

PRESSURE SORES

Your skin is the largest organ in your body. It has many functions such as protecting you from infection and regulating body temperature.

After a spinal cord injury your skin is much more susceptible to damage and breakdown due to loss of sensation, decreased muscle mass, altered blood circulation, and pressure particularly over bony prominences such as your buttocks, elbows and heels. Special care must be taken to protect your skin because a pressure sore is a very serious condition for people with spinal cord injuries.

When you remain seated or lying in the same position for a long time, pressure is exerted against that part of your body. A pressure sore forms when the pressure is maintained beyond the tolerance threshold. The weight of the body compresses fine blood vessels and tissue between the bone and hard surface. When this blood supply is cut off, the skin is deprived of oxygen and other nutrients and the cells and tissue start to die. This can eventually penetrate to the muscles and extend all the way to the bone.

A pressure sore first appears in the form of redness or a blister on the surface of the skin, but deep tissue may be affected long before the wound is visible. Fat and muscle tissue die faster than skin tissue and by the time a sore erupts on the surface of the skin the underlying tissue may already be severely damaged. Dead fat and muscle tissue are also very susceptible to infection, and this in turn can lead to further tissue breakdown of joints and bones. When pressure sores develop to this stage they can be life threatening.

People with spinal cord injuries must remain vigilant in protecting their skin. There are specific nutrients that can help maintain the integrity of your skin as well as increase healing time in the presence of a sore.

RECOMMENDATIONS

1. Increase Protein Intake

- eat 0.8 g of protein per kg body weight/day to maintain healthy skin
- increase to 1.5 g of protein per kg body weight/day in presence of pressure sore
- protein is essential for tissue synthesis

2. Vitamin A

- 5 000 IU/day for maintenance
- 10 000 IU/day in presence of pressure sore
- has immune boosting and skin reparative properties

3. Vitamin C

- 1500 mg/day for maintenance
- 2-3000mg/day in presence of pressure sore
- essential for healthy skin as it has multiple immune, collagen-and elastin-building functions

4. Vitamin E

- 400 IU/day day for maintenance
- 800 IU/day in presence of pressure sore
- powerful antioxidant help reduce free radical damage

5. L-Glutamine Supplement

- 500 mg 3x/day in presence of pressure sore
- amino acid that helps wound healing

6. COQ10

- 30-90 mg/day
- naturally occurring compound found in all parts of the body and plays a critical role in circulation, stimulating the immune system, increasing tissue oxygenation and has shown benefits to increase healing
- best absorbed when taken with fatty foods, such as fish.

7. Omega-3 Fatty Acids

- 2-4 capsules/day for both maintenance & repair
- helps reduce inflammation
- helps improve integrity of the skin
- assists in transporting the absorption of nutrients such as vitamin A & E

8. Zinc

- 30-50 mg/day for maintenance
- 50-100 mg/day in presence of pressure sore
- critical to the entire body's immune and repair process.
- studies show that a skin injury site becomes saturated with zinc within 90 minutes of the injury

9. Eliminate all Refined & Processed Foods

- these can contribute to tissue inflammation, making skin more susceptible to breakdown
- can lower immune system

RECOMMENDED FOODS

Protein

- chicken/turkey
- eggs
- fish
- beef

Vitamin A

- sweet potato
- carrots
- red peppers
- spinach
- kale

Vitamin C

- citrus fruits
- red/green peppers
- papaya
- strawberries
- cantaloupe
- broccoli
- brussel sprouts

Vitamin E

- sunflower seeds, raw
- almonds, raw (not roasted)
- olives
- spinach

Omega-3 Fatty Acids

- flax seeds
- walnuts
- salmon
- sardines
- halibut

Zinc

- pumpkin & sesame seeds
- beef
- calf's liver
- lamb
- venison
- green peas

REFERENCES

1. Michael Murray **Encyclopedia of Natural Medicine** Three Rivers Press: New York 1998
2. Phyllis Balch **Prescription for Nutritional Healing** Avery: New York 2006
3. Elson M. Haas **Staying Healthy with Nutrition** Celestial Arts: Toronto 2006
4. JL Walter **Evidence of Dietary Inadequacy in Adults with chronic SCI**: Spinal Cord 47, 318-322 2009
5. A Gelis **Ulcer Risk Factors in Persons with SCI** Spinal Cord 47, 651-661 2009
6. J. Stuart Krause **Patterns of Recurrent Pressure Ulcers after SCI** Arch Phys. Med. Rehabilitation 85, 1257- 64 2004