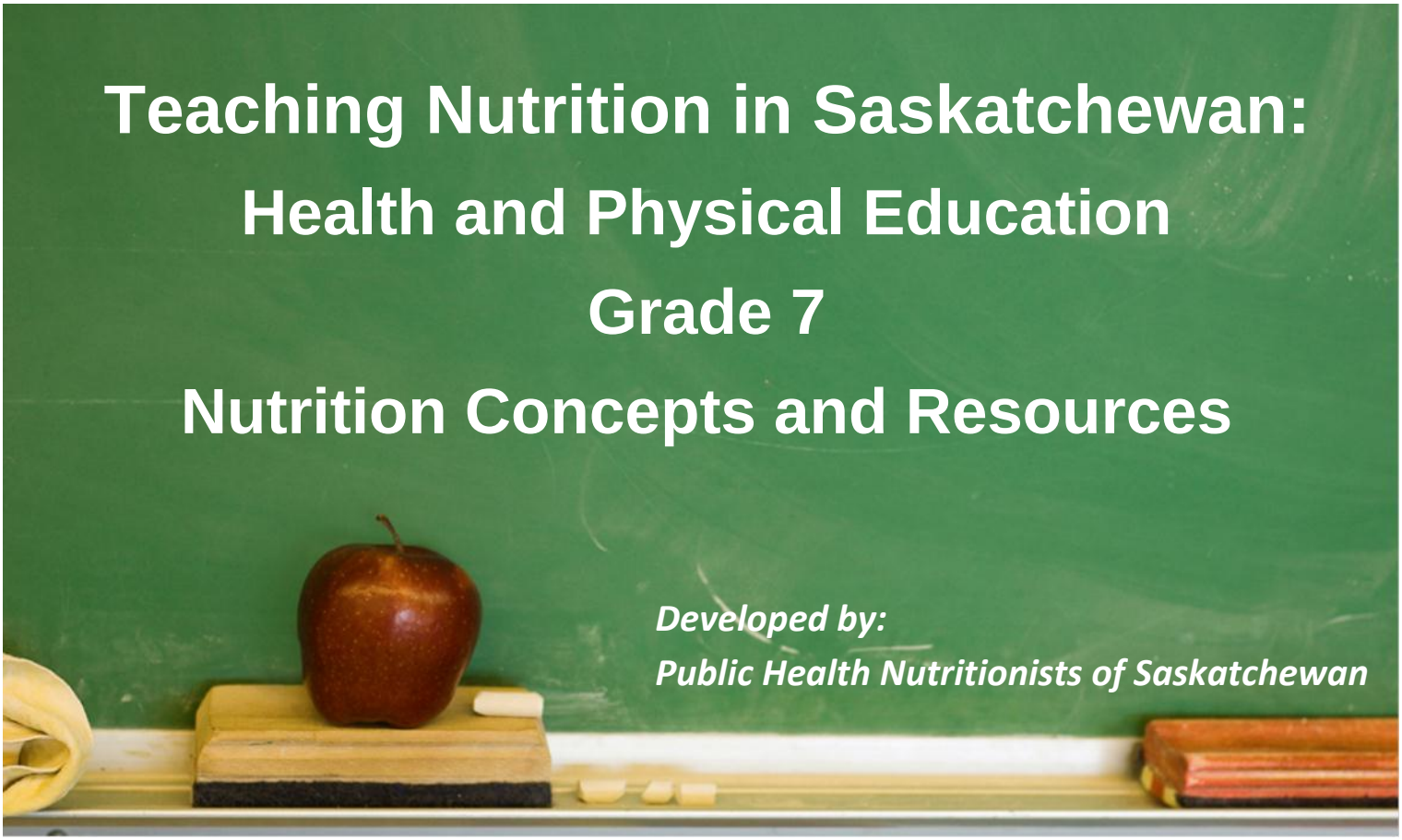
Teaching Nutrition in Saskatchewan:
Health and Physical Education
Grade 7
Nutrition Concepts and Resources



Developed by:
Public Health Nutritionists of Saskatchewan

The purpose of *Teaching Nutrition in Saskatchewan: Health and Physical Education Nutrition Concepts and Resources* is to provide credible Canadian based nutrition information and resources for the learning community. The document was developed using the Saskatchewan Health and Physical Education curricula.

The **Nutrition Concepts and Resources** section, found on pages 3-6 in this resource, identifies nutrition concepts and resources relating to grade-specific provincial health and physical education curriculum outcomes. These lists only refer to the curriculum outcomes that have an obvious logical association to nutrition. They are only suggestions and not exclusive.

The **Nutrition Background Information** section, found on pages 7-26, provides educators with current and reliable Canadian based nutrition information. Several content based information sheets are included in this section.

The Public Health Nutritionists of Saskatchewan work together to promote, support and protect the nutritional health of people living in Saskatchewan. To reach a public health nutritionist in your area, contact your local health region.

NOTE: Due to the dynamic nature of the internet, some hyperlinks may no longer be active. If this has occurred, try searching for the resource on the internet through a search engine such as Google.

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Grade 7 Health Education

Grade 7 Health Education: Commitment to self		
Goal 1: Develop the understanding, skills, and confidences necessary to take action to improve health.		
Outcomes	**Nutrition Concepts**	**Resources: Background Information, Sample Activities, etc.**
USC 7.5 Evaluate personal food choices and needs by applying accurate and current nutritional knowledge (e.g., content labels).	**Healthy Eating for Children and Youth**	**Nutrition Background Information:** *Healthy Eating for Children and Youth (page 7)* **Nutrition Sample Activities** Mission Nutrition www.missionnutrition.ca *Grade 6-8 Lesson 1 Exploring Healthy Eating, Lesson 2 Food For Energy and Nutrients* Alberta Health Services School Nutrition Lesson Plans www.albertahealthservices.ca/nutrition/Page2918.aspx *Grade 7 Small Changes Can Make a Big Difference, Take Control – Meet Your Nutritional Needs*
	Evaluating Reliable Internet Information	**Nutrition Background Information:** *Evaluating Reliable Nutrition Information (page 10)* **Nutrition Sample Activities** Media Smarts mediasmarts.ca *Deconstructing Web Pages, Finding and Authenticating Online Information on Global Development Issues, ICYouSee: A Lesson in Critical Thinking, Jo Cool or Jo Fool*
	Food Tracking for Children and Youth	**Nutrition Background Information:** *Food Tracking for Children and Youth (page 11)* **Nutrition Sample Activities** Alberta Health Services School Nutrition Lesson Plans Grade 7 www.albertahealthservices.ca/nutrition/Page2918.aspx *Small Changes Can Make a Big Difference* Health Canada: Eat Well Be Active Toolkit www.canada.ca/en/health-canada/services/food-nutrition/canada-food-guide/educators-communicators/eat-well-active-educational-toolkit.html *Activity Plan #2 Make Each Serving and All Physical Activity Count* Health Canada Canada's Food Guide www.canada.ca/en/health-canada/services/canada-food-guides.html *My Food Guide* Home Cook Heros (www.we.org/home-cook-heroes/) Secondary lesson package *Lesson 1 Reading Labels and Canada's Food Guide – The Food I Eat Journal*
	Learning to Feed Myself • **Planning a Healthy Menu** • **Cooking Meals**	**Nutrition Background Information:** *Planning a Healthy Menu (page 12)* **Nutrition Sample Activities** Action Schools BC www.actionschoolsbc.ca/ *Healthy Menu Planning Instructional Example*

Grade 7 Health Education: Commitment to self (continued)		
Goal 1: Develop the understanding, skills, and confidences necessary to take action to improve health.		
Outcomes	**Nutrition indicators**	**Resources: Background Information, Sample Activities, etc.**
USC 7.5 Evaluate personal food choices and needs by applying accurate and current nutritional knowledge (e.g., content labels).	**Marketing to Children and Youth**	**Nutrition Background Information:** *Marketing to Children and Youth (page 14)* **Nutrition Sample Activities** Media Smarts mediasmarts.ca *Selling Obesity, Looks Good Enough To Eat, Scientific Detectives, Online Marketing to Kids: Protecting Your Privacy, Online Marketing to Kids: Strategies and Techniques, Scientific Detectives*
USC 7.5 Evaluate personal food choices and needs by applying accurate and current nutritional knowledge (e.g., content labels).	**Reading Food Labels**	**Nutrition Background Information:** *Reading Food Labels (page 16)* **Nutrition Sample Activities** Health Canada, Eat Well and Be Active Educational Toolkit www.canada.ca/en/health-canada/services/food-nutrition/canada-food-guide/educators-communicators/eat-well-active-educational-toolkit.html *Activity Plan #4 Nutrition Facts Table* Health Canada, Understanding Food Labels – Interactive Tools www.canada.ca/en/health-canada/services/understanding-food-labels/interactive-tools.html Mission Nutrition (www.missionnutrition.ca) Grade 6-8 *Lesson 4 Using Food Labels* Home Cook Heros (www.we.org/home-cook-heroes/) Secondary lesson package *Lesson 1 Reading Labels and Canada's Food Guide*
	Evolution of the Food Guide	**Nutrition Background Information:** *Evolution of the Food Guide (page18)*
DM 7.8 Examine and demonstrate personal commitment in making health decisions related to food choices **AND** **DM 7.9** Examine health opportunities and challenges to establish personal commitment goal statements related to food choices	**Opportunities and Barriers to Healthy Eating**	**Nutrition Background Information:** *Opportunities and Barriers to Healthy Eating (page 20)* **Nutrition Sample Activities** Alberta Health Services School Nutrition Lesson Plans www.albertahealthservices.ca/nutrition/Page2918.aspx Grade 7 *Choosing Foods, Making Your School a Healthier Place, It's a Family A-Fare, My Eating Pattern Brainstorm*

Grade 7 Health Education: Commitment to self (continued)		
Goal 3: Apply decisions that will improve personal health and/or the health of others.		
Outcomes	**Nutrition indicators**	**Resources: Background Information, Sample Activities, etc.**
AP 7.10 Design, implement, and evaluate three six day action plans that demonstrate personal commitment to responsible health action related to food choices	Healthy Eating for Children and Youth	**Nutrition Background Information:** *Healthy Eating for Children and Youth (page 7)* **Nutrition Sample Activities** Health Canada: Eat Well Be Active Toolkit www.canada.ca/en/health-canada/services/food-nutrition/canada-food-guide/educators-communicators/eat-well-active-educational-toolkit.html *Activity Plan #3 Setting SMART Goals*

Grade 7 Physical Education

Physical Education Goal: Active living		
Outcome	**Nutrition indicator**	**Resources: Background Information, Sample Activities, etc.**
7.2 Body Composition: Examine personal daily nutritional habits and fluid intake practices that support healthy participation in various types of movement activities and the attainment or maintenance of healthy body weight and body composition.	**Food Tracking**	**Nutrition Background Information:** *Food Tracking for Children and Youth (page 11)* **Nutrition Sample Activities** Alberta Health Services School Nutrition Lesson Plans www.albertahealthservices.ca/nutrition/Page2918.aspx Grade 7 *Small Changes Can Make a Big Difference* Health Canada: Eat Well Be Active Toolkit www.canada.ca/en/health-canada/services/food-nutrition/canada-food-guide/educators-communicators/eat-well-active-educational-toolkit.html *Activity Plan #2 Make Each Serving and All Physical Activity Count* Health Canada Canada's Food Guide www.canada.ca/en/health-canada/services/canada-food-guides.html *My Food Guide* Home Cook Heros (www.we.org/home-cook-heroes/) Secondary lesson package *Lesson 1 Reading Labels and Canada's Food Guide – The Food I Eat Journal*
	Weight Bias	**Nutrition Background Information:** *Weight Bias (page 22)*
	Sports Nutrition	**Nutrition Background Information:** *Healthy Eating for Active Youth (page 7)* Alberta Health Services: Sports Nutrition for Youth: A Handbook for Coaches www.albertahealthservices.ca/assets/info/nutrition/if-nfs-sports-nutrition-for-youth.pdf Fueling the Young Athlete www.coach.ca/fueling-the-young-athlete-p154684 Nutrition for your Young Athlete www.caringforkids.cps.ca/handouts/nutrition_for_your_young_athlete
	Water and Other Beverages	**Nutrition Background Information:** *Water and Other Beverages (page 25)* **Nutrition Sample Activities** Dietitians of Canada for adults www.dietitians.ca/Your-Health/Nutrition-A-Z/Sugary-Drinks/Sugary-Drink-Sense-Factsheets.aspx *Sugary Drink Sense fact sheets* Health Canada: www.healthycanadians.gc.ca/video/boissons-energ-drinks-eng.php *Energy drinks (video of university students)*
	Body Composition and Measuring Children in Schools	**Nutrition Background Information:** *Body Composition and Health Risks in Children and Youth (page 26)*

Healthy Eating for Children and Youth

Healthy Eating is about *how* to eat, as well as *what* to eat. Healthy eating practices for children and youth include:

- sitting down to eat with others,
- eating without distractions or screens,
- trying new foods,
- eating mindfully,
- eating foods that are minimally processed, and
- choosing a balanced variety of enough healthy foods.

Developing and maintaining healthy eating practices during the preteen and teenage years is important for health, growth, and cognitive development. Research shows that the eating habits developed at this age carry on to adulthood. The more youth are exposed to healthy foods the more likely they are to develop healthy eating habits as an adult (1). Adolescence is a time of transition when eating habits of youth are starting to be more influenced by factors outside of the family and home. Schools can support healthy eating habits in youth by making healthy foods more available and the norm. It is not, however, the school's role to "police" the foods students bring from home except in the case of severe food allergies. Telling students what foods they can and cannot take to school may cause feelings of guilt or shame. Youth may not be able to control what food is available to them. It is important to consider that these foods may be the only ones they have, can afford, or know how to prepare.

Good nutrition is about making healthy food choices. When planning meals and snacks, it is important to remind students that the majority of the food they consume should be from the four food groups of Canada's Food Guide. Canada's Food Guide is not meant to be followed exactly, but rather provides *guidance* about the **amount** and **types** of foods that youth need to eat daily to be healthy. It also provides guidance on other healthy eating habits such as the importance of eating together with others, taking the time to eat and savouring each bite, and eating breakfast every day. For more information about Canada's Food Guide go to healthycanadians.gc.ca/eating-nutrition/healthy-eating-saine-alimentation/food-guide-aliment/index-eng.php

Amount:

Canada's Food Guide provides examples of the amount of food that make up one Food Guide Serving. The Food Guide Serving is a reference amount to help people understand how much food is recommended. The amount of food a person eats at a meal or snack may be more or less than one Food Guide Serving.

Canada's Food Guide recommends how many Food Guide Servings people should eat from each of the four food groups. The number of recommended servings is different for people at different stages in life and is different for males and females. The recommended number of Food Guide Servings is an average amount that people should try to eat each day.

Food portions, particularly for restaurant meals and packaged food items, are large. For example, a 6 inch size submarine style bun is equivalent to about 2-3 Food Guide servings of Grain Products. For examples of Food Guide Serving sizes go to www.canada.ca/en/health-canada/services/food-nutrition/canada-food-guide/food-guide-basics/what-food-guide-serving.html

Recommended number of Food Guide Servings Per Day

	Aged 9-13 (Male/Female)	Aged 14-18	
		Male	Female
Vegetables and Fruit	6	8	7
Grain Products	6	7	6
Milk and Alternatives	3-4	3-4	3-4
Meat and Alternatives	1-2	3	2

A good way to learn about Food Guide Serving sizes is to have the youth measure the foods they eat for a day or two. Next, have them compare the amount they eat to the recommended number of Food Guide Servings for their age and sex. For this activity, students can use the My Food Guide Serving Tracker found here www.canada.ca/en/health-canada/services/food-nutrition/canada-food-guide/servings-tracker.html

Type:

The types of food youth eat are just as important as the amount they eat. Canada's Food Guide provides examples of healthy foods from each of the four food groups and also provides tips for selecting more nutritious options.

- Eat at least one dark green and one orange vegetable each day.
- Have vegetables and fruit more often than juice.
- Make at least half of your grain products whole grain each day.
- Drink skim, 1%, or 2% milk each day.
- Have meat alternatives such as beans, lentils, and tofu often.
- Eat at least two food guide servings of fish each week.
- Include a small amount of unsaturated fat each day

There are many cultural foods that are healthy that are not pictured in Canada's Food Guide. The guide can be ordered in many different languages here www.canada.ca/en/health-canada/services/food-nutrition/canada-food-guide/your-copy/translated-versions-canada-food-guide-health-canada.html. Canada's Food Guide for First Nations, Inuit and Metis does include some examples of traditional Indigenous foods and can be accessed here www.canada.ca/en/health-canada/services/food-nutrition/reports-publications/eating-well-canada-food-guide-first-nations-inuit-metis.html. In the classroom, youth could brainstorm meal ideas with a cultural flare.

Foods to Limit

Canada's Food Guide also recommends limiting foods high in calories, fat, sugar or salt (sodium) such as cakes and pastries, chocolate and candies, cookies and granola bars, doughnuts and muffins, ice cream and frozen desserts, french fries, potato chips, nachos, and other salty snacks, alcohol, fruit flavoured drinks, soft drinks, sports and energy drinks, and sweetened hot or cold drinks.

Labeling less healthy foods as "bad" and healthy foods as "good" may lead some children and youth to feel guilt or shame about eating many of the 'bad' foods. It is important to focus more on the positive qualities of healthy foods and less on the negative aspects of foods in the 'foods to limit' category.

Balancing the Food

Eating three regularly timed meals and two to three snacks daily is an important way for youth to get the nutrients needed as they grow and develop and to maintain energy throughout the day.

Eating Breakfast

It is important to start every day by eating breakfast. Breakfast replenishes energy lost during a night's sleep. The body goes through fasting during sleep and the morning meal is meant to "break the fast". Skipping breakfast may result in missed nutrients, which are difficult to make up as the day goes on. A healthy breakfast includes foods from all four food groups. Students who eat breakfast:

- are able to concentrate better in class
- are absent from school less often
- have fewer behavioural issues at school
- tend to have healthier diets overall
- are less likely to be overweight

Healthy Snacks

Snacks that include foods from the four food groups help children and youth meet their daily nutrient needs. Healthy snacks include at least two of the four food groups of Canada's Food Guide. Sometimes there is confusion regarding snacks. Some foods are commonly advertised as "snack foods" such as chips, candies, soft drinks, fruit flavoured snacks, and cakes. These are often high in fat, sugar, and salt and should **not** be considered healthy snacks.

Lunch and Supper

Family meals eaten at home are important for the growth and development of children and youth. Children and youth, who eat meals together with their families, tend to eat healthier (2). Sitting down together and talking about the day during meal

times helps family members manage stress. For youth, family meals are linked to a lower risk of substance abuse, sexual activity, depression and school problems (3). A balanced lunch or supper includes foods from all four food groups. Family meals also provide an opportunity to pass on food traditions and culture (4).

Mindful Eating

Mindful eating is a way to be aware of every bite of food you eat and every sip of drink you take. When eating mindfully, you look at the colours of the food you are about to eat, you smell the aroma of the food, and feel the texture of it when you take a bite. You also take your time eating to be able to truly enjoy and appreciate food. Youth who eat mindfully may eat less food and eat less often because they are listening more to their body's hunger and fullness cues (5).

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Evaluating Reliable Nutrition Information

The science of food and nutrition seems to be changing all the time, and as a result it is hard to keep up-to-date with new findings. Also, nutrition information is available everywhere, particularly on the internet and social media, so it can be hard to know what to believe.

It is important to understand that a lot of nutrition information is untrue and misleading. Some nutrition information can be based on personal beliefs rather than scientific evidence. Inappropriate conclusions can also be drawn from research studies. This means that the information may not be accurate and may actually be harmful. When selecting resources or sharing nutrition information, consider the following:

1. **Where is the information coming from?** The most credible nutrition expert is a Registered Dietitian (R.D.). Professional organizations (e.g. Dietitians of Canada), government or health agencies (e.g. Health Canada, Public Health Agency of Canada) or non-profit organizations (e.g. Diabetes Canada) are also sources of reliable nutrition information. Sites that end with .edu or .gov are generally reliable.
2. **Is the information Canadian?** Nutrition recommendations in Canada are different from those in the United States and other countries. *Canada's Food Guide* is uniquely designed to address nutrition issues in Canada. Using *Canada's Food Guide* in the classroom reinforces the importance of referring to Canadian recommendations. Avoid using food guides and resources from other countries.
3. **Are they trying to sell something?** Avoid using resources that are trying to sell products such as special foods or supplements instead of teaching how to make better food choices at home, at play, at work or while eating out.
4. **Is it a scientific fact or a personal opinion?** Reliable and accurate nutrition information should be based on research evidence. Make sure the resource has credible references at the end. If there are no references or you are uncertain from where the information comes, it may be based on personal opinion and not facts. Personal stories can be misleading and are not reliable sources of nutrition information. Some websites even have disclaimers or site specifically that they are based on personal opinions and not scientific evidence.
5. **How old are the resources?** Always check the date of the information or resources to make sure it is current.
6. **Does the resource or information recommend avoiding certain foods or food groups from *Canada's Food Guide* (e.g. no bread diets)?** Studies show that we need a variety of foods from all four food groups to meet our nutritional needs. No food has all the nutrients needed and avoiding certain food groups can increase risks of nutritional insufficiencies or deficiencies.

If you are uncertain about the credibility of nutrition information, web links or resources contact a registered dietitian in your area for support.

References:

1. Nutrition Tools for Schools. Evaluating Nutrition information: what should you believe? 2007[cited 2016 Dec 28]. Available from: www.healthunit.org/school/resources/Evaluating%20Nutrition%20Information%20What%20Should%20You%20BelieveLGL.pdf
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Food Tracking for Children and Youth

Food tracking and analyzing involves having students record everything they ate or drank in a day, count how many servings of each food group they consumed, and then compare it to the recommendations in Canada's Food Guide (CFG). This activity helps students become more aware of their eating habits and the factors that may affect what and how much they eat. Comparing students' eating patterns with those outlined in CFG not only helps to affirm healthy eating behaviours, but also helps to identify how eating habits may be improved. When assigning students to track the food they eat, it is important to note that complete accuracy and perfect eating habits likely will not occur, and should not be the primary goal of the activity.

Remind students that one day of recording what they eat does not necessarily reflect usual eating habits. Eating habits vary from day to day. Several factors can influence a person's daily intake, such as special occasions, and after school activities. Eating patterns that happen over a number of days reflect more usual eating patterns. Tracking what is eaten for a few days allows students to see current eating habits, without the task becoming too overwhelming. It is important to remember that the purpose of the activity is not to track the amount of a certain nutrient or the number of calories, but rather general patterns of eating based on CFG. Emphasize that eating habits also include the social aspects of eating, such as enjoying meals as a family and with friends. Recent evidence suggests that when families regularly eat together at mealtimes, children and youth eat better and are healthier (1-8).

Creating a non-judgmental climate when doing food tracking activities, will encourage students to be honest when recording their intake. Remind students that there is no right or wrong answer, and the goal of the activity is not to portray perfect eating patterns. By completing the activity with the students, the teacher models how to do the activity accurately.

Be sensitive about the possibility that some families may not be able to provide enough nutritious foods at home. Also some students may eat ethnic foods that are different than their Canadian born peers. Students may feel embarrassed or ashamed to share their food tracking results if their eating patterns are not similar to those reflected in CFG. You may want to assign the food tracking activity on days that the students can participate in a snack or meal program at school or in the community. This will help enable all students to record similar more healthy food choices on their food tracking activity sheets help prevent concerns about choices at home that may be dependent on income or culture.

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Planning a Healthy Menu

Planning meals and snacks for a few days at a time can help to save time and money. With a plan, you will buy fewer food items that you don't need and make fewer trips to the store. Invite students to make a week's worth of dinner menus for a family of four.

Below are suggested menu planning steps that you could review with your students.

Follow these steps to make a menu.

1. **Prepare your workspace.**
    - Gather favourite recipes and search new meal ideas they would like to try. Talk about incorporating leftovers on a night or two but remind them that they will need to plan for extra servings to make sure there is enough for more meals.
    - Get a copy of Canada's Food Guide (CFG) online or download My Food Guide Mobile App. Each meal needs to include servings from all four food groups of CFG. The menu template below can help with this.
2. **Fill in the menu.**
    - Choose the main family meal first. Sitting down and eating together as a family is really important for children. It provides an opportunity to share experiences from the day and also helps to ensure a variety of foods are available and enjoyed. Planning main family meals first will help to make sure these meals occurs. Keep food from the 4 food groups in mind when planning meals and snacks. A good rule of thumb is to have food from 3 - 4 food groups at each meal. Plan to have vegetables or fruit and a serving from another food group for snacks. When making a menu it is important to include favourite meals *and* try out new recipes and foods.
    - Fill in breakfast and lunch. Often students are surrounded by food choices in their school and other places they play and live. Planning which meals that will be eaten away from home, and keeping nutrition in mind, helps students make sure they choose a balanced meal and have extra food from home to supplement what is purchased. For example, if there is a canteen at school, students could plan to have lunch from the canteen knowing what is usually available, and then packing extra vegetables or fruit if this isn't available at school.
3. **Review the menu and think about the following things:**
    - Spice it up with variety. Encourage students to use a variety of ingredients, flavours, colours and textures. This will make meals more interesting and appealing. Combine old favourite foods with a few new dishes.
    - What is going on in the week? Suggest students think about their families' schedules. A busy week filled with activities could mean planning fast and easy meals rather than food that will take longer to prepare.
4. **Estimate the amount of food needed.**
    - Estimate the amount of food to buy and make. Students need to think about the number of people who will be eating and how much they may eat.
5. **Make the grocery list**
    - Looking over the menu, students should think about what food they may already have on hand in order to decide what they will need to buy.
    - Flip through grocery store flyers to take advantage of specials and use coupons to save money. For a homework project, you could have them compare the list to their pantry at home, then go to the store with a parent to price all the items they'd have to buy to make their menu.
    - Consider giving your students a budget to work with so that they need to consider the cost of the meals they have developed.

For more recipe and menu ideas check out Eat Right Ontario (www.eatrightontario.ca), Dietitians of Canada (www.dietitians.ca) or download the Cookspiration mobile app from www.cookspiration.com.

Healthy Menu Template

	Monday	Tuesday	Wednesday
Breakfast ✓ Vegetables and fruit ✓ Grain products ✓ Milk and milk alternatives ✓ Meat and meat alternatives			
Lunch ✓ Vegetables and fruit ✓ Grain products ✓ Milk and milk alternatives ✓ Meat and meat alternatives			
Afternoon snack ✓ Vegetables and fruit ✓ One other food group			
Supper ✓ Vegetables and fruit ✓ Grain products ✓ Milk and milk alternatives ✓ Meat and meat alternatives			
Evening Snack ✓ Vegetables and fruit ✓ One other food group			

Marketing to Children and Youth

Children and youth are a vulnerable target audience for food marketing companies since children can influence parental spending decisions, have their own spending power, and are future adult consumers. It is important for young people to learn how they are targeted by these companies to help them become more aware of and resistant to the influence of marketing.

Food advertising and other forms of marketing have been shown to influence young people's taste preferences, purchasing behaviour, and eating habits. The majority of food marketing promotes products that are high in sugar, fat, and sodium (1). Food marketing has been linked to an increase in children being overweight, which can increase the risk for diabetes and other chronic diseases (2).

It is also important to note that elementary school age children do not have the ability to make rational and healthy decisions about the type of food to select. Adults need to provide them with healthy choices to support them in food selection. Often foods found in vending machines and canteens, or those used in classroom celebrations or as rewards are "easy to like foods" such as candy, chocolate, sweets and chips. These foods interfere with children's interest in trying other foods, and can spoil their appetites for the next meal. Limit access to these foods to support children's ability to eat well.

Types of Food Marketing

Mobile Devices (3)

Mobile devices, such as cell phones and tablets, have become popular for children of all ages. As children get older, their use of these devices increases. Many food marketing companies are reaching youth through text messages, emails, social media and mobile apps. For example, many sugary drink companies and fast food restaurants have developed creative and engaging mobile apps geared to youth. The apps include games, as well as ways to access promotions, and to pay for purchases using cell phones. Due to their presence on social media and creation of mobile apps, food companies are able to interact with young people wherever they are.

Food Marketing through Social Media (4)

Food companies have dramatically increased marketing to children and youth through usage of social media platforms such as social network pages (e.g. Facebook, Twitter) and video sharing websites (e.g. YouTube). This is not surprising since social networking sites are very popular with young people. Because youth are susceptible to peer influences and are willing to interact with food companies through social media, food marketers engage them through short term trending promotions. Youth are encouraged to repeatedly return to the site and share the marketing messages with their friends. Food companies' social network pages contain polls, contests, photos and videos to enhance youth engagement with their brands. Youth are encouraged to register with companies through email to receive "exclusive deals," which enable the food marketing companies to engage with youth outside of the social platforms. These strategies influence brand loyalty and ultimately lifelong purchases.

Food Marketing in Schools (5)

School based food marketing involves a presence of brand names, logos and trademarks around the school. Examples of food marketing in schools include:

- Posters and signs
- Websites and apps promoted for educational purposes but feature food advertisements
- Vending machines, food or beverage containers, food display racks and coolers
- Advertisements in school publications including yearbooks, websites, newsletters, electronic signs, score boards, sports equipment and jerseys, and on school computer monitors and screens
- Fundraisers that encourage students, families and communities to sell or purchase food products
- Free samples, taste tests or coupons

Call to Action (6)

Reversing the trend of marketing unhealthy food to children will require initiatives at all levels. It is imperative that youth are aware of how food manufacturers use marketing to influence their taste preferences, purchasing behaviour, and eating habits. School communities can help to limit the amount of marketing that reaches youth by considering the following initiatives:

- Use nonfood rewards for positive behaviour in the classroom or during school events
- Offer healthy food options in the school rather than low nutrient foods and candy
- Refuse to allow companies to market within the school by displaying logos, brand names or characters on posters, signs, sports equipment or vending machines
- Decline "fast food" coupons for student prizes or incentives
- Advocate for businesses close to the school to stop marketing unhealthy food to children

For more information www.uconnruddcenter.org/ and www.foodmarketing.org/

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Reading Food Labels

The two types of nutrition information that must be on a food label are the Nutrition Facts and the ingredient list. Nutrition and health claims may also be found on food labels but are not required. The four types of information are described below.

Nutrition Facts Table

What is it?

The Nutrition Facts table provides information on the amount of calories and 13 core nutrients based on the listed serving size. It also includes the Percent Daily Value (%DV) to help compare the nutrient content of different food products.

Almost all prepackaged foods require Nutrition Facts tables. Vegetables, fruit, and some meats do not require a label. Restaurant meals also do not require labels; however, many restaurants offer nutrition information on request.

The Nutrition Facts table can help people to:

- Compare similar foods to find out which one has more of a specific nutrient than another food.
- Better manage special diets (for example, a low-sodium or high calcium diet).

Put it into practice

Reading Nutrition Facts tables for health takes a bit of practice and math skills. Here are the steps to follow:

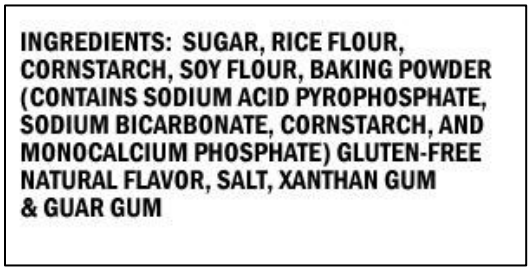
1. **Start with the serving size:** Information on the Nutrition Facts table is based on this amount of food. The serving size needs to be compared to the amount that is usually eaten. If more or less is usually eaten, the amount of each nutrient will be different than what is shown on the table. Also, the serving sizes of similar products are not always the same.
2. **Use the % Daily Value (%DV):** The %DV is used to determine whether there is "a little" or "a lot" of a nutrient in a specific amount of food. It can be used to compare the nutrient content between two or more foods. As a rule of thumb, 5% DV or less is considered a little and 15% DV or more is considered a lot.
3. **Look at a nutrient on the Nutrition Facts table:** When comparing foods, choose the one with more calcium, iron, vitamins and fibre. Choose the food with less fat, saturated fat and sodium.

For example, if you would like to eat more fibre, Cereal A would be a better choice than Cereal B. Although these foods are not the same amount, their weights are similar.

Cereal A

Cereal B

Ingredient list



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 means that a food contains *more* of the ingredients found at the beginning of the list, and *less* of the ingredients at the end of the list.

Reading the ingredient list can help people to check if a food product has a certain ingredient and to avoid specific food ingredients in the case of a food allergy or intolerance.

Nutrient Claims

Nutrient content claims and *health claims* are two nutrition claims that can be used on food products. Although they are optional, if the claims are used, they must follow certain rules from Health Canada to make sure that they are consistent. It is important to look at the overall nutrient makeup of the food item. For example, licorice may have a nutrient content claim that says "0 trans fat" but the candy remains high in sugar and low in nutrients.

a) **Nutrient Content Claims:** Nutrient content claims can help people to make food choices by highlighting a feature of interest in the food such as "good source of vitamin A". These claims follow certain rules from Health Canada to make sure that they are consistent and not misleading. These claims are optional and may be found on some food products.

b) **Health Claims:** Health claims are statements about the helpful effects of a certain food consumed within a healthy diet on a person's health. Below is an example of a health claim.

A healthy diet containing foods high in potassium and low in sodium may reduce the risk of high blood pressure, a risk factor for stroke and heart disease.

For interactive food label reading activities and tools visit:

healthycanadians.gc.ca/eating-nutrition/label-etiquetage/index-eng.php#Interactive_Tools

To learn more about the ingredient list visit: healthycanadians.gc.ca/eating-nutrition/label-etiquetage/index-eng.php

NOTE: The Government of Canada is in the process of changing food labelling requirements. These changes will likely not be noticed until 2021.

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Evolution of the Food Guide

In the Beginning (1,2)

Ever since the 1940's a food guide has existed in Canada to direct Canadians toward healthy food choices and promote their nutritional health.

- In 1942, Canada's first food guide called 'Canada's Official Food Rules' was introduced. At that time, it focused on rationing and preventing nutrition deficiencies during World War II. Over time, it became a tool to teach Canadians about balancing their overall food choices to attain their required nutrients. There have been many changes to Canada's food guides since 1942.
- The guide started out giving many direct rules as noted in the first title of 'Canada's Food Rules'. Later on, recommendations became guidelines to follow.
- Along with name changes, the number of food groups evolved from 5 to 4 in the 1977 version because fruits and vegetables offer similar nutrients so they were combined to form one group.
- The 1982 version was the start of educating the public about making food choices to decrease risk of chronic disease rather than merely prevent nutrient deficiencies. It included the concept of moderation.
- The 1992 version included stakeholder input, using feedback from experts, consumers, literature reviews, food consumption surveys, consumer research, and commissioned scientific reviews. Consultation was an integral part of the process. The guide changed from a circle to a rainbow in this version to visually represent the higher recommended number of servings from the grain products and fruit and vegetable food groups.
- Experts' input to the guide's messages became increasingly important. Today, the input process into developing the Food Guide is very structured and involves many practitioners with various backgrounds, such as experts in nutrition, anaphylaxis, agriculture, food and consumer associations, environmental health, food science, and food industry representatives.
- The evolution continues. In 2016, as part of their Healthy Eating Strategy, Health Canada started to revise their nutrition recommendations and food guide.

The Controversy (2, 3, 4)

- The 2007 version remains controversial as the food industry was an integral part of the 12-member Food Guide Advisory Committee involved in its creation. Dairy, vegetable oil and consumer product manufacturers (including Pepsi-Co, Frito-Lay and Coca-Cola) were represented in the consultation process. Some feel their involvement may have swayed some of the recommendations on the guide.
- The food guide continues to promote foods to meet nutrient needs, with the recommended number of servings per age and gender stemming from 500 simulated diets based on different patterns of eating. Opponents of the guide feel it is time to base recommendations on overall eating practices rather than on nutrients, like the recent Brazilian dietary guidelines www.foodpolitics.com/wp-content/uploads/Brazilian-Dietary-Guidelines-2014.pdf
- Canada's Food Guide continues to be a popular document that Canadians turn to for guidance about the types and amount of foods that are recommended to be consumed.

Refer to the following page for images of ***Canada's Food Guide Over the Years***

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Canada's Food Guide's Over the Years . . .

1942

CANADA'S OFFICIAL FOOD RULES

These are the Health-Protective Foods

Be sure you eat them every day in at least these amounts.

(Use more if you can)

MILK–Adults–½ pint. Children–more than 1 pint. And some CHEESE, as available.

FRUITS–One serving of tomatoes daily, or of a citrus fruit, or of tomato or citrus fruit juices, and one serving of other fruits, fresh, canned or dried.

VEGETABLES (In addition to potatoes of which you need one serving daily)–Two servings daily of vegetables, preferably leafy green, or yellow, and frequently raw.

CEREALS AND BREAD–One serving of a whole-grain cereal and 4 to 6 slices of Canada Approved Bread, brown or white.

MEAT, FISH, etc.–One serving a day of meat, fish, or meat substitutes. Liver, heart or kidney once a week.

EGGS–At least 3 or 4 eggs weekly.

Eat these foods first, then add these and other foods you wish.

Some source of Vitamin D such as fish liver oils, is essential for children, and may be advisable for adults.

1944

I. CANADA'S FOOD RULES

Approved by the Canadian Council on Nutrition

THESE ARE THE FOODS FOR HEALTH. EAT THEM EVERY DAY. DRINK PLENTY OF WATER

1. *Milk*—Adults, ½ to 1 pint. Children, 1½ pints to 1 quart.
2. *Fruit*—One serving of citrus fruit or tomatoes or their juices; and one serving of other fruit.
3. *Vegetables*—At least one serving of potatoes; at least two servings of other vegetables, preferably leafy, green or yellow, and frequently raw.
4. *Cereals and Bread*—One serving of a whole-grain cereal and at least four slices of Canada Approved Vitamin B bread (whole wheat, brown or white) with butter.
5. *Meat and Fish*—One serving of meat, fish, poultry or meat alternates such as beans, peas, nuts, eggs or cheese. Also two eggs and cheese at least three times a week each, and liver frequently.

A fish liver oil, as a source of vitamin D, should be given to children and expectant women, and may be advisable for other adults.

Iodized salt is recommended.

1949

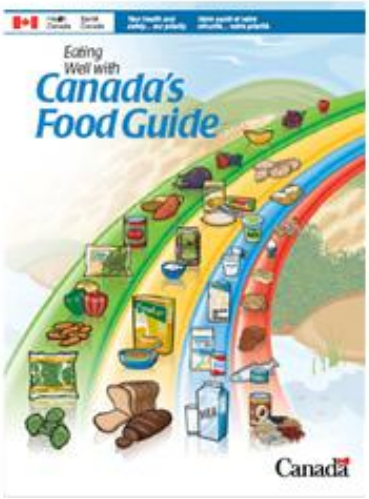
1961

1977

1982

1992

2007



Opportunities and Barriers to Healthy Eating For Children and Youth

Adults provide all meals and snacks for young children. As they get older, youth tend to shop for and prepare more of their own foods and beverages. Depending on what is available at home, in their neighbourhoods, in and around schools, and in recreation facilities, this will greatly influence what youth eat and drink.

When healthy food and beverage options are the easy choice, youth will be more likely to choose them. When youth have few healthy food and beverage options, they often end up choosing those which are high in sugar, salt, and fat.

At Home

Children and youth learn what and how to eat from their parents and families. Influences on eating habits at home can include whether families have:

- **access** to healthy foods and beverages in the community or transportation to get it somewhere else. In neighbourhoods where there is limited access to affordable nutritious food and an easy access to unhealthy foods, it is difficult for families to purchase healthy food to eat.
- **enough income** to be able to afford to buy enough acceptable, culturally appropriate and nutritious foods and beverages. When high fat, salt, and sugar foods and beverages are priced lower than nutrient rich foods, it can be difficult to purchase healthy options. When healthy foods and beverages are affordable, accessible and appealing, it becomes easier to make healthy choices.
- **food skills** such as being able to plan and prepare healthy and tasty meals. There has been a decrease in food skills over the years, resulting in many families and youth relying on less healthy pre-packaged and convenience foods (1). In addition, there is the concern that opportunities for children and youth to gain 'traditional', basic or 'from scratch' cooking skills from family members may be limited. When children and youth are involved in food preparation and cooking, it encourages healthy habits that can last a lifetime.
- **time** to grocery shop, plan, and prepare a meal. As families become busy with activities and responsibilities there may be less time to plan, prepare and eat healthy meals and snacks.
- **proper kitchen equipment**, such as a stove and refrigerator, to prepare and store healthy foods.
- **regular family meals.** Children and youth who participate in family meals on a regular basis tend to eat better than those who do not. Enjoying regular family meals is associated with a higher consumption of vegetables and fruits, milk products and overall nutrients (2). In addition, family meals have been associated with enhancing family relationships, supporting healthy choices and improving literacy levels and school performance (3). It is also a way to pass on cultural and traditional knowledge.
- **multiple stressors** such as difficulty paying rent, finding a place to live, finding employment or caring for ill family members often take priority over healthy eating.

Outside the Home

Schools and surrounding area

Children and youth may rely on the foods and beverages available at school to provide or supplement their meals and snacks. The implementation of nutrition policies and guidelines in schools can make the healthy choice the easy choice for students, and is associated with healthier eating patterns (4). Unfortunately, fast-food restaurants and convenience stores commonly surround schools. Children and youth often walk to and eat at such establishments during their free time.

In addition to teaching about healthy eating, providing children and youth with exposure to *positive* food experiences can promote healthy eating patterns. It is important not to criticise or judge children and youth based on the types or amounts of foods and beverages they consume, as this can actually lead to poorer eating habits, not better (5, 6, 7).

Peer influence

Children and youth are also influenced by what their peers eat and drink, and in order to fit in, they may feel they need to eat the same things their friends do.

Recreation facilities and involvement in sport

Recreation facilities provide a space for physical activity, but unhealthy food and beverage choices are often readily available (8). The food and beverage options available may not be what are recommended before, during and after physical activity.

Participation in sports and other physical activities can influence youth's eating habits. As they learn about the role of healthy eating and exercise, youth may choose healthier food options (if they are available!). Unfortunately, many unnecessary products such as energy drinks and soft drinks are marketed by professional athletes or promoted by some coaches, and can influence youth eating habits.

In addition, sports such as wrestling, football, gymnastics and dance, in which body size plays a role, also impact youth's eating habits.

Food marketing

Advertising that targets children and youth often promotes low nutrient foods and beverages, while rarely promoting healthy items such as vegetables and fruit. Studies show that children and youth are more likely to request, buy or consume foods that are heavily advertised (9). Often food and beverage marketing provides misleading or incomplete information about products, which can lead to children and youth misunderstanding the nutritional value of foods that are marketed.

Body image

Media images of unrealistic body sizes and shapes along with comments from family, friends, role models and peers about weight, can influence children and youths' body image and can in turn increase the risk of unhealthy dieting behaviours. Adult role models who are dieting or have poor body image may also influence the emergence of dieting and unhealthy weight control practices. Talking about healthy eating and physical activity for health benefits without focusing on weight, size and shape can promote a positive body image in children and youth.

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Weight Bias

Weight bias refers to negative attitudes towards people due to their weight. These negative attitudes result in stereotypes, prejudice and unfair treatment towards these people. Weight bias can be expressed in multiple forms, such as name-calling, teasing, physical aggression, cyber bullying, rumors, and social exclusion (1, 2, 4, 5, 7, 8). Not only can this be embarrassing for a child or youth, it can also have serious consequences on their physical, social and psychological health (4, 5, 8). Weight bias towards children and youth most often occurs at school and at home (5, 8).

Why does weight bias happen?

Weight bias occurs because we live in a culture where there is a perception that being thin is desirable (but not *too* thin, because these people may be stigmatized as well) (1). Our culture also tends to believe that people are responsible for their life situation and "get what they deserve". Despite research suggesting that body weight is determined by a complex interaction of genetic, biological and environmental factors, most people believe that weight gain or loss is under personal control (2,3).

We are exposed to misleading messages about weight from various means such as television, movies, books, magazines, social media and websites. A consequence of these messages is that it is thought to be socially acceptable to judge people's characters, personalities and behaviours based on weight. When family members, friends, and education professionals reinforce these false messages, individuals are stigmatized (1).

How does weight bias affect students?

Students who experience teasing or discrimination because of their weight can have low self-esteem, poor body image, and are more likely to experience symptoms of depression and anxiety (1, 5, 8). These students are also more socially isolated, less likely to be chosen as friends, and more likely to engage in suicidal thoughts and behaviours (5, 8). Children and youth who experience weight biases are more likely to try unhealthy weight control measures, binge eat, and avoid physical activities (4, 5, 8). Research shows that children and youth who have been victimized because of their weight report missing more days of school, and experiencing lower expectations by their teachers, which can result in poorer academic performance (4, 6, 7, 8).

Taking Action

All people deserve safety, respect, and acceptance in their community and classroom. Just as we should not tolerate racial or gender bias toward others, we should not tolerate weight bias (1). If you witness weight bias occurring in your school, intervene right away. To learn how to address weight bias within your classroom and school, refer to the resources found at uconnruddcenter.org/weight-bias-stigma-schools-and-educators

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Healthy Eating for Active Youth

Proper nutrition is important for all people, but is crucial for the health of youth who are still growing, developing, and using a lot of energy in their activities. It is important for youth to learn which foods provide energy for the physical activities they do (1).

Nutrients and fluids to fuel our bodies

It is important to eat healthy foods on a regular basis. Eating specific foods when doing physical activity can help with growth and performance.

Carbohydrates, proteins, fats, vitamins, minerals and water all provide important nutrition to help fuel our bodies for physical activities and normal body functioning. Since active youth are also still growing, it is crucial to provide high quality food choices. This means choosing wholesome rather than processed foods to provide sufficient vitamins, minerals and macronutrients.

- **Carbohydrates:** Carbohydrates are the most important fuel source for active individuals. These nutrients break down to glucose, which is used as energy by the body. Glucose is stored in the muscles as glycogen. Muscle glycogen is the most readily available energy source for working muscle and can be released more quickly than other energy sources. Carbohydrates are also the main fuel source for the brain. Good sources of carbohydrates include whole grain bread, pasta, cereal, and crackers.
- **Proteins:** Proteins have a variety of roles in the body, including building, repairing and maintaining muscle. Protein breaks down into amino acids, which are the building blocks for other proteins. Many amino acids can be made by the body, while some are considered essential, meaning we can only get them from food. Active youth need a little more protein than sedentary youth (about 1½–2 times that of sedentary individuals), but they can easily get that protein from food alone. Good sources of protein include eggs, nuts and nut butters, legumes (such as chickpeas, beans and lentils), fish, beef, chicken, and pork.
- **Fats, Vitamins, and Minerals:**
  - **Fats** provide energy for sustained physical activity as well as protection around vital organs.
  - **Vitamins and minerals** support all of the processes our bodies do to break down food for energy and building block materials (2).
  - **Iron** is important for carrying oxygen through the blood to all cells in the body. Iron requirements are higher during periods of rapid growth such as adolescence as well as during regular intense exercise, making it an important mineral for active youth (3).
- **Fluids and water**: Fluids help to regulate body temperature and replace sweat losses during physical activity. It is important for youth to stay hydrated for better mental and physical performance in the activities they do.
  - **Water** helps carry nutrients around in the body, get rid of wastes, regulate body temperature, and stay hydrated. Plain, cool water is usually all youth need for activities lasting one hour or less. Youth should consume plenty of plain, cool water before, during and after physical activities. Additional fluid is needed in warmer conditions.
  - **Sports Drinks:** The key ingredients in most sports drinks are water, sugar, and electrolytes (sodium and potassium). Most youth who participate in physical activity and sport do not need the extra sugar and electrolytes provided by these beverages. Although these beverages are marketed and sold to the general public as part of a healthy lifestyle, they are only useful in very specific circumstances such as if the activity is vigorous for longer than one hour, is intense, or if the activity is a prolonged competitive game that requires repeated intermittent activity (2, 4). In most cases, water is the best choice**.**
  - **Energy drinks:** Energy drinks are NOT the same as sports drinks. Energy drinks can actually decrease sports performance because they contain large amounts of sugar, caffeine and carbonation, which can cause an upset stomach during activity and dehydration. These drinks are not recommended for children, pregnant women and those sensitive to caffeine (5).

Supplements

- **Creatine:** Creatine supplements should not be used by anyone under age 18 (2).
- **Protein Supplements:** Protein supplements should not be used by youth; they can displace high quality food choices and may be high in sugar, salt, or low in other nutrients or fibre. There is also not enough research on their use with youth to know their safety or helpfulness.

What to Eat and Drink Before, During and after Physical Activity

- **Before Activity:** It is important to eat enough food before activity to fuel muscles and the brain for good mental and physical performance. High carbohydrate foods digest quickly and should be the main source of fuel within 2-3 hours before activity, with a medium amount of protein. High fat and/or fibre foods should be limited right before activity as they take longer to digest and can cause gas or upset stomachs during activity (1). Examples of high quality pre-activity choices include oatmeal, low fat yogurt and fruit, pasta with tomato sauce, or an egg and toast.
- **During Activity:** Plain cool water is usually all that is needed for activities lasting one hour or less. For vigorous activity lasting longer than one hour, or activity in hot temperatures, 100% juice or a store-bought or homemade sport drink may be beneficial.
- **After Activity:** Youth should drink plenty of water after activity. Recovery foods are those that are eaten right after activity. A mixture of carbohydrate and protein within 30 minutes of the activity has been shown to be the best kind of recovery food to replenish energy stores and repair lean tissue (muscle) (1). Examples of high quality recover foods include fruit and yogurt smoothies, cottage cheese and crackers, homemade whole grain muffins or milk.

NOTE: *Youth* ***do NOT need to count calories or follow strict meal plans*** *to meet their physical activity needs. It is more important that they understand the general types of foods that can be included in their meals and snacks before during and after physical activity to help them feel good and perform their best. Focusing too strictly on portion sizes and macronutrient distribution can have a negative impact on youth's relationship with food and can even lead to disordered eating.*

Making the healthy choice the easy choice

Since carbohydrates are the main fuel for activity, it is important for young athletes to eat a high carbohydrate diet along with enough protein to build and repair body tissues as well as support their growth (6). Young athletes need frequent healthy meals and snacks to ensure energy requirements can be sustained (6).

To help support active youth to make healthy food and beverage choices before, during and after activity, it is important to have healthy options available in recreation facilities, at tournaments, and at sporting events. Watch this short video to find out more: www.youtube.com/watch?v=3ENmGpUKH0M.

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Water and other Beverages

About 60% of the human body is water (1). Water is a structural component of all cells and is essential to all bodily fluids such as blood, urine, and sweat. Water helps to transport nutrients and remove wastes from the body.

Our bodies naturally lose water throughout the day through breathing, urine, bowel movements and sweat. Water losses increase in hot environments and during physical activity. Water is also lost during illness such as fever and diarrhea.

Water needs to be constantly replaced for us to function and live well. Dehydration can occur when we lose more fluid than we take in. Some symptoms of dehydration include thirst, fatigue, weakness, headache, irritability, and dizziness.

Drinking water is one way to make sure the water lost is replaced. Canada's Food Guide suggests that people drink water for thirst rather than other beverages (2). If choosing to consume other beverages, consider the points listed below.

Milk and Fortified Soy Beverages: Low fat milk and fortified soy beverages are not only a source of water but are also good sources of protein, calcium and vitamin D. Canada's Food Guide recommends Canadians over the age of 2 consume two cups (500mL) of skim, 1% or 2% milk or fortified soy beverage every day.

100% Fruit Juice: Although 100% unsweetened fruit juice is a source of water and some nutrients, Canada's Food Guide recommends choosing vegetables and fruit more often than juice because they contain more fibre. It is easy to drink a large amount of juice and this can displace eating other healthy foods.

Sugar Sweetened Beverages: Sugar sweetened beverages such as fruit drinks, iced tea, specialty coffees, sports drinks, soft drinks and energy drinks provide sugar and minimal nutrients. They can displace other nutritious foods and beverages such as milk (3). Drinking these beverages often can cause health issues such dental cavities and conditions such as obesity, type 2 diabetes and heart disease (3). The sales of soft drinks have decreased over several years; however, the sales of energy drinks, sports drinks and flavoured waters have increased significantly among Canadian youth (3).

- ***Energy Drinks:*** Energy drinks claim to give extra energy, improve concentration and enhance performance. These claims are not proven and there is more proof that they can be harmful. Caffeine is one of the main ingredients of energy drinks. One beverage will likely have more caffeine than what a teen should have in a day. Caffeine can cause trouble sleeping, increased heart rate, restlessness, irritability, nervousness and headaches.

  Energy drinks are **NOT** sports drinks. Energy drinks can actually decrease sports performance because they contain large amounts of sugar, caffeine and carbonation, which can cause an upset stomach during activity and dehydration.
- ***Sports Drinks:*** The key ingredients in most sports drinks are water, sugar, and electrolytes (sodium and potassium). Most youth who participate in physical activity and sport **do not need** the extra sugar and electrolytes provided by these beverages. Although these beverages are marketed and sold to the general public as part of a healthy lifestyle, they are only useful in very specific circumstances. In most cases, water is the best choice.
- ***Vitamin and other flavoured water:*** Vitamin and flavoured waters are bottled drinks that contain water, sugar (or artificial sweetener), natural flavours, citric acid and may contain minerals, vitamins and herbs. There is no scientific proof that vitamin waters provide any health benefits. Although vitamin waters come in many fruit flavours, they contain less than 1% fruit juice and contain only a few of the nutrients that we need each day. It is better that healthy people can get the nutrients recommended by eating a variety of healthy foods from Canada's Food Guide rather than drinking vitamin water. Take caution with these beverages since vitamins and minerals taken as a supplement can be dangerous when taken in large amounts. These drinks are generally not needed or recommended.

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Body Composition and Health Risks in Children and Youth

Weighing and measuring students in schools

Measuring children and youth within the school setting can be more harmful than beneficial. Children and youth are often teased about their size and shape. Measuring weight or body composition at school can increase the amount of teasing children may already be receiving. Regardless of their size or shape, children and youth may be pressured to try harmful diets. Body composition can influence health but research has shown that shaming people for their size does not improve their health (1).

All students need to be physically active, eat well, and have positive mental health regardless of their size and shape. It is important to be supportive of all children and youth by keeping the focus ***on*** health and wellness and ***off*** size and shape.

There are a number of measures that can be used to estimate body composition in relation to health risks.

BMI for Age

BMI (Body Mass Index) for Age is the recommended way for health care providers to assess growth and estimate body composition in children. Research has linked childhood BMI to health quality in adulthood (2). The calculation below is used to determine BMI.

$$\text{BMI} = \frac{\text{weight in kilograms}}{\text{height in metres}^2}$$

BMI for children and youth **MUST** be interpreted differently than BMI for adults. Because children and youth are growing and developing, their body composition changes frequently. As a result, **BMI for children and youth MUST be interpreted by using the appropriate *BMI for Age* charts and NOT adult BMI charts.** When health care providers assess growth, several measurements over a period of time are used instead of one measurement at one point in time.

Skin fold thickness measurements

Skin fold thickness measurements are not recommended for use in schools and fitness facilities. There is a **high potential for error** due to the difficulty in obtaining accurate measurements. Most importantly, skin fold calipers measure subcutaneous fat (fat that is found under the skin). Subcutaneous fat, although still part of overall weight, is not the most concerning fat for health. Visceral fat (fat stored in the abdomen), found close to internal organs, is the type of fat that is associated with health risks and often cannot be measured using skin fold measurements (3).

Regardless of the technique used, body composition should only be measured and used by a trained healthcare provider as part of a total health assessment to accurately evaluate disease risk.

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