



Skin Management and Pressure Injuries

Skin is the largest organ in the body. It is a vital, living multi-layered barrier that is continually regenerating itself by sloughing-off and creating cells. For people living with paralysis, normal blood flow can be compromised, and skin can be damaged by prolonged pressure. Limited mobility coupled with impaired sensation can lead to dangerous pressure injuries.

Q: What is a pressure injury?

Pressure injuries, which are also commonly referred to as pressure ulcers, bedsores, pressure sores, decubiti or decubitus ulcers, occur from damage to the skin and underlying tissue. Ranging from mild (minor skin reddening) to severe (deep craters that can infect to the muscle and bone), they occur when 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, tissue dies and a pressure injury forms which is classified into distinct stages. The severity of pressure injuries is measured by various stages which include:

Stage I: a pigmented, painful area forms that may be warm or cool, firm or soft and range in color from red (lighter skin) to bluish or purplish (darker skin)

Stage II: red and irritated skin may form blisters or an open sore

Stage III: an open, sunken hole called a crater develops and body fat may be seen inside

Stage IV: the pressure injury depth causes damage to the muscle and bone, and sometimes to tendons and joints

Unstageable: sores which are covered in discolored dead skin

Deep tissue injuries: appear as dark purple or maroon and may be a blood-filled blister under the skin

Q: How do I prevent pressure injuries?

Make it a point to release pressure regularly on key pressure points by doing your own pressure shifts every 15 minutes which may include using the tilt/shift feature on your wheelchair or by having someone adjust you. Because the rate of circulation is 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, which puts even more pressure on the blood vessels. Along with lack of movement, pressure injuries can be caused by a number of factors including sliding in a bed or chair (which can stretch or bend blood vessels), pulling across a surface instead of lifting, or a bump or fall. Pressure injuries usually begin where the bones are close to the skin surface and may also be caused by clothing, braces, or hard objects that put pressure on your skin.

Q: When should I seek treatment for pressure injuries?

Healthy skin should appear clear and intact without redness, broken skin, or any open wounds. A pressure injury begins as a red area that may feel hard and/or hot. At this stage, the progression is reversible, and the skin can return to its normal color if the pressure is removed. Stage I or II injuries will heal if cared for carefully. If pressure injuries or skin shears are not getting better in stage I or progress to stage II, you should consult your physician. Stage III and IV injuries are harder to treat; they almost always require medical intervention and may take a long time to heal. If a blister, scab or open wound forms, the tissue underneath is dying. Remove all pressure over the area and see your physician

Tips for Responsible Skin Care

Skin stays healthy with good diet, good hygiene, and regular pressure relief.

- Know your skin – watch for any change in color or texture
- Check your skin daily – use a mirror for hard-to-see areas
- Keep skin clean and dry – moist skin is more likely to break down
- Drink plenty of fluids – 8-12 cups of water a day, not alcohol which causes dehydrated
- Watch your weight – being too thin limits protective padding between bones and skin and too much weight means more pressure
- Don't smoke – it narrows blood vessels which limits nutrients to the skin. Talk to your partner and healthcare team about your abilities and concerns

Q: How to treat pressure injuries?

Skin problems are almost always preventable with routine skin inspection and the

right equipment. In addition to changing positions often and following a good skin care routine, 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. Special cushions act to disperse weight over a wider surface, so pressure is not concentrated on one area. Work with your therapists to know what is available.

Q: Why should I take prevention and care of pressure injuries seriously?

Pressure injuries can be debilitating if not caught early and treated fully. The lack of or impairment of sensory awareness, ability to move, and pain perception that accompanies spinal cord injury makes people with SCI vulnerable to pressure injuries and can lead to pressure injuries going unnoticed. Ulcers, burns (including sunburns), cracks, and calluses compromise the integrity of the skin's barrier and become potential entry points for bacteria, which can lead to infections. If untreated, a pressure injury can mean several weeks or even months of hospitalization or bed rest in order for the wound to heal. Severe pressure injuries can take months to heal, sometimes requiring surgery or skin grafting.

Sources: Christopher & Dana Reeve Foundation Pressure Injuries and Skin Management booklet and the Prevention and Treatment of Pressure Ulcers/Injuries: Clinical Practice Guideline 2019 from the National Pressure Injury Advisory Panel

Need to talk to someone?

Our Information Specialists are available to answer your questions.

Call toll-free 1-800-539-7309 Mon-Fri, 9 am-8 pm EST.

Or schedule a call or ask a question online at

<https://www.ChristopherReeve.org/Ask>.

Resources for Skin Care

Agency for Healthcare Research and Quality: Hospitalizations Related to Pressure Ulcers Among Adults 18 Years and Older, 2006.

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

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.

Association for the Advancement of Wound Care (AAWC)

<https://www.aawconline.org/>

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Middleton, WI 53562

Phone: 608-360-6585

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.

Christopher & Dana Reeve Foundation: Pressure Injuries and Skin Management booklet

<http://s3.amazonaws.com/reeve-assets-production/Skin-Care-Booklet-FINAL-2017.pdf>

The booklet may be viewed and downloaded for free. Call 800-539-7309 for a free print copy.

Craig Hospital: Skin Resources

<https://craighospital.org/spinal-cord-injury-resource-library>

They offer videos and information sheets on pressure injuries, padding in bed, and positioning to prevent pressure injuries.

eMedicine: Pressure Injuries (Pressure Ulcers) and Wound Care

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

This page has clinical information on pressure sores.

Family Doctor.org's Pressure Sores

<https://familydoctor.org/condition/pressure-sores/>

This page has general information on pressure sores, including symptoms, treatment and prevention. The site is sponsored by the American Academy of Family Physicians.

Kinetic Concepts Inc. (KCI)

<https://www.mykci.com/>

12930 W. Interstate 10

San Antonio, TX 78249

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. Their 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. KCI is now part of 3M.

MedlinePlus: Pressure Sores

<https://medlineplus.gov/pressuresores.html>

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

Merck Manual Home Health Handbook: Pressure Sores

<https://www.merckmanuals.com/home/skin-disorders/pressure-sores/pressure-sores>

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

Merck Manual for Health Care Professionals: Pressure Ulcers

<https://www.merckmanuals.com/professional/dermatologic-disorders/pressure-injury/pressure-injuries?qt=pressure%20sore&sc=&alt=sh>

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

MSKTC: Skin Care and Pressure Sores in Spinal Cord Injury

<https://msktc.org/sci/factsheets/skincare>

The Model Systems Knowledge Translation Center (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.

National Alliance of Wound Care and Ostomy

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

PO Box 235

Somonauk, IL 60552

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).

National Pressure Injury Advisory Panel (NPIAP)

<https://npiap.com/>

4 Lan Drive, Suite 310

Westford, MA 01886

Phone: 978-364-5130

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

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

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

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

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

<https://pva.org/>

Paralyzed Veterans of America

801 Eighteenth Street NW

Washington, DC 20006-35171

Phone: 800-424-8200

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

SCI-Info-Pages: Skin and Pressure Sores After SCI

<https://www.sci-info-pages.com/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.

Wound, Ostomy and Continence Nurses Society (WOCN)

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

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.

On Demand Videos**Christopher & Dana Reeve Foundation: Pressure Relief**

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

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

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

<https://youtu.be/kHep3NPVwjM>

Northern New Jersey Spinal Cord Injury System Center (NNJSCIS) (<https://kesslerfoundation.org/NNJSCIS>) has released a three-part video series, Managing Medical Complications After Spinal Cord Injury: Bowel Management (<https://youtu.be/uNfSjhZZZ34>), Pressure Ulcer Prevention (<https://youtu.be/kHep3NPVwjM>), and Pneumonia Prevention (<https://youtu.be/T-jr5daLyLw>). 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.

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)

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

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

<https://www.uab.edu/medicine/sci/uab-scims-information/secondary-conditions-of-sci-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.

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