
Healthy eating

A guide for you after spinal cord injury

Spinal Cord Injury
Rehabilitation Program

This booklet has been written by the health care providers who provide care to people who have a spinal cord injury or illness. At the time of this printing the information was accurate to the best of our knowledge. The information may change due to the rapid changes in health care. It is not intended to replace medical/health advice from your health care providers.

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Introduction – Why nutrition matters

Nutrition is important to maintain good health. After a spinal cord injury, nutrition can be even more important to:

- improve overall wellness
- achieve and maintain a healthy weight
- help regulate bowel and bladder function
- support good bone and skin health

Eating a well balanced diet can also help prevent the long term health complications related to spinal cord injury. These complications can be: weight gain, diabetes, heart disease, deconditioning, osteoporosis and skin breakdown. This is because you typically will use fewer muscle groups and burn less fat. Nutrition plays a key role in preventing and controlling these complications.

While you are a patient in the hospital and in the Spinal Cord Injury Rehabilitation Program, you and your caregivers will have the opportunity to attend a 'Nutrition and Spinal Cord Injury' class. This class will review nutritional needs when you have a spinal cord injury and show you how to use "Eating Well with Canada's Food Guide".

As well, a Registered Dietitian or Dietetic Assistant can meet with you to discuss your individualized nutritional needs.

Eating Well with Canada's Food Guide

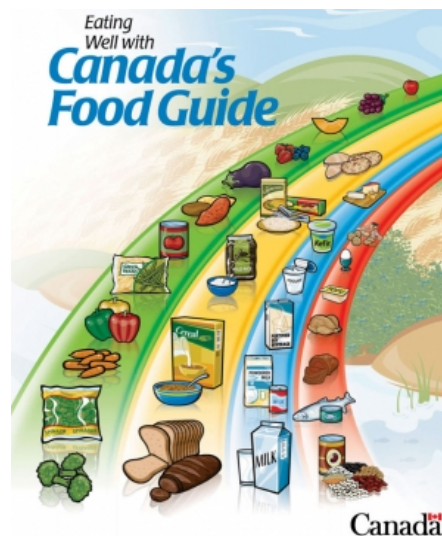
In the following sections, we will cover the nutrients you need after a spinal cord injury. One way to help ensure you eat a healthy balanced diet is to follow Eating Well with Canada's Food Guide.

Eating Well with Canada's Food Guide is a plan that helps you to meet your daily nutrition needs. It will help you to choose what type and how much food to eat. Foods are divided into 4 different food groups. You should enjoy a variety of foods from each group daily. The food guide shows the serving recommendations based on age and gender.

A copy of this guide is in the back of this booklet.

You can check if you are following the food guide by writing down everything you eat or drink in a day. Put each food into one of the food groups. Add up the total number of foods from each group.

Your Registered Dietitian or Dietetic Assistant can also assist you with meeting the recommendations of Eating Well With Canada's Food Guide.



Food Groups

Vegetables and Fruit (7 to 10 servings a day):

One serving equals:

- 1 piece of medium-sized fruit
- ½ cup sliced fruit
- ½ cup cooked vegetables
- 1 cup leafy vegetables
- ½ cup 100% fruit juice

Grain Products (6 to 8 servings a day):

One serving equals:

- ½ cup cooked whole grain pasta or rice
- 1 slice of whole grain bread
- ¾ cup hot cereal
- ½ bagel

Milk and Alternatives (2 to 3 servings a day):

One serving equals:

- 1 cup skim or 1% milk
- ¾ cup skim or 1% yogurt
- 1 cup soy milk
- 1 ½ ounces of cheese (less than 20% MF)

Meat and Alternatives (2 to 3 servings a day):

One serving equals:

- 2 eggs
- 2 tablespoons of peanut butter
- ¾ cup cooked beans or lentils
- 2 ½ ounces or ½ cup cooked fish, chicken or lean meat
- ¼ cup of shelled nuts or seeds

Also include up to 2 to 3 tablespoons a day of fats and oils such as a vegetable oil (canola, olive or soybean) or soft margarine (non-hydrogenated).

How to build a healthy meal

The key to Eating Well with Canada's Food Guide is variety!

Include foods from at least 3 of the 4 food groups listed below.

This will help you to get all the vitamins, minerals and other nutrients you need to keep your body healthy.

Vegetables and Fruit – Fill $\frac{1}{2}$ of your plate with a variety of vegetables. Choose dark green, red and orange colours more often. Have a piece of fruit for dessert.

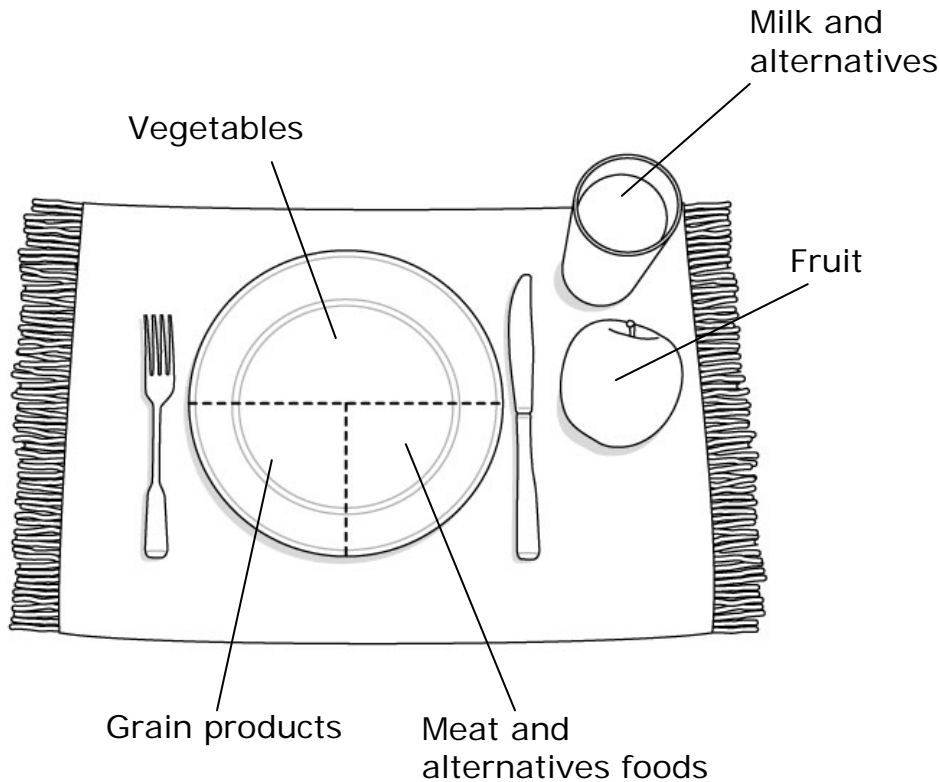
Grain Products – Fill $\frac{1}{4}$ of your plate with whole grain products such as rice, pasta or breads.

Meat and Alternatives – Fill $\frac{1}{4}$ of your plate with healthy, low fat meat and alternatives such as fish, legumes (peas, beans and lentils), tofu or small portions of lean meats.

Milk and Alternatives – Have a glass of low fat milk or a small container of yogurt to complete your meal.

Building a healthy meal is simple, but does take time to figure out what will work best for you!

Use the picture below as a guideline to help you. Watch your portion sizes.



Foods to avoid

Every day it is best to eat nutritious foods. There are foods that are not nutritious and when eaten too much can make you gain weight, and often replace the healthy foods you need.

Best to stay away from foods and beverages 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 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.

Special nutritional needs when you have a spinal cord injury

Planning with the 4 food groups

Special nutritional needs for you may include:

- An increase in protein for skin health
- An increase in the need for fibre - bowel health
- A change in how much you drink for bowel and bladder health
- An increase in calcium and vitamin D for bone health
- An increase in heart healthy fats for heart health
- A change in how much you eat to maintain a healthy weight

Skin health

The food you eat has a big impact on the health of your skin. Protein is needed in the diet to keep skin healthy and strong. People with a spinal cord injury need to prevent skin breakdown and pressure sores.

If you have pressure sores, your body needs protein to heal these sores and to replace the protein lost through these sores.

These 2 food groups are the main sources of protein:

1. Meat and Alternatives
2. Milk Products

If you need to eat more protein, choose several foods from each of these groups every day. Drinking enough water is also important for your skin's strength and health.

Digestive health

A spinal cord injury can cause changes to the way your digestive system works.

To keep regular bowel movements, you are on a bowel program designed for you. A bowel program reduces the risk for constipation, bowel accidents (incontinence) or bowel obstruction.

The key to digestive health is fibre. It is important for you to get enough fibre each day.

Constipation can happen if you do not eat enough high fibre foods or drink enough fluids, or if you do not eat regular meals.

Fibre is found in foods from 3 of the 4 food groups:

1. Grain Products – such as whole grain cereals and breads
2. Vegetables and Fruits
3. Meat Alternatives – such as legumes (lentils, peas and beans), nuts and seeds

There is no fibre in meat or milk products.

Eating 25 to 35 grams of fibre every day helps the bowel. Most people eat much less than this. Slowly increase how much fibre you eat by about 5 grams per week.

You need to make sure you are getting enough fluids while you are adding fibre to your diet. A good starting point is 8 to 10 cups of fluid each day. Too little fluid may cause constipation. A good fluid intake, along with eating high fibre foods, will help your bowels move regularly.

Fibre content of some foods:

Grain products

Food	Amount	Grams of Fibre
All Bran cereal	175ml or $\frac{3}{4}$ cup	15.2
Raisin Bran	175ml or $\frac{3}{4}$ cup	4.6
Oatmeal	175ml or $\frac{3}{4}$ cup	3.0
Bran Muffin	1	2.5
Whole Grain Bread	1 slice	3.0
White Bread	1 slice	0.5

Fruits and Vegetables

Food	Amount	Grams of Fibre
Stewed prunes	1 cup	8.3
Raisins	¼ cup	1.6
Apple (with skin)	1 medium	2.6
Banana	1 medium	1.9
Pear (with skin)	1 medium	5.1
Peas, green	125ml or ½ cup	5.7

Meats and Alternatives

Food	Amount	Grams of Fibre
Baked Beans	125ml or ½ cup	10.4
Kidney Beans	125ml or ½ cup	8.3
Almonds	125ml or ½ cup	9.1
Peanut Butter	30ml or 2 Tbsp	2.0
Flax Seed	30ml or 2 Tbsp	3.5

How to choose a high fibre diet

Breakfast

- Cereals: Choose a whole grain cereal like Bran Flakes, Raisin Bran or Oatmeal. Sprinkle natural bran, All Bran or flaxseed on other cereals like Cornflakes and Rice Krispies.
- Bread: Choose whole grain bread or toast, or a bran muffin. Ask for our High Fibre Supplement and try spreading it on your toast. The recipe for High Fibre Supplement is available from your Registered Dietitian or Dietetic Assistant if you would like to make it at home.
- Fruit: Choose fresh fruit, such as a banana or berries. Add fruit to your cereal. Prunes are another high fibre choice.

Lunch and Supper

- Entrée: Pick items such as meal salads (large salad with some protein) or baked beans.
- Vegetables: Have a side salad. Cooked vegetables like peas and corn are high fibre choices.
- Bread: Choose whole grain breads or muffins.

Dessert

- Pick fresh fruit. Most fibre is found in the skin of the fruit, so do not peel apples and pears.

Bladder health

Drinking enough fluids is important for your bladder health.

After an injury to your spinal cord, you may get urinary tract infections or kidney stones. You can help prevent this by drinking enough fluid. A good starting point is 8 to 10 glasses of fluid spaced evenly throughout the day. A cup is 8 oz or 250 ml. On the other hand, too much fluid can over-stretch your bladder.

Some drinks, such as alcohol and drinks with caffeine - coffee, tea and colas, **are not** good sources of fluids. This means that they take water out of the body. Do not count these drinks as part of your total fluid intake for the day.

Also try to avoid sugar sweetened drinks, soft drinks and sports drinks as they provide extra calories and sugar, which can cause weight gain. Try to drink decaffeinated coffee, tea, and water instead.

Some people find that cranberry juice or cranberry supplements help them prevent urinary tract infections. Just make sure you drink pure, unsweetened cranberry juice that does not contain added sugar.

Bone health

After a spinal cord injury, you may be at increased risk for osteoporosis.

Having enough calcium and vitamin D can help keep your bones healthy and prevent osteoporosis.

What is osteoporosis?

Osteoporosis is a disease that affects your bones. Bone is living tissue which is constantly being broken down and rebuilt. If you have osteoporosis, more bone is broken down than is rebuilt or replaced. As your bones become thinner, your risk for fractures or broken bones increases.

What is calcium?

Calcium is a mineral that is important at all ages. Calcium helps keep your bones strong. If you do not get enough calcium from the foods that you eat, your body will take calcium out of your bones to get the amount it needs. This can cause you to lose bone.

How much calcium do I need each day?

The Osteoporosis Society of Canada recommends that people under 50 years old need 1000 mg of calcium every day and adults over 50 years old need 1200 mg calcium every day. If you do not get enough calcium from food, you may need to take a supplement.

Here is a simple way to know if you are getting enough calcium from food:

1. Start off by giving yourself 300 mg of calcium for the foods you usually eat every day. This is because there is calcium in a variety of foods including oranges, bread and eggs.
2. Add 300 mg for any of these high calcium foods you eat such as:
 - a. 1 cup of milk (all types including whole, 2%, 1%, skim or chocolate)
 - b. 1 cup of calcium fortified almond, rice or soy beverage
 - c. 1 cup of fortified (or calcium rich) orange juice
 - d. $\frac{3}{4}$ cup yogurt
 - e. 1 cube (1.5 oz or 50 grams) of cheese
 - f. 2 slices of processed cheese

Write your daily total here _____

If you are not getting enough calcium from your food, then you need to increase sources of calcium in your diet or take a supplement. A dietitian can help you add food sources of calcium to your diet.

Before taking a calcium supplement, talk with your doctor, nurse, pharmacist or dietitian as too much calcium can be harmful for your health.

Good sources of calcium

Foods from the **Milk Products** group of Eating Well with Canada's Food Guide are the best source of calcium.

You should try to get 3 to 4 servings per day from this group.

Other good sources are salmon with bones, broccoli, spinach and almonds.

What is Vitamin D?

Vitamin D helps your body use calcium from food.

If you do not eat enough Vitamin D, you can lose bone because your body is not able to absorb all the calcium that it needs.

You can get Vitamin D from sunlight, food or a supplement. However, it is difficult to get enough Vitamin D from food alone. Also, it is difficult to get enough vitamin D from the sunlight all year around in Canada as there is less sunlight during October to April. You will most likely need to take a Vitamin D supplement.

How much vitamin D do I need daily?

Those who are at risk of osteoporosis, should get 800 to 2000 IU of vitamin D3 or cholecalciferol, every day.

Good sources of Vitamin D

Foods from the **Milk Products** group of Eating Well with Canada's Food Guide are the best source of vitamin D.

Other good sources are salmon (wild, fresh or canned), mackerel, sardines, tuna, mushrooms and shrimp.

Dietary fat and heart health

After a spinal cord injury, you are at increased risk for heart disease. Research shows there is a tendency toward elevated blood fats following a spinal cord injury. Blood fats include cholesterol and triglycerides. Abnormal blood fats increase your risk for heart disease. Blood fats are also called blood lipids.

To lower your risk of heart disease, you should eat heart healthy fats more often and decrease your dietary intake of saturated fat.

What is blood cholesterol?

Cholesterol is a wax-like fatty substance in your blood. It is made in your body by the liver. Small amounts of cholesterol are important for many body functions. Too much blood cholesterol or fat can build up in your blood vessels and block the blood flow to your heart. This may lead to heart disease or stroke.

There are 2 types of cholesterol in your blood:

1. High Density Lipoprotein (HDL) Cholesterol – GOOD cholesterol

Think of HDL as your 'Healthy' cholesterol.

HDL takes blood cholesterol back to your liver where it can be removed from your body. High levels are healthy for your heart.

2. Low Density Lipoprotein (LDL) Cholesterol – BAD cholesterol

Think of LDL as your 'Lousy' cholesterol.

LDL leaves cholesterol in the walls of your arteries causing them to narrow over time. High levels can lead to heart disease.

What are triglycerides?

Triglycerides are another type of fat found in the blood. High triglyceride levels are also linked to heart disease.

If you have high triglycerides, your Dietitian or Dietetic Assistant can give you information on how to lower them.

Heart healthy fats:

The types of fat and amount of fat you eat can affect your blood cholesterol levels.

Heart healthy fats are **unsaturated** fats in your diet. They include:

- Monounsaturated fat
- Polyunsaturated fat – especially Omega-3 fat

These fats do not raise your blood cholesterol levels. They can help lower LDL cholesterol when used in place of saturated fat and trans fat. Include foods that have unsaturated fats more often.

Foods that have unsaturated fats include:

- Olive, canola, soybean, peanut and other vegetable oils
- Soft non-hydrogenated margarines
- Nuts and seeds
- Avocados
- Fatty fish such as mackerel, herring, trout, salmon and sardines

Did you know?

1 teaspoon of fat has 45 calories.

Eating too much fat, even if it is a healthy fat, adds a lot of calories to your diet and can lead weight gain.



What are omega 3 fats?

Omega 3 fats are a type of polyunsaturated fat.

Everyone needs omega 3 fats in their diet for good heart health.

What are the benefits of omega 3 fats for heart health?

Omega 3 fats:

- Make blood less likely to clot
- Slow down the growth of plaques that can cause blockages in blood vessels
- Protect against irregular heartbeats that can cause sudden cardiac death

What foods have omega 3 fats?

You can get omega 3 fats from fish and plant foods.

Fish sources

Excellent sources of omega 3 fats include these fatty cold water fish:

- Salmon
- Sardines
- Mackerel
- Herring

Plant sources

Plant foods with the highest amounts of omega 3 fats include:

- Canola oil and soybean oil or margarines made with these oils
 - Flaxseeds
 - Walnuts
 - Soybeans and tofu
-

What if I do not like fish?

There are 2 other ways to get fish oil as a source of omega 3 fats in your diet:

1. Omega Plus *liquid* eggs

Omega Plus liquid eggs are real eggs in liquid form that have been changed to have:

- fish oil added to them
- some of the fat and cholesterol removed

These eggs are packaged in cartons similar to milk cartons. A 125ml serving of Omega Plus liquid eggs is equal to 2 eggs and is a good source of omega 3 fat.

What about omega 3 eggs in the shell?

Do not confuse the Omega Plus liquid eggs with omega 3 shell eggs that look like regular eggs. The amount of omega 3 fats is the same as the Omega Plus liquid eggs but the type of omega 3 fat is different. The omega 3 fat in these eggs is a result of feeding the hens flaxseed. This plant source of omega 3 fats is not as beneficial for heart health as the fish source in Omega Plus liquid eggs.

2. Fish oil supplements

Fish oil supplements are an option that you can discuss with your doctor. If you choose to buy them:

- Be sure that the omega 3 fat comes from fish sources rather than from plant sources
- Read the ingredient list to make sure that the source of omega 3 fat is from **fish body oil** rather than **fish liver oil**

The usual dose of standard fish oil capsules is 2 to 3 capsules a day. Higher doses are sometimes used to help lower high blood triglycerides.

Talk to your doctor before starting fish oil capsules.

Unhealthy fats:

- Saturated fat
- Trans fat

These fats can raise your bad LDL cholesterol.

Trans fat can also decrease your good HDL cholesterol.

A healthy diet is low in saturated and trans fats.

Saturated fat is found in:

- High fat processed meats such as sausage, bologna, salami and hot dogs
- Fatty meats such as prime rib and regular ground beef
- Full fat dairy products such as whole milk, high fat cheese, cream, butter and lard
- Coconut, palm and palm kernel oil
- Lard

Trans fat is found in:

- Shortening
- Commercial baked goods
- Fast foods, deep fried foods and foods made with shortening or partially hydrogenated oils
- Margarines made with partially hydrogenated oils
- Snack foods such as potato chips

Overall, eat less of all types of fat in foods and add less fat to cooking.

Will the cholesterol in my diet raise my blood cholesterol?

The cholesterol in food can raise blood cholesterol in some people. But it does not have as big an impact as saturated and trans fat on your blood cholesterol.

For a heart healthy diet, you should still limit dietary cholesterol.

Foods that are high in cholesterol include:

- animal foods such as untrimmed or marbled meat
- poultry with skin
- organ meats
- high fat milk products
- egg yolks

Eat these foods less often.

Healthy weight

After a spinal cord injury, your ideal body weight changes. This is because your bone and muscle mass are decreased.

In general, a good weight for individuals with paraplegia is 10 to 15 pounds less than their pre-injury weight. A good weight for individuals with tetraplegia is 15 to 20 pounds less than their pre-injury weight.

Rehabilitation is hard work. If you do not eat enough food, you will feel tired, lose weight and lose muscle. Eating poorly may make it difficult for wounds to heal and may increase your risk of pressure sores.

If you have lost a lot of weight since your spinal cord injury, you may need to gain back some or all of the weight.

On the other hand, you should not eat too much food or you will gain weight. This means you will need less food to maintain your weight. If you eat more than your body needs, you will gain weight and increase your risk of obesity, heart disease and diabetes.

Being overweight will also make it hard to transfer and move which may increase your chances of getting pressure sores.

If you were overweight or underweight before injury, a Registered Dietitian or Dietetic Assistant can help you find a healthy weight for your level of injury.

Notes
