



The following excerpt has been taken from the Christopher & Dana Reeve Foundation Paralysis Resource Center website.

<https://www.christopherreeve.org/living-with-paralysis/health/secondary-conditions/skin-care>

Skin Care (Pressure Injuries)

People with paralysis are at high risk of developing skin problems. Limited mobility, coupled with impaired sensation, can lead to pressure injuries, which can be a devastating complication. In 2016, the National Pressure Ulcer Advisory Panel changed the recommended terminology from “pressure ulcer” to “pressure injury.” These are also sometimes referred to as “bed sores” or “pressure sores” but the term pressure injury will be used here.

The skin, the largest organ system in the body, is tough and pliable. It protects the underlying cells against air, water, foreign substances, and bacteria. It is sensitive to injury and has remarkable self-repair capabilities. But skin just can’t take prolonged pressure.

A pressure injury involves damage to the skin and underlying tissue. Pressure injuries are also called decubiti or decubitus ulcers, and range in severity from mild (minor skin reddening) to severe (deep craters that can infect all the way to muscle and bone). Unrelieved pressure on the skin squeezes tiny blood vessels, which supply the skin with nutrients and oxygen. When skin is starved of blood for too long, the tissue dies and a pressure injury forms.

Other factors cause pressure injuries too. Sliding in a bed or chair can cause blood vessels to stretch or bend, leading to pressure ulcers. An abrasion can occur when pulling across a surface instead of lifting. A bump or fall may cause damage to the skin that may not show up right away. Pressure injuries can also be caused by clothing, braces, or hard objects that put pressure on your skin. Also, people with limited sensation are prone to skin injuries from burns.

Skin damage from pressure usually begins on the body where the bones are close to the skin surface, such as the hip. These bony prominences apply pressure on the skin from within. If there is a hard surface on the outside too, the skin is pinched off from circulation. Because the rate of circulation is also reduced by paralysis, less oxygen gets to the skin, lowering the skin's resistance. The body tries to compensate by sending more

blood to the area. This may result in swelling, putting even more pressure on the blood vessels.

A skin sore begins as a red area on the skin. This reddened area may feel hard and/or hot. If you have dark skin, the area may appear shiny. At this stage, the progression is reversible: the skin returns to its normal color if the pressure is removed.

If pressure is not removed, a blister or scab may form – this means that the tissue underneath is dying. Remove all pressure over the area and see your physician.

In the next stage, a hole (ulcer) forms in the dead tissue. Frequently, this dead tissue is small on the skin surface. Damaged tissue may extend to the bone.

A skin sore can mean several weeks of hospitalization or bed rest in order for the sore to heal. Complex pressure injuries may require surgery or skin grafting. All of this can cost thousands of dollars and mean valuable time away from your job, school or family.

It is important to note that skin problems are almost always preventable with routine skin inspection, and with right equipment. A wide variety of pressure-relieving support surfaces, including special beds, mattresses, mattress overlays, or seat cushions, are available to support your body in bed or in a chair.

The first line of defense is to be responsible for your skin care.

Skin stays healthy with good diet, good hygiene, and regular pressure relief. First, keep skin clean and dry. Skin which is moist from sweat or bodily discharges is more likely to break down.

Drink plenty of fluids. A healing wound or sore can lose more than a quart of water each day. Drinking 8-12 cups of water a day might not be too much. Note: beer and wine do not count. Alcohol actually causes you to *lose* water or become dehydrated.

Watch weight, too. Being too thin causes you to lose the padding between your bones and your skin and makes it possible even small amounts of pressure to break down the skin. Getting too heavy is risky, too. More weight may mean more padding but it also means more pressure.

Don't smoke. It narrows blood vessels which limits nutrients to the skin. Research has shown that heavy smokers are more prone to skin sores.

Sources:

The Spinal Cord Injury Information Network, Craig Hospital, The National Library of Medicine, the University of Washington School of Medicine, Department of Rehabilitation, the National Pressure Ulcer Advisory Panel.

Keyword Search Terms

Pressure injuries, Bedsores, Pressure sores, Pressure ulcers, Decubitus ulcers, Wound care, Skin breakdowns

Web Sites

www.aawconline.org

Association for the Advancement of Wound Care (AAWC)

70 E. Swedesford Road, Suite 100

Malvern, PA 19355

Phone: 610-560-0484

Email: info@aawconline.org

AAWC is a multidisciplinary organization for advanced wound care. As a not for profit association, AAWC gives numerous benefits to build a collaborative wound care community for optimal care of those who suffer with chronic non-healing wounds. The AAWC was conceived in 1995 to promote excellence in wound education, clinical practice, public policy, and wound research.

<https://craighospital.org/resources/topics/skin>

Craig Hospital: Skin Resources

<http://emedicine.medscape.com/article/190115-overview>

eMedicine: Decubitus Ulcers

This page has clinical information on pressure sores.

<http://familydoctor.org/familydoctor/en/diseases-conditions/pressure-sores.html>

Family Doctor.org's Pressure Sores

This page has general information on pressure sores, including symptoms, treatment and prevention.

<http://www.kci1.com>

Kinetic Concepts Inc. (KCI)

PO Box 659508

San Antonio, TX 78265

Phone: 800-275-4524 (Toll-free)

KCI offers a wide range of clinically proven, economically beneficial wound healing therapies and technologies designed to deliver positive outcomes for patients and healthcare professionals.

<http://www.kci1.com/KCI1/vactherapy>

KCI: V.A.C.[®] Therapy

The V.A.C.[®] therapy products are integrated wound management systems for use in acute, extended and home care settings by patients with chronic, acute, traumatic, subacute and dehiscent wounds, partial-thickness burns, ulcers (such as diabetic, pressure or venous insufficiency), flaps and grafts.

<http://www.nlm.nih.gov/medlineplus/pressuresores.html>

MedlinePlus: Pressure Sores

This page has general information on pressure sores and links to additional resources.

http://www.merckmanuals.com/home/skin_disorders/pressure_sores/pressure_sores.html

Merck Manual Home Health Handbook: Pressure Sores

This page has general information on pressure sores, including causes, symptoms, diagnosis, prevention and treatment.

http://www.merckmanuals.com/professional/dermatologic_disorders/pressure_ulcers/pressure_ulcers.html?qt=pressure%20sore&sc=&alt=sh

Merck Manual for Health Care Professionals: Pressure Ulcers

This page has clinical information on pressure sores, including causes, symptoms, diagnosis, prognosis, treatment and prevention.

<http://www.msktc.org/sci/factsheets/skincare>

MSKTC: Skin Care and Pressure Sores in Spinal Cord Injury

MSKTC is a national center that works to put research into practice to serve the needs of people with traumatic brain injuries, spinal cord injuries, and burn injuries.

<http://www.nawccb.org/>

National Alliance of Wound Care

717 St. Joseph Drive, Suite 297

St. Joseph, MI 49085

Phone: 877-922-6292

NAWC is a professional organization that offers wound care certification and preceptor programs for health care workers. The site has a registry of certified providers (see *Credential Verification* at the top of the page).

<http://www.npuap.org/>

National Pressure Ulcer Advisory Panel (NPUAP)

1025 Thomas Jefferson Street, NW, Suite 500 East,

Washington, DC 20007

Phone: 202-521-6789

NPUAP serves as the authoritative voice for improved patient outcomes in pressure ulcer prevention and treatment through public policy, education and research.

<http://sci.washington.edu/info/pamphlets/index.asp>

Northwest Regional Spinal Cord Injury System: SCI Patient Education Pamphlets – Staying Healthy After a Spinal Cord Injury

This page has three pamphlets with information on maintaining healthy skin and taking care of pressure sores.

http://www.pva.org/atf/cf/%7BCA2A0FFB-6859-4BC1-BC96-6B57F57F0391%7D/CPG_Pressure%20Ulcer.pdf
www.pva.org

Paralyzed Veterans of America publication: Pressure Ulcer Prevention and Treatment Following Spinal Cord Injury: A Clinical Practice Guideline for Health-Care Professionals, 2014.

This publication is written for the health care professional and is downloadable for free at the above link.

www.pressureulcer.net
Pressure Ulcer.net

An informational resource on the types of pressure ulcers, the various areas of the body they occur and treatments.

http://www.sci-info-pages.com/skin_pres.html

SCI-Info-Pages: Spinal Cord Injury – Skin and Pressure Sores

This page has general information and pictures designed to help people recognize, treat and prevent pressure sores. It includes information on warning signs that a pressure sore is not healing.

<http://images.main.uab.edu/spinalcord/pdf/TipSheet2.pdf>

University of Alabama at Birmingham: Rehab Tip Sheet #2 – Assisted Pressure Relief

This tip sheet has recommendations for caregivers on assisting with pressure relief.

<http://www.wocn.org/>

Wound, Ostomy and Continence Nurses Society (WOCN)

1120 Rte. 73, Suite 200
Mount Laurel, NJ 08054
Phone: 888-224-9626

WOCN is a professional nursing society that supports its members by promoting educational, clinical, and research opportunities to advance the practice and guide the delivery of expert health care to individuals with wounds, ostomies, and incontinence.

<http://www.hcup-us.ahrq.gov/reports/statbriefs/sb64.pdf>

Agency for Healthcare Research and Quality: Hospitalizations Related to Pressure Ulcers Among Adults 18 Years and Older, 2006. Citation: Russo, C.A. (Thomson Reuters), Steiner, C. (AHRQ) and Spector, W. (AHRQ). *Hospitalizations Related to Pressure Ulcers, 2006*. HCUP Statistical Brief #64. December 2008. Agency for Healthcare Research and Quality, Rockville, MD.

On Demand Videos

<https://www.youtube.com/watch?v=5zqxSCwtixc>

Christopher & Dana Reeve Foundation: Pressure Relief

A Reeve Health minute with tips on preventing pressure sores by shifting your weight.

<https://www.youtube.com/watch?v=kHep3NPVwjM>

Kessler Foundation: Pressure Ulcer Prevention (Managing Medical Complications After Spinal Cord Injury – Part 2 of 3)

[Northern New Jersey Spinal Cord Injury System Center \(NNJSCIS\)](#) has released a three-part video series, Managing Medical Complications After Spinal Cord Injury: [Bowel Management](#), [Pressure Ulcer Prevention](#), and [Pneumonia Prevention](#). The 30-minute videos provide information to individuals with SCI and caregivers on management and prevention of these conditions, which can have a significant impact on day-to-day activities and quality of life if they are not managed properly.

http://sci.washington.edu/info/forums/reports/pressure_ulcers_2012.asp

Northwest Regional Spinal Cord Injury System: Pressure Ulcers Can Wreck Your Life! Preventing and Managing Skin Problems After SCI (50 minute streaming video and text)

<http://www.uab.edu/medicine/sci/uab-scims-information/secondary-conditions-of-sci-health-education-video-series>

Spinal Cord Injury Information Network: Secondary Conditions of Spinal Cord Injury Health Education Video Series

The two-part video “Pressure Sores: Skin Care Prevention and Treatment” describes skin functions & risk factors for pressure sores, prevention of pressure sores such as proper seating, weight shifts, and nutrition (part 1) and demonstrates techniques for general care and treatment options for the four stages and unstageable pressure sores and tunneling wounds (part 2). It can be downloaded or streamed online.



The following books and videos are available for free loan from the PRC library. For more information, please visit the online catalog at:

<http://www1.youseemore.com/ReevePRC/default.asp>

Books

- Aguilera, Elsa J. **Images of Common and Uncommon Skin and Wound Lesions in Adults with Spinal Cord Injury: Historical Atlas 1984-2003.** BookSurge, 2009.
- Consortium for Spinal Cord Medicine, Clinical Practice Guidelines. **Pressure Ulcer Prevention and Treatment Following Spinal Cord Injury: A Clinical Practice Guideline for Health-Care Professionals.** Washington, DC: Paralyzed Veterans of America, 2014. Second ed.
Written for health care professionals. Available for free download from PVA. Go to www.pva.org, click on *Publications* at the top, then click on *Guidelines and Publications* on the left, then click *Download CPGs and Consumer Guides*, and then click *Clinical Practice Guidelines*.
- Consortium for Spinal Cord Medicine, Clinical Practice Guidelines. **Pressure Ulcers: What You Should Know—A Guide for People with Spinal Cord Injury.** Washington, DC: Paralyzed Veterans of America, 2002.
Written for consumers. Available for free download from PVA. Go to www.pva.org, click on *Publications* at the top, then click on *Guidelines and Publications* on the left, then click *Download CPGs and Consumer Guides*, and then click *Consumer Guides*.
- **Decubitus Ulcers: A Medical Dictionary, Bibliography, and Annotated Research Guide to Internet References.** San Diego, CA: Icon Health, 2004.
- Hess, Cathy Thomas. **Clinical Guide to Wound Care.** Philadelphia: Lippincott, Williams & Wilkins, 2002.
- Maklebust, JoAnn and Mary Sieggreen. **Pressure Ulcers: Guidelines for Prevention and Management.** Springhouse, PA: Springhouse Corporation, 2001.
- Morison, Moya. **Chronic Wound Care: A Problem-Based Learning Approach.** Mosby-Year Book, 2004.
- Morison, Moya. **The Prevention and Treatment of Pressure Ulcers.** C.V. Mosby, 2000.
- Phillips, Jenny. **Access to Clinical Education: Pressure Sores.** New York: Churchill Livingstone, 1997.
- **Pressure Sores: A Medical Dictionary, Bibliography, and Annotated Research Guide to Internet References.** San Diego, CA: Icon Health Publications, 2004.

- U.S. Department of Health and Human Services. **Treatment of Pressure Ulcers.** Rockville, MD: U.S. Department of Health and Human Services, Public Health Service, Agency for Health Care Policy and Research, 1994.

Videos

- **Managing Medical Complications After Spinal Cord Injury.** West Orange, NJ: Kessler Foundation, 2015. DVD
Educational video for people with SCI which covers bowel management, pressure ulcer prevention, and pneumonia prevention.
- **Mosby's Nursing Assistant Skills Video: Preventing and Treating Pressure Ulcers.** C.V. Mosby, 2001.
- **Pressure Ulcers.** Princeton, NJ: Films for the Humanities & Sciences, 2008. (28 minutes)
- **Pressure Ulcers.** Information Television Network, 2006. DVD
Healthy Body Healthy Mind TV series.
- **Skin Care: Preventing Pressure Ulcers.** Medlantic Research Institute. (20 minutes) Can be ordered from PVA.

CD-ROMs

21st Century Complete Medical Guide to Pressure Sores, Bedsores, Decubitus Ulcers: Authoritative Government Documents, Clinical References, and Practical Information for Patients and Physicians. Progressive Management, 2004.

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