
Nutrition and Spinal Cord Injury



Good nutrition is one of many ways to decrease possible complications like neurogenic bowel, urinary tract infections, and pressure wounds in patients with Spinal Cord Injury (SCI). Eating the right amount of calories and protein can help you protect your skin and maintain a healthy weight. Eating 3 well-balanced meals per day made up of a serving of meat/meat substitute, a serving of fruit, a serving of vegetable, a serving of grain, and some low-fat dairy is

critical to maintaining your nutrition.

Bowel Management

People with SCI may have neurogenic bowel, meaning muscles in the bowel may not work right. A healthy diet can be helpful in regulating your bowel program.

- **Eat 15-30 grams of fiber every day**

Fiber helps move the stool through the bowel. Good sources include plain popcorn, whole wheat bread, whole grain cereals, legumes and dried beans, fresh fruits and vegetables. Gradually increase your fiber intake and monitor your tolerance. **Fiber intake greater than 20 grams per day may lead to increased problems with constipation.**

- **Drink a minimum of 1.5 L of liquid each day**

Fluid keeps the stool soft, making it easier to pass.



- If having problems with your stools or bowel program, consider keeping a food and bowel record to assess how foods and fluids affect you. Turn this in to your primary care doctor or dietitian for review.

- If you are experiencing excessive gas, consider limiting these foods: onions, celery, carrots, Brussels sprouts, cucumber, cabbage, cauliflower, radishes, dried beans, raisins, bananas, apricots, prunes, dried fruit, bagels, pretzels, peas, green salads, bran cereal, brown rice, and parsnips.

- Foods that can harden your stool include white bread, cooked vegetables, cottage cheese, boiled/poached eggs, skim or low-fat milk, lean meats, honey, and jelly.

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- Foods that can soften your stool include whole grains, raw fruits, raw vegetables, yogurt, whole milk, nuts, chocolate, and fatty fish. Also, add more fluid to your diet.

Urinary Tract Infection (UTI) Prevention

People with SCI may also be at higher risk for urinary tract infections.

- **Get enough fluids**
Drink plenty of fluids, preferably water, to help flush your bladder and keep your urine light in color. This also helps prevent kidney and bladder stones.



Caution: Too much fluid may cause bladder urgency and low sodium in the blood that can cause seizure, confusion, and muscle cramps.

- **Cranberry Juice and Extract**
Drinking one cup (250 mL) of unsweetened cranberry juice, three times per day, may reduce the amount of bacteria in the urinary tract.

Cranberry extract supplements are not recommended for people with SCI.

Consult your physician as you increase your consumption of Cranberry products as this may cause calcium oxalate kidney stone formation.

Weight Maintenance

People with SCI have a higher risk for diabetes, metabolic syndrome, and cardiovascular disease when they become overweight.



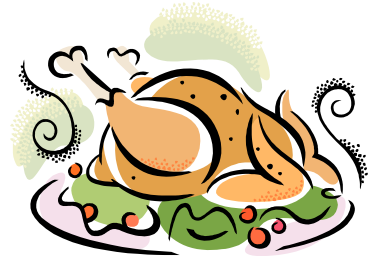
Because they have a lower level of active energy use and lower metabolic rate, people with SCI will have lower energy/calorie needs. Maintaining your weight will improve your ability to transfer as well. If your weight is too low, people with SCI will have a greater risk for skin breakdown and malnutrition. While calorie needs are initially high after your injury, within one year of your injury calorie needs will decrease to a more normal rate.

- **Remain physically active**
No matter what your level of injury, it remains critical that you exercise on a daily basis to maintain a healthy weight. For patients with tetraplegia, this could mean doing daily range of motion exercises with your caregiver. For patients with paraplegia, the use of a manual

wheelchair can increase your metabolic rate and energy use to help you maintain a healthy weight.

- **Decrease your intake of fried foods and high fat snack foods**

Try different cooking methods such as baking, boiling, broiling, grilling, poaching, and sautéing to decrease your intake of fried foods. Consider fresh fruits and vegetables in place of doughnuts, candy bars, chips, and fast foods.



- **Eat 3 meals per day**

Eating 3 meals per day can help prevent you from overeating at a meal when you skip meals. Consider making more foods at home to avoid fast food pitfalls from high fat and high sugar foods. Have your caregiver prepare meals in advance and reheat them in the microwave when you are alone.

Wound Prevention

Those with a spinal cord injury are at risk for pressure wounds.

- **Eat your meals and snacks**

Be sure you eat enough calories and protein to help prevent skin breakdown. Make sure to eat three meals per day.

Drinking water keeps your skin hydrated, which helps to avoid skin tears.

- **If you are overweight**

Extra weight makes transfers more difficult and puts your skin at higher risk for pressure wounds. Keep as active as possible. Choose foods lower in calories like lean meats, low fat dairy, fruits and vegetables. High fat foods have more calories so eat them less often. Foods to limit are fried foods, sweets, chips, and ice cream.



- **If you are underweight**

Lack of proper weight can lead to a higher risk of pressure wounds due to there being no fat or muscle cushion between the skin and the bone. Be sure to eat three meals per day in order to maintain adequate weight. Include nutrient dense foods and lean proteins to help avoid problems with obesity and heart disease.

- **Eat nutrient rich foods**

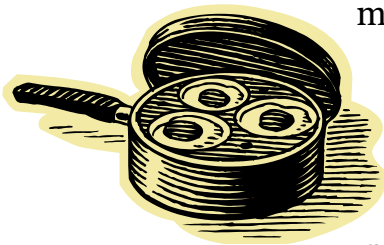
Eat a variety of foods to get vitamins and minerals such as Vitamins A, C, iron and zinc. How? Choose fruits, vegetables, fortified whole grain cereals and breads. Check with your physician or dietitian to see if you may need a multi-vitamin.

Diabetes, Heart Disease, & Metabolic Syndrome

Patients with SCI have an increased risk of developing Diabetes, Heart Disease, and Metabolic Syndrome due to decreased physical activity, decreased muscle mass, increased fat mass, and altered body metabolism. It is important to maintain a healthy lifestyle in order to prevent Diabetes, Heart Disease, and Metabolic Syndrome.

- **Eat a proper diet**

Remember to eat three meals per day to help maintain proper metabolic levels. If you skip a meal, there is a tendency to overeat at your next meal that will lead to weight gain and possible insulin resistance. Remember to choose healthy foods following the MyPlate method of eating. Choose lean meats, low fat dairy products, fruits and vegetables, and whole grains. Avoid deep-fat frying foods in favor of pan-frying with olive or canola oils. Also, bake, boil, braise, grill, poach, and steam foods for more variety in cooking. Limit the intake of high sugar, high fat sweets and beverages.



- **Remain physically active**

Physical inactivity can lead to excessive weight gain with SCI. Because SCI causes a decrease in muscle mass, the metabolic rate to burn fat will decrease. It is important to maintain what muscle you still have. Consider exercising in the pool, using a manual wheelchair versus a power wheelchair, participating in wheelchair sports, using electrical stimulation exercise, and using body weight supported treadmill training. Strive to be achieve 60 minutes of moderate activity five days a week.

- **Maintain a proper weight**

Avoid extreme weight gains and losses that can lead to problems with metabolic rate. Maintain a proper weight in the desired weight range for your level of injury.

- **Avoid high stress**

Too much stress can cause your body to create hormones that can lead to weight gain. This stress can also lead to emotional eating which also leads to weight gain based on the foods eaten. Work with a psychologist to find creative ways to deal with any stress you may be dealing with. Consider relaxation techniques, reading, playing music, gardening, or participating in physical activity.

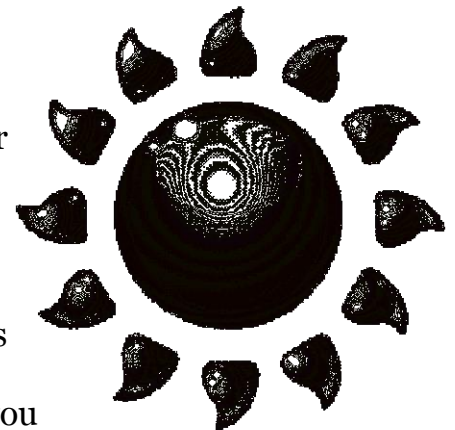


Bone Health and SCI

Patients with SCI have less weight bearing physical activity. This can lead to loss of bone health causing fractures and osteoporosis. It is important to maintain the proper nutrition in your diet in order to maintain bone health. Vitamin D and calcium are involved in maintaining healthy bones.

- **Vitamin D**

The best form of vitamin D available to SCI patients is the sun. By sitting outside in the sun for 10-15 minutes per day with shorts and a sleeveless shirt, patients can achieve optimal vitamin D intake. Patients with dark skin or older age may need more time in the sun. The skin creates vitamin D from the sun's rays. This is important as vitamin D helps to absorb calcium in your gut. You can also find vitamin D in foods; however, if you are vitamin D deficient you will typically need more vitamin D than can be provided by the sun or your diet. Foods high in vitamin D to consider are cod liver oil, fatty fish (salmon, tuna, and mackerel), low-fat dairy products, fortified orange juice, egg yolks, and fortified margarine.



If you have a deficiency, you may be required to take a vitamin D supplement. Your primary care doctor will order this for you.

- **Calcium**

Calcium is important in maintaining the structure and hardness in your teeth and bones. Calcium is also important in sending the appropriate signals through your body as well as helping lower blood pressure levels.

Optimal food sources to consume are low-fat dairy products, green leafy vegetables, fish with soft bones that you can eat, grains, and fortified foods (such as cereals, juice, and soy products).