Current Trends in Pressure Ulcer Prevention

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Heel Pressure Ulcers: What You Need to Know

How big is the problem?

Heel ulcers are the second most common site for pressure ulcers, and are on the rise!! With or without underlying diabetes, there is a reported 19% – 32% occurrence in acute care. People are living longer, entering hospitals with multiple comorbidities and complex care needs, and undergoing more surgical procedures at advanced age that put them at high risk, particularly when hip and lower extremity orthopedic procedures are required. In October, 2008 the Center for Medicare and Medicaid Services (CMS) announced they would no longer provide reimbursement for significant hospital acquired pressure ulcers.

Fast Stat

41% of all deep tissue injuries are found in the heels

Why are heels so vulnerable?

The calcaneus bone is the largest bone of the foot and is wide for its skin surface area. Little subcutaneous fat surrounds the pointed end of the bone. The shock absorptive capacity of the heel decreases with age leaving it more susceptible to forces of pressure, friction, and shear. The sole of the foot has no sebaceous glands; lack of lubrication leaves the skin more vulnerable to drying and cracking. Circulatory impairment secondary to age, ASD, vascular, ischemic, and obstructive insufficiencies place heels at high risk. Peripheral vascular changes that occur with diabetes cause narrowing and hardening of the blood vessels, particularly those of the legs and feet. Decreased blood flow results in damage to nerves, and reduced tissue tolerance to pressure. Loss of sensation secondary to diabetic neuropathy can prevent patients from feeling ischemic pain that causes a normally sensate patient to move his/her leg to relieve the pressure and stop the pain.

Other contributing factors...

Heels are often ignored during doctor and nursing skin assessments, both on admission and during the hospital stay.

Most commonly used risk assessment tools do not have a subscale for non-movement of lower extremities. Risk assessments in general don’t address the specific risk factors for the development of heel pressure ulcers.

Heels are under the bedcovers and are not incontinent therefore, they do not require the frequent assessment, cleansing and lubrication that the incontinent patient does

Fast Fact

Patients with diabetes are 4x more likely to develop a heel ulcer
The Result
Too often, prevention and treatment interventions are inappropriate which in turn increases health care expenditures. Quality of care and comfort for the patient decreases, while the potential for regulatory penalties and lawsuits climb.

Potential personal costs to the patient can include
- Depression
- Increased length of stay in the acute care facility
- The need to go to a facility for additional treatment(s) upon hospital discharge
- Possible surgical intervention
- Pain
- Danger of local or systemic infection; osteomyelitis
- Risk of amputation

Potential facility costs
- Increased length of stay and medical costs for the patient who develops a hospital acquired pressure ulcer
- Potential for litigation, reduced reimbursement and fines from overseeing regulatory commissions.
- Institution reputation for quality of care.

Heel pressure ulcer examples

*Stage I*  
*Stage II*  
*Stage III*  
*Stage IV*  
*Unstageable*  
*Deep Tissue Injury*
What are the particular risks for a heel pressure ulcer?

- History of previous heel ulcer
- Immobility
- Multiple co-morbidities (emphasis on diabetes mellitus)
- Devices that place pressure on heels (TEDS, traction, CPMs, compression hose)
- Lower extremity vascular disease
- Vasoconstrictive drugs and sedation used in critical care
- Epidural and general anesthesia
- Lower extremity contractures that lead to constant unrelieved pressure
- Lower extremity orthopedic surgeries
- Lower extremity edema
- Ventilator dependency
- Agitation that results in friction and tissue distortion to heel skin

Fast Fact: Simple education is important in pressure ulcer prevention

What can I do to prevent heel pressure ulcers in my patient?

- Be aware of the specific risk factors for heel pressure ulcer development. (i.e. Braden mobility score 3 or less, unable to lift foot off bed unassisted or reposition independently)
- Assess and document heel skin integrity on admission and each shift.
- Treat dry skin with a moisturizer twice daily to decrease friction and shear.
- Institute regular, frequent repositioning of the extremity.
- Float heels of at risk patients; position pillows lengthwise from the knee to just above the heel, suspending heel off the support surface.
- Consider protective heel boot if prolonged inactivity (i.e. greater than 6 hours) occurs.
- Initiate prevention protocols on at-risk patients early and aggressively.
- Provide range of motion exercises to ankles every 12 hours.
- Remove TED stockings, CPMs, compression hose, ace wraps, per facility protocol for skin assessments.
- Mobilize patients as soon as possible.
- Consult WOC nurse if patient develops a heel ulcer or deep tissue injury.
- Consult PT if patient has foot drop or is at risk for developing a plantar flexion contracture at the ankle.
- Protect patients at risk during OR and long stays in ED.
References


(2) Vangilder C, Macfarlane, GD, a Meyer S. Results of nine international pressure ulcer prevalence surveys. 1989 to 2005. Ostomy Wound Management 2008; 54(2)40-54.

Slowikowski G, Funk M. Factors associated with pressure ulcers in patients in a surgical intensive care setting. Journal of Wound, Ostomy and Continence Nursing. 2010;37(6);619-626


Frain R. Decreasing the Incidence of Heel Pressure Ulcers in Long Term Care by Increasing Awareness: Results of a One Year Program. OWM 2008; 54:2.


Moisture Associated Skin Damage (MASD)

What is MASD?

Moisture Associated Skin Damage (MASD) is an inflammation of the skin which may or may not be seen as skin erosion (defined as loss of some or all of the epidermis leaving a denuded surface) or cutaneous secondary skin infection. It includes incontinence-associated dermatitis (IAD) secondary to chronic exposure to urine, stool, or both, and intertriginous (area where two skin surfaces may touch or rub together) dermatitis (ITD) secondary to moisture trapped in skin folds. It can extend from the buttocks throughout the perineal area to the posterior and inner thighs.

Fecal Incontinence is more skin damaging than urine

Effects of Chronic Moisture

Chronic moisture compromises the barrier function of the skin. The damage from urine comes from the alkaline moisture environment produced by urine coming into contact with fecal bacteria present in the perineal skin area. Skin damage from liquid stool is secondary to the intestinal enzymes lipase and protease that erode the keratinocyte protective first layer of the skin. Chronic liquid stool incontinence can also lead to compromised nutrition which in turn can negatively impact overall skin integrity.

Other Contributing Factors...

Factors affecting a patient’s tissue tolerance to incontinence include:

- Age
- Health status
- Poor nutritional status
- Skin exposure to friction and shear
- Type of incontinence
- Skin integrity (if edematous or inflamed the skin is at higher risk for damage)
- Fever
- Functional ability to reach a toilet
- Cognitive ability to recognize the need to reach a toilet
- Severity of illness
- Health comorbidities
Why is MASD so Important?
First, because of the patient impact. Issues include pain, which can be severe and constant depending on the level of skin damage and cleansing techniques, and the possible development of secondary skin infections such as candidiasis (yeast) and/or bacterial related skin infections. Misidentification of the cause of the skin damage can result in ineffective treatment plans. And MASD increases patient risk for pressure ulcer development. Onset of incontinence associated dermatitis can occur quickly in critically ill acute care patients. Frequent liquid stool and diminished cognition are key risk factors.

Legal Implications
Legal implications relate to the financial consequences when skin breakdown from moisture is misidentified as a hospital acquired pressure ulcer. This can lead to the possibility of fines from accrediting institutions or The Center for Medicare and Medicaid Services (CMS), and denial of reimbursement to hospitals from insurance carriers for costs associated with pressure ulcer treatments if the MASD related skin breakdown progresses to a Stage III or IV pressure ulcer.

Fast Fact
Medicare/Medicaid may not cover cases of MASD

Nursing Impact
Nursing is impacted by the time and effort it takes to care for skin damaged by incontinence, and having to answer family questions about how and why did this happen? and what is being done about it?....

Pride in providing quality care to all patients is a goal of every nurse.

How to differentiate IAD (incontinence-associated dermatitis) from Stage I and II Pressure Ulcers

<table>
<thead>
<tr>
<th>Main Cause</th>
<th>Exposure to urine/ stool/ or both</th>
</tr>
</thead>
<tbody>
<tr>
<td>Location</td>
<td>In the perineal area and skin folds where stool and urine can accumulate</td>
</tr>
<tr>
<td>Skin Characteristics</td>
<td>Shiny, red, glistening. Usually no slough or devitalized tissue in the area</td>
</tr>
<tr>
<td>Pain</td>
<td>Can be burning, itching, tingling, severe</td>
</tr>
<tr>
<td>Odor</td>
<td>Urine or fecal</td>
</tr>
<tr>
<td>Note</td>
<td>Candidiasis (fungal rash) often seen</td>
</tr>
</tbody>
</table>

IAD
How to differentiate IAD (incontinence-associated dermatitis) from Stage I and II Pressure Ulcers

### Stage I and II Pressure Ulcers

<table>
<thead>
<tr>
<th>Main Cause</th>
<th>Skin exposure to pressure, shear, heat and humidity secondary to inability to change positions, inactivity, and/or overall immobility</th>
</tr>
</thead>
<tbody>
<tr>
<td>Location</td>
<td>Usually over bony prominences, or secondary to external pressures from devices such as casts, thrombic stockings, ace wraps, or other medical devices</td>
</tr>
<tr>
<td>Skin Characteristics</td>
<td>Stage I- non-blanchable erythema (redness) of intact skin in light-skinned person; slight bruising, pain to touch, and/or increased warmth in dark skinned person. Stage II- partial thickness abrasion with pink wound bed, superficial skin ulcerations tend to have distinct wound margins</td>
</tr>
<tr>
<td>Pain</td>
<td>May be sharp and intensified with movement, usually not itchy</td>
</tr>
<tr>
<td>Odor</td>
<td>None, unless infected</td>
</tr>
<tr>
<td>Note</td>
<td>Erythema/ bruising/ and/or discomfort of Stage I ulcer may resolve with off-loading and frequent repositioning. Stage II shallow ulcer generally heals in by re-epithelialization over a 2 week period with treatment and off-loading.</td>
</tr>
</tbody>
</table>

### 7 Steps in Preventing MASD

1. Visual inspection and patient history are key to accurately diagnosing and treating. On hospital admission and throughout the hospital stay, thorough exam of perineal, buttock, sacral crease skin and skin folds should be done in patients with suspected or known moisture problems (especially those with existing incontinence, anasarca, obesity, significant sweating problems, etc.)
2. Prompt removal of urine and stool, timely diaper or underpad changes, and gentle but thorough cleansing with a pH neutral cleanser are essential.
3. Application of skin protectants/barrier ointments that are petroleum or dimethicone based protect the skin from continuing insult.
4. Assisting patients to the toilet or commode at regular intervals, particularly early in the morning and before bed can be very helpful.
5. Aggressive repositioning that off-loads the patient’s sacrum and ischial bony areas helps prevent progression to pressure related skin breakdown.
6. Use of pressure redistributing overlays and mattresses may be very effectively used for this high risk population.
7. Diversion products such as indwelling urinary catheters and/or fecal management products should be considered and initiated only per institution protocol.
Documentation of incontinence episodes, the patient’s skin condition, and treatment efforts should be done daily. If there is lack of improvement in eliminating or minimizing the cause(s) of incontinence, there should be a record of MD notification and actions taken.

Clinical evidence supports having a defined skin care protocol and availability of quality incontinence care products to achieve best outcomes of patient protection and decreased incidence of IAD complications.

References


National Pressure Ulcer Advisory Panel: Pressure Ulcer Stages Revised by NPUAP 2007, NPUAP.org

WEB MD : definitions of intertriginous areas and skin erosion
Device Related Pressure Ulcers

**Definitions and Device Risks**

The National Pressure Ulcer Advisory Panel (NPUAP) defines pressure ulcers as localized injury to the skin and/or underlying tissue usually over a bony prominence, as a result of pressure, or pressure in combination with shear. The panel also recognizes that medical devices used to monitor or treat patients are also likely sources of pressure ulcers. And since most hospitalized patients are placed on some kind of medical device, the potential risks are huge.

**Fast Stat**

Patients with devices are 2-4 times more at risk for PU

**Medical Devices and the Affected Areas**

Typical medical devices in the hospital setting include:

- Sequential compression devices/Stockings - Lower Extremities/Achilles/Knees
- Cervical collars - Neck/Occiput/Clavicle
- Endotracheal tubes - Lips/Tongue
- BiPap - Nasal Bridge
- Fecal containment devices - Perianal/Buttocks
- Nasal cannulas - Ears/Nasal/Nares
- Pulse oximetry probes *When used incorrectly*
- Nasogastric tubes - Nares/Bridges/Nose
- Splints, braces and wraps *When in contact with the skin* - Heels
- Urinary catheters *Misplacement of tubing* - Upper Thighs

**Side Effects of Medical Devices**
Challenges of Medical Devices

Medical devices are common and often crucial in proper patient care. However, these same devices, by design, can also create pressure in unexpected places. Since most devices require a secure fit to work properly, pressure ulcers can result in areas other than the common bony prominences, such as the ears, cheeks and abdomen. The materials used in tandem with the devices, like tape or straps, can also make skin inspection difficult. The pressure ulcer often takes the shape of the device obstructing any sign of the problem at hand. The microclimate of the patient’s skin can also be altered from heat and humidity generated from the devices. These moist environments are ideal for rapid skin deterioration.

Patients who develop edema AFTER medical devices have been placed and secured are at high risk for the development of medical device related pressure ulcers. Frequent assessment is critical!

When Attaching Medical Devices

- Assess skin that is in contact with devices per policy
- Pay close attention to areas with minimal adipose tissue
- Fasten and position tubes and lines with minimal tension
Device Related Pressure Ulcers - Case Study 1

No two faces are the same! Each patient must be addressed individually to ensure a proper fit. The patient here was placed on a simple O2 mask. Respiratory therapy noted that the mask was cutting into the patient’s skin at the bridge of the nose. The mask was replaced and the area of injury was covered and protected.

Device Related Pressure Ulcers - Case Study 2

Male patient s/p MI and stroke. The patient was very restless and combative. Patient was placed in bilateral soft wrist restraints to avoid self harm and extubation. Patient continued to fight restraints and had to be chemically sedated. After sedation achieved restraints were removed and staff noted skin injury for the plastic clip that secured the patient’s ID band.
Device Related Injury to Bariatric Patients

When caring for Bariatric Patients there are several things to be considered when protecting your patient from Device Related Injury.

Skin folds should be inspected routinely with each position adjustment, not only for moisture and subsequent damage from the perspiration, wound drainage, urine or fecal contact that we see in all patients but also for items inadvertently left in the bed. Skin folds can obscure items such as:

- Cleansing items
- Caps from medical devices
- Alcohol prep wipes
- Dropped food
- Syringes

Use of a wicking product may be used in skin folds to assist in healing the skin of a patient with wound leakage from open wound or a weeping fungal infection. Care must be used in the choice of this product so that the product does not in itself increase pressure on the vulnerable damaged skin. You should never use wash clothes, pillowcases or similar items that can increase the level of moisture in the skin folds.

Weeping wound sites in skin folds offer a distinct challenge to the care of bariatric patients. Use of cream or ointment that will adhere to the skin in the face of moisture is paramount. Most successful is a product that will adhere to the moist weeping tissue but wash off easily with soap and water. It must be soft, flexible and easy to apply. It should be inert, non-toxic and contain no alcohol or latex. It should be non-sensitizing, cause no friction and not be absorbed systemically.

Fast Stat

Less is Best – recommendation by NPUAP as a best practice for all patients, including the bariatric population

Preventing and Managing Device-Related Pressure Ulcers

Because the medical devices are necessary in the hospital setting eliminating their usage is out of the question. But, preventing and treating pressure ulcers caused by these devices remains a requirement. In order to find that balance, devices should be repositioned often. Assessments, including loosening and removing devices on every shift, are critical. And manufacturers instructions for removal and application should be closely followed. If straps securing the devices can use less pressure and still maintain their effectiveness this might be a viable option for controlling device-related pressure ulcers. Adding a thin hydrocolloid dressing to the bridge of the nose when using BIPAP to stabilize skin can help reduce friction and shear. Also ensure the patient receives a proper sized and fitted masked to minimize unnecessary pressure to the bony areas of the face. When securing NG Tubes try not to chevron tubes to the nose, instead secure tube with transparent
Incidence of Device Related Pressure Ulcers

**Cervical Collars Users**
- 33-44% of users (Davis et al, 1995)
- 45% of all reportable device related PU (Nix et al, 2009)

**Pulse Oximetry Users in ICU**
- 5% in ICU (Wille et al, 2000)

**Nasoenteric (NG) Tube**
- 12% of all device related PU (Penney et al, 2010)

**Respiratory Devices**
- 33% of all reportable device related PU (Nix et al, 2010)
- Tracheostomies 14% of all device related (Penney et al, 2010)

**Pediatric Pressure Ulcers**
- 50% (Baharestani and Ratliff, 2007)

**Nebraska Medical Center P&I**
- 34.5% (Black et al, 2010)

**Duke University Hospital**
- 42% (Penny et al, 2010)

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**Preventing and Managing Device-Related Pressure Ulcers**

dressing so the tube is "free-floating" in the nare and not riding up on the nostril. Also make sure that the NG tube is away from patient’s cheeks and ears when in a side lying position. ET tubes should be re-positioned q 8 hours and avoid using tape to secure devices. Commercially marketed securement devices that allow movement of the tube should be utilized and is a best practice.

When turning patients, be sure to secure all lines, tubes and connectors away from patient’s skin. Be sure that sequential tubing is not lying under the patient’s heels. Telemetry and SPO2 connects should not be left under the patient, the connectors are hard and can lead to a device related injury very quickly.

Finally, another effective resource is the development of a team consisting of nursing, respiratory and wound care to address the device related pressure ulcers from respiratory equipment. Assigning clear responsibilities with real accountability can be a tremendous motivator in keeping device related pressures in check.

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**Must Read**

Check out the NPUAPs position paper on mucosal pressure ulcers and their recommendation not to stage.


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**Fast Stat**

PUs on the lips, cheeks, ear lobes, nasal bridge, occiput, fingertips and webbing of the thumbs all have their origin with medical devices.
References


Nix D. Overview of Device Related Pressure Ulcers.

Caring for the Bariatric Patient

**Bariatrics Defined**

Bariatrics is a branch of medicine that deals with the causes, prevention, and treatment of obesity. And, according to the CDC Behavioral Risk Factor Surveillance System, since 1991 obesity rates in the Midwest have risen to nearly 29% of the population. The Body Mass Index (BMI) is a number calculated from a person's weight and height and is an indicator in categorizing obesity.

**Fast Stat** 97 million adults in the US are overweight or obese

According to the federal guidelines on identification, evaluation and treatment of the overweight and obese, persons with a BMI greater than 30 may be considered obese. About 97 million adults in the United States are overweight or obese per the National Heart, Lung, and Blood Institute Expert Panel June 1998. 66% of adults in U.S. are overweight and about 33% are obese. Excess fat at the waist has also been linked to several other health disorders, including high blood pressure, regardless of total body fat.

Visceral fat has been linked to metabolic disturbances and increased risk for cardiovascular disease and type 2 diabetes. In women, it is also associated with breast cancer and the need for gallbladder surgery. One reason excess visceral fat is so harmful could be its location near the portal vein, which carries blood from the intestinal area to the liver. Substances released by visceral fat, including free fatty acids, enter the portal vein and travel to the liver, where they can influence the production of blood lipids. **Visceral fat is directly linked with higher total cholesterol and LDL (bad) cholesterol, lower HDL (good) cholesterol, and insulin resistance.**

In all patients, the skin is a critical part of care. Obese patients are no different. Pressure redistribution must be started in early admission, however obese patients often have difficulty breathing and as a result are fearful of position changes.

One way to provide safe lifting and repositioning for the bariatric patient is to establish a lift team. A lift team not only provides safety for the patient, but also for the staff. One such finding was when a lift team was established at Indiana University Hospital. The team began as a research study to determine the best transferring and repositioning devices for bariatric patients. The resulting decrease in patient handing injury associated costs were unexpected. A physical therapist trained all the members of the new lift team in proper ergonomic positioning to prevent staff and patient injuries during lifting and repositioning. A variety of devices were used during the study but overwhelmingly the outcome was by using such a team the facility decreased their patient injury expenses by almost $250,000 per year.

Proper equipment is also important when caring for the obese patient. Since most hospital beds have weight limits in the 300 range, it is important to find a bed that will accommodate the patient’s weight.

**Fast Fact** "Less is best" when placing linens, pads, etc in the patient’s bed. - NAPUP
Treating obesity, however, can be expensive. Medicare will not reimburse for bed purchases and the specialty beds for bariatric patients is on a CAPPED basis – so the most expensive beds are often not fully reimbursable.

Monitoring outcomes is very important with the bariatric patient. Your facility should monitor and allow for changes whenever the satisfaction of both patient and staff is decreased. Education should also be offered to ensure basic bariatric skills are accomplished safely and effectively.

**How to Assess the Bariatric Patient**

Assessing the bariatric patient can be achieved by following these steps:

- **Skin:** look for pressure ulcers in unusual places such as skin folds or sides of feet.
- **Deep skin folds:** may harbor fungal growth.
- **Circulation:** when patient is lying flat, the weight of the pannus might impede circulation to lower extremities. It is common to find effects of venous stasis on lower extremities.
- **Wound care:** may have impaired healing and increased risk of infection.

*Steinmann, RN Magazine 2000*

Common complications in the obese population include:

- **Malnutrition**
  Poor diet choices often made by patient in choosing only empty high calorie foods, nutrition consult along with definitive lab studies such as pre-albumin or transferrin
- **Sleep Apnea**
  Excess fatty tissue in neck causes narrowing, cutting off breathing. May require CPAP
- **Obesity Hypoventilation Syndrome**
  Weight of fatty tissue on rib cage & chest prevents full expansion leading to ventilatory insufficiency
- **Delayed Wound Healing**
  Blood supply to fatty tissue may be insufficient to provide adequate oxygen and nutrition needed for healing, often leading to dehiscence
- **Immobility**
  Physical therapy start within first 24 hours to offer passive and active exercises to reduce possible deconditioning

*Bryant and Nix 2007*

Skin irritations are also a common problem among the bariatric population. Tears in the skin often occur between folds due to friction or if skin is held too taut. Treatment typically involved methods to allow free air movement between skin folds by using products like folded towels, static air seating cushions, or wicking agents. Education of staff about proper turning without stretching the skin is imperative.
The three most common skin irritations faced by obese patients are:

- **Pressure Ulcers**
  Can be at risk for atypical ulcers from pressure within skin folds, tubes or catheters, or from ill-fitting chairs and beds.

- **Candidiasis**
  Yeast like fungus that lives in moist dark environments like skin folds. Moisture from perspiration, urine or wound drainage exacerbates this condition.

- **Contact Dermatitis**
  Moisture barriers that adhere to weeping or moist skin may need a coating of skin barrier to enhance adherence. This is often confused with stage I pressure wounds.

The obese population is also susceptible to other health conditions. Lymphedema, also known as lymphatic obstruction, is a condition of localized fluid retention caused by a compromised lymphatic system. The lymphatic system (often referred to as the body's "second" circulatory system) collects and filters the interstitial fluid of the body. Massive localized lymphedema (MLL) is an extreme example of the subcutaneous fat deposits pathognomonic of lymphedema. Patients with this condition seek treatment when the size of the tissue mass starts to interfere with their daily activities or when excoriation or skin breakdown occurs. Treatment for Lymphedema includes Complete Decongestive Therapy [CDT], or wrapping. Medicare does not cover garments for patients who do not have wounds so any type of garment or device for lymphedema management is non-reimbursable for Medicare beneficiaries.

**Elephantiasis nostras verrucosa (ENV)**
This is an unusual progressive cutaneous hypertrophy due to chronic lymphedema, and repeated inflammatory episodes. It usually manifests over the lower extremities as non-pitting edema with lichenification, hyperkeratotic papules, nodules, and verrucous, cobblestone-like plaques.

The pannus is a medical term for a hanging flap of tissue. It can come in many different sizes and shapes and can become very large, even hanging down below the knees. The extra tissue of a hanging pannus can make personal hygiene difficult. Skin conditions such as yeast infections under the pannus are common problems. A massive hanging pannus can get in the way of walking. And, even a smaller pannus can be an annoyance with clothing as the individual sits or stands. Panniculus size has their own term to designate the size and amount of restriction it can bring to the patient. Patients are rated on a 1-5 scale with 5 being the most severe.

Again, assessment and monitoring is key when caring for the obese patient. A focused physical exam must include any factors that could impair healing process: impaired perfusion, sensation, or systemic infection. Vascular assessment, lab tests and x-rays as needed are also part of the focused physical exam.
And caregivers should also take into account the patient’s overall nutrition. Without full patient function capacity the chances for healing are also limited and should be determined with the assessment. Reassessment must be done whenever the ulcer does not show signs of healing within 2 weeks or if the patient’s physical/physiological status changes.

Finally, it is important to address the patient’s pain level and to manage accordingly. Always use a validated pain scale appropriate for your patient. Use a lift or transfer device to minimize friction and/or shear when repositioning. Avoid postures that increase pressure and always minimize pressure ulcer pain by handling all wounds gently.

**SPECIAL FEATURE**

**Device Related Injury to Bariatric Patients**

When caring for Bariatric Patients there are several things to be considered when protecting your patient from Device Related Injury.

Skin folds should be inspected routinely with each position adjustment, not only for moisture and subsequent damage from the perspiration, wound drainage, urine or fecal contact that we see in all patients but also for items inadvertently left in the bed. Skin folds can obscure items such as:

- Cleansing items
- Caps from medical devices
- Alcohol prep wipes
- Dropped food

Placing a hydrocolloid on the top of the thigh can give the bariatric patient a safe position to attach a Foley catheter holder to prevent the tubing from causing pressure on the inner thigh when patient is positioned on their side. The hydrocolloid may be left in place for up to 10 days.

Use of a wicking product may be used in skin folds to assist in healing the skin of a patient with wound leakage from open wound or a weeping fungal infection. Care must be used in the choice of this product so that the product does not in itself increase pressure on the vulnerable damaged skin. You should never use wash clothes, pillowcases or similar items that can increase the level of moisture in the skin folds.

Weeping wound sites in skin folds offer a distinct challenge to the care of bariatric patients. Use of cream or ointment that will adhere to the skin in the face of moisture is paramount. Most successful is a product that will adhere to the moist weeping tissue but wash off easily with soap and water. It must be soft, flexible and easy to apply. It should be inert, non-toxic and contain no alcohol or latex. It should be non-sensitizing, cause no friction and not be absorbed systemically.
References

CDC Behavioral Risk Factor Surveillance System, 2007


Steinmann, RN Magazine 2000

Bryant and Nix, 2007

Lymphedema in the Morbidly Obese Patient: Unique Challenges in a Unique Population. Volume: 54 Issue Number 1: C. Fife, MD; and M. Carter, PhD

Elephantiasis nostras verrucosa on the legs and abdomen with morbid obesity in an Indian lady - Podila S Sarma MD1, Ashok Ghorpade MD MNAMS2
Dermatology Online Journal 14 (12): 20

NPUAP Quick Reference 2009
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