

Wound Care in Adults with Spina Bifida

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SCOTTISH RITE



Types of wounds:

- Pressure Injuries/Ulcers
- Abrasions/Trauma
- Burns
- Neuropathic/Diabetic ulcers
- Incontinence Associated Dermatitis (IAD)
- Moisture Associated Skin Damage (MASD)

Risk Factors:

- Age
- Wheelchair use
- Bare feet
- Obesity
- Impaired sensation
- Reduced executive functioning/ memory deficit/ VP shunt present
- Incontinence
- Poor personal hygiene
- Male
- Malnutrition
- Diabetes
- Peripheral Arterial Disease (PAD)

What is a Pressure Injury?

- Pressure injuries are areas of necrosis and often ulceration (also called pressure ulcers) where soft tissues are compressed between bony prominences and external hard surfaces.
 - Pressure wounds cause skin and tissue death by blocking the blood supply to the area between your skin and bones from sitting or lying on hard surfaces for too long.
- They are caused by unrelieved mechanical pressure (**weight + gravity**) in combination with friction (**rubbing**), shearing forces (**angle of gravity against tension**), and moisture (**sweat, urine, stool, drainage, etc**).
- Risk factors include age > 65, **impaired circulation** and tissue perfusion, **immobilization**, undernutrition, **decreased sensation**, and **incontinence**.

Prevention:

- **PRESSURE-**

- Change position every 15 minutes to 1 hour while seated in a chair/wheelchair
 - Upper body lifts, standing, shifting weight
- Change position every 2 hours while in bed
 - Left, right, back, stomach if able
 - Keep the head of the bed lower than 30 degrees
 - Lay at a 30-degree side angle
- Pressure redistributing chair cushion and mattress surfaces
 - Get fitted for custom wheelchair seating
 - Gel, air or foam mattress overlay
- Use protective padding
 - Pillows
 - Wedges
 - heel protectors
 - Sheepskin

Prevention:

- **FRICTION-**

- Use skin barrier daily and as needed for incontinence
 - Petroleum, zinc-based, silicone-based, cyanoacrylate
- Use anti-chafing sticks/balms for areas like underarm, behind knees, between thighs, etc.
- Use a lift sheet or lift device instead of sliding
 - Glidewear fabric, Shearban, glidefree slide board tape, anti- friction/shear slide sheet
- Bandages
 - Hydrocolloid, Band-Aid, Tegaderm, triad paste

Prevention:

- **SHEAR-**

- Keep the head of the bed below a 30-degree angle
- Lift to reposition, not drag
- Stabilize posture with foam wedges or pillows to support neutral body
- Knee breaks in profiling beds to prevent sliding down
- Tilt in space wheelchair features (motorized)
- Dressings
 - 5 layer foam over high risk areas









Prevention:

- **MOISTURE-**

- Manage Microclimate (Body heat)
 - Put minimum layers beneath you (sheets, clothing, underpads, diapers, etc)
 - Reduces heat and sweating
- Change clothing if it becomes wet (socks, underwear, sheets, etc.)
- Wear breathable fabrics (Airwick, cotton)
- Manage Incontinence
 - Change diapers generally every 4 hrs and as needed when wet
 - Wear a skin barrier (cream or wipes)
 - External devices (catheters, ostomy, pouches)

Recognition

- [Pressure Injury \(PI\) Staging Guide](#)

Stage 1	Stage 2	Stage 3	Stage 4	Unstageable	Deep Tissue Injury
					
					

Treatment

- Seek care from a WOUND CARE provider
- Keep the wound clean and covered until a physician can evaluate it
- Change the dressing every day until instructions provided by doctor
- If you have a fever or other signs of infection, be seen by a PCP or go to Urgent Care/ER.

Abrasions/Trauma-

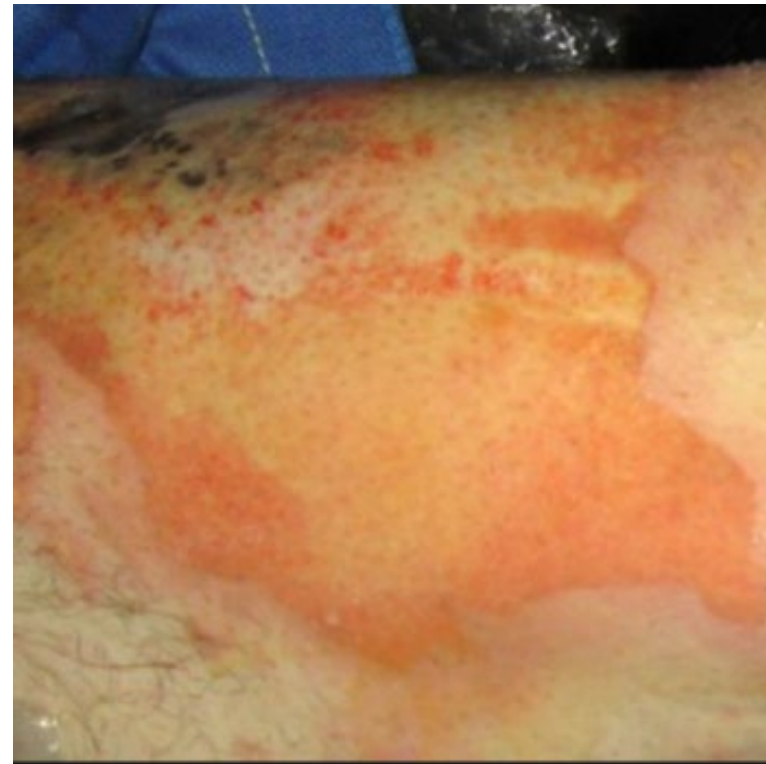
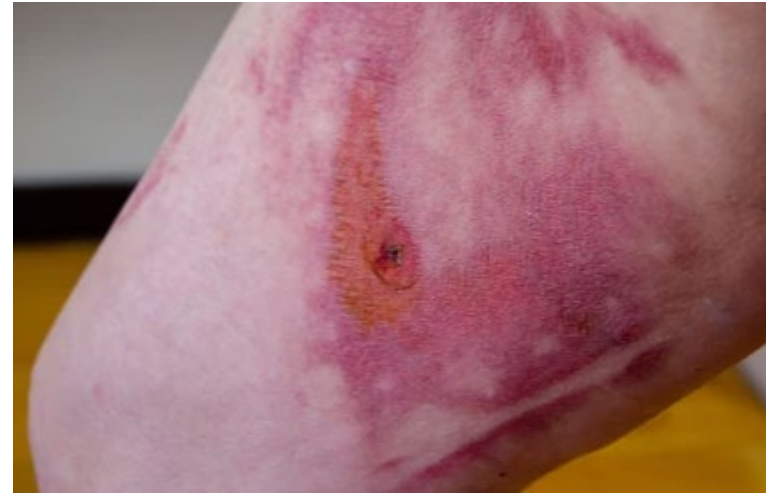
- Because you can not feel or move your legs well, it is easier to bump into things
- Take care when moving in and out of the wheelchair if you use one
- Be aware of where your legs are positioned at all times
- If the skin is broken, clean the area, pat it dry, and apply ointment ([Aquaphor](#), [petroleum jelly](#), [triple antibiotic](#)) and a nonstick bandage. Change it every 1-2 days until healed.
 - See your doctor if the area does not get better in 1-2 weeks
 - Let your PCP know if there are signs of infection
 - See a wound care provider if your wound is not better within 1 month



Burns-

- Because you can not feel your lower body well, you are at risk for burns
- Do not walk barefoot or sit on hot surfaces outside (sidewalk, concrete, by the pool, truck bed, etc)
- Check bath/water temperature before getting in (thermometer or hand check)
- Limit heating pad use to 20 minutes on lower heat setting or Avoid using them
- Use sunscreen (fair skin tones) when you will be out in the sun
- Do not get close to hot objects (space heaters, fire pits, radiators, etc.)
- Do not put hot objects on your lap (food plates, pots/pans, electric blankets, electronics)
- Be careful around the kitchen and outdoor grills to avoid touching hot objects or spilling them on yourself

Burn Injuries



Neuropathic/Diabetic Ulcers (foot wounds)

- You are at risk due to decreased or no sensation and poor circulation
- Causes- something in your shoes (rock, stepped on nail, bunched sock, callus, etc), shoes rubbing blisters or pressure spots, walking barefoot, ingrown toenails, AFO's
- First sign of trouble: Redness, blisters, callus formation, purple discoloration
- What do you do: Seek help from your medical team
 - Wound Care
 - PCP
 - Podiatrist
 - Orthotist
 - Spina bifida clinic

Foot Ulcers



Incontinence/Moisture Damage to skin

- Causes: sweating, wet socks/clothes, stool or urine sitting in your diaper, draining wounds
- Prevent-
 - Wear deodorant in areas you sweat a lot (groin, thigh crease, abdominal/breast folds, armpits, etc.)
 - Change clothes or socks when they become wet
 - Use a preventive barrier cream/film over the skin in your diaper area daily and as needed
 - Change your diaper regularly (every 4 hrs)
 - Check your skin every day and look for changes and problem areas
- Treat-
 - If you have a wound, seek treatment from a wound care provider

IAD/MASD



Good skin health and habits

- Check your skin EVERY DAY
 - Look for color changes, breaks in the skin
 - Focus on bony parts (hips, buttocks, knees, feet) and under braces
- Use a mirror or ask for help to check areas you can't see well
- Keep your skin clean by showering/bathing every day or every other day. Dry completely after showering (especially in folds/creases). Apply cream or oil-based lotion immediately after showering/bathing.
- Use barrier cream on the back of thighs, groin, and buttocks if you are often wet
- Move every 15 minutes when sitting up, turn yourself in bed every 2-4 hours
- Avoid sliding against the floor, transfer board, bed, or other surfaces
- Maintain a healthy weight
- Use braces, shoes, wheelchairs, and cushions that fit properly and do not rub against your skin. Get them readjusted if there are concerns.
- Wear sunscreen, a hat, sunglasses, and protective clothing when you are out in the sun

AFO's and your skin

Know when to go!

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Skin Health- Prevention

- Use a pH-balanced cleanser to wash your skin/feet (Dove, CeraVe, Dr. Bronner's castile bar, Aveeno, Cetaphil)
- Dry the skin well, especially between toes, after showers/baths
- Apply a cream or ointment to moisturize your skin, avoiding the area between the toes
- Use clean, dry socks daily that come up over the top of the AFO
- Ensure there are no wrinkles/bunches in socks; seamless socks are preferred
- Use antiperspirant on the feet if you sweat a lot

Signs there's a problem

- Itching
- Dry cracked skin
- Callus
- Maceration
- Rash
- Ingrown toenail
- Redness
- Wound

What do I do?



- **Fungus-**
 - Topical ointment or powder
 - Tinactin/Tolnaftate
 - Apply twice daily for 2-6 weeks
 - Lotrimin/Clotrimazole cream 1%
 - Apply twice daily for 2-4 weeks
 - Lamisil/Terbinafine hydrochloride cream 1%
 - Apply daily for 7 days
 - Miconazole Nitrate 2%
 - Apply twice daily for 4 weeks
 - Keep feet dry, use talcum powder or corn starch
 - Avoid sharing towels, shoes, or socks with others to prevent spreading infection
 - If there is no improvement with treatment within 4 weeks, seek medical care
 - OTC meds not for children under 2 years old
 - Silver socks

What do I do?



- **Dry cracking skin/Callus**

- Moisturize twice daily with urea-based cream, thick emollients, or hydrating creams
- Exfoliate daily with a pumice stone or foot file. Gently remove the top dry layers in a circular motion
- Medicated OTC patches
- Wear appropriate footwear. Shoes that prevent friction and pressure on the feet
- Seek care for custom orthotics
- Get AFO's adjusted to reduce pressure/friction

What do I do?



- **Maceration-**
 - Apply aluminum chloride/astringent gel (antiperspirant) daily
 - Place cotton gauze between the toes
 - Avoid soaking feet, dry well after showers
 - Wear shoes that allow airflow during the day, and air-dry the skin at night
 - Apply barrier cream daily- this can help protect the feet from moisture
 - Zinc oxide creams
 - Petroleum jelly

What do I do?



- **Rash-**
 - For minor skin irritations:
 - Topical antihistamine
 - Benadryl cream
 - Hydrocortisone cream 1%
 - If the rash worsens or is severe
 - Does not improve with OTC treatment
 - Is spreading
 - Associated fever or other symptoms
 - Unknown cause of rash
 - **Consult a healthcare provider for assistance in diagnosis and treatment**

What do I do?



- **Ingrown Toenail-**

- Epsom salt soaks daily
- Wear wide-toe footwear
- Cleanse the area and apply ointment (petroleum, or antibiotic) and bandage daily
- The healthcare provider may lift the nail edge and place cotton, dental floss, or a splint under it. Usually in 2 to 12 weeks. They may prescribe a corticosteroid cream to apply after soaking daily at home and replacing the splint.
 - Another approach, which minimizes the need for daily replacement, uses cotton coated with a solution that fixes it in place and makes it waterproof (collodion).
- Taping the nail by pulling the skin away from the ingrown nail with tape.
- Placing a gutter splint under the nail. A healthcare provider numbs the toe and slips a tiny slit tube under the embedded nail. This splint stays in place until the nail has grown above the skin edge.
- Partially removing the nail. For a more severe ingrown toenail (inflamed skin, pain, and pus), your health care provider may numb the toe and trim or remove the ingrown portion of the nail. It could take 2 to 4 months for your toenail to grow back.
- Removing the nail and tissue. If you have the problem repeatedly on the same toe, your health care provider may suggest removing a portion of the nail along with the underlying tissue (nail bed). This procedure may prevent that part of the nail from growing back. Your health care provider will numb the toe and use a chemical, a laser, or other methods.

What do I do?



- **Redness-**

- Usually a sign of pressure if over a high-risk area (heel, ankle, top of toes, ball of foot, sides of feet where skin contacts shoes/braces, bony prominences)
- Check for blanching
- Relieve pressure, friction, and moisture immediately and monitor the area
- Seek medical care if it does not resolve within 3 days or if the area forms a blister



What do I do?



- **Wounds-**

- Keep the area clean and covered with a non-adherent bandage and petroleum-based ointment if the skin is broken
- Apply a hydrocolloid bandage if there is low drainage, blistered skin, or discoloration (red/purple)
- Get AFO's adjusted and/or different footwear
- Seek medical care if the area does not improve within 7 days, gets worse, or shows signs of infection
 - Redness extending from the wound, foul odor, purulent drainage/pus, painful, swelling or hardness, fevers, hot to the touch

The Shoe Showcase!

Tips for buying shoes:

- Most braces will require you to size up 1 size.
- Athletic shoes with laces allow for more adjustability.
- If able, choose “Wide”.
- Remove the insole.
- Cut the shoe tongue longer.



Billy Footwear



Nike Go FlyEase



Pedro Children
Orthopedic Sneaker

The Shoe Showcase

- A full-service shoe store can help you fit your shoes.
 - Stride Rite
 - New Balance
 - Running Stores: Luke's Locker, Run On, Fleet Feet
- Mismatched Shoes
 - If your feet differ by at least 2 shoe sizes, they may need mismatched shoes, the following companies sell single or mismatched shoes
 - Zappos.com
 - Nordstrom
 - Odd Shoe Finder
- For Cost Effectiveness- You can always look at shoes at your local stores, and many tennis shoes will work!
 - Walmart
 - Target
 - Nordstrom Rack
 - DSW
- Make sure you replace them often when they start to wear out, approximately every 6-12 months.

References

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Thank You!

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