Nutritious Food Basket 2023 Report

То:	Chair and Members of the Board of Health		
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Recommendations

It is recommended that the Board of Health:

- 1. Receive the report for information.
- Share the Wellington-Dufferin-Guelph Nutritious Food Basket (NFB) survey results with the following groups to increase community awareness of the cost of healthy eating:
 - Consumers through Public Health's website and other communications vehicles as appropriate.
 - Local health and social service groups and officials.

Key Points

• The Nutritious Food Basket (NFB) tool was used to estimate the cost and affordability for an individual or household to eat healthy in Wellington, Dufferin and Guelph (WDG) in 2023.

- In 2023, the cost of the NFB in WDG for a reference household of four people is \$311.61 per week, compared to \$272.67 per week in 2022 (an increase of 14%).
- The highest risk groups for food insecurity include low-income households, households with limited assets (e.g., homeownership, savings), Indigenous households and other racial/cultural groups, female-led lone-parent households and households reliant on income supports.
- Public Health must continue to work with community partners to raise awareness about the root causes of food insecurity and advocate for effective policies that ensure people are not financially constrained and can afford adequate nutritious food.

Background

Food Insecurity Definition

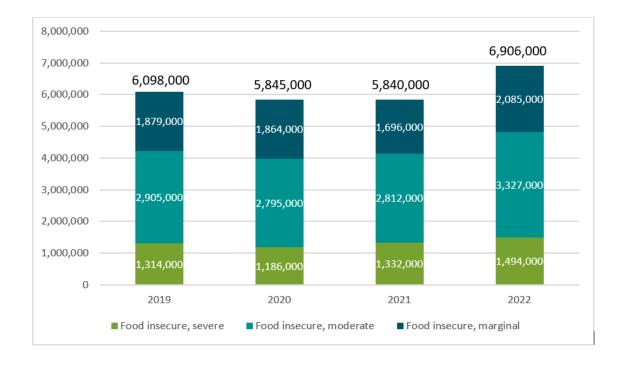
Food insecurity is defined as, "inadequate or insecure access to food due to financial constraints."^{1,2} Household food insecurity is tightly linked to other indicators of social and economic disadvantage and is a marker of material deprivation.² The following helps to identify the different levels of how food insecurity can be classified:

Food Secure	No indication of any income-related problems of food access
Marginally Food Insecure	Some concern or problem of food access
Moderately Food Insecure	Compromises in the quality and/or quantity of food consumed.
Severely Food Insecure	Extensive compromises including reduced food intake ²

Prevalence of Food Insecurity

Nationally, food insecurity has increased past pre-pandemic levels (Figure 1). The dip in rates observed in 2020 and 2021 is likely related to various government-issued COVID-19 supports that were available during those years such as new wage subsidies and other short-term interventions to support households through the pandemic.² Over the past two years the cost of living has increased significantly, including the cost of food. The Canadian Consumer Price Index shows that there has been a 4% increase in all items listed in the index and a 7% increase in the cost of food in Canada from August 2022 to August 2023.³

Figure 1: Number of people living in food-insecure households in the ten provinces of Canada, 2019-2022⁴



In 2022, 19% of households in Ontario were food insecure.⁴ That means almost 1 in 5 households in Ontario are experiencing some level of food insecurity.⁴

A 2023 Public Health Ontario report analyzed data from the Canadian Income Survey and reported that, from 2020-2022,**17.9%** of households were food insecure in the WDG region.⁵ Based on the Canadian Health Survey of Children and Youth (CHSCY), 17.3% of children 1 to 17 years old in WDG lived in food-insecure households in 2019.⁶

In 2022, the University of Guelph reported that 39.5% of students were food insecure.⁷ This is much higher than previous food insecurity rates (20%) among students reported in a 2019 survey.⁸ The two surveys used different methods of measuring food insecurity, so caution needs to be taken when making comparisons between these findings. Although these rates are very high, it is also important to note that other Canadian research found food insecurity rates are higher among non-students of similar age compared to students in post-secondary education.⁹ This study showed that food insecurity was 15% among full-time post-secondary students, 16% among part-time students and 19% among non-students.⁹ Young adults who were not attending post-secondary school were more vulnerable to food insecurity especially severe food insecurity compared to full-time post-secondary students.⁹ Rising inflation rates and these survey findings suggest that food insecurity among young adults at risk will continue to increase. It is important to consider effective policy interventions focused on young, working-age adults or students as another key group to target when addressing food insecurity.

Food Bank Usage

Food Banks Canada (FBC) reported over 1.9 million visits to food banks during the month of March 2023. Since March 2022, there has been a 32% increase in food bank usage and a 78.5% increase since 2019.¹⁰ The main reasons people accessed a food bank were low wages or not enough hours of work and food and housing costs. Those reliant on social assistance make up the largest portion of people accessing food banks.¹⁰ Forty-two percent of households accessing food banks reported social assistance as their main source of income and one in six reported employment as their main source of income. Single adult households account for 44% of households accessing food banks.¹⁰

WDG Public Health's Nutritious Food Basket

WDG Public Health has used the Nutritious Food Basket (NFB) survey tool since 1998 to monitor the cost and affordability of healthy eating.¹¹ This is the second year that the newest version of NFB costing tool and protocol was used and therefore comparisons can be made between 2022 and 2023 data. The NFB data obtained in 2023 is of high quality and can help to inform community action on household food insecurity.

Discussion

NFB methods

The NFB survey was conducted in May of 2023 by a WDG Public Health nutritionist and a health promotion specialist. Seven grocery stores were used for food pricing, including chain and independent stores across WDG. These stores were assessed using the new 2022 Ontario Dietitians in Public Health Nutritious Food Basket Guidance document.¹² To compare incomes and expenses for the purchase of food and rental housing for people in a variety of scenarios, case scenarios were created for analysis (Appendix A). The average rental rates in the City of Guelph were used for the data in the income scenarios and were accessed from the 2022 Primary Rental Market Statistics for Guelph from the Canadian Housing Mortgage Housing Corporation.¹³ Shelter is a fixed expense, so it is important to consider housing costs when assessing food affordability. Shelter is often prioritized over other expenses like healthy food since housing is a critical need.

NFB results

The results of the 2023 NFB costing activity can be viewed in Appendix A. For a reference family of four, the cost of the NFB in WDG is \$1349.27 per month (**\$311.61** per week). In 2022, the cost of the NFB in WDG was \$1180.70 per month (\$272.67 per week).¹⁴ The 2023 NFB cost for a reference family of four is 14% higher than in 2022. National data also reveals significant increases to the cost of food. The Canadian Consumer Price Index shows a 7% increase in the cost of food in Canada from August 2022 to August 2023.³

The results clearly show that many people in WDG do not have enough income to afford healthy food. The largest expense for most low-income residents is housing. Housing is considered affordable if it costs less than 30% of a household's income.¹⁵ The income spent on rent is much higher than 30% (35 percent to 114% percent) in nine out of the ten income scenarios presented in Appendix A, leaving very little money to purchase food and cover other basic expenses after rent is paid.

Of all the income scenarios, a single person receiving Ontario Works (OW) fares the worst, requiring 114% of their income to afford rent. This means a single person on OW does not have enough money for rent or any other expenses, including food. A single

person on OW would require 56% of their income to afford healthy food excluding other basic living expenses (Appendix A). If a single person on OW paid rent and purchased the NFB they would exceed their monthly income by \$609 (Refer to Table 1).

Estimates show a family of four with a median Ontario income would spend approximately 19% of its income on rent, 15% on food, and would have \$6182 left over to cover other monthly expenses (Table 1). A family of four with a median Ontario income (assumes 2 income earners) can afford rent and the NFB as this case scenario demonstrates. The case scenario for a family of four on Ontario Works (OW) estimates it would cost about 63% of their income to afford rent and about 43% of their income to purchase healthy food. This scenario estimates that this family would require an additional \$308 to afford only rent and food let alone any other expenses (Table 1).

Four out of the ten income scenarios require more income (11-70%) to afford the nutritious food basket and rent, regardless of any other expense (See table 1). These four income scenarios were all dependent on social assistance (OW and ODSP) as an income source and three out of the four scenarios that cannot afford rent and food are single-person households reliant on social assistance. This demonstrates that relying on social assistance (especially for single people) puts an individual at serious risk of being food insecure.

Four other low-income scenarios also show very little money left for other expenses after paying for rent and food. These four scenarios have a range of 12-26% of their income to afford other expenses (e.g., utilities, transportation, clothing etc.).

Income Scenario	Percentage income required for monthly rent	Percentage income required to purchase the NFB for a month	Total percentage of income required for mothy rent and the NFB	Money left for all other monthly expenses
Family of four median income (two income earners)	19%	15%	34%	\$6181.73
Family of four on OW	63%	48%	-11%	-\$(308.27)
Single person on OW	114%	56%	-70%	-\$(608.76)

Table 1: Presentation	of select income	scenarios from	Appendix A
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Single person on ODSP	98%	35%	-33%	-(454.76)
Single pregnant person on ODSP	95%	33%	-28%	-(387.58)

A scenario that includes a family of four with two minimum-wage earners is not included in the NFB tool in Appendix A. However, estimating a scenario with two minimum-wage earners, such a family would struggle to afford basic expenses. The Canadian Centre for Policy Alternatives released a 2022 report stating that for most Census Metropolitan areas in Canada, the average rents far exceed what workers earn on the minimum wage.¹⁶

Based on the scenarios presented in Appendix "A", families with adequate incomes can afford the nutritious food basket but low-income households dependent on social assistance cannot afford healthy nutritious food. This is concerning since local statistics indicate the average number of monthly OW beneficiaries in Wellington County between January and July 2023 was 1853, a 6% increase from 2022.¹⁷ The average number of monthly OW beneficiaries in Dufferin in (Q2, 2023) was 482 compared to 427 in Q2 2022 which is a 10% increase over the previous year.¹⁸ It is important to note the beneficiaries of OW includes various family structures but the two family structures making up most of the cases are single individuals without children (65% of cases) and single individuals with children (30% of cases).¹⁷ Single individuals without children do not receive the Canada Child Benefit and have significantly less income and would struggle far more to afford rent and food.

Coping with Food Insecurity

Food insecure households often cope through strategies that manage income and many also resort to strategies that manage food. For example, parents have cut back on their own food intake to feed their children.¹⁹ Other strategies households use to make income go further include using coupons, returning bottles, postponing bill payments, borrowing money, borrowing food, selling possessions and buying food on credit.¹⁹ Many households also consume cheaper foods, skip meals or eat less.¹⁹ Canadian research revealed that food insecure university students have used coping strategies such as applying for a loan or bursary, seeking employment, working more hours and purchasing food using a credit card.¹⁹ In addition, housing affordability can lead to

undesirable sharing and crowding.²⁰ Individuals' overall quality of life and mental health have been shown to be negatively impacted by insecure renting arrangements.²¹

Health Equity Implications

WDG Public Health's 2023 Poverty and Health Board of Health Report found poverty has significant negative impacts on health. According to the report, "poverty and poor health outcomes create a self-perpetuating cycle that is incredibly challenging to escape."²² Putting food on the table is a constant struggle for food insecure households and a significant source of stress.¹⁹

Inadequate intake of key nutrients and poor health outcomes are negative outcomes that result from food insecurity. ²³ People experiencing food insecurity have a higher rate of being diagnosed with chronic conditions including mental health disorders (e.g., depression and suicide ideation) and non-communicable diseases ^{24-27,28,29} (e.g., heart disease, stroke and diabetes) than those who are food secure. People living with food insecurity are diagnosed with infections more than those that are food secure.³⁰⁻³² There are significant negative health outcomes on a child's wellbeing for those who are experiencing food insecurity including increased risk for asthma, depression and suicidal ideation in adolescence and early adulthood.^{33,34} An Ontario study revealed that children and adolescents living in households that are experiencing food insecurity have a greater use of health services for mental health and substance use disorders than children and adolescents living in food secure homes.³⁵

Managing chronic conditions are more difficult when someone is experiencing food insecurity (i.e., inability to afford healthy food or medications) leading to increased chance of negative disease outcomes, hospitalization and, in worst cases, premature death.^{32, 36,37, 38} Food insecure individuals had 1.42 times higher incidence rates of paindriven emergency department visits compared with food secure individuals.³⁹ This study also found that food insecurity was associated with site-specific pain and found that severely food-insecure individuals had significantly higher pain incidence than individuals who were food secure.³⁹ Severe food insecurity was associated with more frequent, multi-cause, critical and after-hours emergency department visits.³⁹ This study concluded that household food insecurity status is significantly associated with paindriven emergency department visits and that policies targeting food insecurity may reduce pain and emergency department utilization in the Canadian population.³⁹

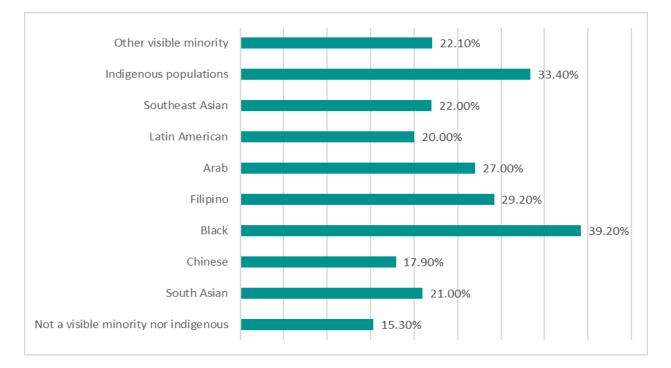
This also takes a significant toll on the health care system and health system costs.^{40,41} Not surprisingly, children and adults who experience higher degrees of food insecurity (i.e., severe food insecurity) have an increased likelihood of severe adverse health outcomes.^{26,42}

Individuals particularly at risk for food insecurity include:

- Low-income households
- Households with limited assets
- Indigenous households and other cultural/racial groups (See Figure 2)
- Female-led lone parent households
- Households reliant on income supports (other than public pensions)²

Certain cultural/racial groups are at higher risk to food insecurity, due to Canada's long history of colonialism and systemic racism.⁴⁴ White individuals are at the lowest risk when compared to other cultural or racial groups in the population who have much higher rates of food insecurity (refer to Figure 2). Black people were the highest percentage of individuals living in food-insecure households in 2022 at 39.2% followed by indigenous peoples at 33.4%.⁴

Figure 2: Percentage of people living in food-insecure households by racial/cultural identity & Indigenous status in the ten provinces, 2022⁴



Addressing Root Causes of Food Insecurity

Second Harvest – a national food recovery network – reported there are four times more food charities (i.e., churches, temples, mosques, senior centres, schools, or social programs) than there are chain and independent grocery stores across Canada.⁴⁴ An estimated 33 billion dollars in food was provided by charities to people in Canada in 2020.⁴⁵ In 2021, there were at least 39 food access programs in Guelph-Wellington serving food insecure households.⁴⁵ Due to the University of Guelph's high rate of food insecurity, five student food access programs have been established on campus.⁴⁶ Only 25% of food insecure households access these emergency services due to a variety of barriers (e.g., transportation, food variety, hours of operation).⁴⁵

WDG Public Health, Our Food Future and Toward Common Ground conducted a local survey with 22 food and social service providers in Guelph Wellington. Staff who completed this survey shared ideas on how to improve food access and acknowledged that addressing the root causes of food insecurity would require income-based policy solutions.⁴⁵ Individuals experiencing food insecurity also report that income-based solutions would be the most effective interventions to help them access nutritious foods.⁴⁵

Inflation and current high costs of living put people living in WDG at increasing risk for food insecurity.² Strategies focused on effective income-related policies for areas such as housing, employment and public income supports will help families meet their basic needs and support their well-being.⁴⁷⁻⁴⁹ It is critical that evidence-based policy interventions to reduce food insecurity are considered to address food insecurity in WDG.

Conclusion

After housing and other living expenses are considered, the 2023 NFB data and income scenario analysis clearly shows that many people with low incomes in WDG do not have enough money to purchase nutritious food on a consistent basis. Food insecurity is a critical public health issue since it impacts all areas of health (i.e., mental, physical, social). The highest risk groups for food insecurity include low-income households, households with limited assets, Indigenous households and other racial or cultural groups, female-led lone parent households and households reliant on income supports.

Food access programs support many food insecure individuals, but they are unable to address the root causes of why households are financially constrained. Inflation and the current costs of living is a major concern. If measures are not taken to address the underlying reasons households lack the financial means to afford basic living expenses and keep up with the rising costs of living, many households will continue to experience food insecuirty.² WDG Public Health will continue to monitor food costs and affordability trends through the NFB protocol annually to identify who in WDG is at highest risk and raise awareness of the issue of food insecurity in WDG as a significant public health issue.

It is essential that WDG Public Health continue to work with groups working to address poverty and food insecurity such as the Guelph and Wellington Task Force for Poverty Elimination, Centre Wellington Community Foundation, Dufferin County Equity Collaborative, the Ontario Dietitians in Public Health's Food Security Work Group and Headwaters Food and Farming Alliance. It is important that effective policy changes are considered to support adequate incomes and the additional factors (i.e., structural and systemic racism) that limit household's ability to afford healthy food.⁴⁷⁻⁴⁹ It is critical that WDG Public Health and community partners work with all levels of government to ensure food insecurity is addressed with income-based solutions (e.g., guaranteed basic income, adequate social assistance rates, and reduced precarious employment conditions) so that households can afford healthy food and reduce health inequities associated with food insecurity.

Ontario Public Health Standards

Foundational Standards

- Population Health Assessment
- \boxtimes Health Equity
 - Effective Public Health Practice
- Emergency Management

Program Standards

\times	Chronic Disease Prevention and Well-Being
	Food Safety
	Healthy Environments
	Healthy Growth and Development
	Immunization
	Infectious and Communicable Diseases Prevention and Control
	Safe Water
	School Health

Substance Use and Injury Prevention

2023 WDGPH Strategic Directions

People & Culture: WDG PUBLIC HEALTH has an organizational culture of engagement, inclusion and agility.

Partner Relations: WDG PUBLIC HEALTH collaborates with partners to address priority health issues in the community.

☐ **Health System Change:** WDG PUBLIC HEALTH is positioned to be an agent of change within the broader health sector.

References

- Polsky JY, Garriguet D. Statistics Canada Health Reports: Household food insecurity in Canada early in the COVID-19 Pandemic [Internet]. 2022. [cited 2023 Oct 18]. Available from: <u>https://www150.statcan.gc.ca/n1/pub/82-003-x/2022002/article/00002-eng.htm</u>
- Tarasuk V, Li T, Fafard St-Germain AA. Household food insecurity in Canada, 2021. Toronto: Research to identify policy options to reduce food insecurity (PROOF) [Internet]. 2022. [cited 2023 Oct 18]. Available from: <u>https://proof.utoronto.ca/</u>
- Statistics Canada. Consumer Price Index, major components and special aggregates Canada Not seasonally adjusted. 2023. [cited 2023 Oct 16]. Available form: https://www150.statcan.gc.ca/n1/daily-quotidien/230919/t001a-eng.htm
- 4. PROOF. New data on household food insecurity in 2022. 2023. [cited 2023 Oct 16]. Available from: <u>https://proof.utoronto.ca/2023/new-data-on-household-food-insecurity-in-2022</u>
- Ontario Agency for Health Protection and Promotion (Public Health Ontario). Household food insecurity estimates from the Canadian Income Survey: Ontario 2019-2022. Toronto, ON: King's Printer for Ontario; 2023.
- Public Health Ontario: Enhanced Epidemiological Summary. Food Insecurity among Children using the Canadian Health Survey of Children and Youth. June 2023. [cited 2023 Oct 16]. Available form: <u>https://www.publichealthontario.ca/-/media/Documents/C/2023/food-insecuritychildren-youth-canada-survey.pdf?rev=fd4fcc3414a4480781880bf72828b429&sc_lang=en
 </u>
- 7. American College Health Association. National College Health assessment III. University of Guelph Data Report 2022.
- Ahmadi SM, Laban S, Primeau C. Hungry for Knowledge: Assessing the Prevalence of Food Insecurity at the University of Guelph. Guelph, ON: Community Engaged Scholarship Institute [Internet]. 2020. [cited 2023 Oct 16]. Available from: <u>https://atrium.lib.uoguelph.ca/server/api/core/bitstreams/8d7330d0-a2e3-4001-bff3-8f343e4d3885/content#:~:text=77%25%20of%20students%20in%20the,and%2023%25%20were %20food%20insecure.&text=insecure%20compared%20to%20students%20who%20were%20reg istered%20on%20a%20meal%20plan
 </u>

- Wang Y, Fafard St.Germain AA, Tarasuk, T. Prevalence and sociodemographic correlates of food insecurity among post-secondary students and non-students of similar age in Canada. BMC Public Health. 2023;23:1059. [cited 2023 Oct 15]. Available from: <u>https://bmcpublichealth.biomedcentral.com/articles/10.1186/s12889-023-15756-y</u>
- 10. Food Banks Canada. Hunger Count. 2023. [Cited Oct 10, 2023]. Available from: https://foodbankscanada.ca/hungercount/overall-findings
- 11. Government of Ontario. Ontario Public Health Standards 2021. [Government document online]. Toronto, ON: Queen's Printer for Ontario; 2021. [cited Oct 30, 2023]. Available from: <u>https://www.health.gov.on.ca/en/pro/programs/publichealth/oph_standards/docs/protocols_guidelines/Ontario_Public_Health_Standards_2021.pdf</u>
- 12. Ontario Dietitians in Public Health. Monitoring food affordability in Ontario, methodology, 2022 version 3. 2022.
- Canada Mortgage and Housing Corporation. Ontario Rental Market Statistics Summary by Metropolitan Areas, Census Agglomerations and Cities, October 2022 [Internet]. 2023. [cited 2023 Oct 16] Available from: <u>https://www03.cmhc-schl.gc.ca/hmippimh/en/TableMapChart/Table?TableId=2.1.31.2&GeographyId=35&GeographyTypeId=2&Displa yAs=Table&GeographyName=Ontario#Bachelor
 </u>
- 14. Wellington-Dufferin-Guelph Public Health. Nutritious food basket report. 2022. [cited 2023 Oct 160. Available from: <u>https://wdgpublichealth.ca/sites/default/files/bh.01.jan0423.r01___nfb.pdf</u>
- 15. Canadian Mortgage and Housing Corporation. About affordable housing in Canada. [Internet]. 2023 [cited 2023 Oct 16]. Available from: <u>https://www.cmhc-schl.gc.ca/en/professionals/industry-innovation-and-leadership/industry-expertise/affordable-housing/about-affordable-housing/affordable-housing-in-canada</u>
- 16. Macdonald D & Tranjan R. Can't afford the rent: Rental Wages in Canada 2022. The Canadian Centre for Policy Alternatives. 2022. [cited Nov 7 2023]. Available from: <u>https://policyalternatives.ca/sites/default/files/uploads/publications/National%20Office/2023/07/cant-afford-the-rent.pdf</u>
- 17. Lukic D. Request for OW stats [Internet]. Message to: Lisa Needham. 2023 August 24 [cited 202 Oct 16].
- Dufferin County: Health & Human Services. Community Services Activity Report 2023 Q2. 2023. [cited 2023 Oct 16] Available from: <u>https://www.dufferincounty.ca/sites/default/files/clerks/2023%20HHS/2023-08-</u> <u>24%20HHS%20Agenda%20Package.pdf</u>
- Dietitians of Canada. Prevalence, severity and impact of household food insecurity: a serious public health issue background paper. 2016. [cited 2023 Oct 16] Available from: <u>https://www.dietitians.ca/DietitiansOfCanada/media/Documents/Resources/HFI-Background-DC-FINAL.pdf</u>
- Waldron R. Responding to housing precarity: the coping strategies of generation rent. Housing Studies. 2021 [cited 2023 Oct 16] Available from: https://www.tandfonline.com/doi/full/10.1080/02673037.2021.2022606
- Mason KE, Baker E, Blakely T, Bentley RJ. Housing affordability and mental health: does the relationship differ for renters and home purchasers? Social Science & Medicine (1982). 2013; 94, pp. 91–97.

- 23. Kirkpatrick S. Food insecurity is associated with nutrient inadequacies among Canadian adults and adolescents. J Nutr. 2010;138:604-612.
- 24. Davison K, Marshall-Gabien G, Tecson A. Association of moderate and severe food insecurity with suicidal ideation in adults: national survey data from three Canadian provinces. Soc Psychiatr Epidemiol. 2015;60(6):963-972.
- Bronte-Tinkew J, Zaslow M, Capps R, Horowitz A, McNamara M. Food insecurity works through depression, parenting, and infant feeding to influence overweight and health in toddlers. J. Nutr. 2007;137(9):2160-2165
- Jessiman-Perreault G, McIntyre L. The household food insecurity gradient and potential reductions in adverse population mental health outcomes in Canadian adults. SSM -Population Health. 2017;3:464-72.
- 27. Tarasuk V, Gundersen C, Wang X, et al. Maternal food insecurity is positively associated with postpartum mental disorders in Ontario, Canada. J Nutr. 2020;150(11):3033-40.
- 28. Tarasuk V, Mitchell A, McLaren L, et al. Chronic physical and mental health conditions among adults may increase vulnerability to household food insecurity. J Nutr. 2013;143(11):1785-93.
- 29. Tait C, L'Abbe M, Smith P, et al. The association between food insecurity and incident type 2 diabetes in Canada: a population-based cohort study. PLoS One. 2018;13(5):e0195962.
- 30. Bekele T, Globerman J, Watson J, et al. Prevalence and predictors of food insecurity among people living with HIV affiliated with AIDS service organizations in Ontario, Canada. AIDS Care. 2018;30(5):663-671.
- 31. Cox J, Hamelin AM, McLinden T, et al. Food insecurity in HIV-hepatitis C virus co-infected individuals in Canada: the importance of co-morbidities. AIDS and Behavior. 2016;21(3):792-802.
- 32. Men F, Gundersen C, Urquia ML, et al. Association between household food insecurity and mortality in Canada: a population-based retrospective cohort study. CMAJ. 2020;192(3):E53-E60.
- 33. McIntyre L, Williams J, Lavorato D, Patten S. Depression and suicide ideation in late adolescence and early adulthood are an outcome of child hunger. J Affect Disord. 2013 Aug 15;150(1):123-9.
- 34. McIntyre L, Wu X, Kwok C, Patten S. The pervasive effect of youth self-report of hunger on depression over 6 years of follow up. Soc Psychiatry Psychiatr Epidemiol. 2017;52:537-47.
- 35. Anderson KK, Clemens KK, Le B, Zhang L, Comeau J, Tarasuk V, Shariff SZ. Household food insecurity and health service use for mental and substance use disorders among children and adolescents in Ontario. Canadian Medical Association Journal. 2023 24;195:E948-55.
- 36. Gucciardi E, DeMelo M, Vogt J, et al. Exploration of the relationship between household food insecurity and diabetes care in Canada. Diabetes Care. 2009;32:2218-24.
- 37. Anema A, Chan K, Weiser S, et al. Relationship between food insecurity and mortality among HIV-positive injection drug users receiving antiretroviral therapy in British Columbia, Canada. PLoS One. 2013;8(5):e61277
- 38. Men F, Gundersen C, Urquia ML, et al. Food insecurity is associated with higher health care use and costs among Canadian adults. Health Affairs. 2020;39(8):1377-85.
- 39. Men F, Urquia ML, Tarasuk, V. Pain-driven emergency department visits and food insecurity: a cross-sectional study linking Canadian survey and health administrative data. Canadian Medical Association Journal. 2022;10;1.

- 40. Men F, Gundersen C, Urquia ML, et al. Food insecurity is associated with higher health care use and costs among Canadian adults. Health Affairs. 2020;39(8):1377-85.
- 41. Tarasuk V, Cheng J, de Oliveira C, et al. Association between household food insecurity and annual health care costs. CMAJ. 2015;187(14):E429-E36.
- 42. Men F, Elgar F, Tarasuk V. Food insecurity is associated with mental health problems among Canadian youth. Journal of Epidemiology and Community Health. 2021;75(8):741-8.
- 43. PROOF. Who are most at risk of household food insecurity? 2022. [cited 2022 October 28]. Available from: <u>https://proof.utoronto.ca/food-insecurity/who-are-most-at-risk-of-household-food-insecurity/</u>
- 44. Second Harvest. Canada's Invisible Food Network [Internet]. 2021. [cited 2022 Sept 21]. Available from: <u>https://www.secondharvest.ca/getmedia/b8cf1995-ec2a-4a13-9c3d-0a9d9b97beb0/Canada-s-Invisible-Food-Network.pdf</u>
- 45. Our Food Future Guelph Wellington. Understanding our local food environment [Internet]. 2022 [cited 2022 Sept 28]. Available from: <u>https://drive.google.com/file/d/1qD_fl-</u> uWijWhTYPgwKq7McM-o0Q11wfQ/view
- 46. Laban S. Nutritious Food Basket Report and student data on food insecurity [Internet]. Message to: Lisa Needham. 2022 September 20. [cited 2022 Sept 20].
- 47. Tarasuk V. Implications of a basic income guarantee for household food insecurity. Research Paper no. 24. Thunder Bay: Northern Policy Institute. 2017 June
- 48. Kirkpatrick S, Tarasuk V. Adequacy of food spending is related to housing expenditures among lower-income Canadian households. Public Health Nutr. 2007;10(12):1664-1473.
- 49. Kirkpatrick S, Tarasuk V. Assessing the relevance of neighbourhood characteristics to the household food security of low-income families. Public Health Nutr. 2010;13(7):1139-1148.

Appendices

Appendix A: NFB Income Scenarios