

# Skin Care & Pressure Sores

## Part 1: Causes and Risks of Pressure Sores



Northwest Regional Spinal  
Cord Injury System

Department of Rehabilitation  
Medicine

University of Washington  
Box 356490  
Seattle, WA 98195

206-616-2183  
nwrscis@uw.edu  
<http://sci.washington.edu/>

Print this document:  
[http://sci.washington.edu/info/  
pamphlets/SCI\\_skin1.pdf](http://sci.washington.edu/info/pamphlets/SCI_skin1.pdf)

This publication was produced by the SCI Model Systems in collaboration with the Model Systems Knowledge Translation Center (<http://msktc.washington.edu>) with funding from the National Institute on Disability and Rehabilitation Research in the U.S. Department of Education, grant no. H133A060070.

### What do I need to know?

- Individuals with SCI are at high risk for developing pressure sores.
- **Pressure sores can be life threatening.**
- Possible complications:
  - Infections can develop and spread to the blood, heart and bone.
  - Amputations
  - Prolonged bed rest necessary for healing can keep you out of work, school and social activities for months.
  - Because you are less active when healing a pressure sore, you are at higher risk for respiratory problems and urinary tract infections.
  - Treatment can be very costly in lost wages or additional medical expenses.
- Up to 80% of individuals with SCI will have a pressure sore during their lifetime, and 30% will have more than one pressure sore.
- Most pressure sores are preventable.

### What is a pressure sore?

A pressure sore (also called pressure ulcer, decubitus ulcer, decubiti (plural), bedsore or skin breakdown) is an area of the skin or underlying tissue (muscle, bone) that is damaged due to loss of blood flow to the area. Blood flow to the skin keeps it alive and healthy. If the skin does not get blood, it will die.

### Why do pressure sores happen?

Normally the nerves send messages of pain or discomfort to your brain to let you know when to move to relieve pressure, stay away from hot surfaces, or shift your weight. After injury, messages from the sensory nerves may not normally reach the brain. With little or no feeling, you have no warning signs to tell you that you have been in one position too long and that something is pressing against your skin causing it harm.

### How do pressure sores happen?

- **Too much pressure on the skin for too long**, as in sitting or lying too long in one position. Unrelieved pressure is the most common cause of pressure sores in SCI. The extended pressure cuts off the blood supply to the skin, leading to tissue damage, skin breakdown and a pressure sore. Common high-pressure situations:
  - Sitting too long without shifting weight.
  - Lying too long without turning.
  - Not enough padding in bed (to protect bony areas of the body, such as the heels).

- Clothing and shoes that fit too tightly.
- Sitting or lying on hard objects, such as catheter connectors and clamps, bulky seams, or buttons on mattresses.
- **Shearing** occurs when the skin moves one way and the bone underneath it moves another way. This can result from slouching while sitting, sitting at a 45 ° angle (as in bed), or sliding during a transfer instead of lifting your body. Shearing can also happen during spasms.
- **Trauma** of any kind (cuts, bumps, burns, scrapes, rubbing)
  - **Abrasion or friction:** Cut or scratch; sliding across sheets or transfer board with bare skin.
  - **Bump or fall:** Bumping toes into doorways; bumping your buttocks off the tire during transfers; bumping knees under desks.

### What puts me at risk of getting a pressure sore?

- **Loss of muscle mass.** With paralysis the muscles tend to shrink, become less bulky and get smaller (atrophy). Muscle mass or bulk serves as a natural cushion over the bony areas. A decrease in muscle mass leads to less protection over bony surfaces and more pressure on the thin skin layers.
- **Being over- or underweight.** When you are underweight, you have less natural padding to protect your body areas, so your skin can break down from even small amounts of pressure. But when you are overweight, it is harder to shift your weight and do pressure reliefs, and all that fat uses oxygen and nutrients that could be nourishing your skin.
- **Decreased circulation.**
  - **Blood flow to the paralyzed limbs decreases** due to the lack of muscle movement and results in less nutrients and oxygen getting to the skin. The skin does not heal well if there is poor circulation.
  - **Edema or swelling** is caused by fluid collecting in the tissues, usually in a part of the body that is not moved frequently and is below the level of the heart (feet, legs and hands). Skin over areas of edema becomes thin and pale and injures easily.

- **Smoking** is terrible for your circulation.
- **Diabetes, high blood pressure and high cholesterol** decrease circulation. If you have these diseases, pay particular attention to your feet and ankles. They are farthest away from the heart and are likely to be affected first or worst.
- **Illness or poor overall health.** This includes fevers, infections (such as UTIs), poor nutrition, and chronic diseases such as diabetes.
- **Moisture.** Wet skin (from urine, stool, sweat, water) is more likely to break down.
- **Dry, flaky skin** can crack and become inflamed and infected.
- **Aging** causes skin to become thinner, dryer, and more fragile. You may need to adjust your pressure relief schedule or switch to a different type of cushion when you get older.
- **Previous skin breakdown.** Scar tissue is more fragile than normal skin.
- **Spasticity** can cause your arms or legs to bump against an object and be injured, or rub against a surface (such as the sheets on your bed), which could produce an open sore.
- **Extreme heat or cold.**
- **Alcohol (or drug) use** often causes people to neglect their pressure reliefs and other personal care needs.
- **Depression** is also a risk factor for developing pressure sores.

### Source

Our health information content is based on research evidence and/or professional consensus and has been reviewed and approved by an editorial team of experts from the SCI Model Systems.

### Authorship

This brochure was developed by the SCI Model System Dissemination Committee in collaboration with the Model Systems Knowledge Translation Center.

### More in the Skin Care & Pressure Sores series:

- Part 2: Preventing Pressure Sores  
*Supplements:*
  - How to do Pressure Reliefs (Weight Shifts)
  - Building Skin Tolerance for Pressure
  - Areas of the Body at High Risk for Pressure Sores
- Part 3: Recognizing and Treating Pressure Sores  
*Supplements:*
  - Stages of Pressure Sores: Illustrations