

Canada's Dietary Guidelines

Canada.ca/FoodGuide



for Health Professionals
and Policy Makers



Health
Canada

Santé
Canada

Canada

Health Canada is the federal department responsible for helping the people of Canada maintain and improve their health. Health Canada is committed to improving the lives of all of Canada's people and to making this country's population among the healthiest in the world as measured by longevity, lifestyle and effective use of the public health care system.

Également disponible en français sous le titre :
Lignes directrices canadiennes en matière d'alimentation à l'intention des professionnels de la santé et des responsables des politiques

To obtain additional information, please contact:

Health Canada
Address Locator 0900C2
Ottawa, ON K1A 0K9
Tel.: 613-957-2991
Toll free: 1-866-225-0709
Fax: 613-941-5366
TTY: 1-800-465-7735
E-mail: hc.publications-publications.sc@canada.ca

© Her Majesty the Queen in Right of Canada, as represented by the Minister of Health, 2019

Publication date: January 2019

This publication may be reproduced for personal or internal use only without permission provided the source is fully acknowledged.

Cat.: H164-231/2019E-PDF
ISBN: 978-0-660-25310-7
Pub.: 170462

Table of Contents

Acknowledgements	1
What are Canada’s Dietary Guidelines?	1
The importance of dietary guidance	4
SECTION 1 Foundation for healthy eating	9
SECTION 2 Foods and beverages that undermine healthy eating	22
SECTION 3 Importance of food skills	31
SECTION 4 Implementation of dietary guidelines	39
Glossary	44
Appendix A: Healthy eating recommendations	49
Appendix B: Summary of guidelines and considerations	50
Appendix C: Process used for the selection of content in this report	52

Acknowledgements

Health Canada would like to thank the many Canadians, experts and stakeholders who took part in the consultations and provided feedback on the proposed guidelines as well as Inuit Tapiriit Kanatami and the Métis National Council who provided input, and provincial and territorial members of the Federal Provincial Territorial Group on Nutrition who provided their public health nutrition policy expertise.

Health Canada also sincerely thanks the following academic experts, who so generously gave of their time and advice over the course of preparing the guidelines:

Malek Batal, PhD, Associate Professor, Department of Nutrition, Université de Montréal

Jennifer Black, PhD, RD, Assistant Professor, Faculty of Land and Food Systems, University of British Columbia

Treena W. Delormier, PhD, Associate Director, Centre for Indigenous Peoples' Nutrition and Environment, McGill University

Thérèse Desrosiers, PhD, RD, Professor, School of Nutrition, Université Laval

Goretty Dias, PhD, Assistant Professor, School of Environment, University of Waterloo

Paul Fieldhouse, PhD, Adjunct Professor, Human Nutritional Sciences, University of Manitoba

Isabelle Galibois, PhD, RD, Director, School of Nutrition, Université Laval

Jess Haines, PhD, MHSc, RD, Associate Professor, Social and Applied Human Sciences, University of Guelph

Sandra Juutilainen, PhD, Canadian Institute of Health Research–Health Systems Impact Fellow, University of Waterloo

Sara Kirk, PhD, Professor, School of Health and Human Performance, Dalhousie University

Catherine L. Mah, MD, FRCPC, PhD, Associate Professor, Faculty of Health, Dalhousie University

Kim Raine, PhD, RD, FCAHS, Professor, Associate Dean (Research) and Acting Vice-Dean, School of Public Health, University of Alberta

Valerie Tarasuk, PhD, MSc, Professor, Nutritional Sciences, University of Toronto

What are Canada's Dietary Guidelines?

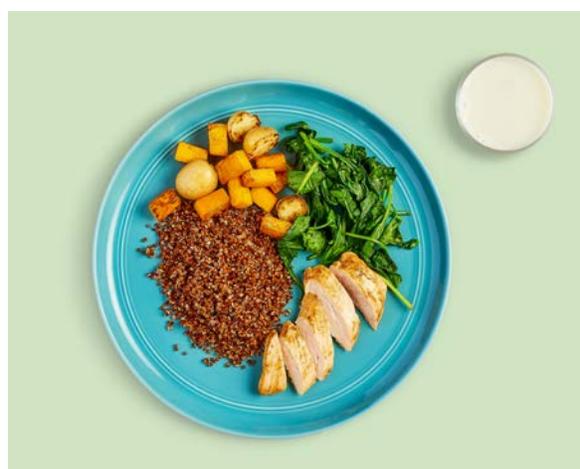
Canada's Dietary Guidelines set out Health Canada's guidelines and considerations on healthy eating.

- The objectives of the guidelines are to promote healthy eating and overall nutritional well-being, and support improvements to the Canadian **food environment**.
- The intended audience is health professionals and policy makers.
- The guidelines are a resource for developing nutrition policies, programs, and educational resources for members of the Canadian population two years of age and older.
- Individuals with specific dietary requirements, including those receiving care in a clinical setting, may need additional guidance or specialized advice from a dietitian.

Related tools and resources

Canada's Healthy Eating Patternⁱ is a resource that builds on and complements the contents of this report.

- The objective of the healthy eating pattern is to provide more specific guidance on the recommended amounts and types of foods as well as life stage guidance (such as recommendations for young children and seniors).
- The intended audience is also health professionals and policy makers.
- The healthy eating pattern can be used as an additional resource for developing procurement policies in institutions, such as long term care facilities and hospital settings.



The Healthy eating recommendations in **Appendix A** translate Canada's Dietary Guidelines into simple, relevant, and evidence-informed messages. The recommendations form the basis of a [mobile-responsive web application](#) that is modern and easy to use. This web application houses tools and resources that will help Canadians apply the guidelines in their daily lives. Examples of tools and resources include:

- An interactive toolⁱⁱ that provides custom information for teens, adults, parents, and older adults in a variety of settings including at home, at work, at school, on the go, grocery shopping, and eating out.
- Web resources, such as factsheets, videos and recipes, to help Canadians apply Canada's Dietary Guidelines.

Guidance on nutrition during infancy, including breastfeeding, is available in the guidance document [Nutrition for Healthy Term Infants](#).

Breastfeeding — exclusively for the first six months, and continued for up to two years or longer with appropriate complementary feeding — is important for the nutrition, immunologic protection, growth, and development of infants and toddlers.

ⁱ Expected publication in 2019

ⁱⁱ Expected release in 2019

Overview of this report

This report is based on the best available scientific evidence. It contains healthy eating guidelines and considerations that are relevant and applicable to the Canadian context.

The report is presented in four sections:

Section 1 focuses on nutritious foods and beverages that are the foundation for healthy eating.

Section 2 describes the types of foods and beverages that can have a negative impact on health when consumed on a regular basis.

Section 3 highlights the importance of food skills as a practical way to support healthy eating.

Section 4 describes the importance of creating supportive environments for healthy eating.

The **considerations** provide complementary guidance on issues of public health importance, while recognizing the context within which Canadians live, learn, work and play. This includes considering that the food supply—and people’s ability to access the food supply—varies across regions. Some considerations take into account Canada’s diversity, while others are based on Canadian health statistics and consumption data. Some considerations also reflect factors and conditions that influence food choices and eating behaviours, including the **determinants of health**.

A full list of the guidelines and considerations is in **Appendix B**.

How this report was developed

Health Canada developed a multi-step decision making process to establish these guidelines, which is described briefly in **Appendix C**.

Guidelines 1 and 2 were developed based on **convincing findings** from scientific reports that included extensive systematic reviews of the literature on the relationship between food and health.^{1,2} The reports are listed in **Table 1**. These convincing findings are supported by a well-established evidence base and are unlikely to change in the foreseeable future as new evidence emerges. Probable, possible and insufficient findings from all reports included in the evidence review^{1,2} were also considered during the policy development process. Health Canada primarily drew evidence for Guideline 3 from its analysis of findings on food skills, including interventions aimed at promoting and improving these skills.³⁻⁵

Health Canada used the best available evidence to translate the science on food and health into healthy eating guidelines. This included evidence published between 2006 and 2018.^{1,2} To find out more about our evidence review, refer to the [Food, Nutrients and Health: Interim Evidence Update 2018](#).

The considerations as well as Section 4 of this report help support the implementation of the guidelines by health professionals and policy makers. They also reflect Health Canada's **population health approach** to developing dietary guidance. This approach considers the broad range of factors and conditions that have a strong influence on health.

Throughout the development of this report, Health Canada's scientists, as well as population health and nutrition experts, collaborated with other Government of Canada departments and agencies. Input was sought from academics, members of provincial and territorial governments, health professional regulatory bodies/ organizations, health charities, and National Indigenous Organizations.

In addition, Health Canada considered the results of two rounds of public consultation on the revision of the Food Guide which were held in the [fall of 2016](#) and [summer of 2017](#). This helped to develop dietary guidance that is relevant and clear to the general Canadian population.



Further, Health Canada considered dietary guidelines from other countries to gain a broad perspective on the communication of guidelines, such as how they are developed, their content, and their use in education and health promotion.⁶

The importance of dietary guidance

What we eat influences our health.

In Canada, **dietary risks** are one of the three leading risk factors for disease burden, as measured by death and disability combined.⁷ Tobacco use and high body mass index (BMI) are the other two. Chronic diseases impacted by diet—namely ischemic heart disease, stroke, colorectal cancer, diabetes, and breast cancer—are among the leading causes of premature death in Canada.^{7,8}

The burden of chronic disease in Canada varies across populations. **Indigenous Peoples in Canada** face a greater burden of chronic disease than the general population. For example, First Nations populations in Canada have disproportionately higher rates of diabetes.^{9,10} However, the rates vary across communities and between First Nations, Inuit, and Métis populations. In addition, Indigenous Peoples face barriers to adequately managing chronic disease.

Oral diseases, such as **dental decay**, share common nutrition-related risk factors with some of the leading chronic diseases in Canada such as diabetes and cardiovascular disease.¹¹ Dental decay affects 57% of Canadian children aged 6 to 11 years and 96% of Canadian adults over their lifetime.¹² Each year in Canada, children aged 1 to 5 are put under anesthesia to perform dental surgery operations to treat dental decay, with a disproportionate representation of Indigenous children.^{13,14} In 2015, total expenditures for dental services in Canada were estimated at \$13.6 billion.¹⁵

In Canada, chronic diseases account for approximately one third of direct health care costs.¹⁶ The Canadian population is aging,¹⁷ faces high rates of obesity,^{18,19} and engages in sedentary

lifestyle behaviours.^{20,21} Thus the impact of chronic diseases is likely to continue to increase, unless we take action to address the many factors that influence what we eat.

The food environment influences what we eat.

The **food environment** influences our food and beverage choices.²² For example, the foods and beverages available in homes, retail food outlets, and restaurants can have a big impact on what and how we eat and drink. Moreover, for Indigenous Peoples, food intakes can be negatively influenced by the limited availability of food acquired in traditional ways (such as hunting, fishing, trapping, and gathering), and the numerous barriers to traditional food access.^{23–29}

In addition to what is available around us, we receive a constant stream of changing (and often conflicting) messages on healthy eating. Food marketing is evolving rapidly, and now includes channels such as social media. This complex and crowded information environment can make it hard for Canadians to make healthy eating choices.

Supporting healthy eating is a shared responsibility.

Canada's Dietary Guidelines can make an important contribution to nutritional health. Health professionals and policy makers in all sectors and at all government levels can use these guidelines as a resource to support program and policy decisions. For example, policies that reflect these guidelines can improve the food environment in settings such as schools, workplaces, recreation centres, and health care facilities.^{30,31} Creating supportive environments across settings can help increase the positive influence that dietary guidelines can have on individuals, families and communities. This is further described in **Section 4**.

Table 1: Scientific reports that included convincing findings* from extensive systematic reviews of the literature on the relationship between food and health

Source	Report title
American College of Cardiology/ American Heart Association 2013	Guideline on lifestyle management to reduce cardiovascular risk: a report of the ACC/AHA task force on practice guidelines
Canadian Cardiovascular Society 2016	Canadian Cardiovascular Society guidelines for the management of dyslipidemia for the prevention of cardiovascular disease in the adult
Dietary Guidelines Advisory Committee 2015	Scientific report of the Dietary Guidelines Advisory Committee: advisory report to the Secretary of Health and Human Services and the Secretary of Agriculture
Dietary Guidelines Advisory Committee 2010	Report of the Dietary Guidelines Advisory Committee on the Dietary Guidelines for Americans
Food and Agriculture Organization of the United Nations 2010	Fats and fatty acids in human nutrition — report of an expert consultation
Health Canada 2016	Summary of Health Canada’s assessment of a health claim about vegetables and fruit and heart disease
Health Canada 2015	Summary of Health Canada’s assessment of a health claim about soy protein and cholesterol lowering
Health Canada 2014	Summary of Health Canada’s assessment of a health claim about ground whole flaxseed and blood cholesterol lowering
Health Canada 2012	Summary of Health Canada’s assessment of a health claim about barley products and blood cholesterol lowering
Health Canada 2012	Summary of Health Canada’s assessment of a health claim about the replacement of saturated fat with mono- and polyunsaturated fat and blood cholesterol lowering
Health Canada 2010	Summary of Health Canada’s assessment of a health claim about oat products and blood cholesterol lowering
International Agency for Research on Cancer 2018	IARC Monographs on the Evaluation of Carcinogenic Risks to Humans — Red Meat and Processed Meat
National Health and Medical Research Council 2011	A review of the evidence to address targeted questions to inform the revisions of the Australian Dietary Guidelines
Scientific Advisory Committee on Nutrition 2015	Carbohydrates and health report
World Cancer Research Fund International 2018	Continuous Update Project (CUP) report: breast cancer
World Cancer Research Fund International 2018	Continuous Update Project (CUP) report: colorectal cancer
World Cancer Research Fund International 2018	Continuous Update Project (CUP) report: oesophageal cancer
World Cancer Research Fund International 2018	Continuous Update Project (CUP) report: liver cancer
World Cancer Research Fund International 2018	Continuous Update Project (CUP) report: cancers of the mouth, pharynx, and larynx
World Cancer Research Fund International 2018	Continuous Update Project (CUP) report: energy balance and body fatness

Table 1: Continued

Source	Report title
World Health Organization 2017	Health effects of saturated and trans-fatty acid intake in children and adolescents: Systematic review and meta-analysis
World Health Organization 2016	Effects of saturated fatty acids on serum lipids and lipoproteins: a systematic review and regression analysis
World Health Organization 2016	Effect of trans-fatty acid intake on blood lipids and lipoproteins: a systematic review and meta-regression analysis
World Health Organization 2012	Guideline: sodium intake for adults and children

* Convincing findings are findings graded 'High' by the American College of Cardiology/American Heart Association, the Canadian Cardiovascular Society, and the World Health Organization; findings graded 'Strong' by the Dietary Guidelines Advisory Committee; findings graded 'Sufficient' by Health Canada; findings graded 'Group 1: Carcinogenic' by the International Agency for Research on Cancer; findings graded 'Adequate' by the Scientific Advisory Committee on Nutrition; findings graded 'Convincing' by the Food and Agricultural Organization, and the World Cancer Research Fund/American Institute of Cancer Research; and findings graded 'A' by the National Health and Medical Research Council.

References

1. Health Canada. Evidence review for dietary guidance: technical report, 2015. Ottawa: Health Canada; 2016.
2. Health Canada. Food, Nutrients and Health: Interim Evidence Update 2018. Ottawa: Health Canada; 2019.
3. Government of Canada. [Improving cooking and preparation skills: a synthesis of the evidence to inform program and policy development](#) [Internet]. Ottawa: Government of Canada; 2010 [cited 2018 Sep 14].
4. Government of Canada. [A look at food skills in Canada](#) [Internet]. Ottawa: Government of Canada; 2015 [cited 2018 Sep 14].
5. Government of Canada. [Improving cooking and food preparation skills: a profile of promising practices in Canada and abroad](#) [Internet]. Ottawa: Government of Canada; 2010 [cited 2018 Sep 14].
6. Food and Agriculture Organization of the United Nations [Internet]. Rome: Food and Agriculture Organization of the United Nations; 2018 [cited 2018 Sep 14]. [Food-based dietary guidelines](#).
7. Institute for Health Metrics and Evaluation [Internet]. Seattle: Institute for Health Metrics and Evaluation; 2018 [cited 2018 Nov 28]. [Global burden of disease \(GBD\) profile: Canada](#).
8. Global Burden of Disease 2013 Risk Factors Collaborators. Global, regional, and national comparative risk assessment of 79 behavioural, environmental and occupational, and metabolic risks or clusters of risks in 188 countries, 1990–2013: a systematic analysis for the global burden of disease study 2013. *Lancet*. 2015;386(10010):2287–2323.
9. Public Health Agency of Canada. [Diabetes in Canada: Facts and figures from a public health perspective](#) [Internet]. Ottawa: Public Health Agency of Canada; 2011 [cited 2018 Sep 14].
10. Indigenous Services Canada. [Preventing and managing chronic diseases in First Nations communities: a guidance framework](#) [Internet]. Ottawa: Indigenous Services Canada; 2018 [cited 2018 Sep 14].
11. Canadian Academy of Health Sciences. [Improving access to oral health care for vulnerable people living in Canada](#) [Internet]. Ottawa: Canadian Academy of Health Sciences; 2014 [cited 2018 Sep 14].
12. Health Canada. [Report on the findings of the oral health component of the Canadian Health Measures Survey, 2007–2009](#) [Internet]. Ottawa: Health Canada; 2010 [cited 2018 Sep 14].
13. Canadian Institute for Health Information. [Treatment of preventable dental cavities in preschoolers: a focus on day surgery under general anesthesia](#) [Internet]. Ottawa: Canadian Institute for Health Information; 2013 [cited 2018 Sep 14].
14. First Nations Information Governance Centre. [National report of the First Nations Regional Health Survey Phase 3: Volume One](#) [Internet]. Ottawa: First Nations Information Governance Centre; 2018 [cited 2018 Sep 14].
15. Canadian Dental Association. [The state of oral health in Canada](#) [Internet]. Ottawa: Canadian Dental Association; 2017 [cited 2018 Sep 14].
16. Public Health Agency of Canada. [How healthy are Canadians? A trend analysis of the health of Canadians from a healthy eating and chronic disease perspective](#) [Internet]. Ottawa: Public Health Agency of Canada; 2016 [cited 2018 Sep 14].
17. Statistics Canada. [Age and sex, and type of dwelling data: key results from the 2016 census](#) [Internet]. Ottawa: Statistics Canada; 2017 [cited 2018 Sep 14].
18. Statistics Canada. [Body composition of adults, 2012 to 2013](#) [Internet]. Ottawa: Statistics Canada; 2014 [cited 2018 Sep 14].
19. Rao DP, Kropac E, Do MT, Roberts KC, Jayaraman GC. Childhood overweight and obesity trends in Canada. *Health Promot Chronic Dis Prev Can*. 2016;36(9):194–198.
20. Statistics Canada. [Directly measured physical activity of children and youth, 2012 and 2013](#) [Internet]. Ottawa: Statistics Canada; 2015 [cited 2018 Sep 14].
21. Statistics Canada. [Directly measured physical activity of adults, 2012 and 2013](#) [Internet]. Ottawa: Statistics Canada; 2015 [cited 2018 Sep 14].
22. Health Canada. [Measuring the food environment in Canada](#) [Internet]. Ottawa: Health Canada; 2013 [cited 2018 Sep 14].
23. Richmond CA, Ross NA. The determinants of First Nation and Inuit health: a critical population health approach. *Health Place*. 2009;15(2):403–411.

24. Chan L, Receveur O, Sharp D, Schwartz H, Ing A, Tikhonov C. First Nations Food, Nutrition and Environment Study (FNFNES): results from British Columbia (2008/2009). Prince George: University of Northern British Columbia; 2011.
25. Chan L, Receveur O, Sharp D, Schwartz H, Ing A, Fediuk KI. First Nations Food, Nutrition and Environment Study (FNFNES): results from Manitoba (2010). Prince George: University of Northern British Columbia; 2012.
26. Chan L, Receveur O, Batal M, William D, Schwartz H, Ing A, et al. First Nations Food, Nutrition and Environment Study (FNFNES): results from Ontario (2011/2012). Ottawa: University of Ottawa; 2014.
27. Chan L, Receveur O, Batal M, William D, Schwartz H, Ing A, et al. First Nations Food, Nutrition and Environment Study (FNFNES): results from Alberta (2013). Ottawa: University of Ottawa; 2016.
28. Chan L, Receveur O, Batal M, William D, Schwartz H, Ing A, et al. First Nations Food, Nutrition and Environment Study (FNFNES): results from the Atlantic (2014). Ottawa: University of Ottawa; 2017.
29. Chan L, Receveur O, Batal M, Sadik T, Schwartz H, Ing A, et al. First Nations Food, Nutrition and Environment Study (FNFNES): results from Saskatchewan (2015). Ottawa: University of Ottawa; 2018.
30. Hawkes C, Smith, TG, Jewel J, Wardle J, Hammond RA, Friel S, et al. Smart food policies for obesity prevention. *Lancet*. 2015;385(9985):2410–2421.
31. Raine KD, Atkey K, Olstad DL, Ferdinands AR, Beaulieu D, Buhler S, et al. Healthy food procurement and nutrition standards in public facilities: evidence synthesis and consensus policy recommendations. *Health Promot Chronic Dis Prev Can*. 2018;38(1):6–17.



Section 1

Foundation for healthy eating

Dietary choices made on a regular basis form a person's **pattern of eating**. Over time, patterns of eating can lead to better or worse health outcomes. This section focuses on the regular intake of foods that make up patterns of eating associated with positive health outcomes.

Table 2 lists the convincing findings that support Guideline 1.

Guideline 1

Nutritious foods are the foundation for healthy eating.

- Vegetables, fruit, whole grains, and protein foods should be consumed regularly. Among protein foods, consume plant-based more often.
 - Protein foods include legumes, nuts, seeds, tofu, fortified soy beverage, fish, shellfish, eggs, poultry, lean red meat including wild game, lower fat milk, lower fat yogurts, lower fat kefir, and cheeses lower in fat and sodium.
- Foods that contain mostly unsaturated fat should replace foods that contain mostly saturated fat.
- Water should be the beverage of choice.

Considerations

Nutritious foods to encourage

- Nutritious foods to consume regularly can be fresh, frozen, canned, or dried.

Cultural preferences and food traditions

- Nutritious foods can reflect cultural preferences and food traditions.
- Eating with others can bring enjoyment to healthy eating and can foster connections between generations and cultures.
- **Traditional food** improves diet quality among Indigenous Peoples.

Energy balance

- Energy needs are individual and depend on a number of factors, including levels of physical activity.
- Some **fad diets** can be restrictive and pose nutritional risks.

Environmental impact

- Food choices can have an impact on the environment.

Vegetables, fruit, whole grains, and protein foods should be consumed regularly. Among protein foods, consume plant-based more often.

- Protein foods include legumes, nuts, seeds, tofu, fortified soy beverage, fish, shellfish, eggs, poultry, lean red meat including wild game, lower fat milk, lower fat yogurts, lower fat kefir, and cheeses lower in fat and sodium.

Rationale

Health Canada recommends the regular intake of nutritious foods—vegetables, fruit, whole grains, and protein foods—that are commonly found in patterns of eating linked with beneficial effects on health. **Table 2** provides more detail on these patterns, which have been shown to have a protective effect in reducing the risk of cardiovascular disease, including risk factors such as high blood pressure and elevated blood lipids.^{1–6}

Nutritious foods

Nutritious foods to encourage should not contribute to excess consumption of sodium, free sugars, or saturated fat.

Cardiovascular disease is a serious public health concern in Canada. Almost 50% of deaths from cardiovascular disease were attributed to **dietary risks** in 2017.⁷ Dietary risks include low intake of nutritious foods, such as vegetables and fruit. In Canada, vegetable and fruit intakes are consistently low.⁸

While many animal-based foods are nutritious, Guideline 1 emphasizes more plant-based foods. The regular intake of plant-based foods—vegetables, fruit, whole grains, and plant-based proteins— can have positive effects on health. This is because patterns of eating that emphasize plant-based foods typically result in higher intakes of:

- dietary fibre, associated with a lower risk of cardiovascular disease (including well-established risk factors such as LDL-cholesterol⁹), colon cancer, and type 2 diabetes,^{3,10–13}
- vegetables and fruit, associated with a lower risk of cardiovascular disease,¹⁴
- nuts, associated with decreased LDL-cholesterol,³ and
- soy protein, associated with decreased LDL-cholesterol.^{3,15}

Shifting intakes towards more plant-based foods could also encourage lower intakes of:

- **processed meat** (such as hot dogs, sausages, ham, corned beef, and beef jerky), which have been linked to increased risk of colorectal cancer,^{16,17} and
- foods that contain mostly saturated fat. Lowering the intake of foods that contain mostly saturated fat by replacing with foods that contain mostly unsaturated fat decreases total and LDL-cholesterol.^{1,2,18–22}

Patterns of eating that include animal-based foods should emphasize more plant-based foods, and promote animal-based foods that are lower in saturated fat, such as lean red meat including wild game, lower fat milk, lower fat yogurts, lower fat kefir, and cheeses lower in fat and sodium.

The intention is not to reduce total fat in the diet. Rather, it is to help reduce intakes of saturated fat, while encouraging foods that contain mostly unsaturated fat.^{1,2,18–22}

Foods that contain mostly unsaturated fat should replace foods that contain mostly saturated fat.

Rationale

Health Canada recommends replacing foods that contain mostly saturated fat with foods that contain mostly unsaturated fat to promote cardiovascular health.

The type of fat consumed over time is more important for health than the total amount of fat consumed. There is convincing evidence that lowering the intake of saturated fat by replacing it with unsaturated fat (that is, poly- or mono-unsaturated fat) decreases total and LDL-cholesterol.^{1,2,18–22} Elevated LDL-cholesterol is a well-established risk factor for cardiovascular disease⁹ that has affected about 1 in 5 adult Canadians in 2012/2013.²³

Replacing saturated fat with polyunsaturated fat can also lower the risk of cardiovascular disease.¹ Further, limiting the intake of foods in which the fat is mostly saturated, while choosing foods in which the fat is mostly unsaturated is a common feature of patterns that have been shown to have beneficial effects on health.^{1–6}



Water should be the beverage of choice.

Rationale

Health Canada recommends water as the beverage of choice to support health and promote hydration without adding calories to the diet. Water is vital for life—in fact it is the largest single component of the human body. It is essential for metabolic and digestive processes.²⁴

Adequate water intake is based on the total amount of water required to prevent the effects of dehydration. In addition to beverages, it would include water from foods like fruit, vegetables, and soups. Some foods and beverages contribute to water intake but can also contribute sodium, **free sugars**, or saturated fat to the diet. **Section 2** provides guidance on foods and beverages high in these nutrients.

Most people consume enough total water to meet their hydration needs.²⁴ However, factors such as physical activity and exposure to hot climates can increase total water requirements. Those most at risk of becoming dehydrated are young children and older adults.

Indigenous Peoples who live in remote, isolated, and northern communities may face limited access and availability of safe drinking water.

Drinking Water Advisories (DWAs) are issued to protect the public from drinking water that is potentially unsafe. They are based on the results of water quality tests. DWAs are most notable in communities that are small, remote or isolated.



Considerations

Nutritious foods to encourage

Nutritious foods to consume regularly can be fresh, frozen, canned, or dried.

Vegetables, fruit, **whole grains** and **protein foods** are nutritious foods to encourage. Frozen, canned, or dried foods (such as legumes) are always convenient options, especially when fresh food is out of season, costly, unavailable, or takes too long to prepare. Nutritious foods to encourage should have little to no added sodium and saturated fat, and little to no **free sugars**.

Dried fruit

Dried fruit is sticky and often adheres to teeth. The sugars contained in foods like dried fruit can contribute to dental decay. If dried fruit is consumed, it should only be consumed with meals.

Cultural preferences and food traditions

Nutritious foods can reflect cultural preferences and food traditions.

Part of the enjoyment of eating is choosing nutritious foods that reflect the cultures and traditions we come from. The cultural make-up of Canada is rich, with over 250 different ethnic origins identified on the Canadian Census.²⁵ Canada's rich diversity is represented in a variety of traditions, cultures and lifestyles. Canadians can expand their repertoire of nutritious foods as they explore recipes and cooking methods from their own cultural backgrounds and the cultural backgrounds of others.



Eating with others can bring enjoyment to healthy eating and can foster connections between generations and cultures.

Healthy eating is about more than just eating certain types and amounts of food. In all cultures, food is an integral part of social interactions and celebrations. Eating together can help to reinforce positive eating habits. This is especially true for children, who learn from behaviour modelled by parents and caregivers. Eating together may also encourage children and adolescents to take part in cooking and food preparation.^{26,27} Preparing and eating food in the company of others is an opportunity for people of all ages to learn about food and share food cultures.

Traditional food improves diet quality among Indigenous Peoples.

The intake of traditional food among Indigenous Peoples, even in limited amounts, has been shown to improve diet quality.^{28–34} These foods may be trapped, fished, hunted, harvested, or cultivated. Traditional food—and the way they are obtained—are intrinsically linked to culture, identity, way of life, and thus overall health.^{28,29,35} Traditional food varies across the country because Indigenous Peoples historically consumed what was available locally. Some traditional foods are commonly consumed across a number of regions. Some examples are:^{28–33,36,37}

- large and small land mammals (moose, deer, elk, hare/rabbit, and caribou),
- sea mammals (seal and whale),
- fish (coastline fish such as salmon, cod and arctic char; lake fish such as trout, walleye, whitefish and northern pike),
- shellfish along the coastlines,
- birds (ducks, geese, and to a lesser extent grouse),
- berries (blueberry, strawberry, raspberry, Saskatoon berry and many others),
- vegetables (corn, squash, fiddleheads, and mushrooms),
- beans,
- nuts (hazelnut), and
- other wild plants (wild rice and Labrador tea).

Research has generally found that traditional food is safe to eat, though regional environmental risks should be considered.^{28–33} Through research and monitoring, the [Northern Contaminants Program](#) works to reduce—and, wherever possible, eliminate—contaminants in traditionally harvested foods, while providing information to make informed decisions about local food use. Refer to local, provincial or territorial governments for up-to-date information, including consumption advisories about locally harvested food. The [First Nations Food, Nutrition and Environment Study](#) provides additional data on traditional food consumption and contaminants.



Energy balance

Energy needs are individual and depend on a number of factors, including levels of physical activity.

Energy needs depend on individual factors such as genetics, age, sex, body size, body composition, and level of physical activity.³⁸ Each person needs to eat enough nutritious food to support nutritional health, growth, and development, while avoiding overconsumption and maintaining a healthy weight.

At one end of the spectrum, overconsuming calorie-containing foods or beverages can lead to excess energy intake. Over time, that can lead to unhealthy weights. In addition to following physical activity guidelines, other approaches such as reducing portion sizes can help promote energy balance among adults.¹⁸ At the other end of the spectrum, restricting intakes of nutritious foods can be a reason for concern. This is because inadequate energy and nutrient intake can have significant and lasting impacts on health. Monitoring of weight status by a health professional can be used as a way to assess unhealthy weights.

Physical activity

For optimal health, children and youth should achieve high levels of physical activity. That means at least 60 minutes of moderate to vigorous physical activity each day and low levels of sedentary behaviour, as well as sufficient sleep.³⁹ For adults and older adults, at least 150 minutes of moderate- to vigorous-intensity aerobic physical activity per week, in bouts of 10 minutes or more, is recommended to achieve health benefits.^{40,41} The [Canadian 24-Hour Movement & Activity Guidelines](#) give more guidance on physical activity.

Some fad diets can be restrictive and pose nutritional risks.

Canadians are exposed to the promotion of diets that are often commercially driven and promise a quick fix for weight loss or the management of a chronic disease. These diets are often referred to as ‘fad diets’. Sometimes these diets evolve from a medically indicated eating plan, and other times they are based on anecdotal observations and have little or no scientific basis. These diets are often used to promote or sell dietary products such as pre-portioned meals and cook books. Fad diets can be restrictive and pose nutritional risks, particularly when many nutritious foods are eliminated from the diet without appropriate planning for nutritional replacements. Nutrient inadequacies can have a significant and lasting impact on health. A healthy diet should provide sufficient energy to promote a healthy body weight, while minimizing the risk of having too much or too little of any particular nutrient. It should also allow for personal food preferences, which can reinforce the enjoyment of healthy eating.

Environmental impact

Food choices can have an impact on the environment.

While health is the primary focus of Canada’s Dietary Guidelines, there are potential environmental benefits to improving current patterns of eating as outlined in this report. For example, there is evidence supporting a lesser environmental impact of patterns of eating higher in plant-based foods and lower in animal-based foods.^{1,42,43} The potential benefits include helping to conserve soil, water and air.

The way our food is produced, processed, distributed, and consumed—including food loss and food waste—can also have environmental implications.^{1,44} Food waste is a contributor to landfill greenhouse gas emissions in Canada.⁴⁵ Reducing food waste—by households, food manufacturers and processors, farmers, and food retailers—can help make better use of natural resources and lower greenhouse gas emissions.⁴⁴ Raising awareness about the importance of reduced food waste is a necessary first step.⁴⁶ This is further discussed in **Section 3**.

Conserving natural resources and reducing food waste can help to ensure that Canadians have a long-term, reliable, and abundant food supply.⁴⁴

Assessing and measuring the environmental impact of food choices can be complex and challenging. This is because all food production requires land, water, and energy. Further, the environmental impact of any food can vary greatly based on factors such as where the food comes from, the packaging, and how it is produced, processed, and transported.

Table 2: Convincing findings* supporting Guideline 1

Finding	Source of evidence
Patterns of eating	
Association between the Dietary Approaches to Stop Hypertension (DASH) eating plan and lowered cardiovascular risk factors	<p>Dietary Guidelines Advisory Committee 2015: Scientific report of the DGAC: advisory report to the Secretary of Health and Human Services and the Secretary of Agriculture</p> <p>American College of Cardiology/American Heart Association 2013: Guideline on lifestyle management to reduce cardiovascular risk: a report of the ACC/AHA task force on practice guidelines</p>
Association between Mediterranean-style diets and decreased cardiovascular disease risk	Canadian Cardiovascular Society 2016: Canadian Cardiovascular Society guidelines for the management of dyslipidemia for the prevention of cardiovascular disease in the adult
Association between eating patterns characterized by higher consumption of vegetables, fruits, whole grains, low-fat dairy, and seafood; and lower consumption of red and processed meats, refined grains, and sugar-sweetened foods and beverages and decreased cardiovascular disease risk	Dietary Guidelines Advisory Committee 2015: Scientific report of the DGAC: advisory report to the Secretary of Health and Human Services and the Secretary of Agriculture
Increased intake of plant-based foods	
Association between increased intakes of vegetables and fruit and decreased cardiovascular disease risk	Health Canada 2016: Summary of Health Canada’s assessment of a health claim about vegetables and fruit and heart disease
Association between diets high in nuts and lowered cardiovascular risk factors	Canadian Cardiovascular Society 2016: Canadian Cardiovascular Society Guidelines for the management of dyslipidemia for the prevention of cardiovascular disease in the adult
Association between diets high in soy protein and lowered cardiovascular risk factors	Canadian Cardiovascular Society 2016: Canadian Cardiovascular Society Guidelines for the management of dyslipidemia for the prevention of cardiovascular disease in the adult
	Health Canada 2015: Summary of Health Canada’s assessment of a health claim about soy protein and cholesterol lowering
Association between diets high in viscous soluble fibre such as oats and lowered cardiovascular risk factors	Canadian Cardiovascular Society 2016: Canadian Cardiovascular Society Guidelines for the management of dyslipidemia for the prevention of cardiovascular disease in the adult
Association between increased intakes of total dietary fibre and decreased risk of cardiovascular disease, colon cancer, and type 2 diabetes	Scientific Advisory Committee on Nutrition 2015: Carbohydrates and health report

Table 2: Continued

Finding	Source of evidence
Association between single grains (beta-glucan oat fibre, barley grain products) and flaxseed and lowered cardiovascular risk factors	Health Canada 2014: Summary of Health Canada’s assessment of a health claim about ground whole flaxseed and blood cholesterol lowering
	Health Canada 2012: Summary of Health Canada’s assessment of a health claim about barley products and blood cholesterol lowering
	Health Canada 2010: Summary of assessment of a health claim about oat products and cholesterol lowering
	Scientific Advisory Committee on Nutrition 2015: Carbohydrates and health report
Saturated fat replacement	
Association between replacement of saturated fat with monounsaturated fat and lowered cardiovascular risk factors	World Health Organization 2017: Health effects of saturated and trans-fatty acid intake in children and adolescents: systematic review and meta-analysis
	World Health Organization 2016: Effects of saturated fatty acids on serum lipids and lipoproteins: a systematic review and regression analysis
	Food and Agriculture Organization of the United Nations 2010: Fats and fatty acids in human nutrition — Report of an expert consultation
Association between replacement of saturated fat with polyunsaturated fat and lowered cardiovascular risk factors	World Health Organization 2017: Health effects of saturated and trans-fatty acid intake in children and adolescents: systematic review and meta-analysis
	World Health Organization 2016: Effects of saturated fatty acids on serum lipids and lipoproteins: a systematic review and regression analysis
	Food and Agriculture Organization of the United Nations 2010: Fats and fatty acids in human nutrition — Report of an expert consultation
Association between replacement of saturated fat with polyunsaturated fat and decreased cardiovascular disease risk	Dietary Guidelines Advisory Committee 2015: Scientific report of the DGAC: advisory report to the Secretary of Health and Human Services and the Secretary of Agriculture
Association between replacement of saturated fat with unsaturated fat (especially polyunsaturated fat) and lowered cardiovascular risk factors	Dietary Guidelines Advisory Committee 2015: Scientific report of the DGAC: advisory report to the Secretary of Health and Human Services and the Secretary of Agriculture
	American College of Cardiology/American Heart Association 2013: Guideline on lifestyle management to reduce cardiovascular risk: a report of the ACC/AHA task force on practice guidelines
Association between replacement of saturated fat with unsaturated fat (type not specified) and lowered cardiovascular risk factors	Health Canada 2012: Summary of Health Canada’s assessment of a health claim about the replacement of saturated fat with mono- and polyunsaturated fat and blood cholesterol lowering
Association between replacement of saturated fat with monounsaturated fat and lowered cardiovascular risk factors and type 2 diabetes risk	Dietary Guidelines Advisory Committee 2010: Report of the DGAC on the Dietary Guidelines for Americans

Table 2: Continued

Finding	Source of evidence
Processed meat	
Association between increased intakes of processed meat and increased risk of cancer	International Agency for Research on Cancer 2018: IARC Monographs on the Evaluation of Carcinogenic Risks to Humans — Red Meat and Processed Meat
Association between increased intakes of processed meat (per 50 grams/ day) and increased risk of colorectal cancer	World Cancer Research Fund International/American Institute for Cancer Research 2018: CUP report: colorectal cancer

* Convincing findings are findings graded 'High' by the American College of Cardiology/American Heart Association, the Canadian Cardiovascular Society, and the World Health Organization; findings graded 'Strong' by the Dietary Guidelines Advisory Committee; findings graded 'Sufficient' by Health Canada; findings graded 'Group 1: Carcinogenic' by the International Agency for Research on Cancer; findings graded 'Adequate' by the Scientific Advisory Committee on Nutrition; and findings graded 'Convincing' by the Food and Agricultural Organization, and the World Cancer Research Fund/American Institute of Cancer Research.

References

1. Dietary Guidelines Advisory Committee. Scientific report of the 2015 Dietary Guidelines Advisory Committee: advisory report to the Secretary of Health and Human Services and the Secretary of Agriculture. Washington: U.S. Department of Agriculture, Agricultural Research Service; 2015.
2. Eckel RH, Jakicic JM, Ard JD, de Jesus JM, Miller NH, Hubbard VS, et al. 2013 AHA/ACC guideline on lifestyle management to reduce cardiovascular risk: a report of the American College of Cardiology/American Heart Association task force on practice guidelines. *Circulation*. 2014;129(25 Suppl 2):S76-S99.
3. Anderson TJ, Grégoire J, Pearson GJ, Barry AR, Couture P, Dawes M, et al. 2016 Canadian Cardiovascular Society guidelines for the management of dyslipidemia for the prevention of cardiovascular disease in the adult. *Can J Cardiol*. 2016;32(11):1263-1282.
4. Saneei P, Salehi-Abargouei A, Esmailzadeh A, Azadbakht L. Influence of Dietary Approaches to Stop Hypertension (DASH) diet on blood pressure: a systematic review and meta-analysis on randomized controlled trials. *Nutr Metab Cardiovasc Dis*. 2014;24(12):1253-1261.
5. Garcia M, Bihuniak JD, Shook J, Kenny A, Kerstetter J, Huedo-Medina TB. The effect of the traditional Mediterranean-style diet on metabolic risk factors: a meta-analysis. *Nutrients*. 2016;8(3):168.
6. Dinu M, Pagliai G, Casini A, Sofi F. Mediterranean diet and multiple health outcomes: an umbrella review of meta-analyses of observational studies and randomized trials. *Nutr Metab Cardiovasc*. 2017;72(1):30-43.
7. Institute for Health Metrics and Evaluation [Internet]. Seattle: Institute for Health Metrics and Evaluation; 2018 [cited 2018 Nov 28]. [GBD Compare | Viz Hub](#).
8. Colapinto CK, Graham J, St-Pierre S. Trends and correlates of frequency of fruit and vegetable consumption, 2007 to 2014. *Health Rep*. 2018;29(1):9-14.
9. National Cholesterol Education Program Expert Panel (NCEP) on Detection, Evaluation, and Treatment of High Blood Cholesterol in Adults (Adult Treatment Panel III). Third report of the National Cholesterol Education Program (NCEP) Expert Panel on Detection, Evaluation, and Treatment of High Blood Cholesterol in Adults (Adult Treatment Panel III) Final report. *Circulation*. 2002;106(25):3143-421.
10. Scientific Advisory Committee on Nutrition. SACN Carbohydrates and health report. Norwich: Public Health England; 2015.
11. Health Canada. [Summary of Health Canada's assessment of a health claim about ground whole flaxseed and blood cholesterol lowering](#) [Internet]. Ottawa: Health Canada; 2014 [cited 2018 Sep 14].
12. Health Canada. [Summary of Health Canada's assessment of a health claim about barley products and blood cholesterol lowering](#) [Internet]. Ottawa: Health Canada; 2012 [cited 2018 Sep 14].
13. Health Canada. [Summary of assessment of a health claim about oat products and blood cholesterol lowering](#) [Internet]. Ottawa: Health Canada; 2010 [cited 2018 Sep 14].
14. Health Canada. [Summary of Health Canada's assessment of a health claim about vegetables and fruit and heart disease](#) [Internet]. Ottawa: Health Canada; 2016 [cited 2018 Sep 14].
15. Health Canada. [Summary of Health Canada's assessment of a health claim about soy protein and cholesterol lowering](#) [Internet]. Ottawa: Health Canada; 2015 [cited 2018 Sep 14].
16. World Cancer Research Fund/American Institute for Cancer Research. Continuous Update Project Expert Report 2018. Diet, nutrition, physical activity and colorectal cancer. Washington: American Institute for Cancer Research; 2018.
17. International Agency for Research on Cancer. Monographs on the Evaluation of Carcinogenic Risks to Humans — Red Meat and Processed Meat. Lyon: International Agency for Research on Cancer; 2018.
18. Dietary Guidelines Advisory Committee. Report of the Dietary Guidelines Advisory Committee on the Dietary Guidelines for Americans, 2010: to the Secretary of Agriculture and the Secretary of Health and Human Services. Washington: U.S. Department of Agriculture, Agricultural Research Service; 2010.

19. Health Canada. [Summary of Health Canada's assessment of a health claim about the replacement of saturated fat with mono- and polyunsaturated fat and blood cholesterol lowering](#) [Internet]. Ottawa: Health Canada; 2012 [cited 2018 Sep 14].
20. Food and Agriculture Organization of the United Nations. Fats and fatty acids in human nutrition: report of an expert consultation. Rome: Food and Agriculture Organization of the United Nations; 2010.
21. Mensink RP. Effects of saturated fatty acids on serum lipids and lipoproteins: a systematic review and regression analysis. Geneva: World Health Organization; 2016.
22. Te Morenga L, Montez JM. Health effects of saturated and trans-fatty acid intake in children and adolescents: systematic review and meta-analysis. *Plos One*. 2017;12(11):e0186672.
23. Statistics Canada. [Cholesterol levels of adults, 2012 to 2013](#) [Internet]. Ottawa: Statistics Canada; 2014 [cited 2018 Sep 14].
24. Institute of Medicine. Dietary reference intakes for water, potassium, sodium, chloride, and sulfate. Washington: National Academies Press; 2005.
25. Statistics Canada. [Immigration and ethnocultural diversity: key results from the 2016 Census](#) [Internet]. Ottawa: Statistics Canada; 2017 [cited 2018 Sep 14].
26. Government of Canada. [Improving cooking and preparation skills: a synthesis of the evidence to inform program and policy development](#) [Internet]. Ottawa: Government of Canada; 2010 [cited 2018 Sep 14].
27. Mills S, White M, Brown H, Wrieden W, Kwasnicka D, Halligan J, et al. Health and social determinants and outcomes of home cooking: a systematic review of observational studies. *Appetite*. 2017;111:116–134.
28. Chan L, Receveur O, Sharp D, Schwartz H, Ing A, Tikhonov C. First Nations Food, Nutrition and Environment Study (FNFNES): results from British Columbia (2008/2009). Prince George: University of Northern British Columbia; 2011.
29. Chan L, Receveur O, Sharp D, Schwartz H, Ing A, Fediuk KI. First Nations Food, Nutrition and Environment Study (FNFNES): results from Manitoba (2010). Prince George: University of Northern British Columbia; 2012.
30. Chan L, Receveur O, Batal M, William D, Schwartz H, Ing A, et al. First Nations Food, Nutrition and Environment Study (FNFNES): results from Ontario (2011/2012). Ottawa: University of Ottawa; 2014.
31. Chan L, Receveur O, Batal M, William D, Schwartz H, Ing A, et al. First Nations Food, Nutrition and Environment Study (FNFNES): results from Alberta (2013). Ottawa: University of Ottawa; 2016.
32. Chan L, Receveur O, Batal M, William D, Schwartz H, Ing A, et al. First Nations Food, Nutrition and Environment Study (FNFNES): results from the Atlantic (2014). Ottawa: University of Ottawa; 2017.
33. Chan L, Receveur O, Batal M, Sadik T, Schwartz H, Ing A, et al. First Nations Food, Nutrition and Environment Study (FNFNES): results from Saskatchewan (2015). Ottawa: University of Ottawa; 2018.
34. Egeland GM, Johnson-Down L, Cao ZR, Sheikh N, Weiler H. Food insecurity and nutrition transition combine to affect nutrient intakes in Canadian arctic communities. *J Nutr*. 2011;141(9):1746–1753.
35. Council of Canadian Academies. Aboriginal food security in northern Canada: an assessment of the state of knowledge. Ottawa: The Expert Panel on the State of Knowledge of Food Security in Northern Canada, Council of Canadian Academies; 2014.
36. Blanchet C, Rochette L. [Nutrition and food consumption among the Inuit of Nunavik: Nunavik Inuit Health Survey 2004, Qanuippitaa? How are we?](#) [Internet]. Québec: Institut national de santé publique du Québec & Nunavik Regional Board of Health and Social Services; 2008 [cited 2018 Sep 14].
37. Sheikh N, Egeland GM, Johnson-Down L, Kuhnlein HV. Changing dietary patterns and body mass index over time in Canadian Inuit communities. *Int J Circumpolar Health*. 2011;70(5):511–519.
38. Institute of Medicine. Dietary Reference Intakes for energy, carbohydrates, fiber, fat, fatty acids, cholesterol, protein, and amino acids. Washington: National Academies Press; 2005.
39. Canadian Society for Exercise Physiology [Internet]. Ottawa: Canadian Society for Exercise Physiology; 2016 [cited 2018 Sep 14]. [The Canadian 24-hour movement guidelines for children and youth: an integration of physical activity, sedentary behaviour, and sleep.](#)

40. Canadian Society for Exercise Physiology [Internet]. Ottawa: Canadian Society for Exercise Physiology; 2011 [cited 2018 Sep 14]. [Canadian physical activity guidelines for adults 18–64 years](#).
41. Canadian Society for Exercise Physiology [Internet]. Ottawa: Canadian Society for Exercise Physiology; 2011 [cited 2018 Sep 14]. [Canadian physical activity guidelines for older adults 65 years and older](#).
42. Aleksandrowicz L, Green R, Joy EJM, Smith P, Haines A. The impacts of dietary change on greenhouse gas emissions, land use, water use and health: a systematic review. *Plos One*. 2016;11(11):e0165797.
43. Nelson ME, Hamm MW, Hu FB, Abrams SA, Griffin TS. Alignment of healthy dietary patterns and environmental sustainability: a systematic review. *Adv Nutr*. 2016;7(6):1005–1025.
44. Agriculture and Agri-food Canada [Internet]. Ottawa: Government of Canada; 2017 [cited 2018 Sep 14]. [A food policy for Canada](#).
45. Environment and Climate Change Canada. [Greenhouse Gas Sources and Sinks in Canada: executive summary 2018](#) [Internet]. Ottawa: Government of Canada; 2018 [cited 2018 Nov 28].
46. Parfitt J, Barthel M, Macnaughton S. Food waste within food supply chains: quantification and potential for change to 2050. *Phil Trans R Soc B*. 2010;365(1554):3065–3081.



Section 2

Foods and beverages that undermine healthy eating

Some forms of food processing, such as pasteurization, have public health benefits. However, **processed foods and beverages** have the potential to negatively impact health when their regular consumption is likely to contribute to excess sodium, **free sugars**, or saturated fat. This section focuses on these foods and beverages and how their regular intake over time can contribute to poor diet quality. **Prepared foods and beverages** from restaurants and other similar establishments, and those prepared at home can also contribute to excess sodium, free sugars, or saturated fat. Though less healthy choices will be made at times, what matters most is what people consume on a regular basis. **Table 3** lists convincing findings that support Guideline 2.

Guideline 2

Processed or prepared foods and beverages that contribute to excess sodium, free sugars, or saturated fat undermine healthy eating and should not be consumed regularly.

Considerations

Sugary drinks, confectioneries and sugar substitutes

- **Sugary drinks** and **confectioneries** should not be consumed regularly.
- Sugar substitutes do not need to be consumed to reduce the intake of free sugars.

Publically funded institutions

- Foods and beverages offered in publically funded institutions should align with Canada's Dietary Guidelines.

Alcohol

- There are health risks associated with alcohol consumption.

Processed or prepared foods and beverages that contribute to excess sodium, free sugars, or saturated fat undermine healthy eating and should not be consumed regularly.

Rationale

Many terms such as ‘minimally processed’ or ‘**ultra-processed**’ are used to categorize foods as healthy or unhealthy. The term ‘**highly processed products**’ is used in this report to describe processed or prepared foods and beverages that contribute to excess sodium, free sugars, or saturated fat when consumed on a regular basis. This includes processed meat, deep-fried foods, sugary breakfast cereals, biscuits and cake, confectioneries, sugary drinks, and many ready-to-heat packaged dishes.

In recent years, the availability and consumption of highly processed products has increased significantly.¹ This shift in consumption patterns has been linked to the global rise in obesity rates.^{2,3} Obesity is a risk factor for many chronic diseases including cardiovascular diseases, hypertension, type 2 diabetes, and some types of cancer.⁴⁻¹⁰ Taking action to reduce the intake of these highly processed products can help reduce important risk factors for chronic disease.

Sodium, free sugars and saturated fat are considered nutrients of concern. This is because they can contribute to an increased risk of chronic disease when consumed in excess. **Trans fat** is also a nutrient of concern and is being addressed through a prohibition of partially hydrogenated oils in Canada.

Sodium is an essential nutrient. However, higher sodium intake is associated with higher blood pressure.¹¹⁻¹⁴ High blood pressure is a risk factor for cardiovascular disease.¹² Sodium is present throughout the food supply, but by far the main contributors to dietary sodium intake are processed foods. In 2017, the main contributors of sodium in Canada were bakery products, mixed dishes, processed meats, cheeses, soups, sauces, dips, gravies, and condiments.¹⁵ In the population, 58% of all Canadians and 72% of children between the ages of 4 and 13 years consumed sodium above the recommended limits.¹⁵

Recommended limits

- **Sodium:** Less than 2300 mg per day (ages 14 and older)¹⁵
- **Free sugars:** Less than 10% of total energy intake¹⁶
- **Saturated fat:** Less than 10% of total energy intake¹⁷

Free sugars are monosaccharides and disaccharides added to foods and beverages by the manufacturer, cook or consumer, and sugars naturally present in honey, syrups, fruit juices and fruit juice concentrates.¹⁶ Free sugars do not include the naturally occurring sources of sugars found in intact or cut fruit and vegetables, and (unsweetened) milk.¹⁶

Beverages that contain free sugars (including 100% fruit juice) have been associated with a higher risk of **dental decay** in children.¹⁸ Further, the intake of foods or beverages with **added sugars** has been associated with an increased risk of weight gain, overweight and obesity, and type 2 diabetes.^{13,19,20} In 2015, **sugary drinks**, sugars, syrups, preserves, confectioneries, desserts (including frozen dessert), and bakery products were among the main sources of **total sugars** in the diets of Canadians.²¹ These foods are also sources of free sugars. **Figure 1** illustrates the relationship between total, added, and free sugars.

To help reduce the intake of free sugars, the majority of total sugars intake should come from nutritious foods, such as intact or cut fruit and vegetables, and unsweetened milk.

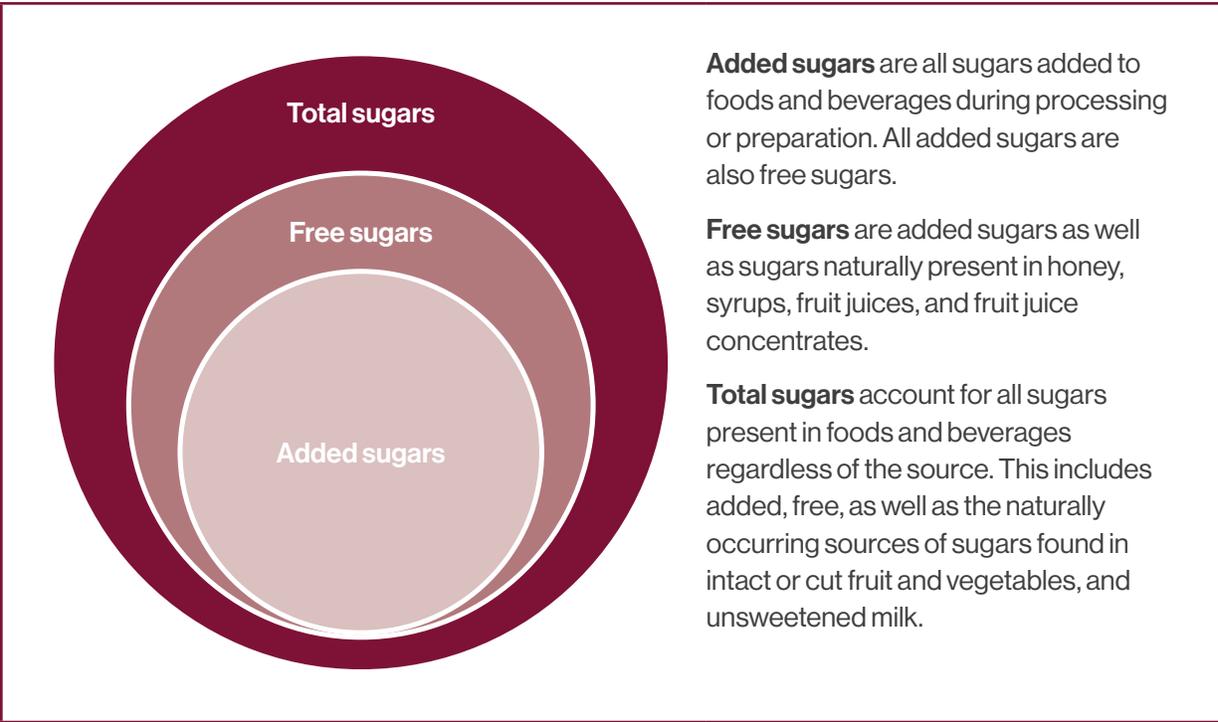


Figure 1: Relationship between added sugars, free sugars, and total sugars

Saturated fat is a type of fat found in foods. It is found in animal-based foods, such as cream, butter, cheeses, and fatty meats as well as some vegetable oils such as coconut and palm kernel oil, and in coconut milk. One in two Canadians consume saturated fat above the recommended limit.²² Lower intakes of foods that contain mostly saturated fat, through replacement with foods that contain mostly unsaturated fat, helps lower cardiovascular risk factors such as LDL-cholesterol.^{12,13,17,19,23–25} In 2015, the major food sources of saturated fat were cheeses, red meat, butter and hard margarine.²²

Trans fat intake has been associated with an increased cardiovascular disease risk and related risk factors.^{17,26} Trans fats are naturally present in small amounts in ruminant animal-based foods such as dairy, beef, and lamb. They can also be produced industrially during the processing of vegetable oils. Historically, the major source of industrially produced trans fats was partially hydrogenated oils (PHOs). The [prohibition of PHOs in Canada](#) will effectively reduce trans fats in the food supply to the lowest level possible. It will also help achieve the public health objective of reducing trans fat intake by the vast majority of Canadians to less than 1% of total energy intake.

Considerations

Sugary drinks, confectioneries, and sugar substitutes

Sugary drinks and confectioneries should not be consumed regularly.

In 2015, sugary drinks were the main sources of total sugars in the diets of Canadians, with children and adolescents (9 to 18 years of age) having the highest average daily intake.²¹

Sugary drinks are beverages that can contribute to excess free sugars when consumed regularly. These include soft drinks, fruit-flavoured drinks, 100% fruit juice, flavoured waters with added sugars, sport and energy drinks, and other sweetened hot or cold beverages, such as iced tea, cold coffee beverages, sweetened milks, and sweetened plant-based beverages. While 100% fruit juice, sweetened milks or fortified soy beverage provide nutrients to the diet, these products can increase the intake of free sugars. Water, unsweetened milk or fortified soy beverage, and fruit should be offered instead.



Confectioneries—which include sweets such as candies, candy bars, fruit leathers, chocolate, and chocolate coated treats—were also top contributors of total sugars in the diets of Canadians in 2015.²¹ These products provide high amounts of free sugars with little to no nutritive value. Confectioneries can also be sticky and adhere to teeth, which can increase the risk of dental decay.

Some confectioneries and sugary drinks (such as hot chocolate and specialty coffees and teas), can also contain cream or other ingredients with saturated fat. Confectioneries and sugary drinks are not needed for healthy eating and can displace nutritious foods in the diet. Promoting the consumption of water instead of sugary drinks, and reducing the intake of confectioneries to a minimum, are important ways to help Canadians decrease free sugars intake and reduce the risk of obesity, type 2 diabetes, and dental decay.

Sugar substitutes do not need to be consumed to reduce the intake of free sugars.

Some foods and beverages (such as some fat-free yogurts and diet soft drinks) are sweetened with sugar substitutes such as aspartame, saccharin, sugar alcohols and purified stevia extract, instead of free sugars. In Canada, these sugar substitutes are regulated as “sweeteners,” a type of **food additive**. Food additives, including sweeteners, are subject to strict controls under Canada’s *Food and Drugs Act* and its *Regulations* to ensure their safety. The sweeteners that have been approved in Canada include sugar alcohols and high-intensity artificial or naturally sourced sweeteners. However, as there are no well-established health benefits associated with the intake of sweeteners,^{19,27,28} nutritious foods and beverages that are unsweetened should be promoted instead.

Publically funded institutions

Foods and beverages offered in publically funded institutions should align with Canada’s Dietary Guidelines.

To create supportive environments for healthy eating, publically funded institutions should offer healthier options that align with **Guideline 1** and limit the availability of highly processed foods and beverages, such as sugary drinks and confectioneries.^{29–32} Workplaces should take a similar approach by providing access to healthier options. Another way to create supportive environments is to limit the promotion of highly processed products in retail settings such as grocery and convenience stores.³⁰ These strategies can help promote lifelong healthy eating habits.

Alcohol

There are health risks associated with alcohol consumption.

Alcoholic beverages can contribute a lot of calories to the diet with little to no nutritive value. When alcohol is mixed with syrups, sugary drinks such as soft drinks and fruit-flavoured drinks, or cream-based liquors, they can be a significant source of sodium, free sugars, or saturated fat.

Further, the substantial disease burden attributed to alcohol intake is a leading global health concern.³³ There are well-established health risks associated with long-term alcohol consumption, including increased risk of many types of cancer—liver, oesophageal, mouth, pharynx, larynx, colorectal, and breast (post-menopausal)—and other serious health conditions (such as hypertension and liver disease).^{7–10,27,34–36}

Non-fatal health and social problems are also associated with drinking alcohol.^{35,36} The economic costs of alcohol-related harm in Canada are estimated to be more than \$14 billion, with about \$3.3 billion directly related to health care costs.³⁷ In 2016, there were at least 3,100 deaths related to alcohol in Canada.³⁸ In the same year, about 77,000 hospitalizations in Canada were due to conditions entirely caused by alcohol.³⁹

People who do not consume alcohol should not be encouraged to start drinking.³⁵ If alcohol is consumed, [Canada’s Low-Risk Alcohol Drinking Guidelines](#) can be used to provide information on how to reduce the risk of alcohol-related harms in both the short and long term. These guidelines set a limit, not a target.³⁵ If all Canadian drinkers were consuming alcohol within the Guidelines, alcohol-related deaths could be reduced.³⁵

Table 3: Convincing findings* supporting Guideline 2

Finding	Source of evidence
Sodium	
Association between decreased intakes of sodium and decreased blood pressure	American College of Cardiology/American Heart Association 2013: Guideline on lifestyle management to reduce cardiovascular risk: a report of the ACC/AHA task force on practice guidelines
	World Health Organization 2012: Guideline: sodium intake for adults and children
	National Health and Medical Research Council 2011: A review of the evidence to address targeted questions to inform the revisions of the Australian Dietary Guidelines
	Dietary Guidelines Advisory Committee 2010: Report of the DGAC on the Dietary Guidelines for Americans
Free sugars	
Association between increased intakes of sugar sweetened beverages and increased risk of weight gain, overweight and obesity	World Cancer Research Fund International/American Institute for Cancer Research 2018: CUP expert report: energy balance and body fatness
Association between increased intakes of sugar-containing beverages and increased risk of dental decay in children	Scientific Advisory Committee on Nutrition 2015: Carbohydrates and health report
Association between increased intakes of added sugars (from food and/or sugar-sweetened beverages) and increased obesity risk and type 2 diabetes risk	Dietary Guidelines Advisory Committee 2015: Scientific report of the DGAC: advisory report to the Secretary of Health and Human Services and the Secretary of Agriculture
Association between increased intakes of sugar-sweetened beverages and increased risk of obesity among children	Dietary Guidelines Advisory Committee 2010: Report of the DGAC on the Dietary Guidelines for Americans
Saturated fat replacement	
Association between replacement of saturated fat with monounsaturated fat and lowered cardiovascular risk factors	World Health Organization 2017: Health effects of saturated and trans-fatty acid intake in children and adolescents: systematic review and meta-analysis
	World Health Organization 2016: Effects of saturated fatty acids on serum lipids and lipoproteins: a systematic review and regression analysis
	Food and Agriculture Organization of the United Nations 2010: Fats and fatty acids in human nutrition — Report of an expert consultation
Association between replacement of saturated fat with polyunsaturated fat and lowered cardiovascular risk factors	World Health Organization 2017: Health effects of saturated and trans-fatty acid intake in children and adolescents: systematic review and meta-analysis
	World Health Organization 2016: Effects of saturated fatty acids on serum lipids and lipoproteins: a systematic review and regression analysis
	Food and Agriculture Organization of the United Nations 2010: Fats and fatty acids in human nutrition — Report of an expert consultation

Table 3: Continued

Finding	Source of evidence
Association between replacement of saturated fat with polyunsaturated fat and lowered cardiovascular disease risk	Dietary Guidelines Advisory Committee 2015: Scientific report of the DGAC: advisory report to the Secretary of Health and Human Services and the Secretary of Agriculture
Association between replacement of saturated fat with unsaturated fat (especially polyunsaturated fat) and lowered cardiovascular risk factors	Dietary Guidelines Advisory Committee 2015: Scientific report of the DGAC: advisory report to the Secretary of Health and Human Services and the Secretary of Agriculture
	American College of Cardiology/American Heart Association 2013: Guideline on lifestyle management to reduce cardiovascular risk: a report of the ACC/AHA task force on practice guidelines
Association between replacement of saturated fat with unsaturated fat (type not specified) and lowered cardiovascular risk factors	Health Canada 2012: Summary of Health Canada’s assessment of a health claim about the replacement of saturated fat with mono- and polyunsaturated fat and blood cholesterol
Association between replacement of saturated fat with monounsaturated fat and lowered cardiovascular risk factors and type 2 diabetes risk	Dietary Guidelines Advisory Committee 2010: Report of the DGAC on the Dietary Guidelines for Americans
Processed meat	
Association between increased intakes of processed meat and increased risk of cancer	International Agency for Research on Cancer 2018: IARC monographs on the evaluation of carcinogenic risks to humans — Red meat and processed meat
Association between increased intakes of processed meat (per 50 grams/day) and increased risk of colorectal cancer	World Cancer Research Fund International/American Institute for Cancer Research 2018: CUP report: colorectal cancer

* Convincing findings are findings graded 'High' by the American College of Cardiology/American Heart Association, the Canadian Cardiovascular Society, and the World Health Organization; findings graded 'Strong' by the Dietary Guidelines Advisory Committee; findings graded 'Sufficient' by Health Canada; findings graded 'Group 1: Carcinogenic' by the International Agency for Research on Cancer; findings graded 'Adequate' by the Scientific Advisory Committee on Nutrition; findings graded 'Convincing' by the Food and Agricultural Organization, and the World Cancer Research Fund/American Institute of Cancer Research; and findings graded 'A' by the National Health and Medical Research Council.

References

1. Moubarac JC, Batal M, Martins AP, Claro R, Levy RB, Cannon G, et al. Processed and ultra-processed food products: Consumption trends in Canada from 1938 to 2011. *Can J Diet Pract Res*. 2014;75(1):15–21.
2. Popkin BM, Gordon-Larsen P. The nutrition transition: worldwide obesity dynamics and their determinants. *Int J Obes Relat Metab Disord*. 2004;28(Suppl 3):S2–S9.
3. Swinburn BA, Sacks G, Hall KD, McPherson K, Finegood DT, Moodie ML, et al. The global obesity pandemic: shaped by global drivers and local environments. *Lancet*. 2011;378(9793):804–814.
4. Tjepkema M. Adult obesity. *Health Rep*. 2006;17(3):9–25
5. Public Health Agency of Canada. [Diabetes in Canada: Facts and figures from a public health perspective](#) [Internet]. Ottawa: Public Health Agency of Canada; 2011 [cited 2018 Sep 14].
6. Public Health Agency of Canada. [How healthy are Canadians? A trend analysis of the health of Canadians from a healthy eating and chronic disease perspective](#) [Internet]. Ottawa: Public Health Agency of Canada; 2016 [cited 2018 Sep 14].
7. World Cancer Research Fund/American Institute for Cancer Research. Continuous Update Project Expert Report 2018. Diet, nutrition, physical activity and colorectal cancer. Washington: American Institute for Cancer Research; 2018.
8. World Cancer Research Fund/American Institute for Cancer Research. Continuous Update Project Expert Report 2018. Diet, nutrition, physical activity and liver cancer. Washington: American Institute for Cancer Research; 2018.
9. World Cancer Research Fund/American Institute for Cancer Research. Continuous Update Project Expert Report 2018. Diet, nutrition, physical activity and breast cancer. Washington: American Institute for Cancer Research; 2018.
10. World Cancer Research Fund/American Institute for Cancer Research. Continuous Update Project Expert Report 2018. Diet, nutrition, physical activity and oesophageal cancer. Washington: American Institute for Cancer Research; 2018.
11. World Health Organization. Guideline: sodium intake for adults and children. Geneva: World Health Organization; 2012.
12. Eckel RH, Jakicic JM, Ard JD, de Jesus JM, Miller NH, Hubbard VS, et al. 2013 AHA/ACC guideline on lifestyle management to reduce cardiovascular risk: a report of the American College of Cardiology/American Heart Association task force on practice guidelines. *Circulation*. 2014;129(25 Suppl 2):S76–S99.
13. Dietary Guidelines Advisory Committee. Report of the Dietary Guidelines Advisory Committee on the Dietary Guidelines for Americans, 2010: to the Secretary of Health and Human Services. Washington: U.S. Department of Agriculture, Agricultural Research Service; 2010.
14. National Health and Medical Research Council. A review of the evidence to address targeted questions to inform the revisions of the Australian Dietary Guidelines. Canberra: National Health and Medical Research Council; 2011.
15. Health Canada. [Sodium Intake of Canadians in 2017](#) [Internet]. Ottawa: Health Canada; 2017 [cited 2018 Sep 14].
16. World Health Organization. Guidelines: Sugars intake for adults and children. Geneva: World Health Organization; 2015.
17. Food and Agriculture Organization of the United Nations. Fats and Fatty Acids in Human Nutrition: Report of an Expert Consultation. Rome: Food and Agriculture Organization of the United Nations; 2010.
18. Scientific Advisory Committee on Nutrition. SACN Carbohydrates and Health Report. Norwich: Public Health England; 2015.
19. Dietary Guidelines Advisory Committee. Scientific report of the 2015 Dietary Guidelines Advisory Committee: advisory report to the Secretary of Health and Human Services and the Secretary of Agriculture. Washington: U.S. Department of Agriculture, Agricultural Research Service; 2015.
20. World Cancer Research Fund/American Institute for Cancer Research. Continuous Update Project Expert Report 2018. Diet, nutrition and physical activity: energy balance and body fatness. Washington: American Institute for Cancer Research; 2018.
21. Langlois K, Garriguet D, Gonzalez A, Sinclair S, Colapinto CK. Changes in total sugars consumption among Canadian children and adults. *Health Reports*. 2019; 30(1): 10-19.
22. Health Canada. 2015 Canadian Community Health Survey — Nutrition. [Internal analysis].

23. Health Canada. [Summary of assessment of a health claim about the replacement of saturated fat with mono- and polyunsaturated fat and blood cholesterol lowering](#) [Internet]. Ottawa: Health Canada; 2012 [cited 2018 Sep 14].
24. Mensink RP. Effects of saturated fatty acids on serum lipids and lipoproteins: a systematic review and regression analysis. Geneva: World Health Organization; 2016.
25. Te Morenga L, Montez JM. Health effects of saturated and trans-fatty acid intake in children and adolescents: systematic review and meta-analysis. *Plos One*. 2017;12(11):e0186672.
26. Brouwer IA. Effect of trans-fatty acid intake on blood lipids and lipoproteins: a systematic review and meta-regression analysis. Geneva: World Health Organization; 2016.
27. World Cancer Research Fund/American Institute for Cancer Research. Diet, nutrition, physical activity and cancer: a global perspective. Continuous Update Project Expert Report 2018. Washington: American Institute for Cancer Research; 2018.
28. World Cancer Research Fund/American Institute for Cancer Research. Continuous Update Project Expert Report 2018. Diet, nutrition, physical activity and bladder cancer. Washington: American Institute for Cancer Research; 2018.
29. Niebylski ML, Lu T, Campbell NR, Arcand J, Schermel A, Hua D, et al. Healthy food procurement policies and their impact. *Int J Environ Res Public Health*. 2014;11(3):2608–2627.
30. Story M, Kaphingst KM, Robinson-O'Brien R, Glanz K. Creating healthy food and eating environments: policy and environmental approaches. *Annu Rev Public Health*. 2008;29:253–272.
31. Hawkes C, Smith TG, Jewell J, Wardle J, Hammond RA, Friel S, et al. Smart food policies for obesity prevention. *Lancet*. 2015;385(9985):2410–2421.
32. Raine K, Alkey K, Olstad DL, Ferdinands R, Beaulieu D, Buhler S, et al. Healthy food procurement and nutrition standards in public facilities: evidence synthesis and consensus policy recommendations. *Health Promot Chronic Dis Prev Can*. 2018;38(1):6–17.
33. Global Burden of Disease 2016 Alcohol Collaborators. Alcohol use and burden for 195 countries and territories, 1990–2016: a systematic analysis for Global Burden of Disease Study 2016. *Lancet*. Epub 2018 Aug 23.
34. World Cancer Research Fund/American Institute for Cancer Research. Continuous Update Project Expert Report 2018. Diet, nutrition, physical activity and cancers of the mouth, pharynx, and larynx. Washington: American Institute for Cancer Research; 2018.
35. Butt P, Beirness D, Stockwell T, Gliksman L, Paradis C. Alcohol and health in Canada: a summary of evidence and guidelines for low risk drinking. Ottawa: Canadian Centre on Substance Abuse; 2011.
36. Public Health Agency of Canada. [The Chief Public Health Officer's Report on the State of Public Health in Canada 2015: Alcohol consumption in Canada](#) [Internet]. Ottawa: Public Health Agency of Canada; 2016 [cited 2018 Nov 28].
37. Rehm J, Baliunas D, Brochu S, Fischer B, Gnam W, Patra J, et al. The costs of substance abuse in Canada, 2002. Ottawa: Canadian Centre on Substance Abuse; 2006.
38. Statistics Canada [Internet]. Ottawa: Statistics Canada; 2016 [cited 2018 Oct 23]. [CANSIM tables](#).
39. Canadian Institute for Health Information. [Alcohol harm in Canada: Examining hospitalizations entirely caused by alcohol and strategies to reduce alcohol harm](#) [Internet]. Ottawa: Canadian Institute for Health Information; 2017 [cited 2018 Oct 23].



Section 3

Importance of food skills

In a food environment where highly processed products have become the easy choice and sometimes the only choice, the promotion of **food skills**, as a component of food literacy, is an essential part of strategies aimed at supporting life-long healthy eating habits.

Guideline 3 and the considerations in this section focus on food skills to support both **Guideline 1** and **Guideline 2**.

Guideline 3

Food skills are needed to navigate the complex food environment and support healthy eating.

- Cooking and food preparation using nutritious foods should be promoted as a practical way to support healthy eating.
- Food labels should be promoted as a tool to help Canadians make informed food choices.

Considerations

Food skills and food literacy

- Food skills are important life skills.
- Food literacy includes food skills and the broader environmental context.
- Cultural food practices should be celebrated.
- Food skills should be considered within the social, cultural, and historical context of Indigenous Peoples.

Food skills and opportunities to learn and share

- Food skills can be taught, learned, and shared in a variety of settings.

Food skills and food waste

- Food skills may help decrease household food waste.

Cooking and food preparation using nutritious foods should be promoted as a practical way to support healthy eating.

Rationale

Health Canada recommends cooking and preparing healthy meals and snacks using nutritious foods as a practical way to support healthy eating. Many Canadians are faced with a **food environment** where highly processed products are readily available, competitively priced, offered in large portion sizes, and heavily marketed.¹ The transformation of the food environment that has taken place over the last few decades has shaped changes in patterns of eating.² Other factors have led to a reliance on highly processed products, including changes in employment conditions (for example, irregular working hours) and to family life (for example, evolving gendered division of household labour).¹

Over time, Canadian households have significantly increased the proportion of their food budget spent on highly processed products—particularly those that are convenient (ready-to-eat or heat).^{1,3} Canadian households also spend about 30% of their food budget on meals and snacks purchased from full-service restaurants, fast-food outlets and cafeterias, as well as refreshment stands, snack bars, vending machines, mobile canteens, caterers, and chip wagons.⁴ The types of meals purchased from these establishments have been associated with an increase in calories, sodium, sugars, and saturated fat.^{5,6} Fewer Canadians are making meals from basic ingredients, and many are reliant on highly processed products that require fewer or different food skills.⁷

Further, the increased use of highly processed products has decreased the transfer of food skills from parents, caregivers, and extended family to children and adolescents. These routes have traditionally been the primary mode of learning these skills.⁷

Cooking and preparing food at home can help support healthy eating as described in **Section 1**.⁸ For example, when food is prepared and cooked at home, the amount of highly processed products purchased and consumed can be reduced. This change in eating behaviour can promote improvements to the types and amounts of food consumed over time by cooking meals using ingredients lower in sodium, free sugars, or saturated fat.



Food labels should be promoted as a tool to help Canadians make informed food choices.

Rationale

Food labels provide a prominent source of nutrition information for Canadians.⁹ This information can be used to make informed food choices, plan nutritious meals, and manage chronic diseases and conditions impacted by diet. Nutrition information on food labels are perceived as a highly credible source of information that consumers report using when making food choices.⁹

Food labels are changing to help make the healthy choice the easier choice. Refer to [Food labelling changes](#).

The use of nutrition information on food labels is higher among people with health conditions and special dietary needs and lower among children, adolescents and older adults.⁹ People with lower income and education are also less likely to use nutrition information on food labels.⁹ Interventions aimed at improving the knowledge and understanding of nutrition information on food labels can have positive results among some populations, such as those with a low income and literacy level.⁹

The Nutrition Facts table is a component of a food label that can help Canadians:

- learn about a food's nutritional value,
- compare the nutritional content of food products, and
- better manage special dietary needs such as a low-sodium diet.

The Nutrition Facts table also declares a percent Daily Value (%DV) on core nutrients in a defined serving of food. Canada's new labelling regulations require that the Nutrition Facts table include a footnote at the bottom of the table about the % DV. The footnote can help Canadians understand if a prepackaged food has 'a little' (5% DV or less) or 'a lot' (15% or more) of a nutrient. When Canadians use information on the food label, it can help them make healthier food choices.¹⁰ When these choices are made on a regular basis, it can help reduce the intake of sodium, free sugars and saturated fat from the overall diet. Reducing the intake of these nutrients over time can help reduce important risk factors for chronic disease in Canada.

The list of ingredients is another component of the food label. Ingredients are listed in order of weight, beginning with the ingredient that weighs the most and ending with the ingredient that weighs the least. This can help Canadians identify if a food contains more of the ingredient (if it is found at the beginning of the list) and less of the ingredient (if it is found at the end of the list). It can also be particularly helpful when trying to avoid certain ingredients (such as allergens).

Taken together, food labels are tools that can help Canadians navigate the complex food environment. Food labels can help Canadians make informed food choices in various settings, such as grocery stores. Encouraging the use of food labels—along with promoting cooking and food preparation—can be an effective strategy to promote the selection of nutritious foods and support the preparation of healthy meals and snacks.

The Nutrition Facts table provides information on the **total sugars** content of a prepackaged food or beverage. Total sugars with 15% or more of the % DV (equivalent to 15 grams or more) can help identify foods high in **free sugars**.

The list of ingredients is another way to identify if a prepackaged food or beverage contains free sugars. Canada's new labelling regulations require that sugars-based ingredients be grouped in descending order by weight after the name "Sugars". This will help Canadians identify all of the sources of free sugars and to understand the proportion of free sugars compared to other ingredients.



Considerations

Food skills and food literacy

Food skills are important life skills.

A person with food skills has the information, abilities, and practices to acquire nutritious foods and prepare meals and snacks that are safe, nutritious, and culturally acceptable. Food skills can help to build a person's understanding of the food supply or where foods come from.

Food skills may also help support a mindful approach to eating: making conscious food choices; taking time to eat; paying attention to feelings of hunger and fullness; and avoiding distractions when eating.¹¹ A mindful approach to eating can promote attentive eating, which is achieved when distractions are at a minimum. Distracted eating may increase food and beverage intake, both in the immediate and subsequent meals or snacks.¹²

Building a basic level of food skills (such as the ability to assemble a simple meal or snack using nutritious foods) can contribute to improved food choices and eating behaviours at any age, but particularly among children and adolescents.⁷ As knowledge and skills are learned and used, cooking and food preparation may become habitual and more time efficient. A basic level of food skills can particularly benefit those moving from one life stage or life circumstance to another, such as adolescents and young adults becoming responsible for feeding themselves, older adults who have lost a spouse who did the cooking, or people who have moved away from their extended families and have less opportunity for intergenerational learning and sharing of food skills.

What food skills include:

- **Knowledge** needed to read, evaluate and interpret nutrition information such as food and menu labels, and marketing of foods and beverages; to store and prepare food safely; to adjust recipes; to grow food, hunt or fish; to know where to find plants and berries to harvest.
- **Skills in using the senses** needed to assess texture, appearance, taste, and smell of foods; to determine ripeness of plants and berries to harvest.
- **Planning skills** needed to make a grocery list and stay within budget; to organize and prepare nutritious meals; to accommodate preferences and dietary needs of family members; to make good use of leftovers.
- **Technical skills** needed to use tools and techniques to make meals; to hunt, fish, harvest, or prepare and preserve wild foods.

— Adapted from Vanderkooy¹³

Food literacy includes food skills and the broader environmental context.

Food skills are a component of food literacy and are interrelated with social environments, physical environments and other **determinants of health**. Many factors influence food choices and eating behaviours.¹⁴ Factors can include:

- peer and family supports,
- availability and accessibility of resources (such as finances, a functioning kitchen, cooking equipment, and a basic shelf of food),
- social, cultural and gender norms, and
- time constraints. (For example, people living on a low income or working several jobs may not have the resources or free time to reasonably improve their food skills.)

All sectors of society should strive to support people of all backgrounds to adopt healthy eating practices and prepare nutritious foods. **Section 4** discusses the need for supportive environments for healthy eating.

Food literacy includes food skills and practices that are learned and used across the lifespan to participate within a complex food environment. Food literacy also means considering the social, cultural, economic and physical factors related to food.

Cultural food practices should be celebrated.

Cultural food practices can influence how food skills are learned and shared. These practices reflect the diverse cultural backgrounds and food traditions in Canada. Food traditions can influence how, what, and when Canadians eat. They can also influence where Canadians acquire food and how they prepare it. Celebrating cultural food practices can keep food traditions alive by sharing them across generations and with others. For example, organizing community events that celebrate with cultural foods can be a way to share knowledge and skills within and between cultures. **Eating with others** (see Section 1) can also foster connections between cultures.



Food skills should be considered within the social, cultural, and historical context of Indigenous Peoples.

Efforts to build food skills should recognize the unique histories, circumstances, and aspirations of Indigenous Peoples of Canada.¹⁵ This includes the historical context of residential schools, which resulted in many residential school survivors being disconnected from their lands, and becoming unfamiliar with the social networks where knowledge and skills about food systems of Indigenous Peoples were shared.¹⁵

The emphasis should be on creating opportunities for intergenerational knowledge sharing and fostering cultural strengths and aspirations for a healthier future. This can be achieved when Indigenous communities lead, as well as participate in, policies and programs that aim to build, and improve, food skills. These efforts can lead to improved diet quality.¹⁶ These efforts may also foster greater self-determination and a revitalized cultural identity.

Food systems of Indigenous Peoples include the food plant and animal species that Indigenous Peoples acquire from the land, water, and air using technologies and knowledge that have been adapted and passed through generations.¹⁷ This knowledge is key for sustainable harvesting and cultivation, as well as for the preparation, storage, consumption, and sharing of traditional food.

Food skills and opportunities to learn and share

Food skills can be taught, learned, and shared in a variety of settings.

Canadians can create opportunities to teach and share food skills wherever they are—at home, in daycares, at school (for example by integrating cooking skills into children’s education), or in other settings such as in community centres, in the garden, or out on the land. For example, local community kitchens may provide peer-to-peer support to newcomers to Canada who face limited access to cultural foods and ingredients, or who are unfamiliar with potential substitutes to prepare traditional recipes.¹⁸ The transferring of food skills can also take place when meal preparation is undertaken as a group activity during family or community celebrations.

Transferring food skills to children and adolescents can build self-confidence and self-efficacy (belief in one’s own abilities), and provide a feeling of accomplishment.⁷ Taking part in food-related tasks can encourage young children to try new foods.¹⁹ Learning food skills in any setting can help support the advancement of behavioural norms around cooking early in life and can support life-long healthy eating habits. Creating opportunities to cook and prepare foods through school-based initiatives (such as home economics curriculum and breakfast programs) along with other community-based programs outside the school setting can support children and adolescents to develop and apply food skills.

This kind of knowledge transfer can also take place among adults. Programs aimed at improving food skills may particularly benefit adults who lack a basic skill level. People who have newly diagnosed diet-related health risk factors may be highly motivated to learn how to make changes to their diet in these types of programs. Focusing on creative aspects of food preparation or on making healthy, quick and cost-effective meals may encourage adults to participate in such learning opportunities.

The proper preparation and safe handling of food should be promoted to avoid risk of food-borne illness. The [General food safety tips](#) discuss best practices for food safety such as safe food handling, storing, cooking, barbecuing and reheating.

To safely harvest, store, and prepare traditional food, it is important to follow the traditional ways and consult with knowledgeable elders. [Food Safety for First Nations People of Canada: A Manual for Healthy Practices](#) discusses best practices in traditional First Nations food harvesting and preparation.

Food skills and food waste

Food skills may help decrease household food waste.

Not all food that is produced is consumed. The annual value of lost and wasted food in Canada is roughly \$31 billion.²⁰ Almost half of all food waste takes place at the household level.²⁰ Potential reasons why households waste food include: poor planning before shopping; impulse shopping; cooking, preparing or serving too much at meals.²¹ Improving food skills may make it easier for Canadians to reduce household food waste. For example, developing skills related to meal planning, storing perishable foods properly, and using up leftovers may help minimize waste.

Wasted food also puts pressure on the environment, using land, soil, and water to produce food that is not eaten.²² The environmental impact of food waste is further described in **Section 1**.

References

1. Moubarac JC, Batal M, Martins AP, Claro R, Levy RB, Cannon G, et al. Processed and ultra-processed food products: consumption trends in Canada from 1938 to 2011. *Can J Diet Pract Res*. 2014;75(1):15–21.
2. Sallis JF, Glanz K. The role of built environments in physical activity, eating, and obesity in childhood. *Future Child*. 2006;16(1):89–108.
3. Moubarac JC. Ultra-processed foods in Canada: consumption, impact on diet quality and policy implications. Montréal: TRANSNUT, University of Montreal; 2017.
4. Statistics Canada. [Survey of household spending, detailed food expenditures, Canada, regions and provinces](#) [Internet]. Table 203–0028. Ottawa: Statistics Canada [cited 2018 Sep 14].
5. Black JL, Billette J-M. Fast food intake in Canada: differences among Canadians with diverse demographic, socio-economic and lifestyle characteristics. *Can J Public Health*. 2015;106(2):e52–e58.
6. Nguyen BT, Powell LM. The impact of restaurant consumption among US adults: effects on energy and nutrient intakes. *Public Health Nutr*. 2014;17(11):2445–2452.
7. Government of Canada. [Improving cooking and preparation skills: a synthesis of the evidence to inform program and policy development](#) [Internet]. Ottawa: Government of Canada; 2010 [cited 2018 Sep 14].
8. Mills S, White M, Brown H, Wrieden W, Kwasnicka D, Halligan J, et al. Health and social determinants and outcomes of home cooking: a systematic review of observational studies. *Appetite*. 2017;111:116–134.
9. Campos S, Doxey J, Hammond D. Nutrition labels on pre-packaged foods: a systematic review. *Public Health Nutr*. 2011;14(8):1496–1506.
10. Government of Canada. [A look at food skills in Canada](#) [Internet]. Ottawa: Government of Canada; 2015 [cited 2018 Sep 14].
11. Warren JM, Smith N, Ashwell M. A structured literature review on the role of mindfulness, mindful eating and intuitive eating in changing eating behaviours: effectiveness and associated potential mechanisms. *Nutr Res Rev*. 2017;30(2):272–283.
12. Robinson E, Aveyard P, Daley A, Jolly K, Lewis A, Lycett D, Higgs S. Eating attentively: a systematic review and meta-analysis of the effect of food intake memory and awareness on eating. *Am J Clin Nutr*. 2013;97(4):728–742.
13. Vanderkooy P. Food skills of Waterloo Region adults [Fireside Chat web presentation]. Waterloo; 2010.
14. Cullen T, Hatch J, Martin W, Higgins JW, Sheppard R. Food literacy: definition and framework for action. *Can J Diet Prac Res*. 2015;76(3):140–145.
15. Truth and Reconciliation Commission of Canada. [Honouring the truth, reconciling for the future: summary of the Final Report of the Truth and Reconciliation Commission of Canada](#) [Internet]. Ottawa: Government of Canada; 2015 [cited 2018 Sep 14].
16. Council of Canadian Academies. Aboriginal food security in northern Canada: an assessment of the state of knowledge. Ottawa: The Expert Panel on the State of Knowledge of Food Security in Northern Canada, Council of Canadian Academies; 2014.
17. Kuhnlein HV, Receveur O. Dietary change and traditional food systems of Indigenous Peoples. *Annu Rev Nutr*. 1996;16:417–442.
18. Government of Canada. [Improving cooking and food preparation skills: a profile of promising practices in Canada and abroad](#) [Internet]. Ottawa: Government of Canada; 2010 [cited 2018 Sep 14].
19. Satter E. *Child of mine: feeding with love and good sense*. Boulder: Bull Publishing Company; 2000.
20. Gooch MV, Felfel A. [\\$27 Billion revisited: the cost of Canada's annual food waste](#) [Internet]. Oakville: Value Chain Management International; 2014 [cited 2018 Sep 14].
21. Parfitt J, Barthel M, Macnaughton S. Food waste within food supply chains: quantification and potential for change to 2050. *Phil Trans R Soc B*. 2010;365:3065–3081.
22. Agriculture and Agri-food Canada [Internet]. Ottawa: Government of Canada; 2017 [cited 2018 Sep 14]. [A food policy for Canada](#).



Section 4

Implementation of dietary guidelines

Programs and policies that align with Canada's Dietary Guidelines provide an opportunity to create supportive environments for healthy eating. Understanding and acting on the barriers that make it challenging for Canadians to make healthy food choices are essential for the successful implementation of these guidelines.

Decisions about healthy eating are influenced by many aspects of our social and physical environments, from household income and food skills to government food policies. The health sector works at federal, provincial, territorial, and regional levels to build understanding of nutrition issues and foster inter-sectoral approaches. This is to ensure that decision makers consider the health impacts of policies and programs along with other government priorities.

Health charities and professional regulatory bodies/associations, in their efforts to reduce the risk of chronic disease and promote health, complement the efforts of governments to support implementation of dietary guidelines.

All sectors—including agriculture, environment, education, housing, transportation, the food industry, trade, as well as child, family and social services—have a role to play for Canada's Dietary Guidelines to have far-reaching and longstanding effects on the nutritional health of Canadians. It is necessary to identify and address the physical, economic, and social barriers to healthy eating. These sectors can make policy decisions within their sphere of influence to improve the accessibility and availability of nutritious foods to Canadians of all ages and backgrounds. Identifying barriers, and opportunities, during policy and program development is essential to the creation of supportive environments for healthy eating across the country.

Healthy eating requires that nutritious foods be available and accessible.

Access to, and availability of, nutritious food options vary within and between population groups. Health inequities arise when these differences are unfair and avoidable.¹ Dietary guidelines are intended to contribute to advancing **health equity** while ensuring that they do not make inequities worse.

Health inequities are related to factors and conditions (biological, social, cultural, economic, and environmental) that affect health.¹⁻³ These factors and conditions are the **determinants of health**. The determinants of health have also been made more specific for some Indigenous populations of Canada by taking a more holistic outlook that addresses the unique historical, economic, political and social factors impacting the wellness of Indigenous populations.^{4,5} These specific determinants include the **social determinants of First Nations health** and the **social determinants of Inuit health**.

The determinants of health combine in ways that impact eating behaviour. It is essential to identify barriers to accessibility and availability of nutritious foods. This can help identify the most appropriate and effective interventions to promote supportive environments for healthy eating across the country.

Canada's Dietary Guidelines are one part of a comprehensive approach to supporting healthy eating. Addressing the determinants of health and reducing health inequities is required to help Canadians make healthy food choices that are aligned with the guidelines in this report.

Certain populations are at increased risk of poor dietary intakes.

Nutritional risk factors (such as low intakes of vegetables and fruit) for chronic diseases and conditions are often termed “modifiable.” However, many people are not able to make changes because their food environment or life circumstances do not support **accessibility** and **availability** of nutritious foods. Underlying health inequities can contribute to food insecurity and poorer health outcomes in some groups in Canada. Those at greater risk of poor health include: Indigenous Peoples, people living on low incomes, people living in rural areas, and newcomers to Canada.¹ These groups are often affected by a number of factors that influence their ability to make healthy eating decisions.

For example, Indigenous Peoples who live in remote, isolated, and northern communities often have limited access to nutritious foods (including traditional food). This may be negatively influenced by limited employment opportunities and low incomes; environmental changes affecting traditional food harvesting and consumption; lack of access to the land and resources; loss of cultural identities, traditional knowledge, and food practices; and the unreliable supply, quality, and high prices of store foods in remote communities.⁶ Underlying determinants have contributed to an unacceptable socio-economic gap between Indigenous and non-Indigenous communities.^{4,5}

In another example, newcomers to Canada may bring with them a food culture they wish to preserve and share. Supporting the preservation of food cultures may help maintain healthy eating habits among newcomers. It may also help sustain the “healthy immigrant effect.” This is the observation that recent immigrants—particularly those migrating in adulthood—are sometimes in better health compared to Canadian-born residents.⁷ This advantage is often lost over time because of factors such as acculturation. Additionally, access to nutritious foods may be difficult because of a combination of issues, such as lower income, language and transportation barriers, as well as availability issues, such as limited markets for culturally acceptable foods.⁸

Children and older adults from all backgrounds can be particularly vulnerable to poor dietary intakes. A child's food choices are shaped by the foods that parents or caregivers are able to select and prepare.

Household income, parental employment status, and parental health all affect the food choices available to children. In addition, adult food purchasing decisions are influenced by other factors, including convenience, commercial messages, and endorsements targeting children. Children themselves are vulnerable to the complex information environment—in particular food marketing techniques that have been shown to steer food choices in the direction of highly processed products.^{9,10}

Older adults now outnumber children in the Canadian population.¹¹ Older adults may be at risk of poor dietary intake, depending on whether they were exposed to positive or negative influences on their health over time. Older adults can be affected by socio-economic conditions, such as lower income, which may limit their ability to travel, purchase and transport nutritious foods.^{23,24} Changes in functional ability can also influence the food choices and eating behaviour of adults in later life. Some older adults face mobility or dexterity issues that can cause them to increasingly rely on others for food shopping and meal preparation.²⁴ They may face social isolation with changes in family and social networks and loss of loved ones over the years. Social isolation can lead to depression and a lack of motivation to prepare and consume nutritious meals.²⁴ While women are more likely to lose a spouse, widowers may have fewer food skills and be less able to prepare nutritious meals for themselves. Older adults' food intake can also be affected by physiological changes, such as poor oral health, diminished appetite, sensory changes, altered digestive processes, chronic health issues, and the effects of medication.^{23,24}

To support healthy eating for all Canadians, collective action on the determinants of health is needed by all sectors to complement and extend the foundation for healthy eating provided by Canada's Dietary Guidelines.

Food insecurity refers to the limited or uncertain availability of nutritionally adequate and safe foods. It also refers to the limited or uncertain ability to acquire acceptable foods in socially acceptable ways.

Rates of food insecurity are higher among Indigenous households than non-Indigenous households.

Rates of moderate and severe food insecurity range from 22% to 63% of Indigenous households (depending on which population has been surveyed),^{12–19} whereas the national average of household food insecurity in Canada is 8%.²⁰

Food insecurity has also been found to be higher among Indigenous children than non-Indigenous children.^{19,21}

Further, rates of food insecurity are especially pronounced in northern, remote, and isolated communities.²²

References

1. Public Health Agency of Canada. [Reducing health inequalities: a challenge for our times](#) [Internet]. Ottawa: Public Health Agency of Canada; 2011 [cited 2018 Sep 14].
2. World Health Organization. Improving Equity in Health by Addressing Social Determinants. Geneva: World Health Organization; 2011.
3. Public Health Agency of Canada. [Population health promotion: an integrated model of population health and health promotion](#) [Internet]. Ottawa: Public Health Agency of Canada; 1996 [cited 2018 Sep 14].
4. Assembly of First Nations. [First Nations Wholistic Policy and Planning: a transitional discussion document on the social determinants of health](#) [Internet]. Ottawa: Assembly of First Nations; 2013 [cited 2018 Sep 14].
5. Inuit Tapiriit Kanatami. [Social determinants of Inuit health in Canada](#) [Internet]. Ottawa: Inuit Tapiriit Kanatami; 2014 [cited 2018 Sep 14].
6. Power E. Food Security for First Nations and Inuit Background Paper. Ottawa: Prepared for the First Nations and Inuit Health Branch, Health Canada; 2007.
7. Vang ZM, Sigouin J, Flenon A, Gagnon A. Are immigrants healthier than native-born Canadians? A systematic review of the healthy immigrant effect in Canada. *Ethn Health*. 2017;22(3):209–241.
8. Sanou D, O'Reilly E, Ngnie-Teta I, Batal M, Mondain N, Andrew C, et al. Acculturation and nutritional health of immigrants in Canada: a scoping review. *J Immigr Minor Health*. 2014;16(1):24–34.
9. Sadeghirad B, Duhaney T, Motaghipisheh S, Campbell NC, Johnston BC. Influence of unhealthy food and beverage marketing on children's dietary intake and preference: a systematic review and meta-analysis of randomized trials. *Obes Rev*. 2016;17(10):945–959.
10. Boyland EJ, Nolan S, Kelly B, Tudur-Smith C, Jones A, Halford JC, et al. Advertising as a cue to consume: A systematic review and meta-analysis of the effects of acute exposure to unhealthy food and non-alcoholic beverage advertising on intake in children and adults. *Am J Clin Nutr*. 2016;103(2):519–533.
11. Statistics Canada. [Age and sex, and type of dwelling data: Key results from the 2016 Census](#) [Internet]. Ottawa: Statistics Canada; 2017 [cited 2018 Sep 14].
12. Chan L, Receveur O, Sharp D, Schwartz H, Ing A, Tikhonov C. First Nations Food, Nutrition and Environment Study (FNFNES): results from British Columbia (2008/2009). Prince George: University of Northern British Columbia; 2011.
13. Chan L, Receveur O, Sharp D, Schwartz H, Ing A, Fediuk KI. First Nations Food, Nutrition and Environment Study (FNFNES): results from Manitoba (2010). Prince George: University of Northern British Columbia; 2012.
14. Chan L, Receveur O, Batal M, William D, Schwartz H, Ing A, et al. First Nations Food, Nutrition and Environment Study (FNFNES): results from Ontario (2011/2012). Ottawa: University of Ottawa; 2014.
15. Chan L, Receveur O, Batal M, William D, Schwartz H, Ing A, et al. First Nations Food, Nutrition and Environment Study (FNFNES): results from Alberta (2013). Ottawa: University of Ottawa; 2016.
16. Chan L, Receveur O, Batal M, William D, Schwartz H, Ing A, et al. First Nations Food, Nutrition and Environment Study (FNFNES): results from the Atlantic (2014). Ottawa: University of Ottawa; 2017.
17. Chan L, Receveur O, Batal M, Sadik T, Schwartz H, Ing A, et al. First Nations Food, Nutrition and Environment Study (FNFNES): results from Saskatchewan (2015). Ottawa: University of Ottawa; 2018.
18. Huet C, Rosol, R, Egeland GM. The prevalence of food insecurity is high and the diet quality poor in Inuit communities. *J Nutr*. 2012;142(3):541–547.
19. Health Canada. Office of Nutrition Policy and Promotion. Summary data tables on household food insecurity in Canada in 2011–12 [Internal analysis].
20. Health Canada. [Household food insecurity in Canada statistics and graphics \(2011 to 2012\)](#) [Internet]. Ottawa: Health Canada; 2017 [cited 2018 Sep 14].

21. Egeland GM, Pacey A, Cao Z, Sobol I. Food insecurity among Inuit preschoolers: Nunavut Inuit Child Health Survey, 2007–2008. *Can Med Assoc J.* 2010;182(3):243–248.
22. Tarasuk V, Mitchell A, Dachner N. [Household food insecurity in Canada, 2014](#) [Internet]. Toronto: Research to identify policy options to reduce food insecurity (PROOF); 2016 [cited 2018 Sep 14].
23. Shlisky J, Bloom DE, Beaudreault AR, Tucker KL, Keller HH, Freund-Levi Y, et al. Nutritional Considerations for Healthy Aging and Reduction in Age-Related Chronic Disease. *Adv Nutr.* 2017;8(1):17–26.
24. Ramage-Morin PL, Garriguet D. Nutritional risk among older Canadians. *Health Rep.* 2013;24(3):3–13.

Glossary

A

Accessibility: the degree to which people can acquire nutritious foods, either through buying them, or by producing or harvesting the foods themselves.

Availability: the supply of nutritious foods to a community or region.

C

Confectioneries: refers to the foods that are generally recognized as sweet treats. This includes candy (such as lollipops, candy canes, mints, candy floss, nut brittles, toffee, jellies, gummies, jujubes, licorice, fudge and caramels); candy bars; chocolate; chocolate-coated or chocolate-containing treats; chocolate compound confections; fruit snack products such as fruit leathers and fruit flavoured pieces; and frozen confections.

Convincing findings: one of the descriptors used to compare grades of evidence from scientific reports on food and health that are included in Health Canada's Evidence Review for Dietary Guidance.

D

Dietary Approaches to Stop Hypertension (DASH) eating plan: refers to a low sodium diet that includes foods high in nutrients such as potassium and calcium that have been shown to help lower blood pressure.¹ It recommends the intake of vegetables, fruit, whole grains, fat-free or low-fat dairy products, fish, poultry, beans, nuts, and vegetable oils; limiting foods that are high in saturated fat (such as fatty meats, full-fat dairy products, and tropical oils), and limiting sugar-sweetened beverages and sweets.¹

Dental decay: a disease that can damage tooth structure. Decay starts by damaging the protective coating, also known as enamel, causing a hole (cavity) to develop. If the cavity is left untreated, it can get bigger, cause pain, and lead to the breakage or loss of a tooth. A cavity is caused when the bacteria living in the plaque react with sugars from food or drink, resulting in an acid. This acid then attacks the surface of a tooth.

Determinants of health: the key factors that influence health, including income and social status; social support networks; education and literacy; employment and working conditions; the social and physical environments; personal health practices and coping skills; healthy child development; biology and genetic endowment; health services; gender and culture.

Dietary risks: a term used in the Global Burden of Disease report² that refers to diets that are low in fruits, vegetables, whole grains, nuts and seeds, fiber, milk, calcium, seafood omega-3 fatty acids, and polyunsaturated fatty acids; and diets that are high in sodium, red meat, processed meat, sugar-sweetened beverages, and trans fatty acids.

F

Fad diets: diets that are often commercially driven and promise a quick fix for weight loss or the management of a chronic disease.

Food additives: substances that are added to food during manufacturing or processing for the purpose of achieving a particular technical effect, such as colouring, thickening, prolonging shelf-life or inhibiting the growth of pathogens. The food additives that are permitted for use in Canada are identified in the [Lists of Permitted Food Additives](#).

Food environment: the aspects of the social and physical environment that affect the types of food available, the accessibility of food, and the nutrition information that people are exposed to, including food marketing. All these aspects of the food environment can influence food choices.

Food skills: the complex, inter-related, and person-centered set of skills. They are needed to provide and prepare safe, nutritious, and culturally acceptable meals for all members of a household.³

Free sugars: defined by the World Health Organization⁴ as all monosaccharides and disaccharides added to foods and beverages by the manufacturer, cook or consumer, and sugars naturally present in honey, syrups, fruit juices and fruit juice concentrates. Free sugars do not include the naturally occurring sources found in intact fruits and vegetables, and those found in (unsweetened) milk.

H

Health equity: the absence of unfair and avoidable differences in health within and between populations. Equity is not the same as equality. To be treated equally is to be treated the same. To be treated equitably, the treatment may differ, but the goal is to achieve outcomes that are more equal.

Highly processed products: a term used in this report to describe processed or prepared foods and beverages that contribute to excess sodium, free sugars, or saturated fat.

I

Indigenous Peoples in Canada: the diverse populations of Canada—First Nations, Inuit, and Métis—with distinct languages, cultural practices, histories, spiritual beliefs, and regions. Important differences are found both within and between First Nations, Inuit, and Métis.

M

Mediterranean-style diets: eating patterns that reflect dietary intakes of people living in Mediterranean countries. These diets are described in different ways in the literature.⁵ General features include high intakes of vegetables, fruit, legumes, nuts, seeds, cereals, and olive oil; low to moderate intakes of dairy products, fish and poultry; low consumption of red and processed meats; and, sometimes, moderate intake of alcohol.⁵

P

Pattern of eating: the combination of food and beverage choices that make up a person's habitual dietary intake.

Population health approach: an approach that aims to maintain and improve the health of the entire population and reduce health inequities among population sub-groups. To do this, the approach looks at, and acts upon the broad range of factors and conditions that have a strong influence on health.

Prepared foods and beverages: products that are prepared by restaurants and other similar establishments, and those prepared at home. Prepared products can also contain processed ingredients.

Processed foods and beverages: products that are canned, cooked, frozen, dried or otherwise processed to extend preservation, food safety, and quality in transportation, distribution and storage.

Processed meat: defined by the World Health Organization⁶ as meat that has been transformed through salting, curing, fermenting, smoking, or other processes to enhance flavour or improve preservation.

Protein foods: include legumes, nuts, seeds, tofu, fortified soy beverage, fish, shellfish, eggs, poultry, lean red meat including wild game, lower fat milk, lower fat yogurts, lower fat kefir, and cheeses lower in fat and sodium.

S

Social determinants of First Nations health: referred to by the Assembly of First Nations⁷ as community readiness; economic development; employment; environmental stewardship; gender; historical conditions and colonialism; housing; lands and resources; language, heritage and strong cultural identity; legal and political equity; lifelong learning; on and off reserve; racism and discrimination; self-determination and non-dominance; social services and supports; urban and rural.

Social determinants of Inuit health: referred to by the Inuit Tapiriit Kanatami⁸ as quality of early childhood development; culture and language; livelihoods; income distribution; housing; personal safety and security; education; food security; availability of health services; mental wellness; the environment.

Sugary drinks: refers to beverages that can contribute to excess free sugars. These include soft drinks, fruit-flavoured drinks, 100% fruit juice, flavoured waters with added sugars, sport and energy drinks, and other sweetened hot or cold beverages, such as iced tea, cold coffee beverages, sweetened milks, and sweetened plant-based beverages.

T

Traditional food (also known as country food): foods that are locally available from natural resources that have cultural significance for Indigenous Peoples in Canada. Traditional food is the preferred term for First Nations and Métis peoples, and country food is the preferred term for Inuit. The use of the term “traditional food” in this report is intended to be inclusive of all Indigenous cultures in Canada.

U

Ultra-processed: a category of foods in the NOVA food classification system⁹ that refers to products as industrial ingredients, obtained from the extraction, refinement, and transformation of constituents of raw foods, with usually little or no whole food.

W

Whole grains: refers to grains that contain all three parts of the kernel (the bran, the endosperm, and the germ). Products made with whole grains have the words “whole grain” followed by the name of the grain as one of the first ingredients. In Canada, 100% whole wheat flour is not considered a whole grain. This is because much of the germ is removed when wheat is milled. Though 100% whole wheat foods may not be considered whole grains, they are nutritious choices that provide dietary fibre.

References

1. National Heart, Lung and Blood Institute [Internet]. Bethesda: National Institute of Health [cited 2018 Sep 14]. [Description of the DASH eating plan](#).
2. Institute for Health Metrics and Evaluation [Internet]. Seattle: Institute for Health Metrics and Evaluation [cited 2018 Sep 14]. [Diet](#).
3. Vanderkooy P. Food skills of Waterloo region adults [Fireside Chat web presentation]. Waterloo; 2010.
4. World Health Organization. Guidelines: Sugars intake for adults and children. Geneva: World Health Organization; 2015.
5. Hernandez-Ruiz A, Garcia-Villanova B, Guerra Hernandez EJ, Amiano P, Azpiri M, Molina-Montes E. Description of indexes based on the adherence to the Mediterranean dietary pattern: A review. *Nutr Hosp*. 2015;32(5):1872–1884.
6. World Health Organization [Internet]. Geneva: World Health Organization; 2015 [cited 2018 Sep 14]. [Q&A on the carcinogenicity of the consumption of red meat and processed meat](#).
7. Assembly of First Nations. [First Nations Wholistic Policy and Planning: A transitional discussion document on the social determinants of health](#) [Internet]. Ottawa: Assembly of First Nations; 2013 [cited 2018 Sep 14].
8. Inuit Tapiriit Kanatami. [Social determinants of Inuit health in Canada](#) [Internet]. Ottawa: Inuit Tapiriit Kanatami; 2014 [cited 2018 Sep 14].
9. Moubarac JC, Batal M, Martins AP, Claro R, Levy RB, Cannon G, et al. Processed and ultra-processed food products: Consumption trends in Canada from 1938 to 2011. *Can J Diet Pract Res*. 2014;75(1):15–21.

Appendix A: Healthy eating recommendations

Healthy eating is more than the foods you eat. It is also about where, when, why and how you eat.

- Be mindful of your eating habits
 - Take time to eat
 - Notice when you are hungry and when you are full
- Cook more often
 - Plan what you eat
 - Involve others in planning and preparing meals
- Enjoy your food
 - Culture and food traditions can be a part of healthy eating
- Eat meals with others

Make it a habit to eat a variety of healthy foods each day.

- Eat plenty of vegetables and fruits, whole grain foods and protein foods. Choose protein foods that come from plants more often.
 - Choose foods with healthy fats instead of saturated fat
- Limit highly processed foods. If you choose these foods, eat them less often and in small amounts.
 - Prepare meals and snacks using ingredients that have little to no added sodium, sugars or saturated fat
 - Choose healthier menu options when eating out
- Make water your drink of choice
 - Replace sugary drinks with water
- Use food labels
- Be aware that food marketing can influence your choices

Appendix B: Summary of guidelines and considerations

Guidelines	Considerations
<p>Guideline 1</p> <p>Nutritious foods are the foundation for healthy eating.</p> <ul style="list-style-type: none"> ▪ Vegetables, fruit, whole grains, and protein foods should be consumed regularly. Among protein foods, consume plant-based more often. <ul style="list-style-type: none"> • Protein foods include legumes, nuts, seeds, tofu, fortified soy beverage, fish, shellfish, eggs, poultry, lean red meat including wild game, lower fat milk, lower fat yogurts, lower fat kefir, and cheeses lower in fat and sodium. ▪ Foods that contain mostly unsaturated fat should replace foods that contain mostly saturated fat. ▪ Water should be the beverage of choice. 	<p>Nutritious foods to encourage</p> <ul style="list-style-type: none"> ▪ Nutritious foods to consume regularly can be fresh, frozen, canned, or dried. <p>Cultural preferences and food traditions</p> <ul style="list-style-type: none"> ▪ Nutritious foods can reflect cultural preferences and food traditions. ▪ Eating with others can bring enjoyment to healthy eating and can foster connections between generations and cultures. ▪ Traditional food improves diet quality among Indigenous Peoples. <p>Energy balance</p> <ul style="list-style-type: none"> ▪ Energy needs are individual and depend on a number of factors, including levels of physical activity. ▪ Some fad diets can be restrictive and pose nutritional risks. <p>Environmental impact</p> <ul style="list-style-type: none"> ▪ Food choices can have an impact on the environment.

Guidelines	Considerations
<p>Guideline 2</p> <p>Processed or prepared foods and beverages that contribute to excess sodium, free sugars, or saturated fat undermine healthy eating and should not be consumed regularly.</p>	<p>Sugary drinks, confectioneries and sugar substitutes</p> <ul style="list-style-type: none"> ▪ Sugary drinks and confectioneries should not be consumed regularly. ▪ Sugar substitutes do not need to be consumed to reduce the intake of free sugars. <p>Publically funded institutions</p> <ul style="list-style-type: none"> ▪ Foods and beverages offered in publically funded institutions should align with Canada’s Dietary Guidelines. <p>Alcohol</p> <ul style="list-style-type: none"> ▪ There are health risks associated with alcohol consumption.
<p>Guideline 3</p> <p>Food skills are needed to navigate the complex food environment and support healthy eating.</p> <ul style="list-style-type: none"> ▪ Cooking and food preparation using nutritious foods should be promoted as a practical way to support healthy eating. ▪ Food labels should be promoted as a tool to help Canadians make informed food choices. 	<p>Food skills and food literacy</p> <ul style="list-style-type: none"> ▪ Food skills are important life skills. ▪ Food literacy includes food skills and the broader environmental context. ▪ Cultural food practices should be celebrated. ▪ Food skills should be considered within the social, cultural, and historical context of Indigenous Peoples. <p>Food skills and opportunities to learn and share</p> <ul style="list-style-type: none"> ▪ Food skills can be taught, learned, and shared in a variety of settings. <p>Food skills and food waste</p> <ul style="list-style-type: none"> ▪ Food skills may help decrease household food waste.

Appendix C: Process used for the selection of content in this report

Health Canada developed a multi-step decision-making process to select the content in this report. Our approach was adapted from established methods for developing guidelines.¹⁻⁸

Step 1: Content organization

A preliminary list of content was identified by examining relevant sources of information:

- Health Canada's *Evidence Review for Dietary Guidance 2015*.
- Relevant Health Canada nutrition-related inquiries (includes public inquiries, media inquiries, and trending nutrition topics on social media).
- Health Canada's reports on food skills in Canadaⁱⁱⁱ.
- Dietary guidelines from other countries.

The preliminary list was organized into categories:

- Content was identified as a **topic** when it referred to modifiable, nutrition-related risk factors for chronic disease, or nutrients of public health concern.
- Content was identified as **context** when it referred to where, how, and when food choices are made, or current patterns of consumption and behaviours associated with food choices.
- Content was identified as a **factor interrelated with nutrition** when it referred to a health factor that has a mutual relationship or connection to food and nutrition, in which one factor affects or depends on another.
- Content related to factors and conditions that influence food choices and eating behaviours was considered broadly, reflecting Health Canada's population health approach to developing dietary guidance.

Step 2: Preliminary scoping

In this step, the preliminary list of content was assessed as either “in scope” or “out of scope” of dietary guidelines. To be “in scope,” the content had to be related to the prevention—not the management—of a nutrition-related chronic disease or condition (such as type 2 diabetes), or a nutrition-related risk factor (such as hypercholesterolemia). The content also had to be in line with Health Canada's federal role in nutrition, which includes promoting the nutritional health and well-being of the population.⁹

ⁱⁱⁱ Relevant publications from Health Canada available at <http://publications.gc.ca/> or <http://canada.ca>; A Look at Food Skills in Canada (2015); Working with Grocers to Support Healthy Eating (2013); Measuring the Food Environment in Canada (2013); Healthy Eating After School (2012); Improving Cooking and Food Preparation Skills: A Synthesis of the Evidence to Inform Program and Policy Development (2010); Improving cooking and food preparation skills: a profile of promising practices in Canada and abroad (2010); Supportive Environments for Learning: Healthy Eating and Physical Activity within Comprehensive School Health (Canadian Journal of Public Health supplement, 2010)

Step 3: Detailed scoping

The content was further scoped to determine whether it should be “retained” for the assessment of relevance in Step 4. In order for the content to be retained, it had to meet two conditions. First, it had to align with Health Canada’s role in disseminating guidance on the topic. In some instances, retained content overlapped with current or in-process Government of Canada guidance (for example guidance on physical activity). In these cases, the content was referred to the relevant areas within the government to determine how best to address it in the report.

Second, there had to be a need for Health Canada to take a position on the content. This was assessed in terms of a perceived need for clarity or consistency in existing guidance as indicated by health stakeholders. To help determine whether there was a need for a Health Canada position, the following questions were considered:

- Are there concerns or uncertainties relative to the content?
- Is there a wide variation in knowledge, understanding or interpretation of the content that could negatively impact the implementation of guidance?
- Is there a public perception that a gap exists between evidence and public health policies and programs related to the content?
- Is there public or stakeholder interest in the content?
- Is the content of public health importance?
- Has the content area been a longstanding issue?

If the answer was “yes” to one or more of these questions, the content was retained for an assessment of relevance in Step 4.

Step 4: Assessment of relevance

Relevance was primarily informed by concurrently considering the evidence base and stakeholder needs. Well-established associations with a **convincing finding** were considered highly relevant, as determined by Health Canada’s *Evidence Review for Dietary Guidance 2015* and *Food, Nutrients and Health: Interim Evidence Update 2018*.^{10,11} Health Canada also considered:

- the potential to shift the distribution of risk of diet-related chronic diseases or conditions of public health concern, and
- whether health professionals and policy makers needed guidance on the content and whether they could implement the guidance.

When content did not have a strong evidence base, but had a high level of stakeholder interest, it was assessed as relevant. For example, although convincing findings on food skills were not identified, this topic was assessed as highly relevant because of a longstanding public health need, as well as broad stakeholder interest in Health Canada’s position.

Additional evidence was gathered and assessed as needed to further assess relevance. Health Canada continued to consider only reports from leading scientific organizations and government agencies, as well as high-quality, peer-reviewed, systematic reviews that met the evidence review inclusion criteria.¹¹ Inclusion and exclusion criteria for reports considered are summarized in Table C.1.

The content identified as highly relevant was grouped into four broad categories:

- healthy dietary patterns,
- foods to consume more,
- foods to consume less, and
- factors that support healthy eating.

The content from these categories form the basis of Canada’s Dietary Guidelines. To confirm whether the content was appropriate, or whether additional content should be considered, Health Canada sought input through consultation and engagement. There were two open public consultations on the Food Guide and two rounds of expert reviews of draft versions of the report. Health Canada also sought input from key health professional organizations, health charities, and National Indigenous Organizations as well as members of the Federal Provincial Territorial Group on Nutrition. Final decisions on the scope of the guidelines rested with Health Canada.

Table C.1: Inclusion and exclusion criteria for identifying reports in the 2015 evidence review

Inclusion criteria	Exclusion criteria
<ul style="list-style-type: none"> ▪ Authored by a health organization with the involvement of an expert panel ▪ Includes an original systematic review of the evidence for a diet-health relationship and an assessment of the quality of primary studies ▪ Includes at least one food topic and its relationship to at least one outcome related to a chronic disease or condition that is of public health interest in Canada ▪ Includes a clear description of the systematic review methodology ▪ Provides an evidence grade for the overall quality of the evidence supporting the findings ▪ French or English language 	<ul style="list-style-type: none"> ▪ Commissioned by industry or an organization with a business interest ▪ Presented or concurred with findings from other reports ▪ Later updated in another report by the same organization on the same topic ▪ Focused on an outcome outside the scope of this scan (for example management of a chronic disease, food safety)

References

1. Schünemann HJ, Wiercioch W, Etzeandía I, Falavigna M, Santesso N, Mustafa R, et al. Guidelines 2.0: systematic development of a comprehensive checklist for a successful guideline enterprise. *CMAJ*. 2014;186(3):E123–42.
2. Eccles MP, Grimshaw JM, Shekelle P, Schünemann HJ, Woolf S. Developing clinical practice guidelines: target audiences, identifying topics for guidelines, guideline group composition and functioning and conflicts of interest. *Implemen Sci*. 2012;7:60.
3. Scottish Intercollegiate Guidelines Network (SIGN). SIGN 50: a guideline developer's handbook. Edinburgh: Scottish Intercollegiate Guidelines Network; 2015.
4. National Institute for Health and Care Excellence (NICE). Developing NICE guidelines: the manual. London: National Institute for Health and Care Excellence; 2014.
5. World Health Organization [Internet]. Geneva: World Health Organization [cited 2018 Sep 14]. [Development of WHO nutrition guidelines](#).
6. US Preventive Task Force. US Preventive Task Force: procedure manual. Rockville: U.S. Preventive Services Task Force; 2018.
7. Canadian Task Force on Preventive Health Care. [Canadian Task Force on Preventive Health Care: procedure manual](#) [Internet]. Ottawa: Canadian Task Force on Preventive Health Care; 2016 [cited 2018 Sep 14].
8. Kredo T, Bernhardsson S, Machingaidze S, Young T, Louw Q, Ochodo E, et al. Guide to clinical practice guidelines: the current state of play. *Int J Qual Health Care*. 2016;28(1):122–8.
9. Health Canada [Internet]. Ottawa: Health Canada; 2018 [cited 2018 Sep 14]. [Food and Nutrition](#).
10. Health Canada. Evidence review for dietary guidance: technical report 2015. Ottawa: Health Canada; 2016.
11. Health Canada. Food, Nutrients and Health: Interim Evidence Update 2018. Ottawa: Health Canada; 2019.

