



Health
Canada

Santé
Canada

Your health and
safety... our priority.

Votre santé et votre
sécurité... notre priorité.

Summary of the Development and Use of a Surveillance Tool: The Classification of Foods in the Canadian Nutrient File According to *Eating Well with Canada's Food Guide*



Canada 

Introduction

The classification of foods in the Canadian Nutrient File (CNF) according to Canada's Food Guide (CFG or Food Guide) was developed as a surveillance tool to assess the food intakes of Canadians relative to Food Guide guidance (CNF/CFG classification).

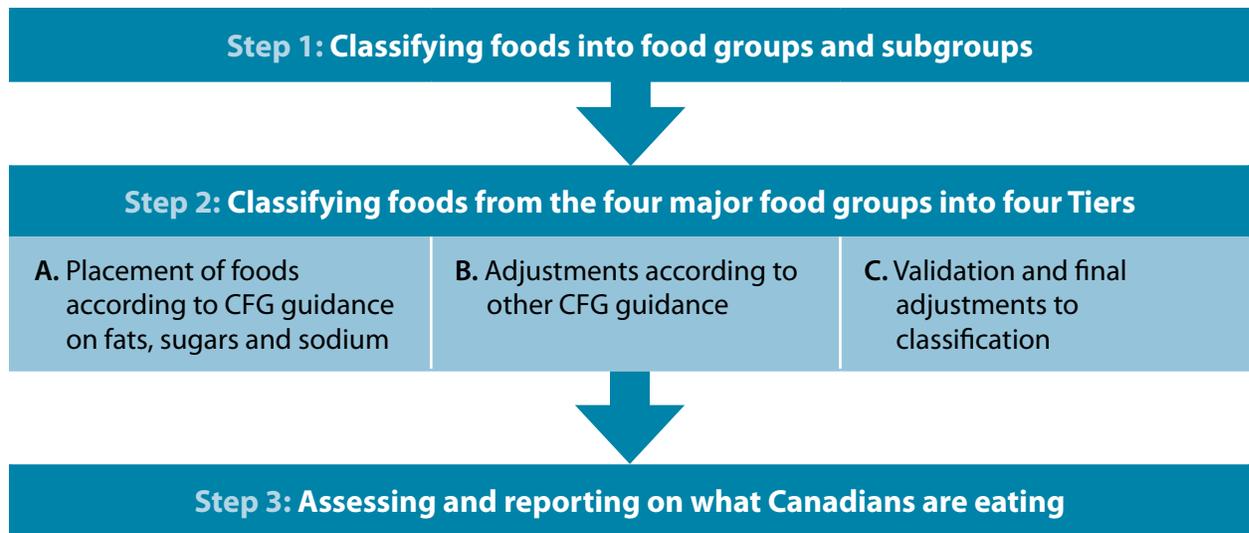
The CNF/CFG classification must be applied to the relevant version of the CNF. Since the classification was developed for surveillance purposes, it was applied to the CNF 2001b version which was used in the last national nutrition survey—the Canadian Community Health Survey Cycle 2.2, Nutrition (CCHS 2004). The results from CCHS 2004 will be used as a baseline for comparison with results from the next national nutrition survey, CCHS 2015. In preparation for CCHS 2015, the classification of foods in the CNF database to be used will be revised according to the same parameters detailed below.

The original CNF/CFG classification was based on the 1992 Food Guide (*Canada's Food Guide to Healthy Eating*). Given the release of *Eating Well with Canada's Food Guide* in 2007, the classification needed to be updated. The revised CNF/CFG classification was developed by a working group, with representation from Health Canada and the Public Health Agency of Canada.

The revised CNF/CFG classification assigns each CNF food to a food group and subgroup. For the four major food groups, it also classifies foods into "Tiers" based on how closely they align with Food Guide guidance (see Figure 1).



Figure 1. Overview of the process undertaken to develop and use the revised CNF/CFG classification



Step 1. Classifying foods into food groups and subgroups

The first step in establishing the CNF/CFG classification was to assign foods into food groups. Within each food group, foods were further classified into subgroups for surveillance analysis. For example, dark green and orange vegetables were classified into different subgroups to be able to report on their consumption separately. See other examples of subgroups in Table 1 on the next page.

Table 1. Classification of foods into food groups and subgroups

Food groups	Subgroups	Tiers
Vegetables and Fruit	Vegetables, dark green	Foods within the subgroups are further divided into four Tiers (see Step 2)
	Vegetables, deep yellow or orange	
	Vegetables, potatoes	
	Vegetables, other	
	Vegetables, juice and cocktail	
	Fruit, other than juice	
	Fruit, juice	
Grain Products	Grain products, whole-grain	
	Grain products, non whole-grain, enriched	
	Grain products, non whole-grain, not enriched	
Milk and Alternatives	Fluid milk and fortified soy beverages	
	Other milk alternatives	
Meat and Alternatives	Beef, game and organ meats	
	Other meats (pork, veal, lamb)	
	Poultry	
	Fish	
	Shellfish	
	Legumes	
	Nuts and seeds	
	Eggs	
	Processed meats	
Other foods and beverages recommended in CFG	Unsaturated fats and oils	No Tiers
	Water	
Other foods and beverages not in the food groups of CFG	Saturated and/or trans fats and oils	No Tiers
	Beverages	
	Uncategorized	
	Alcoholic beverages	
	High fat and/or high sugar foods	
Foods and beverages that are not classified	Recipes	No Tiers
	Foods and beverages that are not classified (missing nutrient data)	

Step 2. Classifying foods from the four major food groups into four Tiers

Within each of the four major food groups, the Food Guide provides guidance on the type of foods to choose through “directional statements”. The Tiers were devised based on this guidance.

The classification of foods into Tiers consisted of 3 steps:

- A. Placement of foods according to Food Guide guidance on fats, sugars and sodium;
- B. Adjustments according to other Food Guide guidance;
- C. Validation and final adjustments to the classification.

A. Placement of foods according to Food Guide guidance on fats, sugars and sodium

Canada’s Food Guide encourages people to choose foods lower in fat, sugar and salt. This guidance was used as the starting point for the classification of foods into Tiers. To do this, lower and upper thresholds were set for the fats, sugars and sodium content of foods.

The thresholds were based on:

- ▶ The criteria for [nutrient content claims](#);
- ▶ Institute of Medicine (IOM) recommendations on sugars ([Dietary Reference Intakes for Macronutrients](#) and [Nutrition Standards for Foods in Schools](#)).

B. Adjustments according to other Food Guide guidance

In addition to recommending foods lower in fat, sugar and salt, Canada’s Food Guide provides other direction on foods to choose within each food group, such as “Make at least half of your grain products whole grain each day” and “Eat at least two Food Guide Servings of fish each week”.

This additional guidance was incorporated into the classification to perform adjustments after the thresholds for fats, sugars and sodium were applied. For example, because the Food Guide encourages the consumption of fish, particularly fatty fish, adjustments were made for the classification of fish naturally high in fat.

C. Validation and final adjustments to the classification

The validation exercise builds on the modeling process used to develop Canada’s Food Guide ([Katamay et al, 2007](#)). Five hundred diets were created using foods from Tiers 1 and 2 for each of the Dietary Reference Intake (DRI) age and sex groups. These simulated diets followed the pattern of eating described in the Food Guide. The diets were assessed against the DRIs and the reference Estimated Energy Requirements. As necessary, further adjustments to the classification were made to ensure the classification reflected the dietary guidance of the Food Guide.



Step 3. Assessing and reporting on what Canadians are eating

Table 2 summarizes the description of the Tiers. It also explains how to use the classification to report on what Canadians are eating relative to Food Guide guidance.

Table 2. Description of Tiers and how to report using the CNF/CFG Classification

Tiers	Description	Explanation	When reporting on food group intakes
1 and 2	“Foods in line with CFG guidance”	Foods that are in line with the guidance in CFG. Most choices should come from this category of foods.	Count towards total number of Food Guide Servings
3	“Foods partially in line with CFG guidance”	Foods that are higher in fat, sugar or salt. On average, few choices should come from this category of foods.	Count towards total number of Food Guide Servings
4	“Foods not in line with CFG guidance”	Foods that are not in line with the guidance in CFG. Foods to limit .	Do not count towards the total number of Food Guide Servings

Table 3 and Figure 2 illustrate how to use the classification to assess and report food intake data from nutrition surveys.

Table 3. Vegetables and Fruit Food Guide Servings (FGS): Usual intakes consumed per day by children in Canada, 2004

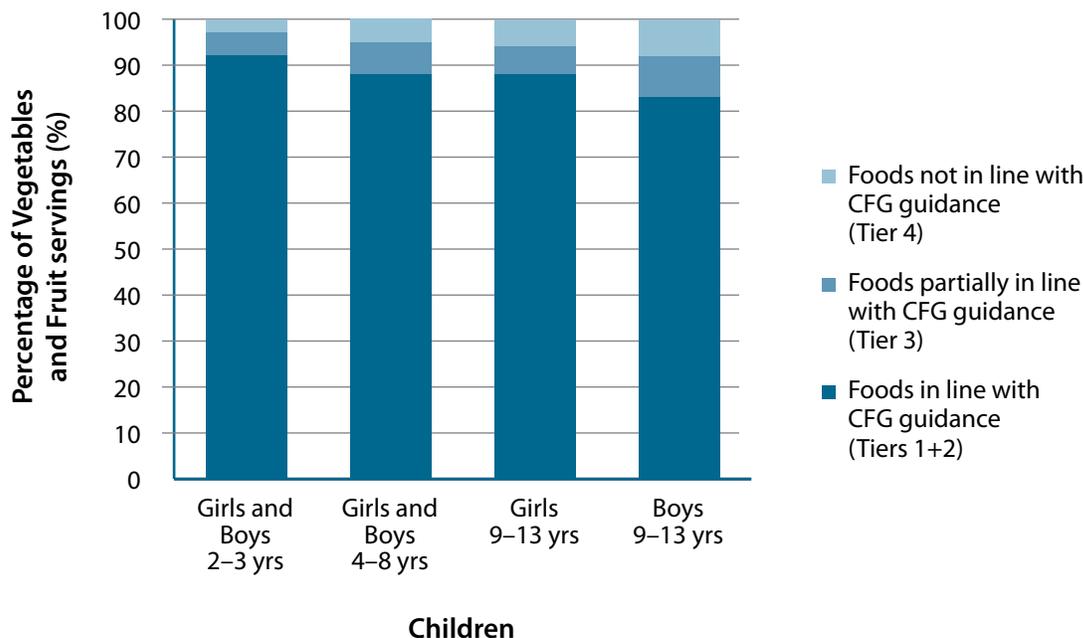
Sex	Age (yrs)	n	Mean number of FGS (Tiers 1–2–3)	Percentage (%) of population consuming (range of FGS)							CFG recommended usual intake
				<2	2–<3	3–<4	4–<5	5–<6	6–<7	7+	
Girls and Boys	2–3	1430	4.2	8.4 ^E	18.3	24.4	20.5	13.2	7.5	7.8 ^E	4
	4–8	3235	4.2	9.1 ^E	18.6	24.8	19.8	13.0	7.6	7.2 ^E	5
Girls	9–13	1980	4.4	^F	15.8 ^E	25.0	23.7	15.8	8.5 ^E	6.9 ^E	6
Boys	9–13	2080	4.5	6.7 ^E	16.5	22.1	20.3	14.7	9.2	10.5 ^E	6

^E Interpret with caution, data with a coefficient of variation between 16.6 and 33.3%.

^F Not reportable; Data with a coefficient of variation greater than 33.3% with a 95% confidence interval not entirely between 0 and 3%.



Figure 2. Percentage of Vegetables and Fruit servings coming from “Foods in line with CFG guidance”, “Foods partially in line with CFG guidance” and “Foods not in line with CFG guidance”, in children, based on one 24h recall.



Potential interpretation

Although the recommended number of Vegetables and Fruit FGS increases throughout childhood, Table 3 shows that intakes remained relatively constant across age groups (with most children consuming around 3 to 5 FGS of Vegetables and Fruit that are in line and partially in line with CFG guidance).

Even though the recommended number of FGS are recommended usual intakes and not minimum amounts, within each age/sex group, a large percentage of children were consuming below the Food Guide’s recommended usual intake (Table 3).

Regarding the type of food consumed, Figure 2 presents quality of food choices made within the Vegetables and Fruit food group, i.e. foods in line, partially in line and not in line with CFG guidance. The quality of the food choices in this food group was good; children predominantly consumed “Foods in line with CFG guidance”, as illustrated in Figure 2.

If you wish to use the revised CNF/CFG classification for your surveillance related research and require further information, please email us at: nutrition@hc-sc.gc.ca. Please indicate “request for CNF/CFG classification documents” in the subject line.

