



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

http://www.christopherreeve.org/site/c.mtKZKgMWKwG/b.4453427/k.F231/Skin_Care.htm

Skin Care (Pressure Sores)

People with paralysis are at high risk of developing skin problems. Limited mobility, coupled with impaired sensation, can lead to pressure sores, or ulcers, which can be a devastating complication.

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 ulcer involves damage to the skin and underlying tissue. Pressure ulcers are also called bedsores, 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 ulcer forms.

Other factors cause pressure ulcers 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 sores 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 black 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 sores 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

Keyword Search Terms

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

Web Sites

http://www.intelihealth.com/IH/ihtIH?d=dmContent&c=211200&p=~br%2CIHW|~st%2C333|~r%2CWSIHW000|~b%2C*|

Aetna Intellihealth: Bedsores (Decubitus Ulcers) What is it?

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

<http://www.aahd.us/page.php?pname=publications/newsletters/2004/spring/PressureSores2&PHPSESSID=6d539da750980382e71051cdeb1551be>

American Association on Health and Disability: Preventing Pressure Sores

This article from the Spring 2004 issue of Health and Disability News has recommendations for preventing pressure sores.

<http://www.craighospital.org/SCI/METS/skin.asp>

Craig Hospital: Skin – It's Too Much Pressure

This article discusses health issues that increase or decrease the risk of skin problems among people with spinal cord injuries, including circulation, diet, bladder and bowel issues, physical and mental health, and aging.

<http://www.disaboom.com/spinal-cord-injury-sci-information/secondary-condition-skin-and-pressure-ulcers>

Disaboom: Spinal Cord Injury Secondary Condition – Skin and Pressure Ulcers

This article by J. Glen House, MD, has information on skin and on pressure ulcers, including where they are likely to develop and how to prevent them.

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

eMedicine: Decubitus Ulcers

This page has clinical information on pressure sores.

<http://familydoctor.org/online/famdocen/home/pat-advocacy/endoflife/039.html>

Family Doctor.org's Pressure Sores

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

http://www.findarticles.com/p/articles/mi_g2601/is_0001/ai_2601000184

Gale Encyclopedia of Medicine: Bedsores

This page has general information on pressure sores, including risk factors and treatment.

<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/KCII/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 dehisced 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.nawccb.org/>

National Alliance of Wound Care

5464 N. Port Washington Road #134

Glendale, WI 53217

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://www.spinalcord.org/resource-center/askus/index.php?pg=kb.chapter&id=308>

National Spinal Cord Injury Association: About Pressure Sores

This page has information on how pressure sores develop and how to prevent them.

<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.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://www.spinalcord.uab.edu/show.asp?durki=32069>

Spinal Cord Injury Information Network: Healthy Living – Managing Pain and Preventing Pressure Sores

This article from the Summer 2000 issue of *Pushin' On* has advice on things people can do to prevent pressure sores.

http://www.spinalinjury.net/html/_pressure_sores.html

Spinal Cord Injury Resource Center: Pressure Sores

This page has general information and pictures designed to help people recognize and treat pressure sores.

<http://images.main.uab.edu/spinalcord/pdffiles/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.health.vic.gov.au/pressureulcers/consumer.htm>

Victorian (Australia) Government Health Information: Consumer Information – Pressure Ulcers

This page has an informational booklet that can be downloaded in English, Arabic, Chinese, Croatian, Greek, Italian, Macedonian, Somali, Spanish, Turkish and Vietnamese.

<http://www.medicaledu.com/>

Wound Care Information Network

E-mail: wounds@medicaledu.com

The Wound Care Information Network offers free and unbiased wound care information designed for [patients](#), [clinicians](#) and [hospital administrators](#). Click on *Patients* to request their “Wound Guide for Patients” booklet.

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

Wound, Ostomy and Continence Nurses Society (WOCN)

15000 Commerce Parkway, Suite C

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.ncbi.nlm.nih.gov/books/NBK63859/>

U.S. National Library of Medicine: Preventing Pressure Ulcers – A Patient’s Guide

This May 1992 consumer guide from the Agency for Health Care Policy and Research has information on pressure ulcers, including risks and advice on prevention.

<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.

Other Videos

<http://www.spinalcord.uab.edu/show.asp?durki=97417>

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 see www.paralysis.org and click *Borrow from Our Lending Library* under PRC Quick Links.

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, 2002.
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

- **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.
- **Taking Care of Your Wound.** Kelowna, B.C. Canada: Thin Air Productions, 1999. (20 minutes) http://www.thinairproductions.ca/taking_care.html

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.

The information contained in this message is presented for the purpose of educating and informing you about paralysis and its effects. Nothing contained in this message should be construed nor is intended to be used for medical diagnosis or treatment. It should not be used in place of the advice of your physician or other qualified health care provider. Should you have any health care related questions, please call or see your physician or other qualified health care provider promptly. Always consult with your physician or other qualified health care provider before embarking on a new treatment, diet or fitness program. You should never disregard medical advice or delay in seeking it because of something you have read in this message.