

## 1: 3 Pressure Ulcer (Bedsore) Nursing Care Plans - Nurseslabs

*There are several risk factors for pressure ulcers, the skin sores that typically develop over bony areas, such as the lower spine, hips, and www.enganchecubano.com known as bedsores, pressure ulcers are a common problem for palliative care patients as mobility decreases and patients spend more time in bed.*

Complications[ edit ] Pressure ulcers can trigger other ailments, cause considerable suffering, and can be expensive to treat. Sores may recur if those with pressure ulcers do not follow recommended treatment or may instead develop seromas , hematomas , infections , or wound dehiscence. Paralyzed individuals are the most likely to have pressure sores recur. In some cases, complications from pressure sores can be life-threatening. The most common causes of fatality stem from kidney failure and amyloidosis. Pressure ulcers are also painful, with individuals of all ages and all stages of pressure ulcers reporting pain. Ulcers due to external pressure occur over the sacrum and coccyx, followed by the trochanter and the calcaneus heel. Friction is damaging to the superficial blood vessels directly under the skin. It occurs when two surfaces rub against each other. The skin over the elbows and can be injured due to friction. The back can also be injured when patients are pulled or slid over bed sheets while being moved up in bed or transferred onto a stretcher. Shearing is a separation of the skin from underlying tissues. When a patient is partially sitting up in bed, their skin may stick to the sheet, making them susceptible to shearing in case underlying tissues move downward with the body toward the foot of the bed. This may also be possible on a patient who slides down while sitting in a chair. Moisture is also a common pressure ulcer culprit. Sweat, urine, feces, or excessive wound drainage can further exacerbate the damage done by pressure, friction, and shear. It can contribute to maceration of surrounding skin thus potentially expanding the deleterious effects of pressure ulcers. Risk Factors[ edit ] There are over risk factors for pressure ulcers. Pathophysiology[ edit ] Pressure ulcers may be caused by inadequate blood supply and resulting reperfusion injury when blood re-enters tissue. A simple example of a mild pressure sore may be experienced by healthy individuals while sitting in the same position for extended periods of time: Within 2 hours, this shortage of blood supply, called ischemia, may lead to tissue damage and cell death. The sore will initially start as a red, painful area. The other process of pressure ulcer development is seen when pressure is high enough to damage the cell membrane of muscle cells. The muscle cells die as a result and skin fed through blood vessels coming through the muscle die. This is the deep tissue injury form of pressure ulcers and begins as purple intact skin. According to Centers for Medicare and Medicaid Services , pressure ulcers are one of the eight preventable iatrogenic illnesses. Biofilm occurs rapidly in wounds and stalls healing by keeping the wound inflamed. Frequent debridement and antimicrobial dressings are needed to control the biofilm. Infection prevents healing of pressure ulcers. Signs of pressure ulcer infection include slow or delayed healing and pale granulation tissue. Signs and symptoms of systemic infection include fever, pain, redness, swelling, warmth of the area, and purulent discharge. Additionally, infected wounds may have a gangrenous smell, be discolored, and may eventually produce more pus. In order to eliminate this problem, it is imperative to apply antiseptics at once. Hydrogen peroxide a near-universal toxin is not recommended for this task as it increases inflammation and impedes healing. Systemic antibiotics are not recommended in treating local infection in a pressure ulcer, as it can lead to bacterial resistance. They are only recommended if there is evidence of advancing cellulitis , bony infection , or bacteria in the blood. Intact skin with non-blanchable redness of a localized area usually over a bony prominence. Darkly pigmented skin may not have visible blanching; its color may differ from the surrounding area. The area differs in characteristics such as thickness and temperature as compared to adjacent tissue. Stage 1 may be difficult to detect in individuals with dark skin tones. May indicate "at risk" persons a heralding sign of risk. Partial thickness loss of dermis presenting as a shallow open ulcer with a red pink wound bed, without slough. Presents as a shiny or dry shallow ulcer without slough or bruising. This stage should not be used to describe skin tears, tape burns, perineal dermatitis , maceration or excoriation. Full thickness tissue loss. Subcutaneous fat may be visible but bone, tendon or muscle are not exposed. Slough may be present but does not obscure the depth of tissue loss. May include undermining and tunneling. The depth of a stage 3 pressure ulcer varies by anatomical location.

The bridge of the nose, ear, occiput and malleolus do not have adipose subcutaneous tissue and stage 3 ulcers can be shallow. In contrast, areas of significant adiposity can develop extremely deep stage 3 pressure ulcers. Full thickness tissue loss with exposed bone, tendon or muscle. Slough or eschar may be present on some parts of the wound bed. Often include undermining and tunneling. The depth of a stage 4 pressure ulcer varies by anatomical location. The bridge of the nose, ear, occiput and malleolus do not have adipose subcutaneous tissue and these ulcers can be shallow. In , the NPUAP stated that pressure ulcers with exposed cartilage are also classified as a stage 4. Stable dry, adherent, intact without erythema or fluctuance eschar on the heels is normally protective and should not be removed. Suspected Deep Tissue Injury: The area may be preceded by tissue that is painful, firm, mushy, boggy, warmer or cooler as compared to adjacent tissue. A deep tissue injury may be difficult to detect in individuals with dark skin tones. Evolution may include a thin blister over a dark wound bed. The wound may further evolve and become covered by thin eschar. Evolution may be rapid exposing additional layers of tissue even with optimal treatment. The guideline includes recommendations on strategies to prevent pressure ulcers including the use of pressure redistributing support surfaces, repositioning and maintaining appropriate nutritional support. Redistributing pressure[ edit ] The most important care for a person at risk for pressure ulcers and those with bedsores is the redistribution of pressure so that no pressure is applied to the pressure ulcer. Previously such individuals had a two-year life-expectancy, normally succumbing to blood and skin infections. Guttman had learned the technique from the work of Boston physician Donald Munro. Sheepskin overlays on top of mattresses were also found to prevent new pressure ulcer formation. Pressure-redistributive mattresses are used to reduce high values of pressure on prominent or bony areas of the body. There are several important terms used to describe how these support surfaces work. Some support surfaces, including antidecubitus mattresses and cushions, contain multiple air chambers that are alternately pumped. Controlling the heat and moisture levels of the skin surface, known as skin microclimate management, also plays a significant role in the prevention and control of pressure ulcers. People with higher intakes of vitamin C have a lower frequency of bed sores in those who are bedridden than those with lower intakes. Maintaining proper nutrition in newborns is also important in preventing pressure ulcers. If unable to maintain proper nutrition through protein and calorie intake, it is advised to use supplements to support the proper nutrition levels. However, skin that is damaged by exposure to urine or stool is not considered a pressure ulcer. These skin wounds should be classified as Incontinence Associated Dermatitis. The guideline includes recommendations on strategies to treat pressure ulcers, including the use of bed rest, pressure redistributing support surfaces, nutritional support, repositioning, wound care e. More research is needed to assess how to best support the treatment of pressure ulcers, for example by repositioning. Protease-modulating dressings, foam dressings or collagenase ointment may be better at healing than gauze. Debridement Necrotic tissue should be removed in most pressure ulcers. The heel is an exception in many cases when the limb has an inadequate blood supply. Necrotic tissue is an ideal area for bacterial growth, which has the ability to greatly compromise wound healing. There are five ways to remove necrotic tissue. It is a slow process, but mostly painless, and is most effective in individuals with a properly functioning immune system. Biological debridement, or maggot debridement therapy, is the use of medical maggots to feed on necrotic tissue and therefore clean the wound of excess bacteria. Although this fell out of favor for many years, in January, the FDA approved maggots as a live medical device. Mechanical debridement, is the use of debriding dressings, whirlpool or ultrasound for slough in a stable wound Surgical debridement, or sharp debridement, is the fastest method, as it allows a surgeon to quickly remove dead tissue. Some guidelines for dressing are:

### 2: Risk assessment tools used for preventing pressure ulcers | Cochrane

*Bedsore* " also called *pressure ulcers* and *decubitus ulcers* " are injuries to skin and underlying tissue resulting from prolonged pressure on the skin. Bedsore most often develop on skin that covers bony areas of the body, such as the heels, ankles, hips and tailbone.

AfroBrazilian, Prevention Even with excellent medical and nursing care, bedsores can be hard to prevent, especially among vulnerable patients. Preventing bedsores is easier than treating them, but this too can be challenging. Tips to reduce the risk of a bed sore developing include: Patients should mention any possible bed sores to their health care worker or doctor. A physical therapist can advise on the most appropriate positions to avoid pressure sores. Causes Anyone who stays in one place for a long time and who cannot change position without help is at risk of developing pressure sores. The ulcers can develop and progress rapidly, and they can be difficult to heal. Sustained pressure can cut off circulation to vulnerable parts of the body. Without an adequate supply of blood, body tissues can die. According to Johns Hopkins Medicine, a sore can develop if blood supply is cut off for more than 2 to 3 hours. Pressure ulcers are usually caused by: For some patients, especially those with thin, frail skin and poor circulation, turning and moving may damage the skin, raising the risk of bedsores. If the skin moves one way while the underlying bone moves in the opposite direction, there is a risk of shearing. Cell walls and minute blood vessels may stretch and tear. This can happen if a patient slides down a bed or a chair, or if the top half of the bed is raised too high. Injured tissue can develop an infection. This can spread, leading to serious illness. Symptoms Pressure ulcers can affect patients who are unable to move because of paralysis, illness, or old age. Patients who use a wheelchair have a higher risk of developing pressure sores on their: Risk factors Pressure sores mainly affect those who are less mobile, or restricted to one position, such as older people or those with mobility impairments. Pressure ulcers are more common among those who: They may not feel a bedsore developing, so they continue to lie on it, making it worse. Patients who cannot move specific parts of their body unaided have a greater risk of developing pressure ulcers. Factors that increase the risk include: A person with a low body weight will have less padding around their bones, while those with obesity can develop sores in unusual places. Studies show that people with a BMI of 30 to 39.9 have a higher risk of developing pressure ulcers. Complications Cellulitis is a possible complication of bed sores. Without treatment, bed sores can lead to serious complications. Cellulitis is a potentially life-threatening bacterial infection of the skin, from the surface to the deepest layer of skin. Cellulitis can result in septicemia, or blood poisoning, and the infection can spread to other parts of the body. Bone and joint infections can arise if a pressure ulcer spreads to the joints or bones. This can result in damage to cartilage and tissue, and a reduction in limb and joint function. Sepsis, in which bacteria can enter through sores, especially advanced ones, and infect the bloodstream. This can lead to shock and organ failure, a life-threatening condition. Outlook Stage 2 bedsores can heal within 1 to 6 weeks , but ulcers that reach stage 3 or 4 may take several months, or they may never heal, especially in people with ongoing health problems. With the appropriate measures, patients and medical staff can significantly reduce the risk of developing pressure ulcers.

## 3: Pressure ulcers - Illnesses & conditions | NHS inform

*Pressure sores, also known as pressure ulcers or bed sores, are caused by application of extra pressure over patches of skin. Pressure sores are commonly seen among the very young or in the.*

Deep tissue injury new stage: Purple or maroon localized area of intact skin or blood-filled blister resulting from pressure damage of underlying soft tissue. Non-blanchable erythema of intact skin. Discolouration of the skin, warmth, edema, induration or hardness may also be used as indicators, particularly on individuals with darker skin. Partial-thickness skin loss involving epidermis, dermis, or both. The ulcer is superficial and presents clinically as an abrasion or blister. Full-thickness skin loss involving damage to or necrosis of subcutaneous tissue that may extend down to, but not through, underlying fascia. Slough may be present; may include undermining and tunneling. Extensive destruction, tissue necrosis or damage to muscle, bone or supporting structures, with or without full-thickness skin loss. Undermining and tunneling may develop. Full-thickness tissue loss in which actual depth of ulcer is completely obstructed by slough or eschar in the wound bed. Desired Outcomes Client will get stage-appropriate wound care and has controlled risk factors for prevention of additional ulcers. Nursing Interventions Rationale Assess the specific risk factors for pressure ulcer: Even clients with an existing pressure ulcer continue to be at risk for further injury, Nurses should consider all potential risk factors for pressure ulcers development. Elderly clients have less elastic skin, less moisture, less padding and have thinning of the epidermis, making it more prone to skin impairment. A severe protein depletion has an albumin level of less than 2. Assess for a history of preexisting chronic diseases e. Clients with chronic diseases typically exhibit multiple risk factors that predispose them to pressure ulceration. These include poor nutrition, poor hydration, incontinence, and immobility. Assess the skin on admission and daily for an increasing number of risk factors. The incidence of skin breakdown is directly related to the number of risk factor present. Assess for a history of radiation therapy. Irradiated skin becomes thin and brittle, may have less blood supply, and is at a higher risk for skin breakdown. Usually, people shift their weight off pressure areas every few minutes; this occurs more or less automatically, even during sleep. Clients with decreased sensation are unaware of unpleasant stimuli and do not shift weight, thereby exposing the skin to excessive pressure. Assess for fecal and urinary incontinence. The urea in urine turns into ammonia within minutes and is erosive to the skin. While the stool may contain enzymes that cause skin breakdown. Diapers and incontinence pads with plastic liners trap moisture and speed up breakdown. Assess for environmental moisture excessive perspiration, high humidity, wound drainage. Moisture may contribute to skin maceration. Assess the surface that the clients spend a majority of time on mattress for bedridden clients, cushion for clients in wheelchairs. Clients who spend the majority of time on one surface need a pressure reduction or pressure relief device to reduce the risk of skin breakdown. Assess the skin over bony prominences sacrum, trochanters, scapulae, elbows, heels, inner and outer malleolus, inner and outer knees, back of the head. These areas at highest risk for breakdown resulting from tissue ischemia from compression against a hard surface. Use an objective tool for pressure ulcer risk assessment: The Braden scale is the most widely used risk assessment. It consists of six subscales namely: Prophylactic pain medication may be indicated. Assess and stage the pressure ulcers. Staging is essential because it determines the treatment plan. Staging should be assessed at each dressing stage. It reflects whether the epidermis, dermis, fat, muscle, bone, or joint is exposed. If the ulcer is covered with necrotic tissue eschar, it cannot be accurately staged. Stage I ulcers are difficult to detect in darkly pigmented skin. The use of mirrors or a penlight may be helpful. Determine the condition of the wound or wound bed. Presence of necrotic tissue. Necrotic tissue is tissue that is dead and eventually must be removed before healing can take place. Necrotic tissue exhibits a wide range of appearance: The color of tissue is an indication of tissue viability and oxygenation. Eschar may be black in stage IV ulcers. Odor may arise from infection present in the wound; it may also arise from the necrotic tissue. Some local wound care products may create or intensify the odors and should be distinguished from wound or exudate odors. Viability of bone, joints, or muscle. In stage IV pressure ulcers, these may be apparent at the base of the ulcer. Wounds may demonstrate multiple stages or characteristics in a single wound. Measure the

size of the ulcer, and note the presence of undermining. The ulcer dimensions include length, width, and depth. An ulcer begins in the deepest tissue layers before the skin breaks down. Assess the condition of wound edges and surrounding tissue. Surrounding tissue may be healthy or may have various degrees of impairment. Healthy tissue is necessary for the use of local wound care products requiring adhesion to the skin. The presence of healthy tissue demarcates the boundaries of the pressure ulcer. Assess the wound exudate. Exudate is a normal part of wound physiology and must be differentiated from pus which is an indication of infection. Exudate may contain serum, blood, and white blood cells, and may appear clear, cloudy, or blood-tinged. The amount may vary from a few cubic centimeters, which are easily managed with dressings, to copious amounts not easily managed. Drainage is considered excessive when dressing changes are needed more often than every 6 hours. This tool provides standardization in the measurement of wound healing. It quantifies surface area, exudate, and the type of wound tissue. Provide local wound care: Apply a topical vasodilator e. Apply a flexible hydrocolloid dressing e. It prevents shear and friction. Apply a vitamin-enriched emollient to the skin every shift. It moisturizes the skin. Apply a Alginates Sorbsan, Kalginate, Kaltostat. Alginate dressings are a type that is highly absorbent and so can absorb the fluid exudate that is produced by some ulcers. These are often used for ulcers with moderate-to-heavy exudate. Apply hydrocolloids or a vapor-permeable membrane dressing. They are not advised to use for heavy-exudate-producing wounds. Apply gauze with sodium chloride solution. This maintains a moist environment but requires multiple dressing changes. Dressings must be removed while still wet. Dressings absorb small amounts of drainage. Can be used on wounds with low exudate. Usually use for shallow ulcers without exudates. Different foams have different levels of absorbency. They are best used on granulating wounds. Foams lessen odor and repel bacteria and water. Gauze with sodium chloride solution. This maintains a moist environment but requires multiple dressing changes as describe for stage II. Sharp or surgical debridement. This procedure removes the necrotic tissue and senescent cells that slow down the tissue repair process, converting a chronic wound into an acute one in the process. Involves allowing a traditional gauze-type dressing to dry out and adhere to the surface of the wound before manually removing the dressing, debriding any tissue attached to it. Stimulation of many cellular processes improves healing. Nerve-growth factors, colony-stimulating factors, and fibroblast growth factors are found to be effective in treating diabetic and venous ulcers. Negative pressure wound therapy.

## 4: Bedsores (pressure ulcers) - Diagnosis and treatment - Mayo Clinic

*The National Pressure Ulcer Advisory Panel (NPUAP) defines a pressure ulcer as a "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." 1 Individuals who are at a higher risk of developing pressure ulcers include those who are wheelchair- or bed.*

Bedsores are areas of damaged skin and tissue caused by sustained pressure — often from a bed or wheelchair — that reduces blood circulation to vulnerable areas of the body. Bedsores — also called pressure ulcers and decubitus ulcers — are injuries to skin and underlying tissue resulting from prolonged pressure on the skin. Bedsores most often develop on skin that covers bony areas of the body, such as the heels, ankles, hips and tailbone. People most at risk of bedsores are those with a medical condition that limits their ability to change positions or those who spend most of their time in a bed or chair. Bedsores can develop quickly. Most sores heal with treatment, but some never heal completely. You can take steps to help prevent bedsores and aid healing.

**Symptoms** Warning signs of pressure ulcers are:

- Unusual changes in skin color or texture
- Swelling
- An area of skin that feels cooler or warmer to the touch than other areas
- Tender areas

Bedsores fall into one of several stages based on their depth, severity and other characteristics. The degree of skin and tissue damage ranges from red, unbroken skin to a deep injury involving muscle and bone.

**Common sites of pressure sores** For people who use a wheelchair, pressure sores often occur on skin over the following sites:

- Tailbone or buttocks
- Backs of arms and legs where they rest against the chair

For people who are confined to a bed, common sites include the following:

- Back or sides of the head
- Shoulder blades
- Hip, lower back or tailbone
- Heels, ankles and skin behind the knees

**When to see a doctor** If you notice warning signs of a bedsore, change your position to relieve the pressure on the area. Seek immediate medical care if you show signs of infection, such as a fever, drainage from a sore, a sore that smells bad, or increased redness, warmth or swelling around a sore.

**Request an Appointment at Mayo Clinic**

**Causes** Bedsores are caused by pressure against the skin that limits blood flow to the skin. Other factors related to limited mobility can make the skin vulnerable to damage and contribute to the development of pressure sores. Three primary contributing factors for bedsores are:

- Constant pressure on any part of your body can lessen the blood flow to tissues. Blood flow is essential to delivering oxygen and other nutrients to tissues. Without these essential nutrients, skin and nearby tissues are damaged and might eventually die.
- Friction occurs when the skin rubs against clothing or bedding. It can make fragile skin more vulnerable to injury, especially if the skin is also moist.
- Shear occurs when two surfaces move in the opposite direction. For example, when a bed is elevated at the head, you can slide down in bed. As the tailbone moves down, the skin over the bone might stay in place — essentially pulling in the opposite direction.

**Risk factors** People are at risk of developing pressure sores if they have difficulty moving and are unable to easily change position while seated or in bed. This might be due to poor health, spinal cord injury and other causes.

- Lack of sensory perception. Spinal cord injuries, neurological disorders and other conditions can result in a loss of sensation. An inability to feel pain or discomfort can result in not being aware of warning signs and the need to change position.
- Poor nutrition and hydration. People need enough fluids, calories, protein, vitamins and minerals in their daily diet to maintain healthy skin and prevent the breakdown of tissues.
- Medical conditions affecting blood flow. Health problems that can affect blood flow, such as diabetes and vascular disease, increase the risk of tissue damage.

**Complications** Complications of pressure ulcers, some life-threatening, include:

- Cellulitis is an infection of the skin and connected soft tissues. It can cause warmth, redness and swelling of the affected area. People with nerve damage often do not feel pain in the area affected by cellulitis.
- Bone and joint infections. An infection from a pressure sore can burrow into joints and bones. Joint infections septic arthritis can damage cartilage and tissue.
- Bone infections osteomyelitis can reduce the function of joints and limbs. Rarely, a skin ulcer leads to sepsis.

**Prevention** You can help prevent bedsores by frequently repositioning yourself to avoid stress on the skin. Other strategies include taking good care of your skin, maintaining good nutrition and fluid intake, quitting smoking, managing stress, and exercising daily.

**Tips for repositioning** Consider the following recommendations related to repositioning in a bed or chair:

- Shift your weight frequently. If you use a

wheelchair, try shifting your weight about every 15 minutes. Ask for help with repositioning about once an hour. Lift yourself, if possible. If you have enough upper body strength, do wheelchair pushups – raising your body off the seat by pushing on the arms of the chair. Look into a specialty wheelchair. Some wheelchairs allow you to tilt them, which can relieve pressure. Select cushions or a mattress that relieves pressure. Use cushions or a special mattress to relieve pressure and help ensure your body is well-positioned. Do not use doughnut cushions, as they can focus pressure on surrounding tissue. Adjust the elevation of your bed. If your bed can be elevated at the head, raise it no more than 30 degrees. This helps prevent shearing.

Tips for skin care Consider the following suggestions for skin care: Keep skin clean and dry. Wash the skin with a gentle cleanser and pat dry. Use plain talcum powder to protect skin at friction points. Apply lotion to dry skin. Change bedding and clothing frequently if needed. Watch for buttons on the clothing and wrinkles in the bedding that irritate the skin. Inspect the skin daily. Look closely at your skin daily for warning signs of a pressure sore.

## 5: Bed sores: Treatment, stages, and prevention

*Although risk-assessment instruments can identify patients at higher risk for pressure ulcers, more research is needed to understand how the use of risk-assessment instruments impacts pressure ulcer incidence compared with clinical judgment.*

**Print Diagnosis** Your doctor will look closely at your skin to determine whether you have a pressure ulcer and how bad the damage is. He or she will try to assign a stage to the wound. Staging helps determine what treatment is best for you. He or she might also order a blood test to assess your general health. Questions from the doctor Your doctor might ask questions such as: When did the pressure sore first appear? What is the degree of pain? Have you had pressure sores in the past? How were they managed, and what was the outcome of treatment? What kind of care assistance is available to you? What is your routine for changing positions? What medical conditions have you been diagnosed with, and what is your current treatment? What is your normal daily diet and fluid intake? **Treatment** Treating pressure ulcers involves reducing pressure on the affected skin, caring for the wounds, controlling pain, preventing infection and maintaining good nutrition. **Treatment team** Addressing the many aspects of wound care usually requires a multidisciplinary approach. Members of your care team might include: A primary care physician who oversees the treatment plan A physician or nurse specializing in wound care Nurses or medical assistants who provide both care and education for managing wounds A social worker who helps you or your family access resources and who addresses emotional concerns related to long-term recovery A physical therapist who helps with improving mobility An occupational therapist who helps to ensure appropriate seating surfaces A dietitian who monitors your nutritional needs and recommends a good diet A doctor who specializes in conditions of the skin dermatologist A neurosurgeon, orthopedic surgeon or plastic surgeon **Reducing pressure** The first step in treating a bedsore is reducing the pressure and friction that caused it. If you have a pressure sore, turn and change your position often. How often you reposition depends on your condition and the quality of the surface you are on. Generally if you use a wheelchair, try shifting your weight every 15 minutes or so and change positions every hour. Use a mattress, bed and special cushions that help you sit or lie in a way that protects vulnerable skin. **Cleaning and dressing wounds** Care for pressure ulcers depends on how deep the wound is. Generally, cleaning and dressing a wound includes the following: If the affected skin is not broken, wash it with a gentle cleanser and pat dry. Clean open sores with water or a saltwater saline solution each time the dressing is changed. **Putting on a bandage.** A bandage speeds healing by keeping the wound moist. This creates a barrier against infection and keeps the surrounding skin dry. Bandage choices include films, gauzes, gels, foams and treated coverings. You may need a combination of dressings. **Removing damaged tissue** To heal properly, wounds need to be free of damaged, dead or infected tissue. Removing this tissue debridement is accomplished with a number of methods, such as gently flushing the wound with water or cutting out damaged tissue. **Other interventions** Other interventions include: **Drugs to control pain.** Nonsteroidal anti-inflammatory drugs (NSAIDs) such as ibuprofen (Advil, Motrin IB), others and naproxen sodium (Aleve) might reduce pain. These can be very helpful before or after repositioning and wound care. **Topical pain medications** also can be helpful during wound care. **Drugs to fight infection.** **Good nutrition** promotes wound healing. This method, which is also called vacuum-assisted closure (VAC), uses a device to clean a wound with suction. **Surgery** A large pressure sore that fails to heal might require surgery. One method of surgical repair is to use a pad of your muscle, skin or other tissue to cover the wound and cushion the affected bone flap reconstruction. **Request an Appointment at Mayo Clinic** **Clinical trials** Explore Mayo Clinic studies testing new treatments, interventions and tests as a means to prevent, detect, treat or manage this disease. **Coping and support** People with pressure sores might experience discomfort, pain, social isolation or depression. Talk with your care team about your needs for support and comfort. A social worker can help identify community groups that provide services, education and support for people dealing with long-term caregiving or terminal illness. Parents or caregivers of children with pressure ulcers can talk with a child life specialist for help in coping with stressful health situations. Family and friends of people living in assisted living facilities can be

advocates for the residents and work with nursing staff to ensure proper preventive care.

## 6: Pressure Ulcer Treatment CEU | Wound Care Continuing Education

*Pressure ulcer risk assessment is crucial to the prevention of pressure ulcers. There are many factors which put certain patients at higher risk of developing these painful injuries that increase health care costs and lead to prolonged hospitalization, and sometimes death.*

Each stage of a decubitus ulcer has different symptoms. Depending on the stage, you may have any of the following: The area may appear red if you have a light complexion. The discoloration may vary from blue to purple if you have a dark complexion. It may appear white. Stage 2 The skin is open and shows signs of some tissue death around the wound. The ulcer is shallow with a red-pink wound bed. There might also be a blister filled with fluid. Stage 3 The ulcer is much deeper within the skin. It affects your fat layer and looks like a crater. There also might be something that looks like pus in the sore. Stage 4 Many layers are affected in this stage, including your muscle and bone. A dark substance called eschar may be inside the sore. Unstageable The ulcer may be yellow or green. It can be soft and look like pus, or it can have a brown scab covering. What causes a decubitus ulcer? Pressure is one of the main causes of a decubitus ulcer. Lying on a certain part of your body for long periods may cause your skin to break down. Your skin is thinner in places next to bone or cartilage. The hips, heels, and tailbone are especially vulnerable to pressure sores. Decubitus ulcers can also happen when you scrape or rub your skin against a hard or rough surface. Friction burns on the skin may damage the outermost layer of skin cells. This layer is called the epidermis. Wearing soiled clothing or undergarments for long periods of time may create open sores on the skin. This may irritate the delicate outer skin layer. There are a number of risk factors for decubitus ulcers: Poor eating habits or not getting enough nutrients in your diet may influence the condition of your skin, which can increase your risk. This includes not drinking enough water to keep your skin hydrated and to prevent dryness. Conditions like diabetes may restrict your blood circulation, which can cause tissue destruction in your skin and increase your risk. Your healthcare provider may refer you to a wound care team of doctors, specialists, and nurses experienced in treating pressure sores. The team may evaluate your ulcer based on several things. In addition, they may look for signs of bacteria growth and cancer. Your treatment will depend on the stage of your ulcer. Treatment can include medications, therapies, or surgery. Antibacterial drugs may treat the infection. You may also receive medication to relieve or reduce any discomfort. A process to remove dead tissue called debridement is an option for cleaning your wound. Keeping the site clean and free of debris is important to promote healing. Your healthcare provider may order frequent dressing changes of your wound. Your healing process depends on the stage of your ulcer. Your healthcare provider may suggest that you change your diet and increase your fluid intake to help you recover faster. Later stages often require more aggressive treatments and longer recovery times.

## 7: Braden Scale for Predicting Pressure Ulcer Risk - Wikipedia

*Pressure ulcers are caused by intrinsic and extrinsic factors. The intrinsic factors include immobilization, cognitive deficit, chronic illness (eg, diabetes mellitus), poor nutrition, use of steroids, and aging. 5,6 There are 4 extrinsic factors that can cause these wounds—pressure, friction.*

Enter terms Risk assessment tools used for preventing pressure ulcers Pressure ulcers also known as bed sores, pressure sores and decubitus ulcers are areas of localised injury to the skin, underlying tissue or both, usually over a bony prominence, as a result of pressure, or pressure in combination with shear tissue distortion resulting from squeezing and stretching soft tissues between bony structures and the skin. Pressure ulcers mainly occur in people who have limited mobility, nerve damage or both. Pressure ulcer risk assessment is part of the process used to identify individuals at risk of developing a pressure ulcer. Risk assessments generally use checklists and their use is recommended by pressure ulcer prevention guidelines. This review found two studies that were eligible for inclusion. The first study found no difference in the number of new pressure ulcers that developed in individuals assessed using the Braden risk assessment compared with an unstructured risk assessment. However, there were methodological limitations with this study. The second study also found no differences in the number of new pressure ulcers that developed in individuals assessed using the Waterlow risk assessment tool, the Ramstadius risk assessment tool, or using clinical judgement alone. This study did not have methodological limitations. Therefore, to date, there are no studies to suggest that the use of risk assessment tools, reduces the number of new pressure ulcers that develop. Two studies were identified which evaluated the effect of risk assessment on patient outcomes; In one study, there was no statistically significant difference in pressure ulcer incidence between people who were assessed using the Braden risk assessment tool compared with those receiving unstructured risk assessment. Methodological limitations of this study prevent firm conclusions being drawn. However, a further high quality RCT identified no statistical differences in pressure ulcer incidence when people were assessed using either the Waterlow risk assessment tool, the Ramstadius risk assessment tool, or using clinical judgement alone. There is no reliable evidence to suggest that the use of structured, systematic pressure ulcer risk assessment tools reduces the incidence of pressure ulcers. Read the full abstract Use of pressure ulcer risk assessment tools or scales is a component of the assessment process used to identify individuals at risk of developing a pressure ulcer. Indeed, use of a risk assessment tool is recommended by many international pressure ulcer prevention guidelines, however it is not known whether using a risk assessment tool makes a difference to patient outcomes. We conducted a review to provide a summary of the evidence pertaining to pressure ulcer risk assessment in clinical practice. To determine whether using structured, systematic pressure ulcer risk assessment tools, in any health care setting, reduces the incidence of pressure ulcers. Randomised controlled trials RCTs comparing the use of structured, systematic, pressure ulcer risk assessment tools with no structured pressure ulcer risk assessment, or with unaided clinical judgement, or RCTs comparing the use of different structured pressure ulcer risk assessment tools. Data collection and analysis: Two review authors independently assessed titles and abstracts of the studies identified by the search strategy for eligibility, obtained full versions of potentially relevant studies and screened these against the inclusion criteria. We included two studies in this review. There was no statistical difference in pressure ulcer incidence between the three groups Waterlow 7. You may also be interested in:

## 8: Pressure ulcer - Wikipedia

*Pressure ulcer risk assessment. 20 January, Early detection and preventive action are vital to reduce avoidable pressure ulcers.*

Mobility Special risk factors Potential scores range from 1 to The tool identifies three categories of risk: Interventions that will help the clinician prevent pressure ulcers do so from both an outside and inside approach. With the outside approach, the clinician can minimize pressure through regular repositioning, using a support surface, and managing incontinence to prevent skin damage from moisture. The inside approach includes the management of nutrition and hydration to support the body in preventing damage and healing any damage that has occurred. Regular Repositioning and Early Mobilization While the underlying cause and formation of pressure ulcers is multifaceted, by definition a pressure ulcer cannot form without pressure on the tissue. Thus, immobility is the most significant risk for the development of pressure ulcers. High pressures over bony prominences for a short time and low pressures over bony prominences for a long time are equally damaging NPUAP, In order to decrease the risk, it is important to reduce the time and amount of pressure the patient is exposed to. All patients must have their positions changed on a regular schedule. A referral to physical therapy is helpful in devising interventions and providing education to increase mobility. The therapist can educate the patient, family, and staff on safe ways to help keep the patient as mobile as possible. A referral to occupational therapy can also provide interventions for transfers, skill training for mobility, and independence skills for hygiene and toileting. Skills learned from an occupational therapist can reduce incontinence and immobility, which can reduce the risk of pressure ulcer development. The physical and occupational therapists, who teach the patient, family, and staff how best to safely mobilize the patient Occupational therapists, who address lifestyle factors that can lead to increased incidence of pressure ulcers and provide physical, psychosocial, and environmental modifications to benefit treatment and prevention Ghaisas et al. It is important to keep in mind that when lateral rotation mattresses are used for pulmonary and cardiovascular care, such rotation does not off-load the skin; the patient must still be repositioned off the bed surface and the skin checked frequently. If the medical condition is so severe that repositioning the patient regularly is not possible, then a support surface designed to decrease pressure must be used and the patient repositioned with frequent small shifts e. When we think of turning the patient, we often think that the patient must be completely over on a side. Frequent small position changes, rather than completely turning the patient, is faster, easier, and safer for all. Any change in position is beneficial. The patient need only be tilted to the side, no more than 30 degrees, with pillows or wedges to help support and reduce the pressure over bony prominences. A small pillow behind the shoulder or the hip alters position without having to move the entire body. Bending the knee alters the pressure on the sacrum and hip. A pillow between the knees prevents pressure when one bony prominence is lying directly on top of another. A small pillow behind the heel will elevate the heel off the surface and prevent pressure. A small turn using a bolster can be as effective as a full turn. NPUAP provides the following general recommendations for repositioning: Reposition the patient in such a way that pressure is relieved or redistributed. Avoid positioning the patient on bony prominences with existing nonblanchable erythema. Avoid subjecting the skin to pressure and shear forces and use manual handling aids to reduce friction and shear. Liftâ€”do not dragâ€”the patient while repositioning. Dragging the patient will cause skin damage due to friction. In most situations, simple devices like lift sheets can be used. Use a split leg sling mechanical lift device when available to transfer a patient into a wheelchair or bedside chair when the patient needs total assistance to transfer. Do not leave moving and handling equipment under the patient after use unless the equipment is specifically designed for that purpose. Avoid positioning directly onto medical devices such as tubes, drainage systems, or other foreign objects. Do not leave the patient on a bedpan longer than necessary. Use principles of safe patient handling to prevent injury to both the patient and the staff. Recommendations for repositioning in bed include: Use the degree tilted side-lying position, alternating between right side, back, left side, or prone position if patient can tolerate this and the medical condition allows. Encourage individuals who can reposition themselves to sleep in a to degree side-lying

position or flat in bed if not contraindicated. Avoid lying postures that increase pressure, such as a degree side-lying position or the semirecumbent position. Limit head-of-bed elevation to 30 degrees for an individual on bedrest unless contraindicated by medical condition or feeding considerations. If not contraindicated, lower the head of the bed one hour after eating or intermittent bolus tube feedings. If sitting in bed is necessary, avoid head-of-bed elevation or a slouched position that places pressure and shear on the sacrum and coccyx. For a patient with an existing pressure ulcer: Do not position the patient directly on the ulcer or on areas of nonblanchable redness or deep tissue injury. Pressure reduces perfusion to the injured tissues and will delay healing and may cause deterioration of the wound. Continue to turn and reposition the patient regardless of the support surface in use. Inspect the skin for additional damage each time the patient is turned or repositioned. The posterior heel sustains intense pressure, even when a pressure reduction surface is used. Because the heel has so little tissue, the pressure is transmitted directly to the bone. Pressure can be relieved by elevating the lower leg and calf from the mattress by placing a pillow under the lower leg or using a suspension device that floats the heel. The pressure will then be spread to the lower leg, relieving the heel. The recommended position for the pillow is lengthwise under the calf, with the heel suspended off the pillow. The patient must still be turned at regular intervals to promote pulmonary, renal, and vascular function along with protecting skin integrity. Heels are properly floated. Padding devices such as synthetic sheep skin, bunny boots, and rigid splints protect the heels and remove friction and shear but do not remove the pressure. This author had two patients who had below-the-knee amputations due to pressure ulcers along the Achilles tendon caused by rigid splints. Common devices such as intravenous bags, rolled towels or sheets, cut-out rings, and water-filled gloves are not designed to redistribute pressure and can actually increase pressure. When a patient is seated, the weight of the body causes the greatest amount of pressure to occur over the ischial tuberosities. Since this area of the body is relatively small, the ischia bear intense pressure when a person is seated; without pressure relief, a pressure ulcer will occur quickly. If the patient cannot sit upright but slouches in the chair, then the sacral area is at risk as well. Pressure remains unrelieved in a paralyzed person because the small involuntary movements that restore blood flow to the tissues are absent. Tilt and recline, though often confused, actually serve distinct and complementary positioning roles. Reclining a chair changes the hip angle and provides some pressure relief, but shearing forces may remain on the back. A tilt-in-space chair both tilts the head back and raises the feet up concurrently, thereby providing more pressure relief and less shearing forces. It is often recommended to use a combination of tilt and recline positioning when addressing pressure relief for a mobility-impaired individual RESNA, General recommendations for the chair-bound patient include: Stand the patient and reseat them in the chair frequently if possible. Provide adequate seat tilt to prevent sliding forward in the chair and adjust footrests and armrests to maintain proper posture and pressure redistribution. Elevate the legs or place the feet on a stool if the feet do not reach the floor in such a way as to slightly tilt the pelvis forward by positioning the thighs slightly lower than horizontally. This will prevent sliding forward out of the chair and reduce pressure on the sacrum. Elevate the feet and recline the chair by 30 degrees to reduce pressure. This includes chair pushups, leaning forward, leaning side to side, or tilting backwards. Leaning forward is the most effective and might be easier than chair push-ups. Acutely ill patients at risk for pressure ulcers should not sit for longer than two hours at a time and not return to sitting for at least an hour. Patients who are incapable of changing their position while sitting should be repositioned at least every hour by a caregiver. Minimize sitting time and consult a seating specialist if the ulcer worsens on the seating surface selected. Consider periods of bed rest to promote ischial and sacral ulcer healing. Avoid sitting a patient with an ischial pressure ulcer in a fully erect posture. Patients with existing pressure ulcers on the ischial areas should limit time sitting in the chair to three times a day for 60 minutes or less, and they must use a cushion gel or air cushions are best that redistributes pressure. This may include assessing the seating and positioning needs of individuals who are wheelchair bound. Proper wheelchair positioning with an individualized seating system can promote good posture, enhance breathing and digestion, prevent complications such as pressure sores and skin irritation, slow further loss of mobility, minimize pain, and maximize functioning. Components of a wheelchair seating system include appropriate size and width as well as specialized supportive cushions, backrests, headrests, and trunk, arm, and leg supports when indicated. CASE Patricia is a year-old female with

multiple sclerosis, leaving her bedridden and unable to move her legs. Despite being on a pressure reduction surface, she has developed a stage 3 pressure injury at her sacrum because of refusing to be turned due to the severe pain she experiences each time her right leg is moved. This has made it very difficult for the staff to provide wound care and keep Patricia clean. The nurse asks the physical therapist for recommendations to make moving Patricia less painful for her and less stressful for the staff. After the initial evaluation with Patricia, the therapist recommends localized heat treatments to her right leg, gentle active-assisted range of motion, and bed exercises to tolerance. After several treatments with the therapist, Patricia is able to tolerate turning toward her right side and staying in position for the time needed to care for her wound and clean her. As a result, Patricia no longer screams out in pain when repositioned. Using Support Surfaces Factors in the development of pressure ulcers include prolonged pressure, friction and shear, and moist, warm skin. Pressure redistribution is the most important feature of a support surface. A surface that effectively redistributes pressure across the entire body contact surface effectively reduces the amount of pressure and extends the time a patient can safely remain in one position WOCN, b. It is critical to remember, however, that there is no mattress, cushion, or bed available today, at any price, that will eliminate pressure and relieve the clinician or caregiver from having to reposition the patient. Patients must still be repositioned no matter what surface is used. Likewise, pressure is not the only contributing factor to skin breakdown and does not replace attention to perfusion, nutritional support, and management of comorbidities WOCN, b. As the body does this, the pressure is spread out along the body surface.

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*Pressure ulcer risk assessment is a standardized process that uses previously developed risk assessment tools or scales, as well as the assessment of other risk factors that are not captured in these scales. Risk assessment tools are instruments that have been developed and validated to identify people at risk for pressure ulcers.*

After your risk assessment is completed, your care team will draw up a "repositioning timetable", which states how often you need to be moved. For some people, this may be as often as once every 15 minutes. The risk assessment will also consider the most effective way of avoiding putting any vulnerable areas of skin under pressure whenever possible. You may also be given training and advice about: Your care team will discuss the types of mattresses and cushions most suitable for you. For example, there are mattresses that can be connected to a constant flow of air, which is automatically regulated to reduce pressure as and when required. Examples of these types of dressings include: Antibiotics If you have a pressure ulcer, you will not routinely be prescribed antibiotics. These are usually only prescribed to treat an infected pressure ulcer and prevent the infection from spreading. Antiseptic cream may also be applied directly to pressure ulcers to clear out any bacteria that may be present. Nutrition Certain dietary supplements, such as protein, zinc and vitamin C, have been shown to accelerate wound healing. If your diet lacks these vitamins and minerals, your skin may be more vulnerable to developing pressure ulcers. As a result of this, you may be referred to a dietitian so that a suitable dietary plan can be drawn up for you. Debridement In some cases, it may be necessary to remove dead tissue from the ulcer to help stimulate the healing process. This procedure is known as debridement. If there is a small amount of dead tissue, it may be possible to remove it using specially designed dressings and paste. Larger amounts of dead tissue may be removed using mechanical means. Some mechanical debridement techniques include: Maggot therapy Maggot therapy, also known as larvae therapy, is an alternative method of debridement. Maggots are ideal for debridement because they feed on dead and infected tissue without touching healthy tissue. They also help to fight infection by releasing substances that kill bacteria and stimulate the healing process. During maggot therapy, the maggots are mixed into a wound dressing and the area is covered with gauze. After a few days, the dressing is taken off and the maggots are removed. Many people may find the idea of maggot therapy off-putting, but research has found that it is often more effective than more traditional methods of debridement. In such cases, surgery will be required to seal the wound and prevent any further tissue damage occurring. Surgical treatment involves cleaning the wound and closing it by bringing together the edges of the wound direct closure , or by using tissue moved from a nearby part of the body flap reconstruction. Pressure ulcer surgery can be challenging, especially because most people who have the procedure are already in a poor state of health. There is a risk of a large number of possible complications occurring after surgery, including: These complications are discussed below. Cellulitis Infection can spread from the site of the pressure ulcer to a deeper layer of skin. This type of infection is called cellulitis. It causes symptoms of pain and redness, plus swelling of the skin. It will need to be treated with a course of antibiotics. Left untreated, there is a risk that the infection can spread to the blood see below or the underlying bone or joint. In rare cases, where pressure ulcers involve the lower back, tail bone and spine, the pressure ulcer can spread to the membranes that surround the spine and brain. This is known as meningitis. Blood poisoning If a person with a weak immune system has a pressure ulcer that becomes infected, there is a risk that the infection will spread into their blood and other organs. This is known as blood poisoning or septicemia. In the most serious cases of blood poisoning, damage to multiple organs can lead to a large drop in blood pressure, known as septic shock , which can be fatal. Symptoms include cold skin and an increased heart beat. Blood poisoning is a medical emergency. It requires immediate treatment in an intensive care unit ICU , so that the functions of the body can be supported while the infection is treated with antibiotics or antiviral medication. Bone and joint infection Infection can also spread from a pressure ulcer into underlying joints septic arthritis and bones osteomyelitis. Both of these infections can damage the cartilage, tissue and bone. They may also affect the joints and limbs. Antibiotics are required to treat bone and joint infections. In the most serious of cases, infected bones and joints may need to be surgically removed. Necrotising fasciitis Necrotising fasciitis,

commonly known as "flesh-eating" bacteria, is a serious skin infection that causes rapid tissue death. Emergency treatment is required. It involves a combination of antibiotics and surgical debridement of the dead tissue.

**Gas gangrene** Gas gangrene is a serious but rare form of infection that occurs when a pressure ulcer becomes infected with the clostridium bacteria. The bacteria thrive in environments where there is little or no oxygen. They produce gases and release dangerous toxins. Symptoms of gas gangrene include severe pain and rapid swelling of the skin. Gas gangrene requires immediate treatment with surgical debridement. In the most serious of cases, it may be necessary to amputate the affected body part to prevent the gangrene from spreading to the rest of the body.

**Prevention** As part of your treatment plan, your care team will discuss with you the best way to prevent pressure ulcers. This will be based on your individual circumstances. However, you may find that the general advice outlined below is helpful.

**Changing position** Making regular and frequent changes to your position is one of the most effective ways of preventing pressure ulcers. If a pressure ulcer has already developed, regularly changing position will help to avoid putting further pressure on it, and give the wound the best chance of healing. As a general rule, wheelchair users will need to change their position at least once every 15 to 30 minutes. If you are unable to change position yourself, a carer or relative will need to assist you.

**Nutrition** Eating a healthy, balanced diet that contains an adequate amount of protein and a good variety of vitamins and minerals can help prevent skin damage and speed up the healing process. You may be referred to a dietitian so that a dietary plan can be drawn up for you. If you currently have a reduced appetite due to a pre-existing health condition, the following advice may be useful: Set a timetable for when you should eat, rather than waiting until you feel hungry. This should ensure that you receive the necessary nutrition. Avoid drinking large amounts of fluids just before you are about to eat, as this will make you feel fuller than you actually are. Cheese, yoghurt, peanut butter, custard, beans and nuts are all good sources of protein. This is particularly important if you have an underlying condition, such as nerve damage or diabetes, which may dampen or numb feelings of pain in certain parts of your body. You can use a mirror to check the parts of your body that are difficult to see, such as your bottom and the heels of your feet. If you notice any damage, report it to your care team. If you are at home, contact your GP or community nurse. If you are in hospital or a nursing home, inform one of your nurses or carers.

**Quit smoking** If you are a smoker, giving up is one of the most effective ways of preventing pressure ulcers. Smoking reduces the levels of oxygen in your blood. It also weakens your immune system, which increases your risk of developing pressure ulcers.

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