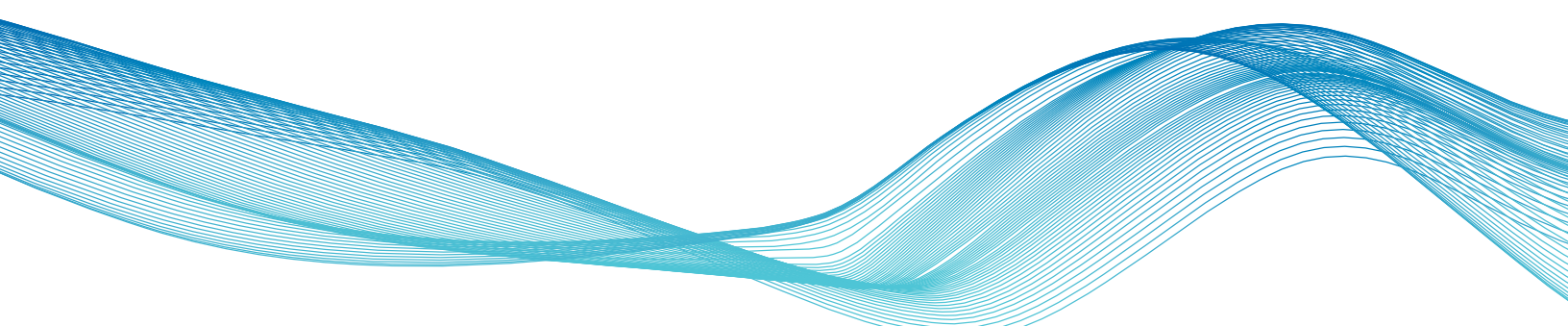


Food Costing in BC 2022

Assessing the affordability of healthy eating



BC Centre for Disease Control
Provincial Health Services Authority

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Suggested citation:

BC Centre for Disease Control. (2023). *Food Costing in BC 2022: Assessing the affordability of healthy eating*. Vancouver, B.C.: BC Centre for Disease Control, Population and Public Health Program.

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Executive summary

Access to food that is affordable, culturally preferable, nutritious and safe is critical to the health and wellbeing of British Columbians. One of the key indicators for food security identified in [British Columbia's \(BC's\) Model Core Program Paper: Food Security](#) is the average monthly cost of a nutritious diet as a proportion of household income. Obtaining a nutritious diet is harder for some households than others due to many factors that are often out of an individual's control, including food affordability. Food costing data can help determine the affordability of healthy eating for different populations. Food affordability information is valuable for population and public health planning, monitoring and to inform policy.

The British Columbia Centre for Disease Control (BCCDC), part of Provincial Health Services Authority (PHSA), works with the five regional health authorities (RHAs) and the Ministry of Health to monitor the cost and affordability of a nutritious diet in BC. Food costing in BC is typically conducted every two years; however, this report is the first to be released since 2017 due to delays caused by the COVID-19 pandemic.

This report presents May-June 2022 data on the average monthly cost and affordability of a nutritious diet in BC based on the [National Nutritious Food Basket](#) (NNFB) and provides insight into the effects of household food insecurity (HFI) on individuals and families. The purpose of this report is to provide data to assess the affordability of healthy eating, or the amount of income required for individuals and households to eat a nutritious diet.

Methods

Data was collected for the 61 food items in Health Canada's 2019 NNFB. BCCDC and the RHAs collected data online and in person in the last week of May and the first week of June 2022. The BCCDC surveillance team analyzed data from 245 stores using algorithms and information developed by Health Canada on the 2019 NNFB. The average cost of each food item is weighted by purchase popularity and the amount of food that each person needs, adjusted by sex and age. Because the NNFB tool was revised in 2019 and new methodology was used in 2022, this year's results cannot be compared to previous cycles of food costing in BC.

The food costing methodology is limited in that it largely excludes stores in rural, remote and Indigenous communities, and it does not take into account costs associated with accessing market food, like transportation, or the cost of accessing traditional or non-market food sources. A special addendum to this report, planned for release in 2023, will share stories from remote Indigenous and non-Indigenous communities related to food cost, access, availability and affordability, as well the impacts of climate change on food access and availability.

Findings

Monthly cost of a nutritious food basket

The average monthly cost of a nutritious food basket for a reference family of four (consisting of a male adult, female adult, male child and female child) in BC in May-June 2022 was \$1,263. Average monthly costs in the five regional health authorities (RHAs) ranged from \$1,193 in Fraser Health to \$1,366 in Island Health. Average monthly costs for each of BC's Health Service Delivery Areas (HSDAs) were also calculated and ranged from \$1,104 in the Northeast HSDA (Northern Health) to \$1,571 in the Northwest HSDA (Northern Health).

Average monthly cost of the nutritious food basket for a reference family of four across BC regional health authorities in 2022

	Average Monthly Cost	Number of Stores Sampled
British Columbia	\$1,263	245
Fraser Health	\$1,193	88
Interior Health	\$1,264	39
Northern Health	\$1,300	18
Vancouver Coastal Health	\$1,311	62
Island Health	\$1,366	38

Affordability of a nutritious food basket

Analysis of five different household compositions and income scenarios shows that once families or individuals with low incomes have paid for rental housing and food, little to no money remains for other necessities and living costs. In some cases, once rent is paid, there is not enough money left to afford a nutritious food basket and families or individuals must choose between having a roof over their heads and eating enough nutritious food.

Cost of food as a proportion of disposable income for five scenarios

Monthly Income and Costs	Family of four, income assistance	Family of four, minimum wage	Single parent with one child, income assistance	Single young male adult, disability assistance	Single female senior, income assistance
Disposable income 2022 ¹	\$3,232	\$5,251	\$2,050	\$1,421	\$1,875
Housing type	3-bedroom	3-bedroom	2-bedroom	Bachelor	1-bedroom
Cost of housing	\$1,657	\$1,657	\$1,500	\$1,150	\$1,300
% income required for housing	51%	32%	73%	81%	69%
Cost of food	\$1,263	\$1,263	\$661	\$481	\$327
% income required for food	39%	24%	32%	34%	17%
What's left after housing and food	\$311.89	\$2,330.69	-\$111.82	-\$210.73	\$248.20

Discussion

In May-June 2022, the average monthly cost of a nutritious food basket for a reference family of four in BC was **\$1,263**.

While the cost of a nutritious food basket in 2022 cannot be compared to previous food costing data in BC, economic data show that the cost of living and the price of food are increasing, and Canada is currently experiencing historic inflation. The recent rise of the consumer price index suggests that at the time of this report's release, the cost of a nutritious food basket is likely even higher than the figures reported here.

The price of food does not affect everyone equally. Analysis of food costs for different household compositions and income scenarios illustrate the challenges of affording a nutritious diet for individuals and households who live on low incomes, especially for individuals and households who live on income and disability assistance.

1 Disposable income refers to income remaining after deduction of taxes and other mandatory charges. Information on data sources used for these calculations can be found in the food costing report.

Household food insecurity is a key public health issue in BC. It affects individuals' physical, social and mental health and overall wellbeing, and negatively impacts health system utilization and costs. Research shows that household food insecurity is an income-based issue, and that policies that improve household incomes are the most effective way to address household food insecurity.

Conclusion

The data in this report gives insight into the challenges to healthy eating for individuals and households who live on low incomes. Research shows that the strongest predictor of household food insecurity is not food prices, but inadequate incomes. Addressing household food insecurity requires policy action to increase incomes so that everyone can afford to eat a nutritious diet that supports health and overall wellbeing.

While income is the strongest predictor of household food insecurity, a number of economic, social, environmental and geographic factors affect people's access to enough foods that promote wellbeing. The affordability of healthy eating should be considered together with intersecting issues, such as climate change and food availability, to effectively address broader issues of food insecurity and ensure everyone has equitable access to food that is affordable, culturally preferable, nutritious and safe. In the context of climate change, record inflation and ongoing recovery from the COVID-19 pandemic, there is an urgent need for equity-based solutions to food insecurity.

Addressing household food insecurity requires policy action to increase incomes so that everyone can afford to eat a nutritious diet that supports health and overall wellbeing.

Introduction

Food costing in BC 2022

Access to food that is affordable, culturally preferable, nutritious and safe is critical to the health and wellbeing of British Columbians. One of the provincial indicators for food security identified in [British Columbia's \(BC's\) Model Core Program Paper: Food Security](#) is the average monthly cost of a nutritious diet as a proportion of income – this is referred to as food affordability. When assessing food affordability, it is clear that households with the lowest incomes have the hardest time affording nutritious food.

Food security means that everyone has equitable access to food that is affordable, culturally preferable, nutritious and safe; everyone has the agency to participate in, and influence food systems; and that food systems are resilient, ecologically sustainable, socially just and honour Indigenous food sovereignty.¹

The BC Centre for Disease Control (BCCDC), a part of Provincial Health Services Authority (PHSA), works with BC's five regional health authorities (RHAs) and the Ministry of Health to monitor the cost of a nutritious diet in BC. The food costing data can be used to assess the affordability of healthy eating for different population groups, and inform population and public health planning, monitoring and to inform policy. Food costing in BC is typically conducted every two years; however, this report is the first to be released since 2017 as the food costing cycle planned for 2020 was delayed due to the COVID-19 pandemic.

This report presents 2022 data on the average monthly cost and affordability of a nutritious diet in BC, based on the National Nutritious Food Basket (NNFB), and an overview of research on the connections between household food insecurity (HFI) and health. It outlines the methods taken to collect and analyze the food costing data, discusses the health implications of not being able to afford a nutritious diet, presents the results and discusses the findings in the context of current intersecting challenges to food security including historic inflation, climate change and the COVID-19 pandemic.

The National Nutritious Food Basket

The [National Nutritious Food Basket](#) (NNFB) is a tool used by various levels of government and other stakeholders to monitor the cost and affordability of healthy eating.^[2] The NNFB was first introduced at a national level in 1974. The Food Prices Review Board developed the tool, and Agriculture and Agri-Food Canada implemented it 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 Canadian nutrition recommendations. In 2008, the NNFB was revised to reflect the Dietary Reference Intakes, updates to *Eating Well with Canada's Food Guide* and data collected through the Canadian Community Health Survey (CCHS).³ In 2019, Health Canada revised the NNFB once again to be consistent with the 2019 Canada's food guide, updated national food intake data from the 2015 Canadian Community Health Survey-Nutrition and updated Dietary Reference Intakes.³

The 2019 NNFB includes 61 food items (vegetables and fruits, protein foods, grains, and oils and fats) and their quantities for individuals in various age and sex groups (See Appendix 1 for complete list of the 61 food items). The NNFB food items are minimally processed, require preparation and are considered by Health Canada to be commonly eaten by most people in Canada.⁴ While the NNFB includes a variety of nutritious foods that are consistent with Canada's food guide, it does not measure the cost of the food guide or provide dietary guidance. The NNFB is a single example of a nutritious food basket; there are many different ways to eat a nutritious diet and individual choices, preferences and needs influence the cost of eating in Canada. The NNFB does not consider special dietary needs, cultural or other food preferences, access to time and resources to prepare food, non-food items (e.g., cleaning supplies), take-out food or kitchen equipment and utensils. Five percent is added to the cost of the basket to account for miscellaneous foods such as coffee, tea, herbs, spices and condiments.

Compared to the previous NNFB, the current NNFB includes fewer food items (61 items in the current version, as compared to 67 items in the previous version). It includes more whole grains, plant-based proteins and foods with little to no added sodium and saturated fat and little to no free sugars. The five percent allocation for miscellaneous foods was also not included in previous versions of the NNFB. Due to these differences, this year's food costing data and results cannot be compared to previous food costing results using earlier versions of the NNFB.

2 Health Link BC defines healthy eating as “a pattern of eating that contributes to best possible health through positive relationships with food and diverse, balanced food choices that meet a person’s needs for nutrients and energy”.² While healthy eating is more than just the foods one eats, this report focuses specifically on the cost of a nutritious food basket and does not look at important cultural, social and emotional aspects of healthy eating.

This year's food costing data gives insight into the cost and affordability of healthy eating in 2022, but cannot be compared to previous food costing results using earlier versions of the NNFB.

Household food insecurity

An individual or household's ability to afford culturally preferable, nutritious and safe food is a key provincial indicator of food security in BC. Calculating the cost of the NNFB provides insight into the income required for individuals and families to be able to eat a nutritious 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”⁵, which is most often due to lack of financial resources to access food. More recently, PROOF, a leading group of researchers in Canada, defines household food insecurity (HFI) as “the inadequate or insecure access to food due to financial constraints”.⁶ The definition and measurement of household food insecurity focus on the economic and financial dimensions of food insecurity. However, other social, environmental and geographic factors can also negatively impact access to enough foods that promote wellbeing. For example, climate change impacts on the food system and lack of food availability in remote areas can influence food insecurity. While these factors are considered in a broader definition of food insecurity,¹ food costing and this report focus on the economic and financial aspects of food insecurity, and income, which is the strongest predictor of household food insecurity.

Calculating the cost of the NNFB provides insight into the income required for individuals and families to be able to eat a nutritious diet.

Household 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, reducing intake, or going day(s) without eating (severe food insecurity).⁷ In 2021, 14.9% of households in BC, or 732,000 people, experienced household food insecurity, with 4.4%, 7.3%, and 3.2% experiencing marginal,

moderate and severe household food insecurity respectively.⁷ Approximately 145,000, or 1 in 6, children in BC lived in a food insecure household in 2021.⁷

Research shows that household food insecurity is primarily an income-based issue that is tightly linked to poverty and other forms of material deprivation.^{6,8} It is a population health issue that stems from systemic inequities, and it disproportionately affects individuals and households who experience the negative impacts of social, economic, geographic and structural inequities.^{1,7} Disproportionately high rates of food insecurity are found among lower income households, families headed by single female parents, Indigenous people, individuals who identify as Black, people who are marginally housed or experiencing homelessness, people living with disabilities, new immigrants and other systemically marginalized populations.^{5,6,8} While households whose main source of income is from social assistance have the highest rate of household food insecurity, the majority of households who experience household food insecurity work in paid employment and rely on income from wages, salaries or self employment.⁶

Household food insecurity negatively affects people's health and wellbeing, and it takes a toll on the healthcare system. People who experience household food insecurity are much more likely to experience chronic physical and mental health problems and suffer from infectious and non-communicable diseases. They are also more likely to experience negative disease outcomes, be hospitalized and die prematurely.^{6,9-11} Household food insecurity places a substantial burden on BC's health care system and expenditures. One study found health care costs were 16% higher for marginally food insecure and 76% higher for severely food insecure households compared to food secure households.⁹ In 2018, the economic burden of not meeting healthy eating recommendations in Canada was estimated to be approximately \$13.8 billion per year (\$5.1 billion of which is associated directly with health care costs and \$8.7 billion with indirect costs such as lost productivity).¹² Food insecurity contributes to this economic burden, as those who experience it face barriers to affording their basic dietary needs, adding to the intersecting stressors and inequities that influence their health.

Household food insecurity places a substantial burden on BC's health care system and expenditures.

Food security is foundational to healthy eating. Household food insecurity is inversely associated with adult dietary quality, particularly for intake of vegetables, fruits and dairy products.^{13,14} Research shows no difference between adults in food secure and food insecure households when it comes to food skills

and cooking ability, and adults in food insecure households report a number of strategies they use to manage and cope with financial constraints (e.g., shopping with a budget).^{6,15}

Individuals in households that experience food insecurity may experience a number of health and social challenges, including, but not limited to, those outlined below.

Birth outcomes and maternal and child health

- > Inadequate access to 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 baby.¹⁶
- > Mothers living in food insecure households were as likely to initiate breastfeeding as those who were food secure, but low-income parents may face greater barriers with breastfeeding and may be less able to maintain breastfeeding and lactation.¹⁷
- > In food insecure households with children, parents and other adults may go without food, or eat food of poorer quality to prioritize feeding their children.¹⁸ When parents or guardians have difficulty feeding their children well, they may also experience feelings of failure, further impacting their physical and mental health.¹⁹
- > Children who are food insecure experience increased barriers to good physical and mental health. Evidence shows that household food insecurity contributes to increased likelihood of some birth defects, anemia, lower nutrient intake, asthma, poorer general health and hospitalization, among children.²⁰ Children who live in food insecure households have poorer general health.²¹
- > Household food insecurity has been identified as a stressor to early childhood development. Children under five years old who live in food insecure households are more likely to experience development delays and poorer cognitive outcomes in vocabulary and math.²²

Chronic disease

- > Individuals in food insecure households report higher levels of poor or fair self-rated health, diabetes, heart disease, high blood pressure and food allergies.²³⁻²⁵
- > Individuals with diabetes in food insecure households experience greater emotional distress around diabetes self-management, and have a harder time managing their blood sugars and following a diabetic diet due to precarious food access.²⁶
- > Youth who experience hunger are more likely to have asthma or another chronic condition.²¹

Mental health and emotional wellbeing

- > Food insecurity affects social, emotional and mental wellness. Without healthy coping skills and resources to manage the stress of food insecurity, stress may lead to emotional distress, including symptoms of anxiety, sleep disturbance, social isolation and depression.^{24,27-30}
- > Child hunger is an independent risk factor for symptoms of depression and suicide ideation in adolescence and early adulthood.^{31,32}
- > Children in food insecure households may have poorer academic outcomes and social skills compared to children who do not experience food insecurity.^{33,34}
- > Emerging research suggests a link between severe food insecurity and several disordered eating behaviors in both adults and adolescents.³⁵

BCCDC's Priority Health Equity Indicators for British Columbia: Household Food Insecurity Update Report (planned for release in 2023) provides a more thorough overview of the recent literature on the connections between HFI, health and evidence-based responses, and reports on the prevalence of HFI in BC and the impact of COVID-19 pandemic on food security.⁸

Methods

In BC, Health Canada’s NNFB tool is used to collect food costing data every two years, during the last week of May and the first week of June. Due to delays during the COVID-19 pandemic, the current cycle of food costing is the first to be conducted since 2017.

From 2009-2013, data was collected and analyzed at the regional health authority (RHA) level, and food costs from approximately 130 randomly selected, full-service grocery stores^[3] were used to determine the average cost of NNFB. Since 2015, data collection and analysis has included all 16 health service delivery areas (HSDA) to address the RHA’s request for more local-level data.^[4]

In 2022, BCCDC randomly selected a sample of 252 full-service grocery stores stratified by the HSDAs of the RHAs. “High-end health food” stores, which were identified as carrying a high proportion of organic, specialty and local foods, were excluded from the store sample. This decision was made based on 2017 food costing analysis in BC, which showed that prices of NNFB items in these types of stores were often high outliers, raising concerns that they disproportionately raised the average NNFB cost in areas where “high-end health food stores” were included in the sample.

While previous cycles of food costing have collected all data in-person, data in 2022 were collected online for stores that have an online storefront (i.e., online shopping website) and in-person for stores that do not have an online storefront. In February-April 2022, BCCDC and the RHAs tested the validity of using online data for food costing, and concluded that online prices of NNFB food items are, on average, similar enough to in-store prices to be considered a valid and efficient approach to collecting food costing data.

Data were collected for the 61 food items on the Health Canada’s 2019 NNFB tool, with minor changes and substitutions. These changes and other technical notes can be found in Appendix 2. The five RHAs coordinated in-person data collection, while the BCCDC coordinated online data collection. BCCDC received complete data for 245 stores, 36% of which (n=89) were costed in person, while 64% (n=156) were costed online. Data from the final sample of 245 stores were used to determine the average cost of the NNFB at provincial, RHA and HSDA levels.

3 Stores that carry a full line of grocery products are considered “full-service grocery stores”. They sell fresh meat, dairy, produce and basic groceries such as flour and cereal. To be included in food costing, stores must carry all (or close to all) 61 food items that make up the NNFB.

4 The 2022 food costing also included up to three local health areas (LHA) or community health service areas (CHSA) in each health authority. This information will be available from the regional health authorities in 2023.

The BCCDC surveillance team analyzed the data using algorithms and information developed by Health Canada on the NNFB. The average cost of each food item was weighted by purchase popularity and the amount of food that each person needs, and adjusted by sex and age. Five percent was added to the cost of the basket to account for miscellaneous foods. Then, the total cost of the NNFB was adjusted based on household size, using the Household Size Adjustment Factor (see Table 5), which accounts for economies and diseconomies of scale for larger and smaller households.

Because the NNFB tool was revised in 2019 and new methodology was used in 2022, this year's results cannot be compared to previous cycles of food costing in BC. Previous food costing data and reports can be found on the [BCCDC website](#).

Limitations of food costing in rural, remote and Indigenous communities

Evidence and stories in the BCCDC's Food Security Policy Brief on Rural, Remote and Indigenous Food Security in BC³⁶ illustrate the unique food security challenges experienced by rural, remote and Indigenous (RRI) communities. The COVID-19 pandemic and recent climate related emergencies such as wildfires and atmospheric river events have elevated the urgency of existing and emerging challenges to food access.

The food costing methodology largely excludes rural, remote and Indigenous communities, where there are a limited number of full-service grocery stores as well as challenges to accessing remote areas to collect food cost data. The food costs in this report also do not take into account other costs associated with accessing food such as transportation, fuel and time; other factors which affect individuals' and households' access to nutritious foods such as access to transportation or proximity to food outlets; or the impact of climate change on food access and availability. The NNFB only includes market foods commonly found in grocery stores, and this report does not provide insight into the cost of accessing traditional foods or land-, water- or air-based food sources (e.g., hunted, fished or gathered food).

To address these limitations of food costing in rural, remote and Indigenous communities, BCCDC is currently working on a project to better understand and capture remote Indigenous and non-Indigenous communities' experiences with food cost, access, availability and affordability, as well as the impacts of climate change on food, including market and traditional foods. A special addendum to this food costing report, planned for release in 2023, will share stories from communities in order to inform policy, practice and program development in rural, remote and Indigenous communities in BC.

Findings

Monthly cost of a nutritious food basket

The average monthly cost of the National Nutritious Food Basket for a reference family of four in British Columbia in May-June 2022 was **\$1,263**. This monthly food cost is based on a reference family of four, which is made up of a male and a female adult (age 31-50), a male child (14-18 years old) and a female child (4-8 years old).

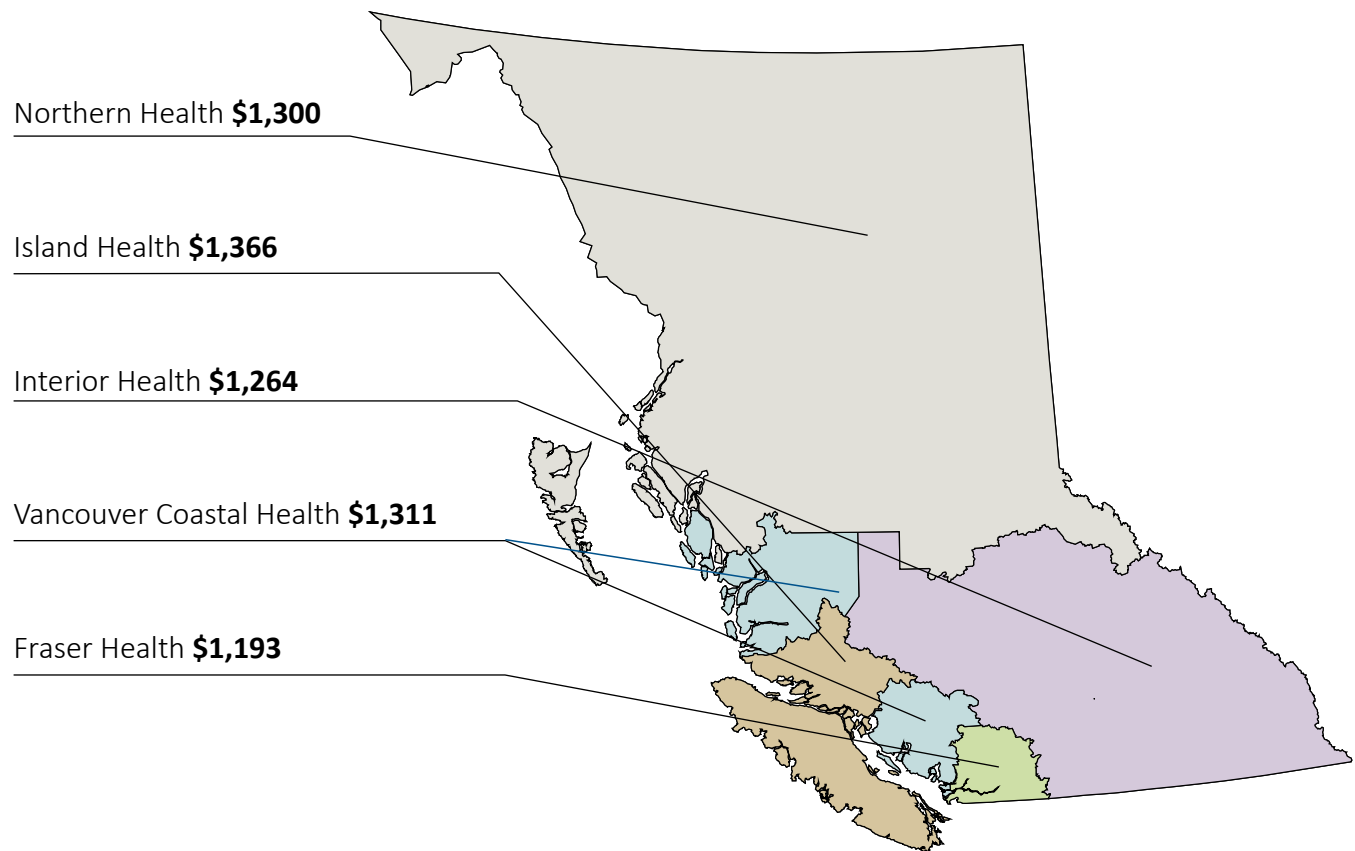
The average monthly cost of a nutritious food basket for a reference family of four across the regional health authorities is presented in Table 1 and Figure 1. The average monthly cost varies by health authority; the highest monthly cost is in Island Health (\$1,366) and the lowest cost is in Fraser Health (\$1,193).

Table 1. Average monthly cost of the nutritious food basket for a reference family of four across BC regional health authorities in 2022

	Average Monthly Cost	Number of Stores Sampled
British Columbia	\$1,263	245
Fraser Health	\$1,193	88
Interior Health	\$1,264	39
Northern Health	\$1,300	18
Vancouver Coastal Health	\$1,311	62
Island Health	\$1,366	38

Figure 1. Average monthly cost of the nutritious food basket for a reference family of four across the BC health authorities in 2022

British Columbia \$1,263



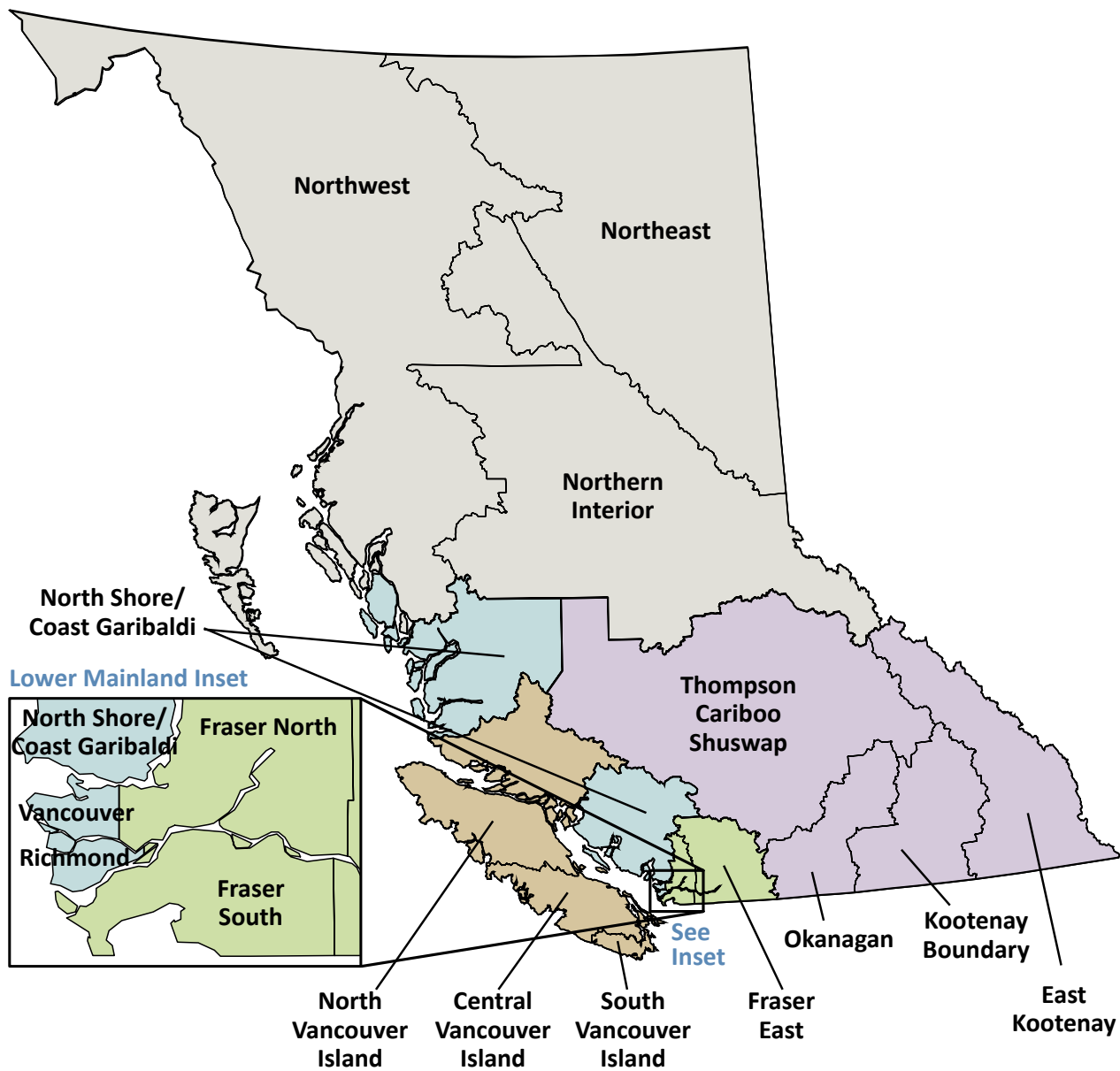
Data Source: BC Nutritious Food Basket Food Costing Survey, 2022

The average monthly cost of the nutritious food basket for the reference family of four across the BC health service delivery areas (HSDAs) is presented in Table 2. Geographic Information System (GIS) maps showing the average monthly food cost across HSDAs within each of the five regional health authorities are included in Appendix 3.

Table 2. Average monthly cost of the nutritious food basket for each health service delivery area for a reference family of four in 2022

	Average Monthly Cost	Number of Stores Sampled
Fraser Health		
Fraser East	\$1,109	16
Fraser North	\$1,234	33
Fraser South	\$1,194	39
Interior Health		
East Kootenay	\$1,307	8
Kootenay Boundary	\$1,230	6
Okanagan	\$1,294	15
Thompson Cariboo Shuswap	\$1,205	10
Northern Health		
Northeast	\$1,104	6
Northern Interior	\$1,247	6
Northwest	\$1,571	6
Vancouver Coastal Health		
North Shore/Coast Garibaldi	\$1,379	25
Richmond	\$1,179	9
Vancouver	\$1,287	28
Island Health		
Central Vancouver Island	\$1,343	13
North Vancouver Island	\$1,370	9
South Vancouver Island	\$1,386	16

Figure 2. Locations of the 16 HSDAs across BC



The cost of the nutritious food basket in Table 1 and Table 2 are reported based on a reference family of four (two adults and two children). Table 3 shows the calculation for the reference family of four.

Table 3. Calculation of the 2022 nutritious food basket for a reference family of four in BC

Sex	Age	Average Monthly Cost
Female	4 – 8 years	\$222
Male	14 – 18 years	\$354
Female	31 – 50 years	\$309
Male	31 – 50 years	\$378
Subtotal		\$1,263
Multiply by the household adjustment factor for a family of four		X 1.0
Total monthly cost		\$1,263

A heteronormative nuclear family of four was used as the reference family to calculate average NNFB costs to align with the reference family used by other jurisdictions and Statistics Canada. However, individuals and families in BC live in diverse household structures and sizes. Information in Tables 4 and 5 can be used to calculate the cost of a nutritious food basket for different family types and household compositions. Because it likely costs more per person to feed a smaller family and less to feed a larger family, the household size adjustment factors found in Table 6 should be applied to the total cost. Examples of how to calculate the cost of a nutritious food basket using the household size adjustment factor for a single mother with one son, a single young male adult and a single female senior are provided in Tables 6a-c. The figures provided in these tables are not meant to be prescriptive for individuals, and actual costs of eating will vary based on a number of factors including but not limited to dietary needs and preferences and availability of time and resources to prepare food.

Table 4. Average monthly cost of the nutritious food basket in BC for different age and sex groups in 2022

Males		Average Monthly Cost	Females		Average Monthly Cost
Age Group			Age Group		
2- 3 years		\$199	2- 3 years		\$199
4- 8 years		\$225	4- 8 years		\$222
9- 13 years		\$293	9- 13 years		\$289
14- 18 years		\$354	14- 18 years		\$289
19- 30 years		\$401	19- 30 years		\$314
31- 50 years		\$378	31- 50 years		\$309
51- 70 years		\$335	51- 70 years		\$284
Over 70 years		\$313	Over 70 years		\$272
Pregnancy					
			Younger 18 years		\$338
			19- 30 years		\$359
			31- 50 years		\$353
Breastfeeding					
			Younger 18 years		\$336
			19- 30 years		\$355
			31- 50 years		\$353

Table 5. 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

Table 6a. Calculation of the nutritious food basket for a single mom and her son in BC in 2022

Sex	Age	Average Monthly Cost
Female	35 years	\$309
Male	12 years	\$293
Subtotal		\$601
Multiply by the household adjustment factor for a family of two		X 1.10
Total monthly cost		\$661

Table 6b. Calculation of the nutritious food basket for a single young male adult in BC in 2022

Sex	Age	Average Monthly Cost
Male	20 years	\$401
Subtotal		\$401
Multiply by the household adjustment factor for a household of one		X 1.20
Total monthly cost		\$481

Table 6c. Calculation of the nutritious food basket for a single female senior in BC in 2022

Sex	Age	Average Monthly Cost
Female	75 years	\$272
Subtotal		\$272
Multiply by the household adjustment factor for a household of one		X 1.20
Total monthly cost		\$327

Affordability of a nutritious food basket

Table 7 presents provincial averages of the cost of food and housing as a proportion of disposable income for five different household compositions and income scenarios. This data shows that once families or individuals who rely on income or disability assistance have paid for housing and food, little to no money remains for other basic needs and living costs such as utilities, transportation, childcare, health and medical costs, education/student loans, and essential items such as toiletries and cleaning supplies. In some cases, once rent has been paid, there is not enough money left to afford a nutritious food basket and families or individuals must choose between having a roof over their heads and eating enough nutritious food.

With the exception of the example of a single female senior, families and individuals on income and disability assistance in BC require 32% to 39% of their monthly disposable income to purchase a nutritious food basket. A family of four where both parents work full time at minimum wage requires 24% of their monthly disposable income to purchase a nutritious food basket. A single female senior on income assistance, which includes Old Age Security and the Guaranteed Income Supplement for low-income seniors over the age of 65, must spend 17% of their income on a nutritious food basket.

Table 7: Cost of food as a proportion of disposable income for five scenarios

Monthly Income and Costs	Family of four, income assistance	Family of four, minimum wage ^[5]	Single parent with one child, income assistance	Single young male adult, disability assistance	Single female senior, income assistance
Disposable income 2022 ^[6]	\$3,232	\$5,251	\$2,050	\$1,421	\$1,875
Housing type	3-bedroom	3-bedroom	2-bedroom	Bachelor	1-bedroom
Cost of housing ^[7]	\$1,657	\$1,657	\$1,500	\$1,150	\$1,300
% income required for housing	51%	32%	73%	81%	69%
Cost of food ^[8]	\$1,263	\$1,263	\$661	\$481	\$327
% income required for food	39%	24%	32%	34%	17%
What's left after housing and food	\$311.89	\$2,330.69	-\$111.82	-\$210.73	\$248.20

5 Both adults working full-time (35 hr/wk) at minimum wage.

6 Disposable income refers to income remaining after deduction of taxes and other mandatory charges. Figures here include after-tax employment earnings, tax credits, income assistance and OAS/GIS rates where applicable, calculated as of October 2022. Income information was constructed by: Research Branch, Ministry of Social Development and Poverty Reduction.

7 Monthly median rent for primary rental market in BC from the Canadian Mortgage and Housing Corporation BC (October 2021).³⁷ Utilities may or may not be included. Figures include only purpose build rental units.

8 2022 Cost of Nutritious National Food Basket in BC, provincial average.

Discussion

In 2022, the average monthly cost of a nutritious food basket for a reference family of four in BC is **\$1,263**. This report presents food costs across the province, where there appears to be some variation in average monthly cost by health authority region and health service delivery area.

Research consistently shows that the strongest predictor of household food insecurity is not the price of food itself, but household income.⁶ Therefore, food costing data is intended to be used to assess food affordability, or the percentage of income required to purchase a nutritious diet for different income scenarios. Analysis of food costs for different household compositions and income scenarios illustrates the challenges of affording a nutritious diet for individuals and households who live on low incomes.

While the cost of the nutritious food basket in 2022 cannot be compared to previous food costing data in BC, economic data show that the cost of living is increasing, and that Canada is currently experiencing historic inflation. In September 2022, prices for food purchased from stores in Canada grew at the fastest pace year-over-year (11.4%) since 1981.³⁸ In December 2022, the consumer price index (CPI) in BC was up 6.6% compared to December 2021.³⁹ Cost of food in BC rose 9.5% in that same period, with the price of groceries purchased from stores increasing 11.0%.³⁹ This suggests that the cost of the NNFB at the time of this report's release is likely higher than what is reported here as data collection took place in May-June 2022. Shelter, transportation, and health and personal costs have also been rising,³⁹ and climate change is affecting the food system in various ways, including cost, availability and disruptions to the food supply chain.⁴⁰

The price of food does not affect everyone equally. It has the biggest impact on those with the lowest incomes, and the data in this report show that it is especially challenging for individuals and households who live on income and disability assistance to afford a nutritious diet after paying for housing and other necessities. Those earning low wages or facing other challenges (such as high rents, childcare, health or transportation costs) may also struggle to afford a healthy diet while meeting their other basic needs. This is concerning, as household food insecurity is a serious public health issue with negative impacts on health and health system utilization and costs.

Research shows that household food insecurity is an income-based issue that requires income-based solutions.⁶ Charitable efforts, such as food banks and other forms of emergency food provisioning, provide temporary relief to some, but only a small percentage of households experiencing food insecurity access such services. While other food-based initiatives such as community gardens support important objectives like social connectedness and sustainable local food systems, these initiatives lack the capacity to reduce household food insecurity because they do not address root cause of the

issue: poverty.⁶ Rather, the literature shows that policies that improve household incomes are the most effective way to address household food insecurity, so that everyone can afford to eat a nutritious diet while meeting their basic needs.

Limitations

There are some limitations to the food costing sampling, methodology and analysis.

Sampling limitations

- > Data collection was a one-time snapshot event in May-June 2022 that may not necessarily reflect the average annual cost estimate or the cost of a nutritious food basket at the time this report is published.
- > While a random sample of stores is used, the cost of food items in the sampled stores may not be representative of average costs in the HSDA, health authority region or in BC.
- > Certain types of stores (e.g., stores in remote areas) may have been more likely to be excluded from the sample than others. While a random sample of stores was selected, some sampled stores that were unable to be costed (e.g., due to store refusal of consent, inability to identify a volunteer or travel to the store) were replaced with stores from a “contingency list” which was also randomly generated.
- > The exclusion of non-full-service grocery stores may influence the estimated costs and may not reflect the cost in remote areas where there are a limited number of full-service grocery stores.
- > Food costs may also be affected by the proportion of larger chain grocery stores sampled, especially those that are known for having lower prices, versus smaller, independent grocery stores.
- > Some health authority regions and HSDAs may have a higher proportion of large chain stores sampled than others, which may not represent the true cost of food across the region. For example, the Northeast HSDA has the lowest average monthly cost of the NNFB of all 16 HSDAs (\$1,104). All six stores sampled in the Northeast HSDA were large chain grocery stores in two of its main population centres and likely do not reflect the true cost of food in smaller, independent stores and more rural and remote areas in the HSDA.

Methodological limitations

- > Not everyone shops at or has access to full-service grocery stores. Some people access food by traditional and non-commercial means such as growing, fishing, hunting and gathering, which also have associated costs.
- > Rural and remote areas have a limited number of full-service stores, and people may be more likely to shop at smaller grocers who often offer foods at higher prices.
- > Transportation costs are not considered for communities who may have to travel long distances to access a full-service grocery store.
- > Not all 61 food items were available at every store, so some data was missing. This report does not include analysis of availability of NNFB food items in stores.
- > The NNFB includes a variety of foods that Canadians reported consuming in the most recent (2015) Canadian Community Health Survey-Nutrition, and may not reflect current popularity or food consumption in BC.
- > The NNFB and Health Canada's costing analysis tool does not consider cultural preferences, dietary restrictions, allergies or special diets, which may affect the actual cost of healthy eating for individuals and households.
- > When applied to sub-provincial levels, demographic and geographic differences between RHAs/HSDAs may not be fully captured by the current Health Canada NNFB costing analysis tool. These differences include but are not limited to:
 - > Age and sex distribution,
 - > Ethnicity/culture,
 - > Average family/household composition,
 - > Rural/remoteness vs. urbanity,
 - > Seasonality of food items, and
 - > Seasonality of sales promotion.
- > While BCCDC provided training tools and opportunities to support consistent data collection across all volunteers and Health Authority Registered Dietitians (RDs), some variations in the collected data are possible.

Affordability analysis limitations

- > The assessment of affordability and income scenarios is only reported at the provincial level. There are variations in both food and housing costs across the province, which are not captured in the provincial averages reported here.
- > While up to date (as of October 2022) minimum wage and social assistance rates were utilized, the most recent provincial housing data available was from 2021. Actual housing costs in 2022 are likely significantly higher than those used in the analysis.
- > The housing data only includes costs of purpose built rental units (i.e., units designed and built for the purpose of long-term rental accommodation) and does not include costs for the secondary housing market (i.e., suites that may be available for rent one year, and not the next) or home ownership.
- > Income scenario analysis does not take into account costs of other necessities or living costs that affect the affordability of healthy eating.

Conclusion

Equitable access to affordable, culturally preferable, nutritious and safe food is critical to the health and wellbeing of the BC population. Households and individuals that experience household food insecurity face numerous health and social challenges. In this report, the 2019 National Nutritious Food Basket (NNFB) tool was used to assess the cost and affordability of healthy eating.

In May-June 2022, the average monthly cost of a nutritious food basket for a reference family of four in BC was **\$1,263**. There was some variation in average monthly cost by health authority and by health service delivery area. This data can be used to assess the affordability of healthy eating for different population groups and to provide insight into the challenges food insecure households face to purchase a nutritious diet. Food costing data is also used in living wage and affordability calculations in BC.

The price of food has the biggest impact on those with the lowest incomes. The data in this report show that it is especially challenging for individuals and households who live on income and disability assistance to afford a nutritious diet while also paying for housing and other basic needs. Research shows that the strongest predictor of household food insecurity is not food prices, but inadequate incomes. Therefore, addressing household food insecurity requires policy action to increase incomes so that everyone can afford to eat a nutritious diet that supports health and overall wellbeing.

While income is the strongest predictor of household food insecurity, a number of economic, social, environmental and geographic factors affect people's access to enough foods that promote wellbeing. The affordability of healthy eating should be considered together with intersecting issues, such as climate change and food availability, to effectively address broader issues of food insecurity and ensure everyone has equitable access to food that is affordable, culturally preferable, nutritious and safe.

In the context of record inflation, increasing costs of living, climate change impacts on the food system and ongoing recovery from the COVID-19 pandemic, there is an urgent need for equity-based solutions to food insecurity in BC.

Appendix 1

Contents of the 2019 National Nutritious Food Basket

Food Category	Food Item	
Vegetables and Fruit	Cucumber, fresh	Green beans, frozen
	Celery, fresh	Broccoli, frozen
	Tomatoes, canned	Peas, frozen
	Mushrooms, fresh	Green pepper, fresh
	Onions, fresh	Romaine lettuce, fresh
	Tomatoes, fresh	Spinach, frozen
	Apples, fresh	Winter squash, fresh
	Bananas, fresh	Carrots, fresh
	Grapes, fresh	Sweet potatoes, fresh
	Oranges, fresh	Potatoes, fresh
	Pears, canned	Corn, frozen
	Strawberries, frozen	Mixed vegetables, frozen
	Peaches, canned	Cabbage, fresh
	Cantaloupe, fresh	Iceberg lettuce
	Fortified soy beverage	Tuna, canned
Protein Foods	Tofu	Pink salmon, canned
	Hummus	White fish, frozen
	Chickpeas, canned	Eggs, fresh
	Kidney beans, canned	Chicken legs
	White beans, canned	Ground turkey
	Black beans, canned	Pork chops
	Lentils, dry	Beef, inside round roast
	Sunflower seeds	Mozzarella cheese
	Peanuts, unsalted	Milk, 2% M.F.
	Peanut butter, natural	Plain yogurt, 1-2% M.F.
Whole Grain Foods	Brown rice	Whole wheat pita, roti or chapatti
	Quick rolled oats	Whole wheat dinner roll
	Whole grain wheat flour	O-shaped oat cereal, plain
	Whole wheat pasta	Shredded wheat, plain
Unsaturated Fats	Vegetable oil	
	Mayonnaise	
	Margarine	

Data source: Health Canada: <https://www.canada.ca/en/health-canada/services/food-nutrition/food-nutrition-surveillance/national-nutritious-food-basket/contents.html#foods-and-bev>

Appendix 2

Technical notes

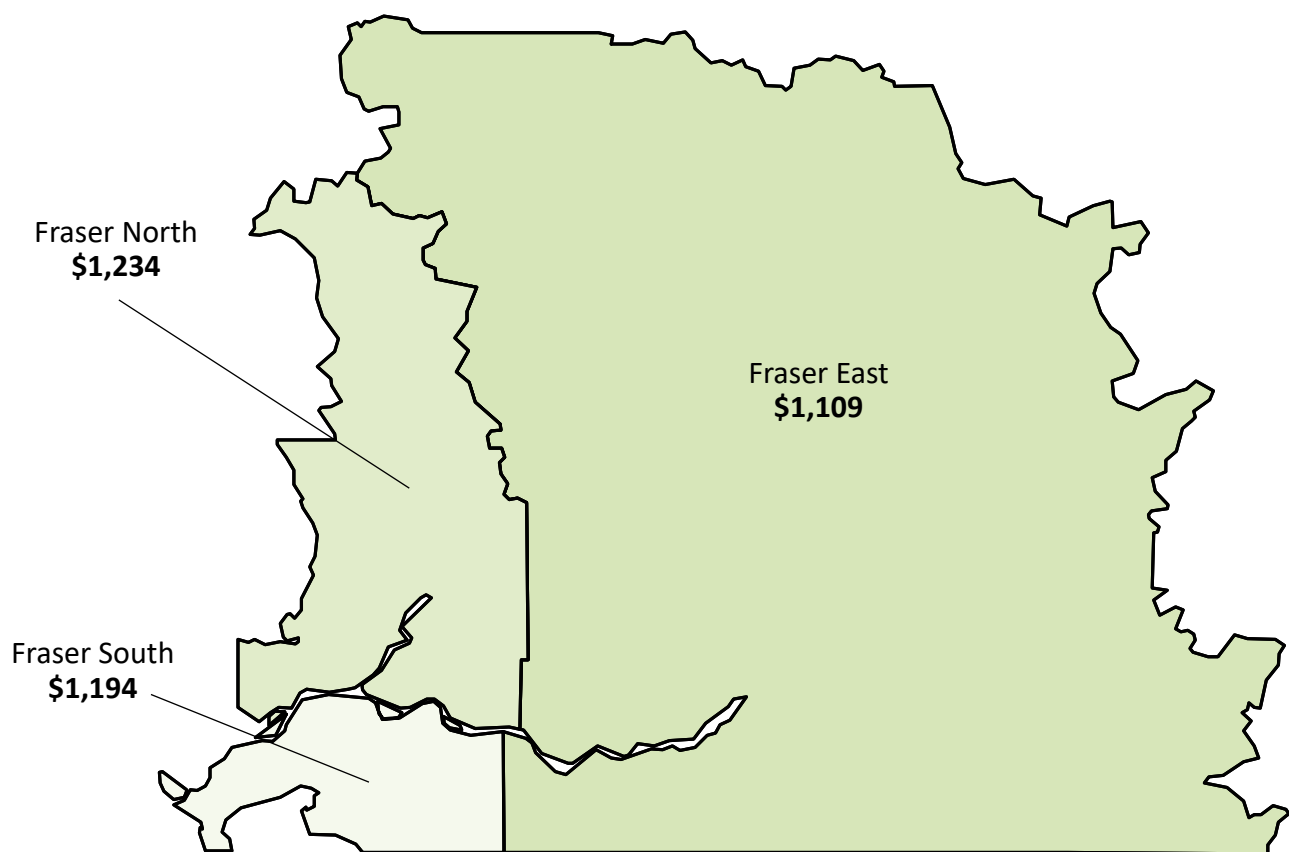
- > A substitution was made to Health Canada’s 61-item NNFB food item list. Whole wheat sliced bread was included in place of whole-wheat flatbread. Consultation with Health Canada deemed this change unlikely to affect the results of the costing exercise or the nutrient profile of the basket.
- > Foods and beverages in the food basket have little to no added sodium and saturated fat, and little to no free sugars. For example, canned vegetables and legumes are of the “no salt added” or “low in sodium” variety and canned fruits are in water instead of juice or syrup. However, substitutions were allowed for some items where the NNFB item was not available, which may have affected the cost and nutrient profile. For example, where low-sodium canned items were not available, costers were instructed to record the prices of the item with salt added, if available.
- > Large eggs in BC are slightly larger than the standard egg weight included in the Health Canada NNFB tool; however, we did not change the weight conversion factor to reflect that of BC egg sizes.
- > Some food prices (lettuce, cucumbers, celery, eggs, dinner rolls) were recorded per item rather than by weight. In cases where item weights were not recorded, average historical weights from previous food costing cycles were used.
- > Data for 10 stores were collected outside of the standard 2-week food costing period. All data were collected between May 26-June 29, 2022.

Appendix 3

Maps of food costs for each health authority at the HSDA level

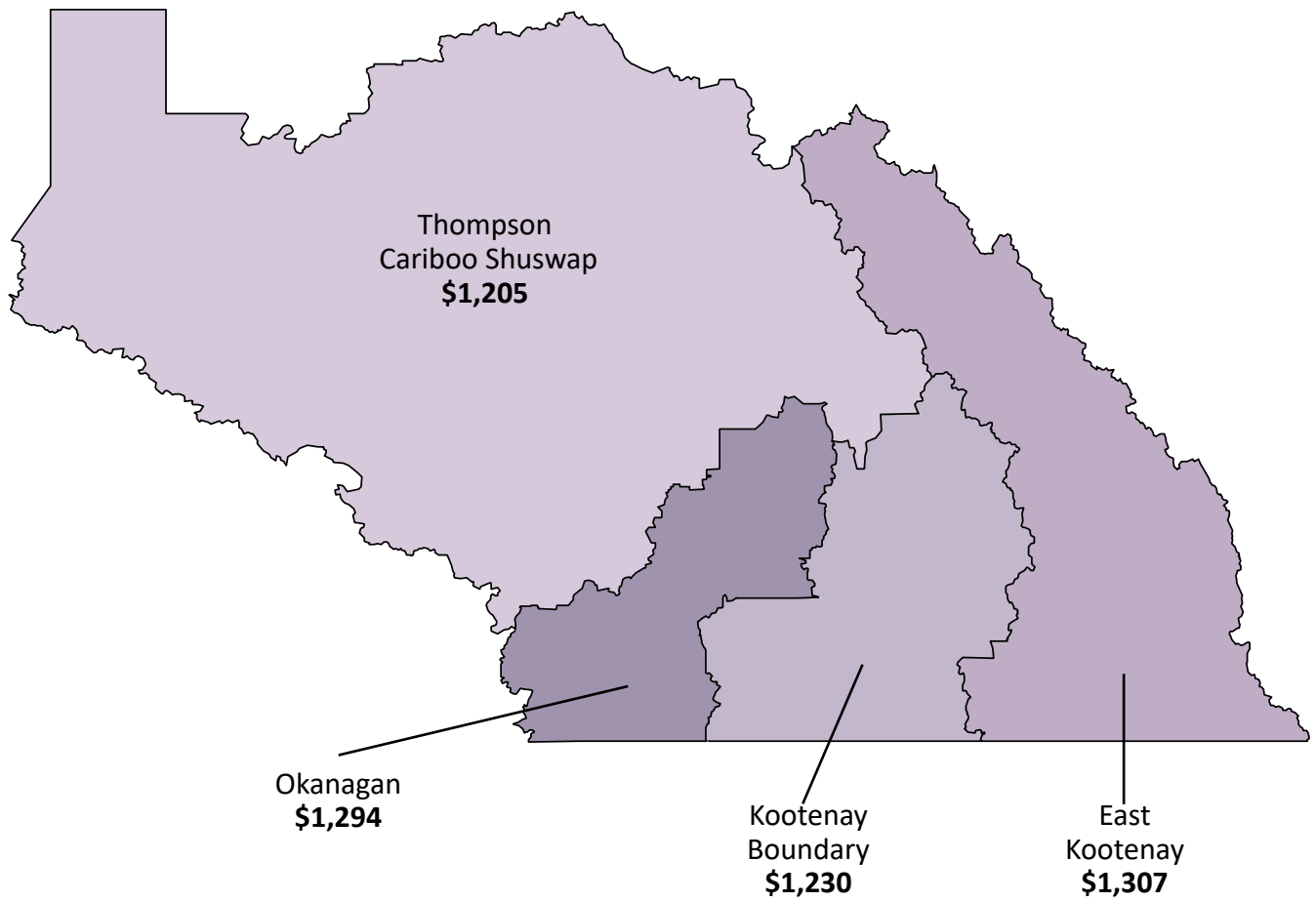
Figures 5-9 show the average monthly cost of a nutritious food basket for a reference family of four across the HSDAs for each of the five regional health authorities.

Figure 5. Average monthly cost of the nutritious food basket for a reference family of four across the Fraser Health HSDAs in 2022



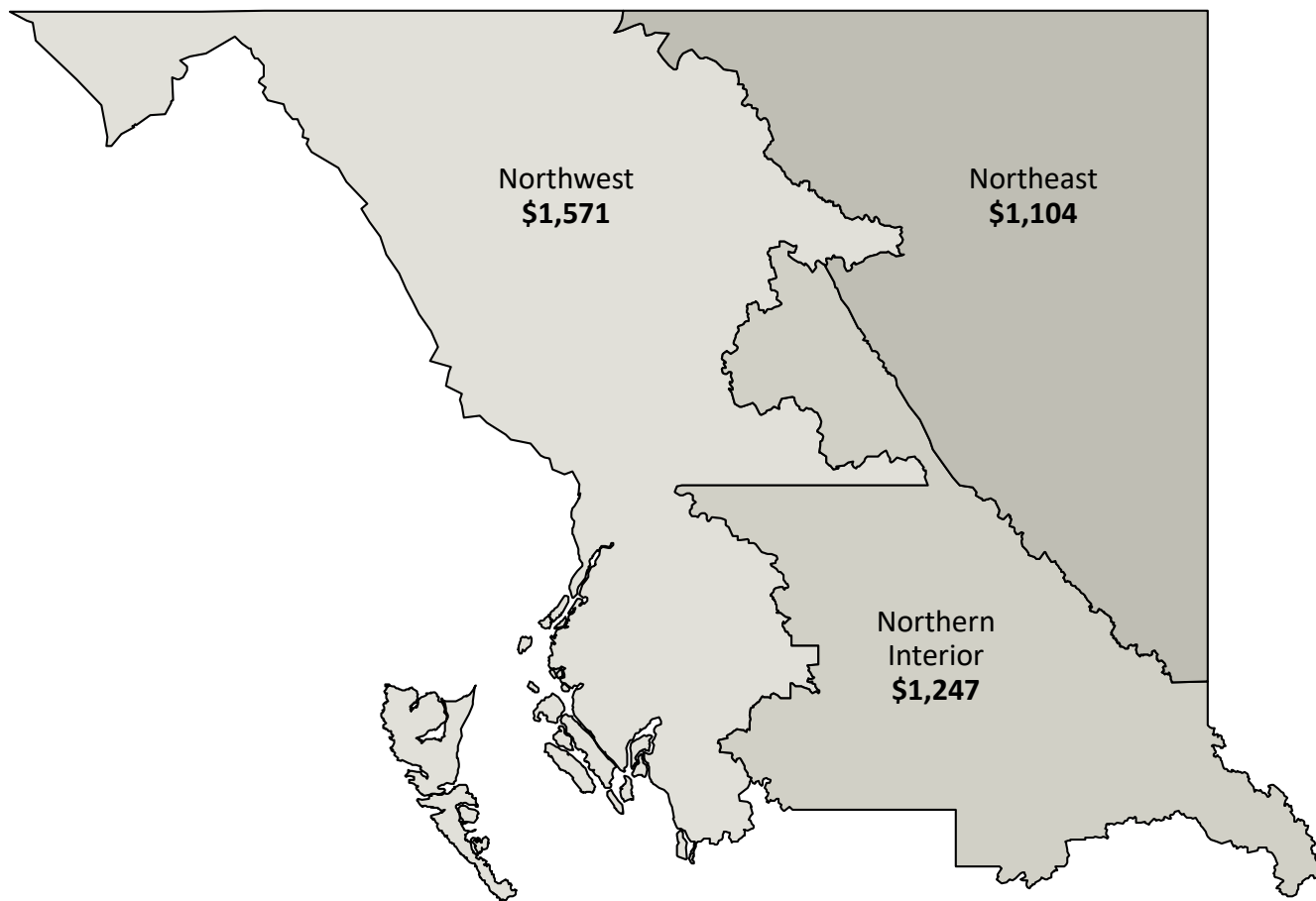
Data Source: BC Nutritious Food Basket Food Costing Survey, 2022

Figure 6. Average monthly cost of the nutritious food basket for a reference family of four across the Interior Health HSDAs in 2022



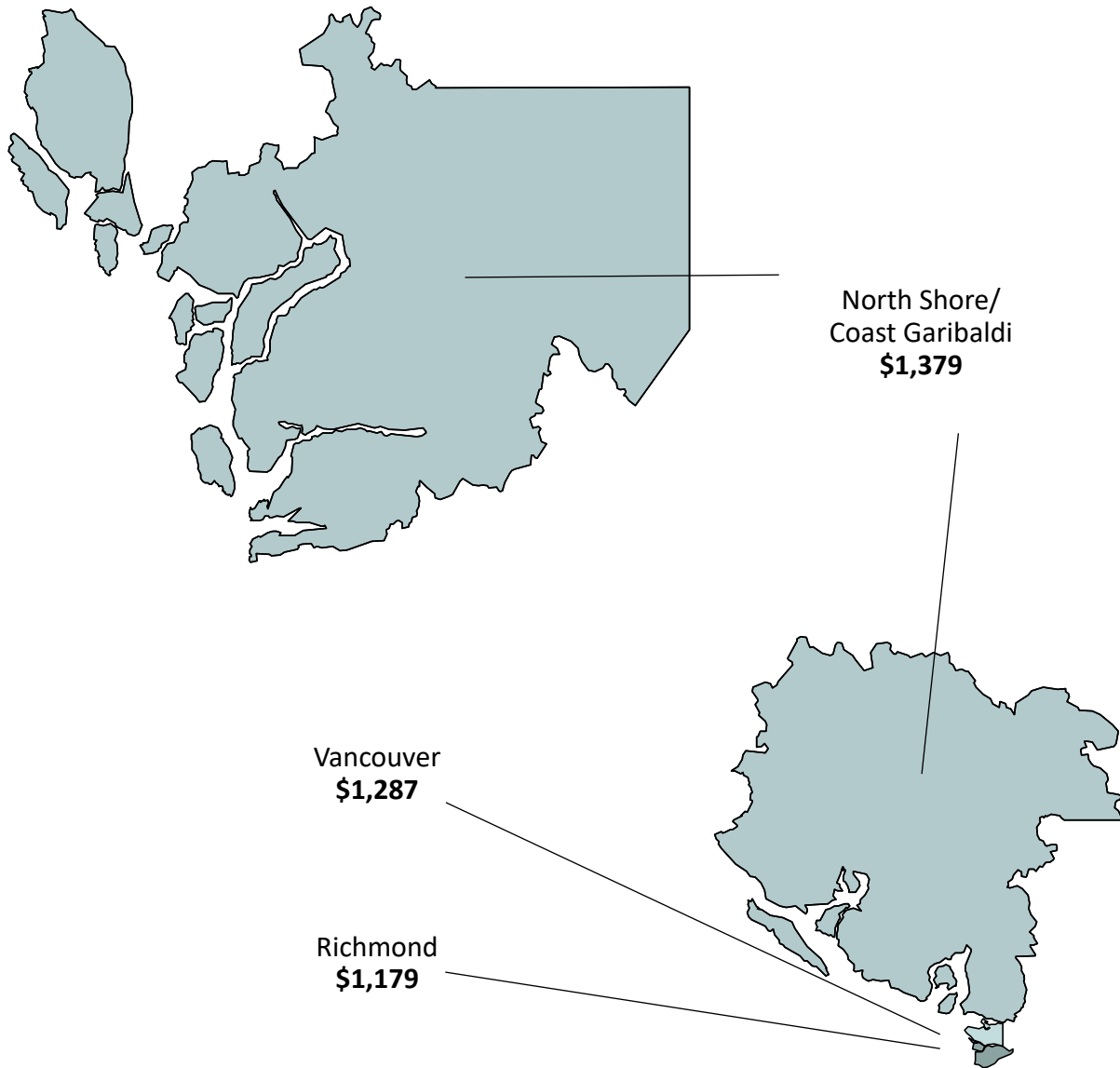
Data Source: BC Nutritious Food Basket Food Costing Survey, 2022

Figure 7. Average monthly cost of the nutritious food basket for a reference family of four across the Northern Health HSDAs in 2022



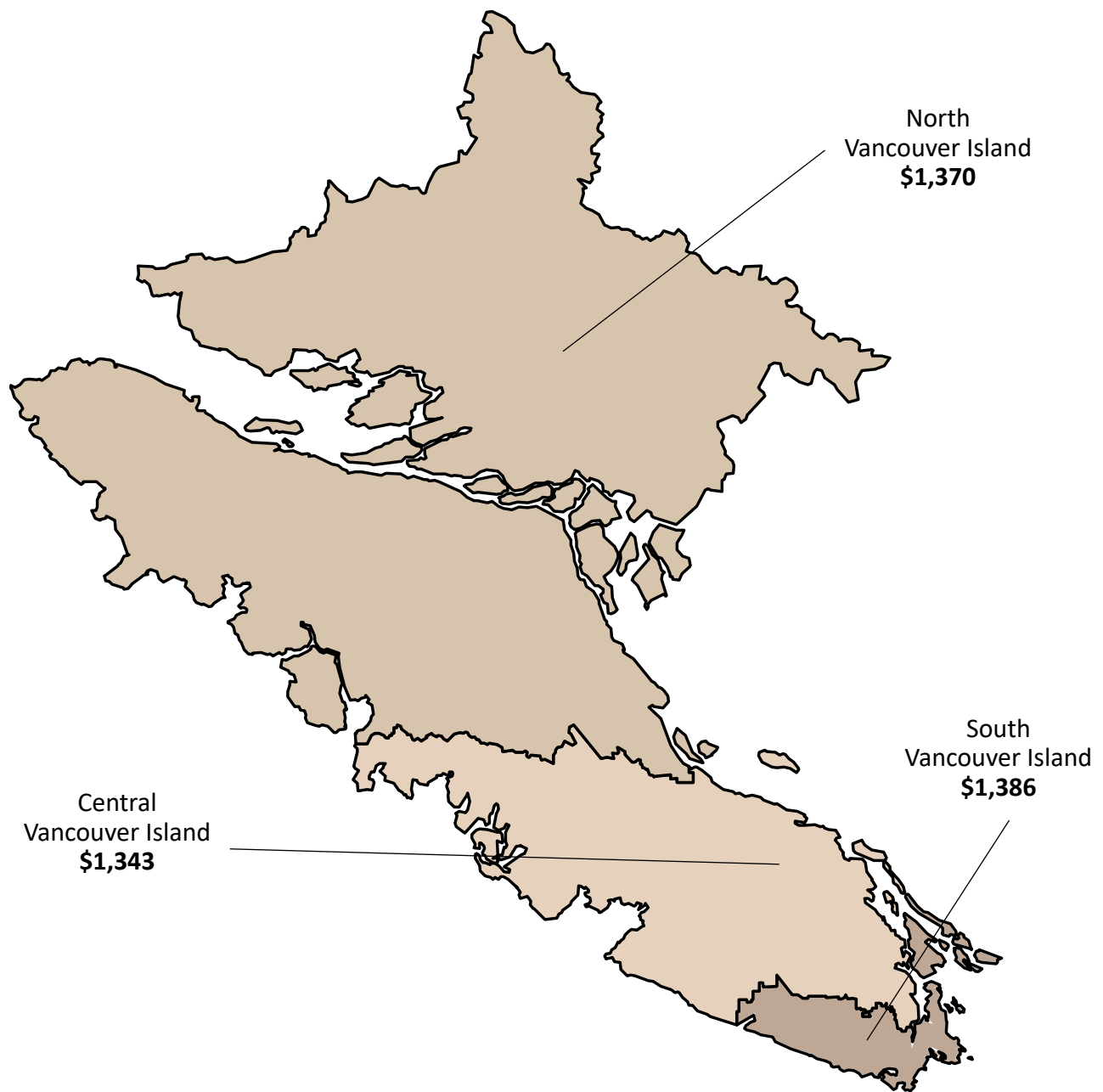
Data Source: BC Nutritious Food Basket Food Costing Survey, 2022

Figure 8. Average monthly cost of the nutritious food basket for a reference family of four across the Vancouver Coastal Health HSDAs in 2022



Data Source: BC Nutritious Food Basket Food Costing Survey, 2022

Figure 9. Average monthly cost of the nutritious food basket for a reference family of four across the Island Health HSDAs in 2022



Data Source: BC Nutritious Food Basket Food Costing Survey, 2022

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