table 13c: Top Five Sources of Protein Foods by Percent Contribution of Food Volume by Age Group, Ontario, 13-17 year olds

Top Protein Foods Consumed by Age Group 13-17 year olds	Percent Contributions (95% CI) (n=389)
Cow's Milk, 2%	◊ *24.5% (14.9%, 4.2%)*
Chicken, Meat Only	◊ *13.4% (7.9%, 18.9%)*
Cow's Milk, 1%	◊ *10.7% (6.8%, 14.7%)*
Cheese, 10%-25% BF	◊ *4.4% (2.8%, 6.1%)*
Beef, Ground	◊ *4.4% (2.4%, 6.3%)*

Note: ◊=Interpret with caution due to coefficient of variation between 0.166 and 0.333. CI=Confidence Interval. Based on a single 24 hour recall. *Source: Canadian Community Health Survey (CCHS) - Nutrition, 2015*

Table 13d: Top Five Sources of Protein Foods by Percent Contribution of Food Volume by Age Group, Ontario, 16-64 year olds

Top Protein Foods Consumed by Age Group 16-64 year olds	Percent Contributions (95% CI) (n=2,177)
Cow's Milk, 2%	14.6% (10.9%, 18.2%)
Chicken, Meat Only	14.2% (11.4%, 17.0%)
Beef, Ground	◊ *7.7% (4.2%, 11.1%)*
Cow's Milk, 1%	◊ *5.9% (3.9%, 7.9%)*
Egg	5.1% (3.9%, 6.2%)

Note: ◊=Interpret with caution due to coefficient of variation between 0.166 and 0.333. CI=Confidence Interval. Based on a single 24 hour recall. *Source: Canadian Community Health Survey (CCHS) - Nutrition, 2015*

Table 13e: Top Five Sources of Protein Foods by Percent Contribution of Food Volume by Age Group, Ontario, 65 years and older

Top Protein Foods Consumed by Age Group 65 years and older	Percent Contributions (95% CI) (n=823)
Cow's Milk, 2%	◊ *20.3% (14.1%, 26.5%)*
Cow's Milk, 1%	◊ *8.2% (5.1%, 11.4%)*
Chicken, Meat Only	◊ *7.1% (3.6%, 10.6%)*
Beef, Ground	§
Cow's Milk, Skim	◊ *5.8% (3.5%, 8.1%)*

Note: §=Suppressed due to coefficient of variation above 0.333. ◊=Interpret with caution due to coefficient of variation between 0.166 and 0.333. CI=Confidence Interval. Based on a single 24 hour recall. *Source: Canadian Community Health Survey (CCHS) - Nutrition, 2015*

Table 14a: Top Five Sources of Whole Grain Foods by Percent Contribution of Food Volume by Age Group, Ontario, 1-6 year olds

Top Whole Grain Foods Consumed by Age Group 1-6 year olds	Percent Contributions (95% CI) (n=211)
Whole Grain Bread	40.6% (27.4%, 53.8%)
Whole Grain Breakfast Cereals	◊ *32.2% (19.3%, 45.1%)*
Breakfast Cereal (Other)	◊ *9.6% (4.8%, 14.5%)*
Plain Popcorn And Pretzels	§
Rice	§

Note: §=Suppressed due to coefficient of variation above 0.333. ◊=Interpret with caution due to coefficient of variation between 0.166 and 0.333. CI=Confidence Interval. Based on a single 24 hour recall. *Source: Canadian Community Health Survey (CCHS) - Nutrition, 2015*

Table 14b: Top Five Sources of Whole Grain Foods by Percent Contribution of Food Volume by Age Group, Ontario, 7-12 year olds

Top Whole Grain Foods Consumed by Age Group 7-12 year olds	Percent Contributions (95% CI) (n=170)
Whole Grain Bread	◊ *41.2% (28.7%, 53.8%)*
Whole Grain Breakfast Cereals	19.2% (12.9%, 25.4%)
Rolls, Bagels, Pita, etc.	§
Breakfast Cereal (Other)	◊ *9.1% (5.1%, 13.0%)*
Plain Popcorn And Pretzels	§

Note: §=Suppressed due to coefficient of variation above 0.333. ◊=Interpret with caution due to coefficient of variation between 0.166 and 0.333. CI=Confidence Interval. Based on a single 24 hour recall. *Source: Canadian Community Health Survey (CCHS) - Nutrition, 2015*

Table 14c: Top Five Sources of Whole Grain Foods by Percent Contribution of Food Volume by Age Group, Ontario, 13-17 year olds

Top Whole Grain Foods Consumed by Age Group 13-17 year olds	Percent Contributions (95% CI) (n=162)
Whole Grain Bread	◊ *32.5% (20.4%, 44.5%)*
Whole Grain Breakfast Cereals	◊ *20.8% (11.3%, 30.3%)*
Breakfast Cereal (Other)	§
Rolls, Bagels, Pita, etc.	◊ *12.8% (4.6%, 21.0%)*
Salty And High-Fat Snacks	§

Note: §=Suppressed due to coefficient of variation above 0.333. ◊=Interpret with caution due to coefficient of variation between 0.166 and 0.333. CI=Confidence Interval. Based on a single 24 hour recall. *Source: Canadian Community Health Survey (CCHS) - Nutrition, 2015*

Table 14d: Top Five Sources of Whole Grain Foods by Percent Contribution of Food Volume by Age Group, Ontario, 18-64 year olds

Top Whole Grain Foods Consumed by Age Group 18-64 year olds	Percent Contributions (95% CI) (n=902)
Whole Grain Bread	38.9% (29.1%, 48.6%)
Whole Grain Breakfast Cereals	◊ *22.9% (13.3%, 32.5%)*
Rolls, Bagels, Pita, etc.	§
Rice	◊ *8.3% (4.3%, 12.3%)*
Plain Popcorn And Pretzels	§

Note: §=Suppressed due to coefficient of variation above 0.333. ◊=Interpret with caution due to coefficient of variation between 0.166 and 0.333. CI=Confidence Interval. Based on a single 24 hour recall. *Source: Canadian Community Health Survey (CCHS) - Nutrition, 2015*

Table 14e: Top Five Sources of Whole Grain Foods by Percent Contribution of Food Volume by Age Group, Ontario, 65 years and older

Top Whole Grain Foods Consumed by Age Group 65 years and older	Percent Contributions (95% CI) (n=455)
Whole Grain Bread	◊ *49.1% (42.0%, 56.3%)*
Whole Grain Breakfast Cereals	◊ *26.5% (18.6%, 34.5%)*
Rolls, Bagels, Pita, etc.	§
Plain Popcorn And Pretzels	§
Rice	§

Note: §=Suppressed due to coefficient of variation above 0.333. ◊=Interpret with caution due to coefficient of variation between 0.166 and 0.333. CI=Confidence Interval. Based on a single 24 hour recall. *Source: Canadian Community Health Survey (CCHS) - Nutrition, 2015*

Table 15a: Top Five Sources of Non-Whole Grain Foods by Percent Contribution of Food Volume by Age Group, Ontario, 1-6 year olds

Top Non-Whole Grain Foods Consumed by Age Group 1-6 year olds	Percent Contributions (95% CI) (n=354)
White Bread	◊ *22.5% (15.3%, 29.6%)*
Pasta	◊ *15.7% (8.6%, 22.9%)*
Rice	14.1% (8.9%, 19.3%)
Breakfast Cereal (Other)	◊ *12.5% (6.8%, 18.2%)*
Rolls, Bagels, Pita etc.	◊ *8.7% (5.4%, 11.9%)*

Note: ◊=Interpret with caution due to coefficient of variation between 0.166 and 0.333. CI=Confidence Interval Based on a single 24 hour recall. *Source: Canadian Community Health Survey (CCHS) - Nutrition, 2015*

Table 15b: Top Five Sources of Non-Whole Grain Foods by Percent Contribution of Food Volume by Age Group, Ontario, 7-12 year olds

Top Non-Whole Grain Foods Consumed by Age Group 7-12 year olds	Percent Contributions (95% CI) (n=368)
White Bread	◊ *22.5% (14.0%, 31.0%)*
Rolls, Bagels, Pita, etc	◊ *20.3% (12.9%, 27.8%)*
Rice	◊ *11.8% (7.7%, 15.8%)*
Pasta	◊ *9.6% (6.5%, 12.8%)*
Breakfast Cereal (Other)	◊ *7.3% (3.3%, 11.3%)*

Note: ◊=Interpret with caution due to coefficient of variation between 0.166 and 0.333. CI=Confidence Interval Based on a single 24 hour recall. *Source: Canadian Community Health Survey (CCHS) - Nutrition, 2015*

Table 15c: Top Five Sources of Non-Whole Grain Foods by Percent Contribution of Food Volume by Age Group, Ontario, 13-17 year olds

Top Non-Whole Grain Foods Consumed by Age Group 13-17 year olds	Percent Contributions (95% CI) (n=380)
Rolls, Bagels, Pita, etc.	20.3% (14.8%, 25.9%)
White Bread	◊ *19.0% (12.8%, 25.3%)*
Rice	14.1% (9.8%, 18.5%)
Pasta	◊ *11.2% (7.5%, 15.0%)*
Breakfast Cereal (Other)	◊ *9.0% (5.7%, 12.3%)*

Note: ◊=Interpret with caution due to coefficient of variation between 0.166 and 0.333. CI=Confidence Interval Based on a single 24 hour recall. *Source: Canadian Community Health Survey (CCHS) - Nutrition, 2015*

Table 15d: Top Five Sources of Non-Whole Grain Foods by Percent Contribution of Food Volume by Age Group, Ontario, 18-64 year olds

Top Non-Whole Grain Foods Consumed by Age Group 18-64 year olds	Percent Contributions (95% CI) (n=1,996)
White Bread	24.1% (18.7%, 29.6%)
Rolls, Bagels, Pita, etc.	20.2% (17.2%, 23.2%)
Rice	◊ *13.2% (7.9%, 18.5%)*
Pasta	10.6% (8.8%, 12.5%)
Cereal Grains And Flours	5.1% (3.6%, 6.7%)

Note: ◊=Interpret with caution due to coefficient of variation between 0.166 and 0.333. CI=Confidence Interval. Based on a single 24 hour recall. *Source: Canadian Community Health Survey (CCHS) - Nutrition, 2015*

Table 15e: Top Five Sources of Non-Whole Grain Foods by Percent Contribution of Food Volume by Age Group, Ontario, 65 years and older

Top Non-Whole Grain Foods Consumed by Age Group 65 years and older	Percent Contributions (95% CI) (n=740)
White Bread	25.6% (20.2%, 31.1%)
Rolls, Bagels, Pita, etc.	18.5% (13.4%, 23.6%)
Rice	§
Whole Wheat Breads	◊ *7.7% (4.7%, 10.7%)*
Whole Grain Breakfast Cereals	◊ *7.7% (4.0%, 11.3%)*

Note: §=Suppressed due to coefficient of variation above 0.333. ◊=Interpret with caution due to coefficient of variation between 0.166 and 0.333. CI=Confidence Interval. Based on a single 24 hour recall. *Source: Canadian Community Health Survey (CCHS) - Nutrition, 2015*

Table 16a: Top Five Sources of Other Foods by Percent Contribution of Food Volume, by Age Group, Ontario, 1-6 year olds

Top Other Foods by Age Group 1-6 year olds	Percent Contribution (95% CI) (n=350)
Cookies, Commercial	◊ *8.7% (5.3%, 12.1%)*
Potato Chips	§
Crackers And Crispbreads	◊ *6.8% (4.2%, 9.3%)*
Salty And High-Fat Snacks	§
Macaroni	◊ *6.1% (2.9%, 9.2%)*

Note: §=Suppressed due to coefficient of variation above 0.333. ◊=Interpret with caution due to coefficient of variation between 0.166 and 0.333. CI=Confidence Interval. Based on a single 24 hour recall. *Source: Canadian Community Health Survey (CCHS) - Nutrition, 2015*

Table 16b: Top Five Sources of Other Foods by Percent Contribution of Food Volume, by Age Group, Ontario, 7-12 year olds

Top Other Foods by Age Group 7-12 year olds	Percent Contribution (95% CI) (n=361)
Salty And High-Fat Snacks	◊ *14.6% (7.3%, 21.9%)*
Potato Chips	§
Ice Cream	◊ *7.4% (4.7%, 10.1%)*
Croissants	§
French Fries	◊ *5.6% (2.4%, 8.9%)*

Note: §=Suppressed due to coefficient of variation above 0.333. ◊=Interpret with caution due to coefficient of variation between 0.166 and 0.333. CI=Confidence Interval. Based on a single 24 hour recall. *Source: Canadian Community Health Survey (CCHS) - Nutrition, 2015*

Table 16c: Top Five Sources of Other Foods by Percent Contribution of Food Volume, by Age Group, Ontario, 13-17year olds

Top Other Foods by Age Group 13-17 year olds	Percent Contribution (95% CI) (n=352)
Potato Chips	§
Salty And High-Fat Snacks	§
French Fries	◊ *11.8% (6.6%, 17.0%)*
Ice Cream	◊ *7.0% (2.7%, 11.3%)*
Chicken	◊ *4.6% (1.8%, 7.3%)*

Note: §=Suppressed due to coefficient of variation above 0.333. ◊=Interpret with caution due to coefficient of variation between 0.166 and 0.333. CI=Confidence Interval. Based on a single 24 hour recall. *Source: Canadian Community Health Survey (CCHS) - Nutrition, 2015*

Table 16d: Top Five Sources of Other Foods by Percent Contribution of Food Volume, by Age Group, Ontario, 18-64 year olds

Top Other Foods by Age Group 18-64 year olds	Percent Contribution (95% CI) (n=1,769)
French Fries	◊ *13.8% (10.4%, 17.2%)*
Potato Chips	◊ *11.5% (8.5%, 14.5%)*
Muffins	◊ *7.2% (5.1%, 9.3%)*
Chicken	§
Salty And High-Fat Snacks	◊ *6.3% (3.5%, 9.1%)*

Note: §=Suppressed due to coefficient of variation above 0.333. ◊=Interpret with caution due to coefficient of variation between 0.166 and 0.333. CI=Confidence Interval. Based on a single 24 hour recall. *Source: Canadian Community Health Survey (CCHS) - Nutrition, 2015*

Table 16e: Top Five Sources of Other Foods by Percent Contribution of Food Volume, by Age Group, Ontario, 65 years and older

Top Other Foods by Age Group 65 years and older	Percent Contribution (95% CI) (n=677)
French Fries	◊ *10.2% (6.3%, 14.2%)*
Potato Chips	§
Ice Cream	§
Muffins	◊ *5.6% (2.0%, 9.2%)*
Cakes	◊ *6.3% (3.5%, 9.1%)*

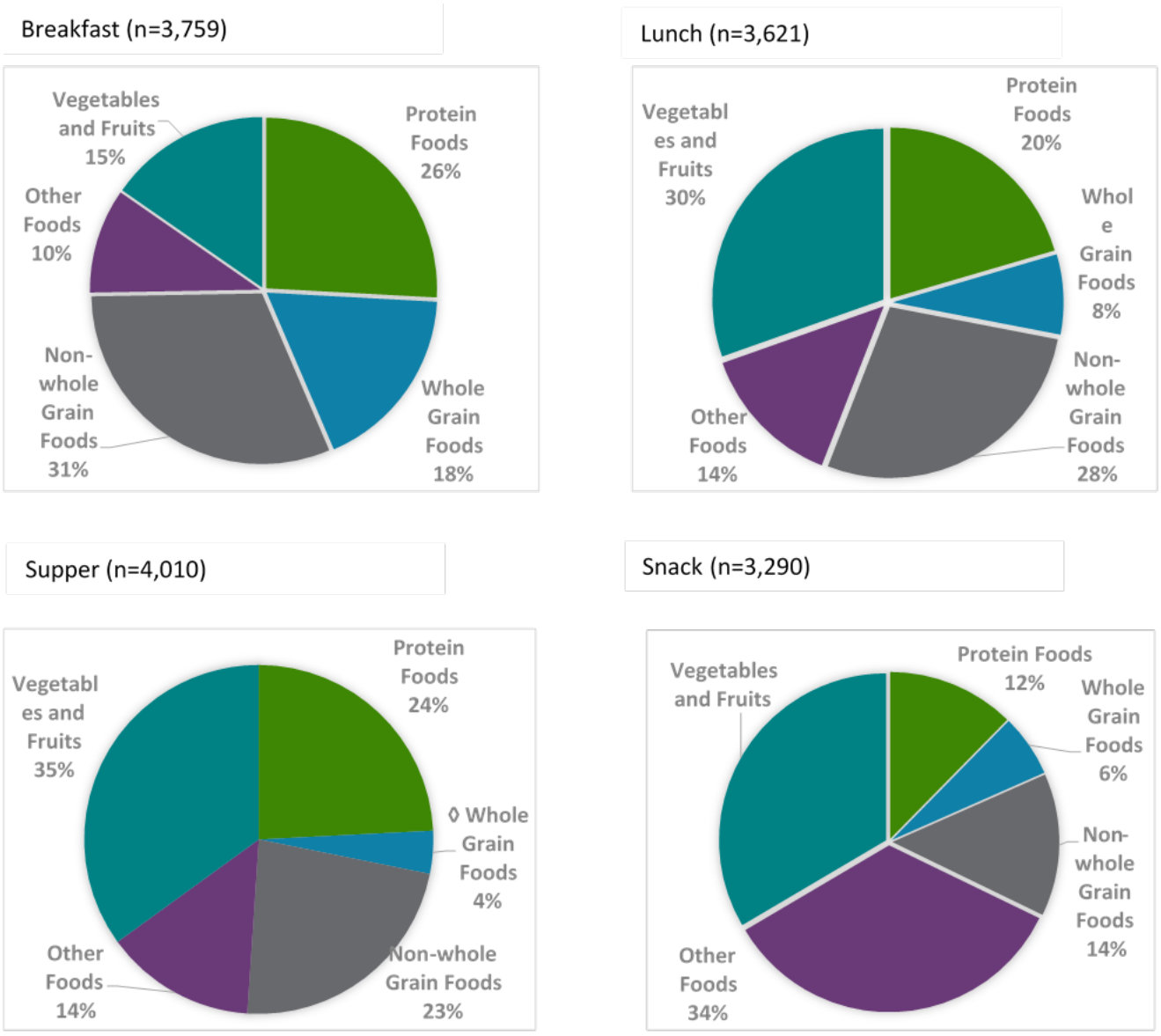
Note: §=Suppressed due to coefficient of variation above 0.333. ◊=Interpret with caution due to coefficient of variation between 0.166 and 0.333. CI=Confidence Interval. Based on a single 24 hour recall. *Source: Canadian Community Health Survey (CCHS) - Nutrition, 2015*

Table 11: Percent Contributions of Food Grouping to Total Food Volume Intake by Meal Occasion, Ontario, one years and older

Food Group	Breakfast, Percent Contribution (95% CI) (n=3,759)	Lunch, Percent Contribution (95% CI) (n=3,621)	Supper, Percent Contribution (95% CI) (n=4,010)	Snack, Percent Contribution (95% CI) (n=3,290)
Vegetables And Fruits	15.3% (13.6%, 17.1%)	30.4% (26.6%, 34.2%)	35.0% (33.2%, 36.8%)	33.5% (29.2%, 37.8%)
Animal-based Protein Foods	25.0% (23.5%, 26.5%)	18.6% (17.2%, 20.1%)	22.5% (21.4%, 23.6%)	10.0% (8.6%, 11.5%)
Plant-based Protein Foods	0.9% (0.6%, 1.2%)	1.8% (1.4%, 2.2%)	1.7% (1.2%, 2.1%)	2.3% (1.7%, 3.0%)
Whole Grain Foods	17.7% (15.5%, 19.9%)	7.6% (6.3%, 8.8%)	4.0% (2.0%, 5.9%)	6.0% (4.2%, 7.9%)
Non-Whole Grain Foods	31.2% (28.2%, 34.1%)	27.9% (26.2%, 29.6%)	22.9% (20.0%, 25.8%)	13.8% (12.0%, 15.6%)
Other Foods	9.9% (8.0%, 11.8%)	13.7% (11.0%, 16.3%)	14.0% (10.0%, 17.9%)	34.3% (30.6%, 38.1%)

Note: CI: Confidence Interval. Based on a single 24 hour recall. *Source: Canadian Community Health Survey (CCHS) - Nutrition, 2015*

Figure 15: Percent Contribution of Food Groupings to Total Food Volume Intake at Meal Occasions, Ontario, one year and older



Note: Based on a single 24 hour recall. *Source: Canadian Community Health Survey (CCHS) - Nutrition, 2015*

Table 12: Proportion of Population Who Reported Consuming Food at Meal Occasions by Age Group

Age Group	Breakfast/Brunch n (%)	Lunch n (%)	Supper n (%)	Snack n (%)
All respondents (n=4,221)	3,759 (89.1%)	3,621 (85.8%)	4,010 (95.0%)	3,290 (77.9%)
1-6 years (n=381)	371 (97.4%)	359 (94.2%)	368 (96.6%)	355 (93.2%)
7-12 years (n=378)	359 (95.0%)	344 (91.0%)	367 (97.1%)	353 (93.4%)
13-17 years (n=400)	351 (87.8%)	342 (85.5%)	371 (92.8%)	329 (82.3%)
18-64 years (n=2,225)	1,899 (85.3%)	1,862 (83.7%)	2,104 (94.6%)	1,649 (74.1%)
65 years and older (n=837)	779 (93.1%)	714 (85.3%)	800 (95.6%)	604 (72.2%)

Note: Based on a single 24 hour recall. *Source: Canadian Community Health Survey (CCHS) - Nutrition, 2015*

Table 13: Proportion of Population Who Reported Consuming Any Food Grouping By Meal Occasion

Food Group	Breakfast, n (%) (n=3,759)	Lunch, n (%) (n=3,621)	Supper, n (%) (n=4,010)	Snack, n (%) (n=3,290)
Vegetables and Fruits	1,289 (34.3%)	2,526 (69.8%)	3,243 (80.9%)	1,875 (57.0%)
Protein Foods	2,764 (73.5%)	2,718 (75.1%)	3,349 (83.52%)	1,529 (46.5%)
Whole Grain Foods	1,295 (34.5%)	527 (14.6%)	413 (10.3%)	313 (9.5%)
Non-Whole Grain Foods	1,847 (49.1%)	2,349 (64.9%)	2,544 (63.4%)	993 (30.2%)
Other Foods	732 (19.5%)	1,606 (44.4%)	1,734 (43.2%)	2,197 (66.8%)

Note: Based on a single 24 hour recall. *Source: Canadian Community Health Survey (CCHS) - Nutrition, 2015*

Table 14: Percent Contribution of Vegetables and Fruit Intake to Total Food Volume Intake by Meal Occasion and Age Group, Ontario, one year and older

Age Group	Breakfast, Percent Contribution (95% CI)	Lunch, Percent Contribution (95% CI)	Supper, Percent Contribution (95% CI)	Snack, Percent Contribution (95% CI)
1-6 years	12.3% (8.5%, 16.2%)	◊ *24.7%* (18.4%, 31.0%)	29.9% (24.8%, 35.1%)	34.4% (29.3%, 39.6%)
7-12 years	9.3% (6.2%, 12.3%)	22.6% (17.1%, 28.0%)	25.0% (21.7%, 28.3%)	27.9% (22.8%, 32.9%)
13-17 years	◊ *11.7%* (7.3%, 16.0%)	21.3% (17.1%, 25.5%)	25.9% (20.7%, 31.2%)	28.5% (20.1%, 37.0%)
18-64 years	16.8% (13.5%, 20.1%)	31.4% (27.0%, 35.8%)	35.4% (33.1%, 37.7%)	33.9% (27.1%, 40.8%)
65 years and older	◊ *14.8%* (9.1%, 20.6%)	34.3% (29.1%, 39.6%)	41.4% (38.0%, 44.7%)	38.7% (32.7%, 44.7%)

Note: ◊=Interpret with caution due to coefficient of variation between 0.166 and 0.333. CI=confidence interval. Based on a single 24 hour recall. *Source: Canadian Community Health Survey (CCHS) - Nutrition, 2015*

Table 21a: Top Five Sources of Vegetables and Fruits by Percent Contribution of Food Volume at Breakfast, Ontario, one year and older

Top Vegetables and Fruits, Breakfast	Percent Contribution (95% CI) (n=1,289)
Banana	23.7% (17.5%, 30.0%)
Apple	§
Other Fruits	◊ *12.2% (8.4%, 16.0%)*
Citrus Fruits	◊ *7.8% (3.9%, 11.7%)*
Fruit Dish	§

Note: §=Suppressed due to coefficient of variation above 0.333. ◊=Interpret with caution due to coefficient of variation between 0.166 and 0.333. CI = Confidence Interval. Based on a single 24 hour recall. *Source: Canadian Community Health Survey (CCHS) - Nutrition, 2015*

Table 21b: Top Five Sources of Vegetables and Fruits by Percent Contribution of Food Volume at Lunch, Ontario, one year and older

Top Vegetables and Fruits, Lunch	Percent Contribution (95% CI) (n=2,526)
Salads	19.1% (13.9%, 24.3%)
Lettuces And Leafy Greens	11.0% (8.7%, 13.2%)
Tomatoes	9.5% (8.0%, 11.1%)
Apple	7.8% (6.1%, 9.5%)
Other Veg	◊ *6.5% (4.4%, 8.5%)*

Note: ◊=Interpret with caution due to coefficient of variation between 0.166 and 0.333. CI = Confidence Interval. Based on a single 24 hour recall. *Source: Canadian Community Health Survey (CCHS) - Nutrition, 2015*

Table 21c: Top Five Sources of Vegetables and Fruits by Percent Contribution of Food Volume at Supper, Ontario, one year and older

Top Vegetables and Fruits, Supper	Percent Contribution (95% CI) (n=3,243)
Salads	21.3% (18.1%, 24.5%)
Potato	10.1% (8.1%, 12.2%)
Tomatoes	9.9% (7.7%, 12.1%)
Other Veg	5.8% (4.8%, 6.8%)
Lettuces And Leafy Greens	5.5% (4.3%, 6.7%)

Note: CI = Confidence Interval. Based on a single 24 hour recall. *Source: Canadian Community Health Survey (CCHS) - Nutrition, 2015*

Table 21d: Top Five Sources of Vegetables and Fruits by Percent Contribution of Food Volume as a Snack, Ontario, one year and older

Top Vegetables and Fruits, Snack	Percent Contribution (95% CI) (n=1,875)
Apple	29.9% (26.8%, 33.0%)
Banana	12.2% (10.6%, 13.7%)
Citrus Fruit	8.8% (6.7%, 10.9%)
Melons	◊ *7.7% (3.3%, 12.1%)*
Other Fruit	◊ *6.7% (4.5%, 8.9%)*

Note: ◊=Interpret with caution due to coefficient of variation between 0.166 and 0.333. CI = Confidence Interval. Based on a single 24 hour recall. *Source: Canadian Community Health Survey (CCHS) - Nutrition, 2015*

Table 15: Percent Contribution of Animal-based Protein Food Intake to Total Food Volume Intake by Meal Occasion and Age Group, Ontario, one year and older

Age Group	Breakfast, Percent Contribution (95% CI)	Lunch, Percent Contribution (95% CI)	Supper, Percent Contribution (95% CI)	Snack, Percent Contribution (95% CI)
1-6 years	38.5% (32.7%, 44.3%)	19.4% (16.3%, 22.6%)	27.8% (95% CI: 23.7%, 31.9%)	20.3% (95% CI: 16.2%, 24.4%)
7-12 years	30.0% (25.3%, 34.8%)	13.8% (10.8%, 16.9%)	23.4% (20.3%, 26.5%)	9.0% (5.6%, 12.4%)
13-17 years	29.9% (25.4%, 34.4%)	19.2% (15.1%, 23.2%)	26.6% (21.9%, 31.2%)	§
18-64 years	23.3% (21.1%, 25.6%)	19.5% (17.6%, 21.3%)	22.1% (20.7%, 23.6%)	9.3% (7.7%, 11.0%)
65 years and older	22.3% (18.2%, 26.5%)	16.7% (14.5%, 18.9%)	20.8% (18.6%, 23.0%)	8.0% (6.2%, 9.7%)

Note: §=Suppressed due to coefficient of variation above 0.333. CI=confidence interval. Based on a single 24 hour recall. *Source: Canadian Community Health Survey (CCHS) - Nutrition, 2015*

Table 16: Percent Contribution of Plant-based Protein Food Intake to Total Food Volume Intake by Meal Occasion and Age Group, Ontario, one year and older

Age Group	Breakfast, Percent Contribution (95% CI)	Lunch, Percent Contribution (95% CI)	Supper, Percent Contribution (95% CI)	Snack , Percent Contribution (95% CI)
1-6 years	§	§	§	◊ *0.9%* (0.3%, 1.6%)
7-12 years	§	◊ *1.6%* (0.5%, 2.7%)	§	§
13-17 years	◊ *0.3%* (0.1%, 0.5%)	◊ *1.0%* (0.4%, 1.5%)	◊ *2.1%* (0.8%, 3.3%)	◊ *1.5%* (0.6%, 2.5%)
18-64 years	◊ *1.0%* (0.6%, 1.4%)	2.0% (1.4%, 2.6%)	◊ *1.8%* (1.2%, 2.4%)	◊ *3.1%* (2.1%, 4.1%)
65 years and older	§	§	◊ *1.3%* (0.5%, 2.2%)	1.7% (1.1%, 2.4%)

Note: §=Suppressed due to coefficient of variation above 0.333. ◊=Interpret with caution due to coefficient of variation between 0.166 and 0.333. CI=confidence interval. Based on a single 24 hour recall. *Source: Canadian Community Health Survey (CCHS) - Nutrition, 2015*

Table 24a: Top Five sources of Protein Foods by Population Proportion of Food Volume at Breakfast, Ontario, one year and older

Top Protein Foods, Breakfast	Percent Contribution (95% CI) (n=2,764)
Cow's Milk, 2%	34.2% (29.8%, 38.7%)
Cow's Milk, 1%	13.6% (10.6%, 16.6%)
Egg	10.4% (7.8%, 13.0%)
Milk-Based Bev	◊ *9.3% (3.7%, 14.9%)*
Egg Dish	◊ *5.2% (3.0%, 7.4%)*

Note: ◊=Interpret with caution due to coefficient of variation between 0.166 and 0.333. CI = Confidence Interval. Based on a single 24 hour recall. *Source: Canadian Community Health Survey (CCHS) - Nutrition, 2015*

Table 24b: Top Five sources of Protein Foods by Population Proportion of Food Volume at Lunch, Ontario, one year and older

Top Protein Foods, Lunch	Percent Contribution (95% CI) (n=2,718)
Chicken, Meat Only	19.6% (15.3%, 24.0%)
Beef, Ground	◊ *10.8% (6.4%, 15.2%)*
Cow's Milk, 2%	◊ *6.4% (4.4%, 8.4%)*
Cheese, 10% BF -25% BF	6.0% (4.8%, 7.2%)
Cow's Milk, 1%	§

Note: §=Suppressed due to coefficient of variation above 0.333. ◊=Interpret with caution due to coefficient of variation between 0.166 and 0.333. CI = Confidence Interval. Based on a single 24 hour recall. *Source: Canadian Community Health Survey (CCHS) - Nutrition, 2015*

Table 24c: Top Five sources of Protein Foods by Population Proportion of Food Volume at Supper, Ontario, one year and older

Top Protein Foods, Supper	Percent Contribution (95% CI) (n=3,349)
Chicken, Meat Only	18.4% (14.6%, 22.3%)
Beef, Ground	◊ *10.8% (5.0%, 16.6%)*
Cow's Milk, 2%	◊ *8.8% (6.0%, 11.5%)*
Beef, Lean Only	7.1% (5.5%, 8.7%)
Cheese, 10% BF - 25% BF	4.5% (3.6%, 5.4%)

Note: ◊=Interpret with caution due to coefficient of variation between 0.166 and 0.333. CI = Confidence Interval. Based on a single 24 hour recall. *Source: Canadian Community Health Survey (CCHS) - Nutrition, 2015*

Table 24d: Top Five sources of Protein Foods by Population Proportion of Food Volume as a Snack, Ontario, one year and older

Top Protein Foods, Snack	Percent Contribution (95% CI) (n=1,529)
Cow's Milk, 2%	◊ *23.7% (15.7%, 31.6%)*
Yogourts , >2.1% BF	11.4% (8.8%, 14.0%)
Nuts	◊ *10.2% (6.8%, 13.6%)*
Cow's Milk, 1%	◊ *10.0% (6.3%, 13.7%)*
Cheese, > 25% BF	8.3% (5.7%, 10.9%)

Note: ◊=Interpret with caution due to coefficient of variation between 0.166 and 0.333. CI = Confidence Interval. Based on a single 24 hour recall. *Source: Canadian Community Health Survey (CCHS) - Nutrition, 2015*

Table 17: Percent Contribution of Whole Grain Foods Intake to Total Food Volume Intake by Meal Occasion and Age Group, Ontario, one year and older

Age Group	Breakfast , Percent Contribution (95% CI)	Lunch, Percent Contribution (95% CI)	Supper, Percent Contribution (95% CI)	Snack , Percent Contribution (95% CI)
1-6 years	14.9% (10.7%, 19.1%)	◊ *11.2%* (4.8%, 17.7%)	§	◊ *3.6%* (1.3%, 5.9%)
7-12 years	◊ *15.3%* (9.3%, 21.2%)	◊ *5.9%* (2.7%, 9.2%)	§	◊ *3.3%* (1.6%, 5.0%)
13-17 years	◊ *17.2%* (11.6%, 22.8%)	◊ *6.6%* (2.9%, 10.3%)	◊ *4.7%* (2.2%, 7.3%)	§
18-64 years	16.5% (13.0%, 20.1%)	7.0% (5.3%, 8.6%)	◊ *4.0%* (1.6%, 6.4%)	◊ *6.8%* (3.6%, 9.9%)
65 years and older	24.0% (20.2%, 27.9%)	10.0% (7.6%, 12.4%)	◊ *4.3%* (1.8%, 6.9%)	◊ *6.6%* (2.4%, 10.9%)

Note: §=Suppressed due to coefficient of variation above 0.333. ◊=Interpret with caution due to coefficient of variation between 0.166 and 0.333. CI=Confidence Interval. Based on a single 24 hour recall. *Source: Canadian Community Health Survey (CCHS) - Nutrition, 2015*

Table 18: Percent Contribution of Non-Whole Grain Foods Intake to Total Food Volume Intake by Meal Occasion and Age Group, Ontario, one year and older

Age Group	Breakfast, Percent Contribution (95% CI)	Lunch, Percent Contribution (95% CI)	Supper, Percent Contribution (95% CI)	Snack, Percent Contribution (95% CI)
1-6 years	28.7% (23.1%, 34.3%)	◊ *27.1%* *(20.3%, 33.8%)*	29.4% (24.2%, 34.6%)	◊ *9.6%* *(6.5%, 12.7%)*
7-12 years	36.6% (26.0%, 47.2%)	34.6% (29.4%, 39.9%)	26.6% (23.1%, 30.2%)	◊ *14.7%* *(9.7%, 19.8%)*
13-17 years	31.2% (24.7%, 37.7%)	32.6% (25.6%, 39.6%)	27.6% (21.2%, 34.0%)	◊ *14.4%* *(8.5%, 20.2%)*
18-64 years	30.7% (27.1%, 34.3%)	27.6% (25.2%, 30.1%)	23.1% (19.4%, 26.9%)	14.3% (11.8%, 16.8%)
65 years and older	31.4% (27.8%, 35.1%)	24.8% (21.5%, 28.1%)	17.1% (13.7%, 20.5%)	12.9% (9.0%, 16.7%)

Note: ◊=Interpret with caution due to coefficient of variation between 0.166 and 0.333. CI=Confidence Interval. Based on a single 24 hour recall. *Source: Canadian Community Health Survey (CCHS) - Nutrition, 2015*

Table 19a-e: Top Five Sources of Whole Grain Foods by Percent Contribution of Food Volume by Meal Occasion, Ontario, one year and older

Table 27a: Top Five Sources of Whole Grain Foods by Percent Contribution of Food Volume at Breakfast, Ontario, one year and older

Top Whole Grain Foods, Breakfast	Percent Contribution (95% CI) (n=1,295)
Whole Grain Breakfast Cereals	45.4% (32.1%, 58.7%)
Whole Grain Bread	◊ *42.0% (30.6%, 53.3%)*
Breakfast Cereal (Other)	◊ *6.3% (4.1%, 8.5%)*
Rolls, Bagels, Pita, etc.	§
Muffins And English Muffins	§

Note: §=Suppressed due to coefficient of variation above 0.333. ◊=Interpret with caution due to coefficient of variation between 0.166 and 0.333. CI = Confidence Interval. Based on a single 24 hour recall. *Source: Canadian Community Health Survey (CCHS) - Nutrition, 2015*

Table 27b: Top Five Sources of Whole Grain Foods by Percent Contribution of Food Volume at Lunch, Ontario, one year and older

Top Whole Grain Foods, Lunch	Percent Contribution (95% CI) (n=527)
Whole Grain Bread	57.8% (44.9%, 70.7%)
Rolls, Bagels, Pita etc.	◊ *20.6% (9.6%, 31.6%)*
Rice	§
Whole Grain Breakfast Cereals	§
Cereal Grains And Flours	§

Note: §=Suppressed due to coefficient of variation above 0.333. ◊=Interpret with caution due to coefficient of variation between 0.166 and 0.333. CI = Confidence Interval. Based on a single 24 hour recall. *Source: Canadian Community Health Survey (CCHS) - Nutrition, 2015*

Table 27c: Top Five Sources of Whole Grain Foods by Percent Contribution of Food Volume at Supper, Ontario, one year and older

Top Whole Grain Foods, Supper	Percent Contribution (95% CI) (n=413)
Rolls, Bagels, Pita etc	◊ *38.1% (24.6%, 51.7%)*
Whole Grain Bread.	27.6% (18.3%, 36.9%)
Rice	◊ *17.6% (8.4%, 26.7%)*
Whole Grain Breakfast Cereals	§
Pasta	§

Note: §=Suppressed due to coefficient of variation above 0.333. ◊=Interpret with caution due to coefficient of variation between 0.166 and 0.333. CI = Confidence Interval. Based on a single 24 hour recall. *Source: Canadian Community Health Survey (CCHS) - Nutrition, 2015*

Table 27d: Top Five Sources of Whole Grain Foods by Percent Contribution of Food Volume as a Snack, Ontario, one year and older

Top Whole Grain Foods, Snack	Percent Contribution (95% CI) (n=313)
Plain Popcorn And Pretzels	§
Whole Grain Bread	§
Whole Grain Breakfast Cereal	◊ *16.4% (8.5%, 24.4%)*
Breakfast Cereals (Other)	§
Crackers And Crisp-breads	§

Note: §=Suppressed due to coefficient of variation above 0.333. ◊=Interpret with caution due to coefficient of variation between 0.166 and 0.333. CI = Confidence Interval. Based on a single 24 hour recall. *Source: Canadian Community Health Survey (CCHS) - Nutrition, 2015*

Table 28a: Top Five Sources of Non-Whole Grain Foods by Percent Contribution of Food Volume at Breakfast, Ontario, one year and older

Top Non-Whole Grain Foods, Breakfast	Percent Contribution (95% CI) (n=1,847)
White Bread	29.0% (24.2%, 33.8%)
Rolls, Bagels, Pita, etc.	17.3% (14.2%, 20.4%)
Breakfast Cereal (Other)	12.7% (10.4%, 14.9%)
Whole Grain Breakfast Cereals	◊ *11.0% (6.8%, 15.2%)*
Whole Wheat Breads	◊ *5.1% (2.5%, 7.7%)*

Note: ◊=Interpret with caution due to coefficient of variation between 0.166 and 0.333. CI = Confidence Interval. Based on a single 24 hour recall. *Source: Canadian Community Health Survey (CCHS) - Nutrition, 2015*

Table 28b: Top Five Sources of Non-Whole Grain Foods by Percent Contribution of Food Volume at Lunch, Ontario, one year and older

Top Non-Whole Grain Foods, Lunch	Percent Contribution (95% CI) (n=2,349)
White Bread	29.4% (22.0%, 36.8%)
Rolls, Bagels, Pita, etc.	21.2% (18.5%, 23.8%)
Rice	◊ *14.7% (8.8%, 20.6%)*
Pasta	◊ *9.1% (4.6%, 13.6%)*
Whole Grain Breads	◊ *5.5% (3.8%, 7.2%)*

Note: ◊=Interpret with caution due to coefficient of variation between 0.166 and 0.333. CI = Confidence Interval. Based on a single 24 hour recall. *Source: Canadian Community Health Survey (CCHS) - Nutrition, 2015*

Table 28c: Top Five Sources of Non-Whole Grain Foods by Percent Contribution of Food Volume at Dinner, Ontario, one year and older

Top Non-Whole Grain Foods, Supper	Percent Contribution (95% CI) (n=2,544)
Rice	23.9% (19.0%, 28.8%)
Pasta	22.9% (18.4%, 27.3%)
Rolls, Bagels, Pita, etc.	20.0% (15.7%, 24.3%)
White Bread	16.8% (13.2%, 20.5%)
Cereal Grains And Flours	8.3% (6.9%, 9.6%)

Note: ◊=Interpret with caution due to coefficient of variation between 0.166 and 0.333. CI = Confidence Interval. Based on a single 24 hour recall. *Source: Canadian Community Health Survey (CCHS) - Nutrition, 2015*

Table 28d: Top Five Sources of Non-Whole Grain Foods by Percent Contribution of Food Volume as a Snack, Ontario, one year and older

Top Non-Whole Grain Foods, Snack	Percent Contribution (95% CI) (n=933)
Salty And High-Fat Snacks	◊ *21.9% (11.9%, 31.8%)*
Rolls, Bagels, Pita, etc.	◊ *17.7% (8.6%, 26.7%)*
White Bread	◊ *16.4% (11.1%, 21.8%)*
Breakfast Cereal (Other)	◊ *8.2% (4.0%, 12.4%)*
Granola Bar	6.3% (4.6%, 8.0%)

Note: ◊=Interpret with caution due to coefficient of variation between 0.166 and 0.333. CI = Confidence Interval. Based on a single 24 hour recall. *Source: Canadian Community Health Survey (CCHS) - Nutrition, 2015*

Table 20: Percent Contribution of Other Foods Intake to Total Food Volume Intake by Meal Occasion and Age Group, Ontario, one year and older

Age Group	Breakfast, Percent Contribution (95% CI)	Lunch, Percent Contribution (95% CI)	Supper, Percent Contribution (95% CI)	Snack, Percent Contribution (95% CI)
1-6 years	◊ *4.9%* *(2.5%, 7.2%)*	16.1% (12.1%, 20.1%)	◊ *10.4%* *(7.4%, 13.4%)*	31.1% (25.8%, 36.5%)
7-12 years	§	◊ *21.4%* *(15.3%, 27.5%)*	20.2% (15.3%, 25.1%)	44.8% (37.7%, 51.9%)
13-17 years	◊ *9.7%* *(5.2%, 14.3%)*	◊ *19.4%* *(11.6%, 27.2%)*	13.1% (9.6%, 16.6%)	◊ *39.9%* *(29.1%, 50.6%)*
18-64 years	11.6% (9.1%, 14.1%)	12.6% (10.3%, 14.9%)	13.5% (9.0%, 18.0%)	32.6% (27.9%, 37.2%)
65 years and older	◊ *6.2%* *(3.2%, 9.2%)*	◊ *12.4%* *(7.4%, 17.4%)*	◊ *15.0%* *(10.0%, 20.0%)*	32.1% (24.5%, 39.7%)

Note: §=Suppressed due to coefficient of variation above 0.333. ◊=Interpret with caution due to coefficient of variation between 0.166 and 0.333. CI=Confidence Interval. Based on a single 24 hour recall. *Source: Canadian Community Health Survey (CCHS) - Nutrition, 2015*

Table 30a: Top Five Sources of Other Foods by Population Proportion of Food Volume at Breakfast, Ontario, one year and older

Top Other Foods, Breakfast	Percent Contribution (95% CI) (n=732)
Muffins	◊ *25.1% (17.3%, 32.8%)*
Croissants	§
Sweet Rolls And Breads	§
French Fries	§
Bacon	§

Note: §=Suppressed due to coefficient of variation above 0.333. ◊=Interpret with caution due to coefficient of variation between 0.166 and 0.333. CI = Confidence Interval. Based on a single 24 hour recall. *Source: Canadian Community Health Survey (CCHS) - Nutrition, 2015*

Table 30b: Top Five Sources of Other Foods by Population Proportion of Food Volume at Lunch, Ontario, one year and older

Top Other Foods, Lunch	Percent Contribution (95% CI) (n=1,606)
French Fries	◊ *17.9% (12.2%, 23.6%)*
Luncheon Meat	16.9% (13.9%, 19.9%)
Potato Chips	§
Chicken	◊ *6.4% (3.4%, 9.4%)*

Top Other Foods, Lunch	Percent Contribution (95% CI) (n=1,606)
Sausage	4.3% (3.0%, 5.6%)

Note: §=Suppressed due to coefficient of variation above 0.333. ◊=Interpret with caution due to coefficient of variation between 0.166 and 0.333. CI = Confidence Interval. Based on a single 24 hour recall. *Source: Canadian Community Health Survey (CCHS) - Nutrition, 2015*

Table 30c: Top Five Sources of Other Foods by Population Proportion of Food Volume at Supper, Ontario, one year and older

Top Other Foods, Supper	Percent Contribution (95% CI) (n=1,734)
French Fries	25.4% (18.3%, 32.5%)
Chicken	11.6% (8.0%, 15.1%)
Ice Cream	5.6% (3.7%, 7.5%)
Fish	§
Sausage	5.0% (3.6%, 6.4%)

Note: §=Suppressed due to coefficient of variation above 0.333. CI = Confidence Interval. Based on a single 24 hour recall. *Source: Canadian Community Health Survey (CCHS) - Nutrition, 2015*

Table 30d: Top Five Sources of Other Foods by Population Proportion of Food Volume as a Snack, Ontario, one year and older

Top Other Foods, Snack	Percent Contribution (95% CI) (n=2,197)
Potato Chips	21.5% (17.2%, 25.8%)
Salty And High-Fat Snacks	◊ *17.1% (11.5%, 22.7%)*
Ice Cream	7.7% (4.9%, 10.4%)
Muffins	◊ *6.5% (4.4%, 8.5%)*
Cookies, Commercial	6.1% (3.7%, 8.5%)

Note: ◊=Interpret with caution due to coefficient of variation between 0.166 and 0.333. CI = Confidence Interval. Based on a single 24 hour recall. *Source: Canadian Community Health Survey (CCHS) - Nutrition, 2015*

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