

Food costing in BC 2013

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Sufficient, safe and nutritious food is critical to the health and well-being of the British Columbian population, which is why Provincial Health Services Authority (PHSA) works with key stakeholders such as the Ministry of Health, the five regional health authorities, First Nations Health Authority, and Dietitians of Canada to monitor the cost of healthy eating in British Columbia (B.C.). The cost of the National Nutritious Food Basket (NNFB) is one of the indicators used to evaluate the 2011-2014 Healthy Families BC Healthy Eating Strategy.

The purpose of this report is to present the 2013 data on the average monthly cost of a nutritionally adequate, balanced diet in B.C. based on the National Nutritious Food Basket. The report outlines the methods taken to collect and analyze the data; it discusses the health implications of not being able to afford a healthy diet; and it compares the 2013 data to previous years' data.

What is the National Nutritious Food Basket?

The National Nutritious Food Basket was first introduced at a national level in 1974. The Food Prices Review Board developed the tool and Agriculture Canada implemented the tool in cities across Canada until 1995. In 1997, Health Canada assumed responsibility for the tool and updated it based on data from Statistics Canada, the Canadian Nutrient File and nutrition recommendations. In 2008, the NNFB was revised once more to reflect the Dietary Reference Intakes, the updates to *Eating Well with Canada's Food Guide* and the data collected through the Canadian Community Health Survey (CCHS).¹

The NNFB tool is used by provinces and territories across Canada to monitor the cost and affordability of healthy eating. For example, the Ontario Public Health Standards require health boards across Ontario to monitor food affordability on an annual basis.²

The NNFB includes 67 food items that are minimally processed, require preparation and are considered to be commonly eaten by most Canadians in amounts that would provide a nutritionally adequate, balanced diet. The NNFB does not consider special dietary needs, cultural or other food preferences, non-food items, take-out food or condiments, spices or kitchen equipment and utensils.

What does the National Nutritious Food Basket measure?

A key indicator of food insecurity is an individual's or household's ability to afford healthy, safe, and culturally appropriate food. Calculating the cost of the NNFB provides insight into the income required for individuals and families to be able to eat a nutritionally adequate diet.

Health Canada defines household/individual food insecurity as "the inability to acquire or consume an adequate diet quality or a sufficient quantity of food in socially acceptable ways or the uncertainty that one will be able to do so".³

Therefore, the meaning of food insecurity ranges from worrying about running out of food (marginal food insecurity), to not being able to afford healthy food (moderate food insecurity), to missing meals or going hungry (severe food insecurity). According to the 2011-2012 Canadian Community Health Survey data, 8.3 per cent of the population of B.C. is moderately or severely food insecure.⁴ Higher rates of food insecurity are found in lower income households and among: families headed by single females, Aboriginal Peoples, marginally housed and homeless people, and new immigrants.⁵

As reported in the Ministry of Health's document the *Core Functions Food Security Evidence Review*,⁶ food security is foundational to healthy eating and for those households that are food insecure, there are a number of health and social challenges that may arise:

Birth outcomes and maternal health

- Inadequate nutrition during pregnancy can have negative health impacts on both the mother and baby. For example, low-income women who are unable to meet their dietary requirements during pregnancy have an increased risk for a low birth weight babies.⁷
- Among food insecure families, the quality and quantity of women's food intake may deteriorate as household incomes dwindle.⁸

Child development

- Food insecure children may have poorer academic outcomes and social skills compared to children who do not experience food insecurity.^{9,10}

Chronic diseases

- Food insecure individuals report higher levels of: poor or fair self-rated health, diabetes, heart disease, high blood pressure, and food allergies.^{11,12}
- Food insecure individuals with diabetes experience greater emotional distress and have a harder time managing their blood sugars and following a diabetic diet.¹³
- Youth who experience hunger are more likely to have a chronic condition and asthma.¹⁴
- Food insecure children have poorer general health.¹⁵

Mental health and emotional well-being

- Food insecurity impacts social and mental well-being and can increase the likelihood of depression, distress (including feelings of worthlessness and hopelessness), and social isolation.¹⁶
- Child hunger is an independent risk factor for depression and suicidal symptoms in adolescence and early adulthood.¹⁷

What methods are used to collect and analyze the B.C. data?

In B.C., data is collected in May/June every two years by the five regional health authorities. Based on Health Canada's NNFB, the same tool is used each year to facilitate comparison. Food costs from approximately 130 randomly selected, full-service grocery stores are used to

determine the average cost of the 67 food items.

The surveillance team at PHSA analyzes the data submitted by the regional health authorities using algorithms and information received by Health Canada. The average cost in each food category is weighted by purchase popularity and the amount of food that each person needs, adjusted by sex and age. Then the total cost is adjusted based on the size of family using the Household Size Adjustment Factor to account for the economies or diseconomies of scale.

Sampling limitations include: data collection was a one-time snapshot event that may not necessarily reflect the average annual cost estimate, and the exclusion of non full-service grocery stores may influence the estimated costs.

The monthly food cost is based on a reference family of four, which is made up of a male and female (age 31-50), a boy (14-18 years old), and a girl (4-8 years old).

What are the findings from the 2013 data collection?

Monthly cost of a nutritious food basket

The average monthly cost of a nutritious food basket for a reference family of four in British Columbia in 2013 was **\$914**.

The average monthly cost of a nutritious food basket for a reference family of four across the health authorities is displayed in Figure 1.



Figure 1. Average monthly cost of the nutritious food basket for a reference family of four across the B.C. health authorities in 2013.

The cost of the nutritious food basket is reported based on a reference family of four (two parents and two children). Table 1 shows the calculation for the reference family of four.

Table 1. Calculation of the 2013 nutritious food basket for a reference family of four in B.C.

Gender	Age	Average monthly cost
Male	31-50 years	\$256
Female	31-50 years	\$217
Female	4-8 years	\$150
Male	14-18 years	\$291
Subtotal		\$914
Multiply by the household adjustment factor for a family of four		X 1.0
Total cost		\$914

Information in Tables 3 and 4 (page 7) can be used to calculate the cost of a nutritious food basket for different family types. Because it costs more per person to feed a smaller family and less to feed a larger family, the household size adjustment factors found in Table 4 must be applied to the total cost. An example of how to calculate the cost of a nutritious food basket using the household size adjustment factor for a single mother with one son is provided in Table 2.

Table 2. Calculation of the 2013 nutritious food basket for a single mom and her son in B.C.

Gender	Age	Average Monthly Cost
Female	35 years	\$217
Male	12 years	\$205
Subtotal		\$422
Multiply by the household adjustment factor for a family of two		X 1.10
Total Cost		\$464

Table 3. Average monthly cost of the 2013 food basket in B.C. for different age and gender groups.

Males	Average monthly cost	Females	Average monthly cost
<i>Age group</i>		<i>Age group</i>	
2-3 years	\$121	2-3 years	\$118
4-8 years	\$155	4-8 years	\$150
9-13 years	\$205	9-13 years	\$177
14-18 years	\$291	14-18 years	\$211
19-30 years	\$283	19-30 years	\$220
31-50 years	\$256	31-50 years	\$217
51-70 years	\$246	51-70 years	\$191
Over 70 years	\$244	Over 70 years	\$187
		<i>Pregnancy</i>	
		Younger than 18 years	\$235
		19-30 years	\$239
		31-50 years	\$233
		<i>Breastfeeding</i>	
		Younger than 18 years	\$245
		19-30 years	\$253
		31-50 years	\$247

Table 4. Household size adjustment factors.

Family size	Adjustment factor
Individual	Multiply by 1.20
Two people	Multiply by 1.10
Three people	Multiply by 1.05
Four people	Multiply by 1.0
Five to six people	Multiply by 0.95
Seven or more people	Multiply by 0.90

Changes in food costs

The average monthly cost of the 2011 nutritious food basket for a reference family of four was \$868, which shows an increase of \$45/month between 2011 and 2013. Changes in food costs over the last three costing cycles for a reference family of four are included in Table 5.

Table 5. Changes in B.C. monthly food costs over the last three costing cycles for a reference family of four.

	2009	2011	2013
Monthly food cost for B.C.	\$872	\$868	\$914

Although B.C. has collected food costing data since 2000, data prior to 2007 has not been included since Health Canada updated the NNFB in 2008 to reflect the Dietary Reference Intakes, the updates to *Eating Well with Canada's Food Guide* and the data collected through the Canadian Community Health Survey (CCHS).

Table 6. The change in monthly food costs for B.C. and each health authority for a reference family of four from 2011 and 2013.

	Average cost 2011	Average cost 2013	Absolute change
B.C. average	\$868	\$914	\$45
Northern Health	\$841	\$939	\$98
Island Health	\$873	\$948	\$75
Fraser Health	\$851	\$886	\$35
Interior Health	\$833	\$862	\$29
Vancouver Coastal Health	\$944	\$934	-\$10

Summary

Sufficient, safe, and nutritious food is critical to the health and well-being of the B.C. population. Households that are food insecure face numerous health and social challenges. The National Nutritious Food Basket is a tool used by B.C. and jurisdictions across Canada to monitor the cost of food in order to understand food insecurity.

In B.C., the 2013 average monthly cost of a nutritious food basket for a reference family of four was \$914, an increase of \$45 since the 2011 survey. There is some variation in average monthly cost by health authority: the highest cost was in Island Health (\$948) and the lowest cost was in Interior Health (\$862). The cost of a healthy diet can affect individuals and families of all incomes but has the highest impact among households with the lowest incomes.

The data provided by the B.C. food costing work provides valuable information for population and public health planning.

References

- ¹ Health Canada. *History of food baskets in Canada*. Last modified February 2, 2009. <http://www.hc-sc.gc.ca/fn-an/surveill/basket-panier/hist-eng.php>
- ² Ontario Ministry of Health Promotion. "Nutritious Food Basket Guidance Document." 2010. Retrieved from <http://www.mhp.gov.on.ca/en/healthy-communities/public-health/guidance-docs/NutritiousFoodBasket.PDF>
- ³ Health Canada. *Household food insecurity in Canada: An overview*. Last Modified July 25, 2012. <http://www.hc-sc.gc.ca/fn-an/surveill/nutrition/commun/insecurit/index-eng.php>
- ⁴ Statistics Canada. *Percentage of households with food insecurity, by province/territory, Community Health Survey, 2011-2012*. Last modified December 12, 2013. <http://www.statcan.gc.ca/pub/82-625-x/2013001/article/11889/c-g/desc/desc04-eng.htm>
- ⁵ Health Canada. *Household food insecurity in Canada in 2007-2008: Key statistics and graphics*. Last modified July 25, 2012. <http://www.hc-sc.gc.ca/fn-an/surveill/nutrition/commun/insecurit/key-stats-cles-2007-2008-eng.php>
- ⁶ B.C. Ministry of Health. "Food security evidence review." 2013. Retrieved from: <http://www.health.gov.bc.ca/public-health/core-public-health-functions.html>
- ⁷ Fowles, E.R. "Prenatal nutrition and birth outcomes." *Journal of Obstetric, Gynecologic, & Neonatal Nursing*, 33, 2004: 809-822.
- ⁸ Tarasuk, V.S., McIntyre, L., & Li, J. "Low-income women's dietary intakes are sensitive to the depletion of household resources in one month." *Journal of Nutrition*, 137 (8), 2007: 1980-1987.
- ⁹ Alaimo, K., Olsen, C., & Frongillo, E. "Food insufficiency and American school-aged children's cognitive, academic and psychological development." *Pediatrics*, 108, 2001: 44-53.
- ¹⁰ Jyoti, D.F., Frongillo, E.A., & Jones, S.J. "Food insecurity affects school children's academic performance, weight gain, and social skills." *Journal of Nutrition*, 135, 2005: 2831-2839.
- ¹¹ Che, J. & Chen, J. "Food insecurity in Canadian households." *Health Reports*, 12 (4), 2001: 11-22. Ottawa, ON: Statistics Canada. (Catalogue No. 82-003-XIE).
- ¹² Vozoris, N. & Tarasuk, V. "Household food insufficiency is associated with poorer health." *Journal of Nutrition*, 133 (1), 2003: 120-126.
- ¹³ Seligman, H.K., Jacobs, E.A., Lopez, A., Teschann, J., Fernandez, A. "Food insecurity and glycemic control amount low-income patients with type 2 diabetes." *Diabetes Care*, 35, 2012: 233-238.
- ¹⁴ Kirkpatrick, S.I., McIntyre, L., & Potestio, M.L. "Child hunger and long-term adverse consequences of health." *Archives of Pediatric and Adolescent Medicine*, 164 (8), 2010: 754-762.
- ¹⁵ Ibid.
- ¹⁶ Vozoris & Tarasuk. *Household food insufficiency*, 120-126.
- ¹⁷ McIntyre, L., Williams J.V.A., Lavorato, D.C., Patten, S. "Depression and suicide ideation in late adolescence and early adulthood are an outcome of child hunger." *Journal of Affective Disorders*, 150 (1), 2012: 123 – 129.