



HEALTHY EATING: A PRACTICAL GUIDE





INTRO

YOUR HEALTH IS YOUR GREATEST RESOURCE

The healthier you are, the better poised you are to achieve goals in all areas of your life, including academic, career and personal goals.

Eating nutritiously is one of the most important things you can do to enhance and maintain your health. This guide—made possible through funding from the Ministère de l'Éducation, du Loisir et du Sport, Québec—aims to provide you with practical and reliable information that you can use to make health-enhancing choices about the foods and beverages you consume.

If you take away only one message from this booklet, let it be this: **A healthy diet is a plant-based diet!** Read on for much more information on healthy eating.

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QUALITIES OF A HEALTHY DIET

The principles of a healthy diet can be summarized in a few key points.

A healthy diet is:

- **Generally low in fat, and specifically low in “unhealthy” saturated and trans fat.**
A high-fat diet—or one that is rich in “unhealthy” fats—increases a person's risk for chronic health problems that include heart disease, diabetes and stroke.
- **Low in added sugars.** Sugars occur naturally in foods such as fruit and milk. Added sugars, such as those in non-diet soft drinks or candies, contribute to obesity and they may raise the risk of heart disease and diabetes.
- **Low in sodium.** A diet high in sodium is linked to an increased risk for high blood pressure and its associated health problems (e.g. heart disease).
- **High in fiber.** A high-fiber diet is linked with better health and a reduced risk of some chronic illnesses.
- **Low in cholesterol.** A diet rich in dietary cholesterol contributes to cardiovascular disease.
- **Rich in vitamins and minerals.**
- **Calorie balanced.** Getting more energy (i.e. calories) than your body needs results in weight gain.



THE BENEFITS OF A HEALTHY DIET

The numerous benefits of a healthy diet include:

- *a reduced risk of illness and disease, including cardiovascular illness (heart disease and stroke), diabetes and some cancers*
- *a stronger immune system*
- *achievement and maintenance of a healthy weight*
- *increased energy*
- *better sleep*
- *improved concentration/performance*
- *better sex*
- *better mood*
- *bowel regularity*
- *healthy skin, hair and teeth*
- *a greater sense of health and well-being*
- *and it's much better for the environment*



GENERAL STRATEGIES TO ACHIEVE A HEALTHY DIET

*Eating healthfully is easier
than you think.*

Just as there are a few principles to a healthy diet, there are a few general approaches to healthy eating. They include:

- **Eat lots of plants.** Plant foods tend to be low in fat, calories and sodium; plus they have no cholesterol. They also have fiber and are often rich in vitamins, minerals and other beneficial compounds.
- **Consume a variety of foods.** This ensures that you get a full complement of nutrients.
- **Eat regularly throughout the day.** Aim for a breakfast, lunch and dinner along with a few snacks.
- **Eat foods as close to their natural state as possible.** The processing of foods strips them of valuable nutrients. Unhealthy ingredients such as salt, sugar or fat are often added to processed foods.
- **Focus on healthy fats.** The amount of fat in the diet is not as important to your health as the type of fat. Healthy “unsaturated” fats are found mainly in plant foods (e.g. olive oil, canola oil). When you choose animal foods—which are a main source of unhealthy fat—opt for lower fat versions, such as lean cuts of meat or low-fat milk, yogurt and cheese.
- **Beware of liquids.** Liquids can add a significant amount of additional calories to a diet, which can result in weight gain. Choose water often to satisfy your thirst.

Nutrition advice is the most requested topic for health education at Concordia Health Services and the number one issue students say they would change to enhance their health. There is an outstanding amount of information available on nutrition, but much of it is misleading or inaccurate. This can be confusing. This booklet summarizes the most important information you need to know about healthy eating and provides further resources should you wish to learn more.

If you want a step-by-step guide to change the way you eat, consult the Health Services workbook “How to Effectively Set, Achieve and Maintain Health Goals”. This is an evidence-based guide to making long-lasting changes in any behaviour, including nutrition. On the back page of this booklet you can find a brief summary of the guide and information on how to obtain a copy.

REMEMBER

*There is room for all kinds of
delicious foods in a healthy diet. Ice
cream, potato chips and chocolate
can all be part of a healthy diet,
as long as you eat these foods
occasionally and in small amounts.*

People get information about healthy eating from a variety of sources including the Internet, nutrition books and even family and friends. Food guides are an excellent way to learn about healthy eating.

Canada's Food Guide is a tool that helps you make food choices to improve your health and reduce your risk of illness. The Food Guide is updated regularly to keep it consistent with the latest science and to make sure it remains understandable and useful. You can obtain the Food Guide at Health Services or download a copy from the Health Canada website (www.hc-sc.gc.ca/fn-an/food-guide-aliment/index-eng.php).

UNDERSTANDING CANADA'S FOOD GUIDE

Canada's Food Guide provides recommendations for the quantity and quality of foods and beverages to consume for optimal health. It places foods and beverages into four main groups:

- fruit and vegetables
- grain products
- milk and alternatives
- meat and alternatives

Within each food group, the Food Guide recommends a number of servings based on age and sex. These are summarized in the table to the right. The Food Guide also identifies what one serving is. The panel on the right provides a general summary of serving sizes. You can find information on serving sizes for a wide variety of foods from Canada's Food Guide website.

Besides providing recommendations for the four main food groups, the Food Guide also provides recommendations for fats and oils

HEALTHY DIET GUIDELINES

CANADA FOOD GUIDE SERVING RECOMMENDATIONS

	Female 19–50	Male 19–50	Female 51+	Male 51+
Fruits and Vegetables	7–8	8–10	7	7
Grain Products	6–7	8	6	7
Milk and Alternatives	2	2	3	3
Meat and Alternatives	2	3	2	3

WHAT IS ONE FOOD GUIDE SERVING?

- **Fruit and vegetables:** ½ cup* frozen, fresh or canned fruit or vegetables; 1 piece of fruit; 1 cup raw greens (e.g. lettuce, spinach).
- **Grain products:** 1 slice of bread (35 grams); ½ bagel, pita or tortilla; ½ cup cooked rice or other grains, or pasta; 30 grams of cold cereal; ¾ cup hot cereal.
- **Milk and alternatives:** 1 cup milk or soy milk, ¾ cup yogurt; 50 grams** cheese.
- **Meat and alternatives:** 75 grams (½ cup) cooked meat, poultry or shellfish; ¾ cup legumes (e.g. beans, lentils); 2 eggs; 2 Tbsp peanut butter; ¼ cup nuts.

* ½ cup=125 ml and is about the size of a tennis ball

** 50 grams of cheese is about the size of two 9-volt batteries

HEALTHY DIET GUIDELINES

(30-45 mL, or 2-3 Tbsp per day) and it suggests limiting foods that are 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, salty snacks, alcohol, fruit flavoured drinks, soft drinks, sports and energy drinks, and sweetened hot or cold drinks. The Food Guide does not provide a number of servings for these foods. The best way to limit them is to set a daily calorie limit. Experts recommend that individuals aim to consume not more than 150 calories a day from these foods.

For each of the four main food groups, the Food Guide offers quality recommendations. These are:

Fruit and vegetables

- Eat at least one dark green and one orange vegetable each day
- Choose vegetables and fruit prepared with little or no added fat, sugar or salt
- Have vegetables and fruit more often than juice

Grains

- Make at least half of your grain products whole grain each day
- Choose grain products that are lower in fat, sugar or salt

Milk and alternatives

- Drink skim, 1%, or 2% milk each day or fortified soy beverage if you don't drink milk
- Select lower fat milk alternatives

Meat and alternatives

- Have meat alternatives such as beans, lentils and tofu often
- Eat at least two Food Guide servings of fish each week
- Select lean meat and alternatives prepared with little or no added fat or salt.

The quality recommendation for oils and fats is to focus on the healthy “unsaturated” fats. These include olive oil, canola oil, and non-hydrogenated (soft) margarines. Also, butter, hard margarine, lard and shortening should be limited in a healthy diet.

THE HARRIS-BENEDICT EQUATION FOR ESTIMATING YOUR DAILY CALORIE NEEDS

The first step in estimating your daily calorie needs is to determine your Basal Metabolic Rate (BMR), which is the amount of calories you burn each day while at rest.

IMPERIAL BMR FORMULA

Women: $655 + (4.35 \times \text{weight in pounds}) + (4.7 \times \text{height in inches}) - (4.7 \times \text{age in years})$

Men: $66 + (6.23 \times \text{weight in pounds}) + (12.7 \times \text{height in inches}) - (6.8 \times \text{age in years})$

METRIC BMR FORMULA

Women: $655 + (9.6 \times \text{weight in kilos}) + (1.8 \times \text{height in cm}) - (4.7 \times \text{age in years})$

Men: $66.5 + (13.7 \times \text{weight in kilos}) + (5 \times \text{height in cm}) - (6.8 \times \text{age in years})$

Once you know your BMR, you can multiply that number by an activity multiplier* to estimate your total daily calorie needs. Multiply your BMR by:

- 1.2 if you are sedentary (little or no exercise)
- 1.375 if you are lightly active (light exercise/sports 1-3 days/week)
- 1.55 if you are moderately active (moderate exercise/sports 3-5 days/week)
- 1.725 if you are very active (hard exercise/sports 6-7 days a week)
- 1.9 if you are extra active (very hard exercise/sports & physical job or training 2 times a day)

Estimate of my daily calorie needs: _____ calories

**These categories are quite broad. If you find that your activity level falls somewhere between two categories, determine an activity multiplier between the two that you think would be most appropriate. For example, you walk most places so you wouldn't consider yourself sedentary, but you believe the amount of walking you do wouldn't put you in the lightly active category so you decide to use 1.325 as your activity multiplier.*



HOW TO USE CANADA'S FOOD GUIDE

The serving recommendations in the Food Guide are based on the daily energy needs of the average Canadian male and female.

For the 19-50 year age group the average female requires 1,850 calories while the average male requires 2,400 calories per day. You will need to adjust the number of servings you need based on your size, activity level and weight goals. To do this, you first need to estimate your daily energy needs, which can be done using the Harris-Benedict equation (see page 6).

If your estimated calorie needs are similar to those of the reference individual, you can use the number of servings recommended in the Food Guide. You could also include a small amount of discretionary calories—150 calories for example—so that you can include foods and beverages that are not in the four main food groups such as cake, sweets, ice cream or alcohol.

If your calorie needs are significantly different from those of the reference male or female, you will have to adjust the number of servings to meet your energy and nutritional needs. If your energy needs are greater than the reference individual, you need to proportionately increase the amount of servings in each food group. For example, a 20 year old female athlete calculates that she burns about 2,300 calories a day, which is approximately 25% more than the reference individual. She would aim for 25% more of the recommended number of servings, which would be:

- fruit and vegetables: 9-10 servings (instead of 7-8)

ESTIMATING YOUR DAILY CALORIE NEEDS: AN EXAMPLE

Maria is 22 years old, 5'6" (66") tall, and weighs 145 pounds. She gets together with friends for a friendly game of basketball twice a week, each game lasting about an hour. She also goes for a 30 min jog twice a week. Based on these activities she determines that she is moderately active. Her calculations for BMR are:

$$\text{BMR} = 655 + (4.35 \times 145) + (4.7 \times 66) - (4.7 \times 22)$$

$$\text{BMR} = 655 + 630.75 + 310.2 - 103.4$$

$$\text{BMR} = 1492.55$$

$$\text{Daily calorie needs} = \text{BMR} \times \text{activity multiplier} = 1492.55 \times 1.55 =$$

2313 calories per day

- grain products: 7.5-9 servings (instead of 6-7)
- milk/alternatives: 2.5 servings (instead of 2)
- meat/alternatives: 2.5 servings (instead of 2).

She may also decide to increase her intake of oils and fats to 3–4 tablespoons—rather than the 2–3 tablespoons that are recommended. Finally, she may also wish to include discretionary calories (maybe 200 for this active female) for foods that are not found in the four main food groups such as ice cream, chips or alcohol.

If your energy needs are significantly less than the reference individual, you would proportionately decrease the number of servings in each food group and factor in some discretionary calories for foods not found in the four main food groups.

Now that you know how many servings to aim for, you can plan out your meals and snacks for the day. Monitoring is extremely important

TIPS FOR EFFECTIVE MONITORING

- **Write things down:** This is the most important aspect of monitoring. You may be tempted to think that you can monitor in your head, but this doesn't work. Having the information down on paper helps guide changes, spot patterns and more.
- **Be honest and accurate:** There is no point in monitoring if you are not going to be honest. You should also aim to be accurate in your recording. Don't wait until the end of the day to record what you have eaten. Record as soon as you can. Measuring will improve accuracy.
- **Review your monitoring:** Again, there is no point in monitoring if you are not going to use the information. At the end of each day identify if you have reached your nutrition goal. The sooner you identify that you are not on track, the sooner you can make changes to get back on track.
- **Develop a system that is easy to use:** One of the greatest barriers people report about monitoring is that it takes time. To overcome this, create a system that is easy to use. Besides the monitoring sheet presented here, there are many websites that offer programs to record food, exercise, weight and more. There are also mobile apps that you can use.
- **More is better:** Include as much detail as possible without making monitoring a terrible chore. The most important details for nutrition monitoring are the quantity and quality of food.



HOW TO USE CANADA'S FOOD GUIDE

to ensure that you are on track with healthy eating, especially if you are trying to change your diet. An effective way of monitoring is to use a worksheet. It could look like an accounting sheet for food. Divide the worksheet into columns to record food category servings, oil servings and discretionary calories; and rows to record what you eat. Record both the quantity and the quality of the food and indicate how many servings the food represents in the appropriate column. An example of a completed worksheet is shown to the right. On the following page a blank worksheet is presented that you can copy. You can use the worksheet to plan a day of eating, or you can use it to monitor your eating as the day progresses. Record the type and amount of food you have eaten as soon as you can. Be honest. You may need to measure some foods to be accurate.

As with any skill, it will take practice for you to get proficient at planning a day of healthy eating. You won't need to record everything you eat for the rest of your life; rather, record for a while until you are confident in your planning. You may need to modify your plan as things change in your life, such as a pregnancy, a change in physical activity, or a weight change.

OTHER APPROACHES TO HEALTHY EATING

The Canada Food Guide is practical, flexible and based on good science; however, it is not the only approach to healthy eating. Other approaches include other food guides (e.g. the Vegetarian Food Guide), guidelines from other countries (e.g. Dietary Guidelines for Americans), guidelines from organizations (e.g. The Nutrition Source from the Harvard School of Public Health), and some diet plans that are based on good science (e.g. Mediterranean Diet).

COMPLETED MONITORING SHEET

Date: September 20	F/V	Gr	Milk	Meat	Oil	Cal
MY GOAL FOR THE DAY	8	6	2	2	3	150
Breakfast						
1 whole grain bagel		2				
2 tbsp raspberry jam						50
1 tbsp non-hydrogenated margarine					1	
1 banana	1					
1/2 cup unsweetened orange juice	1					
Mid-morning Snack						
1/4 cup almonds				1		
Lunch						
1 cup pasta		2				
1 cup tomato/vegetable pasta sauce	2					
Salad of 1 cup lettuce + 1/2 cup chopped vegetables	2					
1 tbsp low-fat salad dressing					1	
Mid-afternoon Snack						
1 low-fat granola bar						100
3/4 cup low-fat yogurt			1			
Dinner						
75 grams grilled salmon				1		
1 cup rice		2				
1 cup roasted vegetables	2					
1 tbsp olive oil for roasting					1	
Evening Snack						
50 grams cheese			1			
MY TOTAL FOR THE DAY	8	6	2	2	3	150

WORKSHEET TO PLAN A DAY OF HEALTHY EATING

ACCORDING TO THE CANADA FOOD GUIDE

Use this worksheet to plan a day of healthy eating ahead of time or to record your food and beverage consumption as you go through your day. Begin by entering in the “MY GOAL FOR THE DAY” row your goal for the number of servings in each food group as well as your goal for the amount of calories of “other” foods and drinks. Then, record what you plan to eat/drink—or what you have eaten/drunk—in the left column. Include details on quantity and quality (e.g. 1 cup skim milk, 2 slices whole grain bread, 75 grams lean ground beef). Next, record the

number of servings of the food or beverage in the appropriate column (e.g. for 1 cup cooked white rice you would put 2 in the grains column since 1/2 cup of cooked rice is 1 serving). For “other” foods and drinks (e.g. chocolate, alcohol) record as accurately as possible the number of calories you have consumed. When the worksheet is complete, add the servings (or calories) in each column and write that number in the “MY TOTAL FOR THE DAY” row. Finally, compare your total with your goal to identify if you achieved your nutrition goal for the day.

Date:

	Enter Number of Servings					Enter Calories
	F/V	Gr	Milk	Meat	Oil	Other
Breakfast						
Mid-morning Snack						
Lunch						
Mid-afternoon Snack						
Dinner						
Evening Snack						
MY GOAL FOR THE DAY						
MY TOTAL FOR THE DAY						

What is One Serving?

Each of the following represents one serving. For a more comprehensive list consult the “choosing foods” section of the Canada Food Guide website.

Fruit and vegetables: ½ cup* frozen, fresh or canned fruit or vegetables; 1 piece of fruit; 1 cup raw greens (e.g. lettuce) or ½ cup cooked greens (e.g. spinach)

Grain products: 1 slice of bread (35 g); ½ bagel, pita or tortilla; ½ cup cooked rice or other grains, or pasta; 30 grams of cold cereal; ¾ cup hot cereal.

Milk and alternatives: 1 cup milk or soy milk; ¾ cup yogurt; 50 grams** cheese.

Meat and alternatives: 75 grams (½ cup) cooked meat, poultry or shellfish; ¾ cup legumes (e.g. beans, lentils); 2 eggs; 2 Tbsp peanut butter; ¼ cup nuts***

Fats and oils: 1 Tablespoon oil, butter, margarine, mayonnaise, salad dressing

*½ cup (125 ml) is about the size of a tennis ball **50 grams of cheese is about the size of two, 9-volt batteries

*** ¼ cup is about the amount of nuts that fits flat in the palm of your hand.

HOW TO READ A FOOD LABEL

Nature Valley
SWEET AND SALTY
Chewy Nut Bars
Peanut
(made with 100% Whole Grains)

Nutrition Facts

Per 1 bar (35 g)

Amount		% Daily Value
Calories	170	
Fat	9 g	14%
Saturated Fat 2.5 g		
+ Trans Fat 0 g		13%
Cholesterol	0 mg	
Sodium	140 mg	6%
Carbohydrate	19 g	6%
Fibre 2 g		6%
Sugars 11 g		
Protein	2 g	4%
Vitamin A	0%	Vitamin C 0%
Calcium	2%	Iron 2%

Food labels are an indispensable tool for those who wish to eat healthfully.

They are required by law in Canada on all packaged foods, with a few exceptions. There are three main kinds of information on a label: the

“Nutrition Facts” panel, the ingredient list, and the nutrition claim.

HOW TO READ A “NUTRITION FACTS” PANEL

The “Nutrition Facts” panel lists the serving size, amount of calories per serving, and the amount of 13 nutrients per serving. It can be used to compare two different brands of a

food product. A “Nutrition Facts” panel for a nut bar is used as an example. Here’s what to look for:

1. What is the serving size? In the nut bar the serving size is 1 bar that weighs 35 grams. When comparing two products, make sure the serving sizes are the same. If they are not, you will need to do some calculations to compare the same amount of food.

2. How many calories are in a serving? There can be a big difference between brands. Be aware that a food may seem to be low-calorie but the serving size on the “Nutrition Facts” panel may be very small. The nut bar has 170 calories.

3. What percentage of calories comes from fat? The amount of fat on a “Nutrition Facts” panel is listed in grams. This can be useful to identify foods that are low in fat. However, you also need to consider what percentage of the total calories comes from fat. To do this multiply the grams of fat by 9 (there are 9 calories per gram of fat), divide that number by the total calories and then multiply by 100. For the nut bar example the percent of calories from fat = $[(9 \times 9) / 170] \times 100 = 48\%$. Almost half of the nut bar’s calories come from fat.

4. Do saturated and trans fat account for a high proportion of total fat? Less than one-third of the total fat in a healthy diet should come from saturated and trans fat. The lower the better. The nutrition label for the nut bar indicates that it contains no trans fat, while saturated fat accounts for just less than one-third of the total fat (2.5 grams saturated fat in 9 grams of total fat).

5. How much fiber is in the product? Aim for at least 20 grams of fiber each day; and more is even better. This bar contains some

fiber (2 grams). High fiber foods contain 4-6 grams of fiber per serving.

6. How much sugar is in the product?

One teaspoon of sugar weighs 4 grams. Therefore, the nut bar has just less than 3 teaspoons of sugar (11 grams). Note, though, that almost one-third of the weight of the bar is sugar (11 of the 35 grams)!

7. Is the food low in sodium? You should aim to consume less than 2,300 mg of sodium each day; preferably 1,500 mgs. The nut bar is relatively low in sodium (140 mgs).

8. Is the food rich in vitamins and minerals?

The “Nutrition Facts” panel indicates “% Daily Value” numbers for two vitamins (A and C) and two minerals (calcium and iron) only. You can tell if a food is rich in these particular nutrients if their “% Daily Value” is high.

9. Is the food high in cholesterol? It is recommended that you consume less than 300 mg of cholesterol per day.

10. Don't pay too much attention to the “% Daily Values”. These values are based on a 2,000 calorie/day diet, which is the amount of calories needed by a moderately active person of 68 kg (150 pounds). Larger people and those who are more active require more calories. If you need more or less than 2,000 calories a day, this information will not be appropriate for you. However, it can give you an idea of which nutrients are abundant (large % daily value number) and which are not (low number).

WHAT TO LOOK FOR IN THE INGREDIENT LIST

The ingredient list contains all ingredients in the food. They are listed from most to least by weight. The closer an ingredient is to the top

of the list, the more of it the food contains. Avoid or limit foods with the following ingredients at or near the top of the list:

- Hydrogenated or partially hydrogenated oils, which are all high in saturated or trans fat.
- Sugar, fructose, glucose, dextrose, and high fructose corn syrup, which are all forms of added sugar.
- Stone ground, enriched, bleached, or multigrain flour, which are processed grains. Opt for whole grains such as “whole wheat”, “whole rye”, or “whole oats”.

The first six ingredients in the nut bar are: roasted peanuts, corn syrup, sugar, whole grain rolled oats, glucose-fructose and palm kernel oil. The label states “made with 100% whole grains” but the bar contains more sugar, corn syrup and peanuts than whole grains.

NUTRITION CLAIMS

A nutrition claim is a legally regulated statement that is meant to help you spot healthy foods. A few examples are:

- Calorie-reduced: 50% fewer calories than the regular version.
- High source of dietary fiber: At least 4 grams of fiber per serving.
- Very high source of dietary fiber: At least 6 grams of fiber per serving.

Don't base your food choices on the nutrition claim only as it can be misleading. A food that is calorie-reduced can still be high in calories; it just means that it is not as high as the regular version. The “Nutrition Facts” panel provides much richer information.





16 WAYS TO GET MORE PLANT FOODS INTO YOUR DIET

Since a healthy diet is a plant based diet, an excellent strategy to improve your diet is to increase the amount of plant foods you consume.

Here are a few ideas for getting more plants into your diet.

1 Stock your fridge and pantry with plant-based foods. If you have plant foods on hand you are more likely to eat them. Plant foods include fruit and vegetables (fresh, frozen, canned or juice); lentils and beans (canned or dried); nuts and seeds; grains such as rice, oats, bulgur, barley, millet and quinoa and foods made of them such as breads, pasta and cereal; and soy products such as tofu and soy milk.

2 Pack some sliced vegetables into your lunch. Make a healthy veggie dip by adding some spices (onion, garlic, dill, Tabasco, etc.) to fat-free sour cream and put some in a small container to bring with the veggies.

3 Always have fruit handy. Put a piece of fruit into your lunch or your back pack. Keep a small bowl of fruit on your desk or in a visible place in the house, such as on a counter top.

4 Have a salad. Don't be limited to leafy greens topped with tomato and cucumber. Experiment! Try fennel, endives or cabbage. Add beans (e.g. kidney beans), legumes (e.g. chickpeas) or fruit (e.g. sliced apple) to your vegetable salad. Make a healthy vinaigrette by mixing two parts olive oil with one part vinegar. Put the vinegar in a jar that has a tight lid and add your favorite spices such as garlic, oregano, rosemary, mustard, pepper, dill or minced onion. Add a little bit of oil and shake vigorously until the vinegar is suspended in the oil. Repeat until you have integrated all the oil. Pack the salad and the dressing in separate containers.

5 Add extra canned, fresh or frozen vegetables to pasta sauces or stews. You can also add whole or mashed beans to pasta and other sauces.

6 Make a sandwich. Be creative. Choose a different type of bread such as rye, a pita, a bagel or a tortilla. Fill your sandwich with hummus or mashed avocado and some vegetables such as green pepper, tomato, or cucumber. Use strong mustard instead of mayonnaise or butter.

7 Discover new ways to prepare fruit. For example, cover some chopped banana, pineapple or peaches with a mixture of lemon juice and a little bit of brown sugar or maple syrup and broil in the oven until bubbly.

8 Grill vegetables. Baste some firm vegetables (e.g. eggplant, peppers, mushrooms, zucchini or corn) with olive oil and grill them on a BBQ. Alternatively, drizzle vegetables with olive oil and spices, tightly wrap in aluminum foil, and place on the BBQ (or in the oven) until the vegetables are tender.

9 Instead of a soft drink, choose an unsweetened fruit juice or low-sodium vegetable juice.

10 Whip up a healthy fruit smoothie in just a few minutes by blending low-fat milk, soy milk, or fat-free yogurt along with your favorite fresh or frozen fruit, some fruit juice, a few tablespoons of leftover cooked grains (e.g. oatmeal), and a few ice cubes.

11 Make a fruit salad by assembling a bowl of cut-up fruit and top with fat-free yogurt, chopped nuts, raisins and perhaps a touch of something sweet like maple syrup.

12 Have soup. Making your own soup is very easy and home-made soups freeze well. A basic soup recipe begins by stir-frying some chopped onions, garlic, celery and carrots in olive oil in a large pot until they are soft (about 5 minutes). Add a liquid such as low-sodium chicken or vegetable broth. Next add fresh, canned or frozen vegetables such as tomatoes, cauliflower, zucchini, green beans, corn, spinach, kale: whatever suits your fancy. For a heartier soup add cooked grains (e.g. rice, barley), cooked beans, dried or cooked lentils, or some cubed cooked meat such as chicken or beef. Season with salt, pepper and any spices you think would fit well. Bring the soup to a simmer, stirring occasionally. Let it simmer for a while, allowing the flavours to develop.

If making soup seems like too much work, take canned soup such as minestrone, chicken noodle or even a plain tomato soup and add some extra vegetables such as canned corn, peas, beans or carrots. Throw in some spices for extra taste.

13 Make your own healthy pizza at home in minutes. For the base, use a slice of toasted whole grain bread, a whole grain pita, or a whole grain tortilla. Top with a mixture of tomato sauce, a bit of olive oil and some spices such as basil and oregano. Add your favorite chopped vegetables, such as zucchini, mushrooms, peppers, tomato, or olives. Finish with a bit of cheese and bake at 375°F for 10-15 minutes until the cheese melts and bubbles.

14 Make a stir-fry. Stir-fry recipes and sauces are easy to find on the Internet.



15 Have a vegetarian day or two during the week. Try a Meatless Monday or a Tofu Tuesday. Or, make a decision that every day one of your servings of meat/alternatives will come from a plant-based source such as nuts or beans.

16 Snack on nuts, seeds or dried fruit. However, beware that dried fruit has a lot of natural sugars, and nuts have a lot of healthy fat and calories, so don't overdo it with these tasty snacks.



TIPS FOR EATING WELL ON A BUDGET

EXAMINE HOW OFTEN YOU EAT OUT

Prepare your own meals and eat out less often to save money and eat healthfully. Sandwiches, salads, wraps, nuts, seeds, and leftovers are easy to prepare and carry with you to school or work. Fruit or chopped vegetables are a great option for a quick, healthy snack. It is worthwhile to learn some basic cooking techniques from your friends and family. There is plenty of information on the basics of cooking on the web. Search using the terms “basic cooking skills” or “cooking 101”.

BE A SMART SHOPPER

A few ways to do this are to:

- Make a grocery list and stick to it.
- Get to know the typical price of foods. This way when things go on sale you will be able to tell if it is a good deal or not.
- Check flyers. You can find flyers online at circulaires.com. You can also get a quick look at the best weekly food specials on

sosculine.com (click on the “Save Money” tab and then the “This Week’s Specials” link).

- Buy items on sale that you know you will eat.
- Buy in bulk. However, don’t buy more than you can store or use before it will spoil. Also, verify that the bulk price is less expensive than that of the packaged food.
- Don’t shop for food when you are hungry because you will likely buy more than you planned.
- Compare brands by unit price. Unit price is the price per unit of volume or weight. In the grocery store, unit price is often on the tag below the item.
- Avoid buying food at convenience stores and vending machines. The prices at these places are usually higher and the selection is not as healthy.

OTHER STRATEGIES

- Cook large portions and bring leftovers to work or school, or freeze leftovers to eat later in the week.
- Don’t waste food. Plan meals around the ingredients you have at home, especially if they are approaching their expiry date. Rotate food so that the oldest item is in the front of the fridge or cabinet. This way you will see it and be more likely to use it. Some foods—bread, for example—can be frozen before they reach the expiry date.
- Eat a plant-based diet. In general, plant foods are less expensive than animal foods when compared kilo for kilo.
- Avoid alcohol.
- Drink tap water...it’s healthy, free and good for the environment.
- Use the Concordia student-run People’s Potato that serves affordable lunches.

Following a vegetarian diet—one that is composed mainly of plant foods—is an excellent way to increase the amount of plant-based food in your diet.

Vegetarian diets are associated with increased levels of health and wellness. The health benefits include a decreased risk of heart disease, high blood pressure, cholesterol, stroke, kidney disease, dementia, obesity, cancer, diabetes, and digestive disorders. These benefits have been linked to the higher levels of fiber, vitamins, minerals, and antioxidants and the lower levels of cholesterol and saturated fat in plant foods. A vegetarian diet is often more affordable than a meat-centered diet.

NUTRITION RECOMMENDATIONS AND CONCERNS

A vegetarian diet, like an omnivore diet (i.e. eats all kinds of food), can be more or less healthy depending on the choices a person makes. Many junk foods, such as chips, cookies, candy and soda, are vegetarian. Consuming these in large amounts will result in a poor diet. Canada's Food Guide can be used by vegetarians and vegans to guide their diet. Plant foods are included in the four main food groups. Vegetarians should make food choices that address any nutritional challenges of their particular type of vegetarianism. An evidence-based guide to plant-based healthy eating is the Vegetarian Food Guide Pyramid, which is easily found on the Internet.

Because there are some nutrients present in animal foods that are not available—or less abundant—in plant foods, a vegetarian diet may have nutritional challenges. Vegans avoid all animal products so they face the greatest challenges. Semi-vegetarians occasionally eat meat, so they face the least challenges. The main nutritional concerns for vegetarians are:

VEGETARIAN AND VEGAN DIETS

- **Calories.** In general, plant foods are less calorie dense than animal foods. Therefore, vegetarians need to eat a greater volume of food to meet their calorie needs.
- **Vitamin B12.** This vitamin is found only in animal foods. Depending on the extent to which a vegetarian excludes animal foods from their diet, they may have to find alternative sources of the vitamin. Some foods such as cereals are fortified with vitamin B12. Check the food label to identify if a food has been fortified. If a person's diet excludes all animal foods, they may need to take a supplement—such as a multivitamin—to meet their daily vitamin B12 needs.
- **Calcium.** Calcium is less abundant in plant foods than in animal foods. Vegans—and vegetarians who don't consume dairy products—will need to include plant sources rich in calcium in their diet. They may also consider a calcium supplement.
- **Iron.** The iron found in plant foods is absorbed less readily than that in animal foods. Vegetarians should make sure to include iron-rich plant foods in their diet such as beans and dark leafy vegetables. A daily multivitamin will also supply iron.
- **Protein.** All plant foods—with the exception of soy and quinoa—lack sufficient “essential” amino acids that are needed to make protein in the human body. Eating a variety of plant foods will provide a full complement of essential amino acids.

Other nutritional challenges—particularly for vegans—are vitamin D, zinc and iodine intake.

If you wish to learn more about vegetarian and vegan diets there are many websites with comprehensive information such as vegnutrition.com and the Vegetarian Resource Group (vrg.org). An excellent resource is the “Position of the American Dietetic Association: Vegetarian Diets” 2009 that is available on the American Dietetic Association's website (eatright.org) and elsewhere on the Internet.



HEALTHY NUTRITION FOR ATHLETES AND ACTIVE PEOPLE

In 2009, the American Dietetic Association, the Dietitians of Canada, and the American College of Sports Medicine collaborated to develop a position paper on nutrition and athletic performance.

The paper provides energy, nutrient, and fluid recommendations for active adults and competitive athletes. It also recommends what to eat before, during, and after exercise or training. You can access and download the paper—which is very interesting and informative—by searching for “Nutrition and Athletic Performance” on the website of the American Dietetic Association (eatright.org).

Athletes and active people need to eat a healthy diet in order to reap the benefits of their active lifestyle. Poor nutrition can lead to muscle and bone loss, changes in menstruation, fatigue, illness, injury, and a longer recovery time. The general nutrition strategies for athletes and active people are listed below. For more detailed information consult the position paper:

- Consume enough energy during periods of high-intensity and/or long duration training. Low energy intake can lead to loss of muscle, fatigue, injury and other problems.
- Carbohydrates provide energy and are needed to maintain blood glucose levels during exercise and replenish glycogen

stores after physical activity. Restricting carbohydrates can be detrimental. Recommendations range from 6 to 10 grams of carbohydrates per kilogram of body weight per day. The amount depends on energy expenditure, type of sport and environmental conditions.

- Protein needs are slightly greater in athletes and active people and can be met through diet alone. Protein or amino acid supplements are not necessary. Endurance and strength-trained athletes should aim for 1.2 to 1.7 grams of protein per kilogram of body weight per day.
- Fat is an important nutrient in the diet of athletes and active people. Fat intake should range from 20 to 35% of total energy intake. A low-fat diet does not benefit performance and a high-fat diet is not recommended.
- Meet the recommended daily amount of micronutrients (i.e. vitamins and minerals). If you restrict energy intake, use severe weight-loss practices or eliminate one or more food groups from your diet, you risk becoming deficient in micronutrients.
- Stay hydrated. Dehydration decreases athletic performance.
- Have a small meal or snack before exercise to improve performance. This meal/snack

should be high in carbohydrates to provide energy and be low in fat and fiber. The timing of the meal should be such that there is no food left in the stomach during exercise.

- For events lasting less than one hour, consume a small amount of carbohydrates (such as that found in sports drinks) during exercise to maintain blood glucose levels and optimize performance. For longer events, it is best to consume drinks or snacks that contain glucose at 15-20 minute intervals throughout the activity.
- Consume foods high in carbohydrates within 30 minutes of finishing exercise and then again every few hours.
- No vitamin and mineral supplements are generally required if you are consuming adequate energy from a variety of foods.

NUTRITION RECOMMENDATIONS FOR ATHLETES OR ACTIVE PEOPLE

The nutrition recommendations of Canada's Food Guide are appropriate for athletes and active people. However, these people need more fluids, more energy, and slightly more protein. Most of the additional energy should be in the form of carbohydrates, as these make up the biggest portion of the recommended nutrient intake.

Canada's Food Guide can be adapted to the needs of an athlete/active person by increasing the number of servings proportionally based on their energy needs. For example, a 25 year old male athlete calculates that he burns about 3,600 calories a day. This is 50% greater than the energy needs of the reference male used to develop the Canada Food Guide, which is 2,400 calories a day. To meet his energy needs, this athlete must increase the recommendations in the Food Guide by 50%.

Therefore he will aim for the following number of servings:

- fruit and vegetables: 12-15 servings (instead of 8-10)
- grains: 12 servings (instead of 8)
- milk/alternatives: 3 servings (instead of 2)
- meat/alternatives: 4.5 servings (instead of 3)

He may also choose to increase his servings of oils and fats by 50% (3-4.5 tablespoons) and include some discretionary calories (e.g. 300) for other foods not found in the four main food groups. Of course, this is just a guide. If he finds that this is not suitable for him, he may have to adjust up or down. A lot depends on the choices he makes within each food group as some options are more calorie dense than others. A dietician that specializes in sports nutrition can help an athlete develop a personalized eating plan.



NUTRITION FOR BUILDING MUSCLE

Many people mistakenly believe that consuming a lot of protein is necessary to build muscle. Four factors contribute to muscle growth:

1. **Genetics.** Our ability to put on muscle is limited by our genes.
2. **Exercise.** In order for muscles to grow, they must be sufficiently challenged, such as through weight lifting. This creates "micro" tears in the muscles. When these tears are repaired the muscle grows.
3. **Rest.** Resting a muscle is crucial for it to be repaired.
4. **Nutrition.** In order to build muscle, a person must consume more calories than they burn. If they don't consume enough calories, energy is not available for the muscles to grow. By weight, muscle is approximately 70% water and 22% protein. Under ideal conditions, a male can add a maximum of one ounce (28 grams) of muscle a day. This translates to just over 6 grams of added muscle protein (22% of 28 grams). One cup of milk (250 mL, 8 oz.) provides 8 grams of protein. Therefore, an extra glass of milk contains more than enough protein for one day's muscle growth. Excess protein is not necessary from food or from shakes or supplements.



NUTRITION AND HEALTHY WEIGHT

Being overweight is associated with many health problems including an increased risk of type II diabetes, heart disease, stroke, sleep apnea, and high blood pressure.

Some of the health problems are due to the weight itself (e.g. increased aches and pains), while others are a result of the behaviours that contribute to the weight gain such as being inactive and having poor eating habits.

It can be difficult to lose weight. You need to make a weight loss plan and stick with it. Set

nutrition and physical activity goals such that you burn more calories than you consume each day. For more information on effectively setting, achieving and maintaining health goals, see the back page of this booklet.

There are several ways to set nutrition goals. One way is to follow an established weight loss program such as Weight Watchers or the Mediterranean Diet. Research shows that just about all diet plans will lead to weight loss as long as you stick to them. However, some weight loss plans do not reflect healthy nutrition recommendations. If you choose this approach, choose a diet plan that incorporates the evidence-based recommendations outlined in this booklet (e.g. plant-based, low saturated and trans fat, high fiber etc.).

A second way is to set calorie goals such as “Each day I will eat no more than 1,800 calories.” This type of goal does not stipulate the quality of those calories: they can all come from ice cream if you wish! If you choose this approach, be sure to select foods that reflect the evidence-based recommendations in this booklet. Since cutting calories results in cutting down nutrients, men should not go below

ARE YOU AT A HEALTHY WEIGHT?

The 3 measures of healthy weight

1. Body Mass Index: This is a simple measure that is calculated by dividing your weight in kilograms by the square of your height in meters ($BMI = \text{weight [kg]} / \text{height}^2 \text{ [m]}$). A BMI between 18.5 and 24.9 is associated with the lowest risk of weight-related health problems. A BMI over 25 is categorized as overweight: over 30 is obese. Both of these categories are associated with an increased risk for health problems. Being underweight (BMI less than 18.5) is also associated with an increased risk for health problems. The BMI does not take into consideration the distribution of weight; so two people of the same height and weight will have the same BMI, despite the fact that one may be lean and muscular while the other has a high percentage of body fat.

2. Body fat percentage. This measure takes into consideration body composition. There are several ways to estimate body fat percentage, including skinfold calipers and bioelectrical impedance analysis (BIA), which can be done using a hand held tool. The American Academy of Sport identifies obese as 32% body fat or more for women and 25% or more for men. If you would like to have your body fat measured, contact a Health Promotion Specialist at Concordia University Health Services.

3. Waist circumference: Men with a waist measurement greater than 40 inches (102 cm) and women with a waist measurement greater than 35 inches (89 cm) are at increased risk for weight-related health problems.

1,500 calories a day and women should not go below 1,200.

A third way to set nutrition goals is to use the Canada Food Guide. This approach addresses both the quantity and the quality of the food. First, estimate how many calories you burn each day. You can do this using the Harris-Benedict equation (see page 6). Next, reduce that number to achieve a calorie deficit. A reasonable amount of weight loss is one-half to one pound a week (1/4-1/2 kg/week). This translates to a deficit of 250 to 500 calories a day. Finally, adjust the recommended servings in the four main food groups of the Food Guide. To do this, calculate what proportion of calories you will consume each day compared to the reference individual of your gender (1,850 calories for women and 2,400 calories for men) and multiply each serving recommendation in the Food Guide by that factor. You also need to include servings for oils and fats (2-3 servings are recommended in the Food Guide), as well as a small number of discretionary calories (e.g. 150) for other foods that the Food Guide suggests we limit such as cake, candies or alcohol. (Note: the discretionary calories do not have to be used on foods and beverages high in calories, sugar, salt or fat. They can be used for additional foods in the four main food groups).

One of the strengths of the Canada Food Guide is that it is flexible: there are many choices within each category that can suit the tastes of just about everyone. However, within each category the calorie content of foods varies. For example, one serving (250 mL) of homogenized milk (3.25 %) has about 160 calories, which is almost twice the amount of that in skim milk (85 calories). Frequently choosing higher calorie options will result in slower weight loss—or possibly no weight loss at all. When using the Food Guide as a tool for weight loss it is important to choose lower calorie options in each food group. This can be achieved by following the quality recommendations. You can also use your label reading skills (see page 10) to identify lower calorie options.

USING THE FOOD GUIDE TO SET NUTRITION GOALS FOR WEIGHT LOSS: AN EXAMPLE

Daisy is 5'5" tall (165 cm), weighs 180 pounds (82 kg) and is 24 years old. As part of her weight loss plan she has set a goal to engage in 150 minutes of moderate physical activity per week. Using the Harris-Benedict equation, she estimates that she will burn about 2,500 calories a day. Daisy has decided to aim for a half-pound weekly weight loss, which requires a 250 calorie deficit each day. This means her nutrition goal will be based on 2,250 calories per day. She compares this to the daily calories burned by the reference female (1850 calories) and determines that she needs to consume about 1.2 times (2,250/1,850) the recommended servings. Therefore, Daisy's daily nutrition goal will be to eat according to the Canada Food Guide and have:

- fruit and vegetables: 8.5-9.5 servings (instead of 7-8)
- grain products: 7-8.5 servings (instead of 6-7)
- milk/alternatives: 2.5 servings (instead of 2)
- meat/alternatives: 2.5 servings (instead of 2)

She has also included 2 servings (tablespoons) of oils and fats and 150 discretionary calories for any food or beverage she wishes.

PHYSICAL ACTIVITY

Setting both nutrition and physical activity goals is the most effective way to lose weight. Research indicates that 150 minutes a week of moderate- to vigorous-intensity physical activity is associated with many health benefits. Getting more physical activity than what is recommended (e.g. 300 minutes a week) will contribute to faster weight loss.

WHAT ABOUT WEIGHT GAIN?

If your goal is to gain weight, you can use the same process as that for weight loss outlined here; however, you need to consume more calories each day than you burn. It's still important to follow the quality recommendations in the Food Guide. Opt for higher calorie, healthy foods in each food group. Beans and nuts are calorie dense and nutritious. You may want to add an additional serving from the meats and alternatives category to include extra beans and nuts.

ALCOHOL

Moderate alcohol consumption is associated with better cardiovascular health as well as a reduced risk of diabetes and gallstones.

However, drinking beyond moderation is linked with a variety of health problems, not to mention the impact it has on a family, a community and society as a whole.

Alcohol is relatively calorie dense, providing seven calories per gram. It can quickly add up as a source of unwanted extra calories and contribute to weight gain without adding any significant nutrients to your diet.

While there is no “prescription” for a safe level of drinking, the Canadian Centre for Addiction and Mental Health offers guidelines for people who want to lower the risks associated with their drinking. Not consuming alcohol represents the lowest risk. For those who choose to drink alcohol, the guideline

WHAT IS A STANDARD DRINK?

Alcohol comes in different forms and concentrations. Each of the following is considered on standard drink containing 13.6 grams of alcohol:



12 oz (341 mL)
beer (5%)



5 oz (142 mL)
wine (10–12%)



1.5 oz (43 mL)
spirits (40%)

Note: The same volume of higher alcohol content beers and wines (e.g. sherry) have more alcohol and are considered more than one drink.

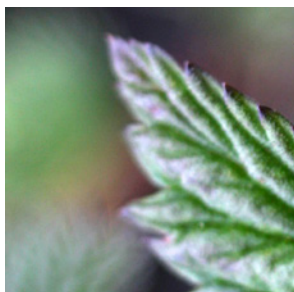
is to consume no more than two standard drinks a day. Men should consume no more than 14 standard drinks a week, while women should consume no more than nine standard drinks a week.

Some people should avoid alcohol. These include people who are unable to drink moderately, pregnant women, those with certain chronic disorders (e.g. liver disease, uncontrolled high blood pressure), those taking certain medications, and anyone who will be driving within a few hours of drinking.

If you are concerned about your use of alcohol, Health Services can help. Drop in to see a nurse. We can refer you to additional resources both at Concordia and in the community. For more information, search the term “alcohol” on medicinenet.com or webmd.com, or consult the Center for Addiction and Mental Health’s website (camh.net).

OTHER TOPICS

The goal of this booklet is to provide a brief, practical guide that helps you make nutrition choices to enhance your health and reduce your risk of nutrition-related health problems. Unfortunately, due to space limitations, we are unable to address all nutrition topics. On the back page we provide links to websites where you can get information on other nutrition-related topics.



The body needs a variety of nutrients to function optimally.

These can be divided into two categories: macronutrients—those we need in large amounts—and micronutrients, which are those we need in small amounts. The macronutrients are fats, proteins, carbohydrates, and water. Micronutrients are vitamins and minerals. What follows is a brief summary of each of these. For more information consult the “What You Should Eat” section of the “Nutrition Source” website from Harvard University (www.hsph.harvard.edu/nutritionsource/what-should-you-eat/) or search for these terms on the National Library of Medicine’s website (www.nlm.nih.gov/medlineplus/).

MACRONUTRIENTS

Proteins

Proteins build and repair muscles, skin and other tissues and are an integral component of hormones and enzymes, which regulate the body’s processes. Proteins are also essential for building the cells of the immune system.

Proteins are composed of basic units called amino acids, which are linked together in various combinations to create thousands of different proteins. There are 22 amino acids, 13 of which are called “non-essential” because the body can make them. The other nine “essential” amino acids must come from the foods we eat since the body cannot make them.

Animal food sources of protein are referred to as “complete” protein because they contain all 22 amino acids. Sources include meat, poultry, dairy products, eggs and seafood. With the exception of soybeans and quinoa, all plant proteins lack one or more of the essential amino acids, so they are called “incomplete” proteins. Depending on the foods they include in their diet, some vegetarians and all vegans need to pay attention to the protein in their diet. See the Vegetarian and Vegan section of this booklet for information and resources. Plant foods that contain a substantial amount of protein include beans, lentils, soy products (e.g. tofu) and nuts.

One gram of protein provides four calories of



UNDERSTANDING NUTRIENTS

energy. In a healthy, balanced diet protein should contribute 10-15% of daily calories. If you eat according to the Canada Food Guide you will meet your daily protein requirements.

Fats

Fat stores energy, insulates the body and its organs, is a component of hormones and other important substances, and provides essential fatty acids that the body cannot produce. It also transports the fat-soluble vitamins A, D, E and K throughout the body. High fat consumption is linked with cardiovascular disease and some cancers. The health effects are related to the type of fat in the diet, rather than the amount. However, since fat provides a concentrated source of energy, high consumption of any type of fat can contribute to weight gain, which increases the risk of many health problems.

In general, fat occurs as triglycerides, which are formed by attaching three fatty acid molecules to a molecule of glycerol. These fatty acids can be saturated or unsaturated. (Unsaturated fatty acids can be either monounsaturated or polyunsaturated). Dietary fats contain a combination of saturated and unsaturated fatty

TRANS FAT

Trans fat is rarely found in nature: most of the trans fat we eat is man-made. It is created through a process called hydrogenation, where polyunsaturated oil is bombarded with hydrogen under high heat to create a solid. Research indicates that trans fat consumption increases the amount of “bad” cholesterol (LDL) circulating in the blood and may also decrease “good” cholesterol (HDL). This increases the risk for cardiovascular disease. Sources of trans fat include foods made with “hydrogenated” or “partially hydrogenated” vegetable oils such as snack foods, packaged baked goods and stick margarine, as well as some fast foods such as French fries. The amount of trans fat is indicated on a food label. It is best to avoid trans fat altogether. If you follow the recommendations of Canada’s Food Guide your diet will be very low in trans fat.

OMEGA-3 FATS

Omega-3 refers to a specific type of “essential” fatty acid. The consumption of omega-3s has been associated with positive health outcomes, most notably a reduced risk of heart disease. There are 3 main omega-3s in the diet: eicosapentaenoic acid (EPA), docosahexaenoic acid (DHA) and alpha-linolenic acid (ALA).

EPA and DHA are found mainly in cold-water, oily fish like salmon, sardines, mackerel, herring and trout. They appear to have the greatest impact on enhancing heart health. Consuming two servings of fish a week is recommended as part of a healthy diet.

ALA is found in plants and is converted to EPA and DHA through an inefficient process, so the impact of ALA consumption on heart health is much less than that of EPA or DHA. The richest sources of ALA are flaxseed oil and flaxseeds. Other sources include canola oil, soybean oil, olive oil and walnuts. Omega-3s can be found in fortified foods as well as in supplements (e.g. fish oil). However, research shows that foods fortified with ALA (e.g. margarines) don't have a positive impact on heart health.

unsaturated type. If you follow Canada's Food Guide you will achieve these recommended amounts.

Carbohydrates

Carbohydrates are a large group of compounds that are composed of carbon, hydrogen and oxygen molecules arranged into ring-like structures called saccharides. The main function of carbohydrates is to provide energy. Carbohydrates come in two main forms: simple and complex. The body converts both simple and complex carbohydrates into glucose, which is used to fuel the body's energy needs.

Simple carbohydrates—also called sugars—consist of one saccharide molecule, or two molecules attached together. Their names usually end in “-ose” (e.g. glucose, sucrose and fructose). They tend to taste sweet. Sugars occur naturally in foods such as fruit, berries and milk. They are also found in concentrated amounts in table sugar, honey, maple syrup and molasses. Simple carbohydrates are small molecules so they are easily absorbed into the bloodstream and quickly raise blood sugar levels. This leads to an increase in the secretion of insulin to even out blood sugar levels. A diet high in sugars increases the risk for diabetes. Although there is no recommended amount for sugars in the diet, the consensus among nutrition experts is to limit “added” sugars. Added sugars include those found in processed foods (e.g. cakes), candies, soft drinks, sugary cereals as well as sugars that are added at the table (e.g. sugar added to coffee, tea or cereal). Several prominent organizations—including the World Health Organization and the American Heart Association—have issued recommendations to keep added sugars to no more than 10% of daily calories, and preferably less. Based on a 2,000 calorie a day diet, this would translate to no more than 12 teaspoons of added sugar. Keep in mind that a 355 ml can of non-diet soft drink typically contains 10 teaspoons of added sugar!

The second type of carbohydrates are the complex carbohydrates, which are also called starches. They consist of many saccharide molecules linked together in chains. Because they

acids. A dietary fat is called “saturated” if it contains predominantly saturated fatty acids and “unsaturated” if it contains predominantly unsaturated fatty acids. (The terms “monounsaturated fat” and “polyunsaturated fat” refer to dietary fats that are rich in these types of fatty acids). The body can produce some fatty acids, so they are referred to as “non-essential”. Those that the body cannot produce are called “essential” fatty acids. We must get these from our diet.

Saturated fat has been dubbed “bad fat” because eating too much of this type of fat negatively affects blood cholesterol levels, which contributes to an increased risk for cardiovascular disease (e.g. heart attack, stroke). Saturated fat typically comes from animal sources and is often solid at room temperature. Sources include meat, lard, animal shortening, and dairy products such as cheese, butter, sour cream and milk. Unsaturated fat has been linked to a reduced risk of cardiovascular disease, so it is often referred to as “good fat”. Unsaturated fat typically comes from plant foods and is liquid at room temperature. Sources include olive oil, canola oil, soybean oil, peanut oil, avocados and nuts.

Fat is calorie dense. One gram of fat provides 9 calories—more than twice the amount in proteins or carbohydrates. It is recommended that fat contribute 20-30% of daily calories in a healthy diet. Most of that fat should be the

UNDERSTANDING NUTRIENTS

are larger molecules, they tend to be absorbed more slowly and, therefore, keep blood sugar levels more stable. Sources of complex carbohydrates include grain products (e.g. bread, cereal, rice, pasta, and oats), vegetables (e.g. potatoes, carrots) and legumes (e.g. peas and beans). Whole grains are an excellent option since they are not refined and retain much of their nutritional strengths.

Each gram of carbohydrates provides four calories of energy. It is recommended that the majority of our daily calories—between 50 and 65%—come from carbohydrates. If you eat according to the Canada Food Guide you will meet your carbohydrate needs and the proportion of simple and complex carbohydrates will be favourable to your health.

Water

You may have heard that you should get “eight glasses of water a day”, but there is no evidence to support this idea. Instead, your daily water needs depend on your size, activity level, the weather and what food and drinks you have consumed. Water needs are greater with increased physical activity and when the weather is hot. Unlike the other nutrients, there is no recommended daily amount of water that we should consume. Men should aim for 3.5 liters a day and women should get 2.75 liters a day. Obviously, you will need more if you are active or the weather is hot.

The Canada Food Guide recommends that you “satisfy your thirst with water”. Although all beverages contain water, many also contain

ARTIFICIAL SWEETENERS

Many people choose foods that are prepared with artificial sweeteners because they taste sweet and have fewer or no calories. Several sugar substitutes are approved for use in Canada. They include acesulfame-potassium, sucralose, and sugar alcohols (e.g. xylitol and mannitol). Research indicates that these are safe when consumed in low to moderate amounts. However, research has paradoxically revealed an association between the consumption of artificial sweeteners and weight gain. We are still learning more about the health effects of these substances. Ideally, it is best to avoid artificial sweeteners, but if you choose to consume them, keep the amount low.

other nutrients that—when consumed in large amounts—can negatively affect health. Non-diet soft drinks, fruit flavoured drinks and sweetened hot and cold drinks contain a lot of sugar and calories. Drinking a lot of these contributes to an increased risk for overweight and diabetes.

Lab tests show that the quality of tap water and bottled water are the same, so take advantage of the new water stations on campus and fill your reusable water bottles and help save the environment—and some money—along the way.

MICRONUTRIENTS

Vitamins and Minerals

Although the body needs vitamins and minerals in small amounts, these amounts are critical for optimal functioning. A deficiency of a vitamin or mineral can lead to serious health consequences. Taking large amounts of a vitamin or mineral (i.e. megadose) over time can also negatively affect health.

A comprehensive review of vitamins and minerals is beyond the scope of this booklet. You can easily find information online if you are interested (see resources on back page). If you follow the Food Guide and enjoy a variety of foods you will meet your vitamin and mineral needs. However, taking a daily multivitamin is a good idea. There is no need to take individual vitamin or mineral supplements. Supplements may be recommended if you have a medical problem (e.g. iron for anemia) or if you lack a vitamin or mineral in your diet (e.g. vitamin B12 for vegans or calcium supplements for those who avoid all dairy products).

FIBER

Fiber is a type of carbohydrate that passes through the digestive tract without being absorbed. Therefore, it supplies no calories or nutrients. It comes in two main forms: soluble and insoluble. Several health benefits have been associated with fiber consumption. They include a reduced risk of heart disease, diabetes, constipation, and diverticular disease.

Fiber is found only in plant foods. It is recommended that adults consume a minimum of 20 grams of fiber a day from foods—not supplements. More is better. You can achieve this by following the Canada Food Guide, which stresses plant-based foods and whole grains.



HOW TO SET, ACHIEVE AND MAINTAIN HEALTH GOALS

Health is your greatest resource, and moving towards better health is extremely worthwhile.

You probably picked up this booklet because you want to make a change in your lifestyle. Change can be challenging, but it is possible. Below is a brief outline of the process that research has

revealed is effective for setting, achieving, and maintaining health goals. You can pick up a copy of a workbook that guides you through this process at either Health Services location, or download it from the Concordia University Health Services website. If you are serious about making changes for better health, including eating a healthy diet, Health Promotion Specialists are available to you for free consultations. Contact Gaby Szabo (Gaby.Szabo@concordia.ca, ext. 4326) or Owen Moran (owen.moran@concordia.ca, ext. 3572) to make an appointment. This service is available only to staff, faculty, and current students of Concordia University.

THE FOUR STEPS OF EFFECTIVE BEHAVIOUR CHANGE

Approaching behaviour change in a systematic way increases

your chance of success. There are four steps to effective behaviour change.

Step 1: Define the Goal. You need to set a S.M.A.R.T. goal, which is one that is Specific, Measurable, Action-oriented, Realistic, and Timely.

Step 2: Build Commitment to the Goal. In order to start and continue eating nutritiously, you must see healthy eating as a great gift you are giving yourself...not a deprivation! Two factors contribute to commitment: "importance" and "belief in ability". You need to see your goal as important and you need to believe that you are able to carry out the behaviours/tasks to achieve it. Some ways to increase the importance you give to healthy eating and your belief in your ability to eat healthfully are to:

- tie healthy eating to your values and life goals;
- identify the pros and cons of healthy eating, both now and in the future;
- identify and access your strengths and skills.

The workbook has several activities that can help you build commitment to your goal.

Step 3: Make a Plan. Break the goal down into manageable steps and identify what needs to be put in place for you to achieve your goal. Your plan includes:

- building skills,
- gathering information,
- gathering support from others,
- identifying and planning for possible barriers, and
- identifying and implementing rewards.

Step 4: Monitor Your Progress. Monitoring (e.g. writing down what you eat) is one of the most important predictors of successful change. Accurately document what you eat and review your monitoring sheet daily to determine if you have reached your nutrition goal. If you have, great, keep doing what you're doing and make note of what helps. If not, identify the barriers and develop strategies to overcome them so you can get back on track.

NUTRITION RESOURCES

Websites

The Nutrition Source, from Harvard University School of Public Health
www.hsph.harvard.edu/nutritionsource

Nutrition Action Healthletter, from the Center for Science in the Public Interest. Selected articles from past issues of this excellent newsletter are available in the "View Archives" section of www.cspinet.org/nah. Full text of current and past issues is available through the Concordia Libraries portal.

The American Dietetic Association
www.eatright.org

webmd.com & medicinenet.com

Search for a nutrition topic of interest on these reliable websites.

Concordia Resources

Emergency Food Fund
Program of Concordia University Multifaith Chaplaincy that provides vouchers to local grocery stores for those in need. Call extension 3593 to make an appointment.

People's Potato
7th floor, Hall Building (514-848-2424, extension 7590). Serves a by-donation vegan lunch every weekday during the school-year from 12:30 - 2 pm.

Montreal Resources

The Information and Referral Centre of Greater Montréal, (514) 527-1375.
Provides information on thousands of community resources, including food banks. Directs people seeking help in solving their problems to the specific agencies that provide the services they need. Call and leave your phone number. They'll call back a few minutes later and search their extensive databases to provide you with helpful resources.