

Pressure Ulcer Assessment and Risks

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Author(s)

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Disclosures

None

Audience

Registered Nurse

Accreditation

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Course Objectives

After completion of this course participants will be able to:

1. Describe the physiological aspects of skin, as the body's largest organ.
2. Identify 2 effects aging has on the skin.
3. Examine the components of a skin assessment.
4. Document a skin assessment.
5. Define the term Pressure Ulcer Risk Assessment Tool.
6. Discuss the criteria and answer choices in each section of the Braden Risk Assessment Tool.
7. Develop preventative intervention choices based on answers in each section of the Braden Risk Assessment Tool.
8. Create a pressure ulcer prevention plan of care.
9. Define pressure ulcer.
10. Describe the stages of pressure ulcers: Stage I, II, III, IV, Unstageable, and Suspected Deep Tissue Injury (DTI).
11. Explain how to assess a pressure ulcer.
12. Document a pressure ulcer assessment.
13. Develop a pressure ulcer plan of care based on the risk assessment and the pressure ulcer assessment.

The Skin

- Facts about skin
 - Largest organ of the body
 - Receives 2/3 of the body's blood volume
 - Sheds and re-grows outer skin cells about every 27 days

Functions of the Skin

- Protects from bacterial invasion
- Protects against UV rays
- Holds the body's shape
- Senses the environment
- Maintains temperature
- Prevents excessive loss of fluids and electrolytes

Skin Layers

- The skin is made up of two layers with each layer performing specific functions. The layers are:
 - Epidermis
 - Dermis

Epidermis

- The epidermis is the thin outer layer of skin and consists of five layers:
 - Stratum corneum (horny layer)
 - Stratum lucidum (clear layer)
 - Stratum granulosum (granular layer)
 - Stratum spinosum (spiny layer)
 - Stratum germinativum (granular layer)

Dermis

- The dermis is the middle layer of the skin and contains:
 - Blood vessels
 - Lymph vessels
 - Hair follicles
 - Sweat glands
 - Collagen bundles
 - Fibroblasts
 - nerves

Underlying Structures

- Underlying structures below the epidermis and dermis include:
 - Subcutaneous tissue
 - Fascia
 - Muscles
 - Bones
 - Ligaments
 - Cartilage
 - tendons

Subcutaneous Layer

- Deepest layer of skin
- Network of collagen and fat cells
- Conserves body heat
- Protects from injury
- Shock absorber

Fascia

- White shiny appearance
- Gives support to muscle fibers
- Keeps muscles in bundles so they can function as a single unit

Muscles

- The engine for the body's movement

Bones

- Support and protect internal organs
- Provides the body's structure and frame

Ligaments, Cartilage & Tendons

- Connect bone to bone and muscle to bone
- Protect bone to bone and muscle to bone

Aging and Skin

- Sunlight is a major cause of skin changes often thought as aging changes. These include:
 - Wrinkles
 - Dryness
 - Age spots

Wrinkles

- Overtime the sun's ultraviolet light damages the fibers in the skin called elastin. The breakdown of these fibers causes the skin to lose its ability to snap back after stretching. As a result, wrinkles form.
- Wrinkles are especially pronounced in sun exposed areas.
- Gravity also is at work, pulling the skin and causing it to sag, most noticeably on the face, neck and upper arms.

Aging Skin

- As skin ages it becomes thinner and loses fat
- Looks less plump and smooth
- Underlying structures (veins, bones) become more prominent

Dry Skin

- Sebaceous glands produce less oil with aging
 - Men less significant
 - Women changes begin following menopause
- Skin appears dry, rough, scaly
- Skin appears translucent, thin and pale
- Often “itchy”
- Most dry on lower legs, elbows and forearms

Age Spots

- Lentigos – also called age spots, liver spots
- Flat, brown spots caused by years of sun exposure
- The number of pigment-containing cells (melanocytes) decreases, but the remaining melanocytes increase in size.
- Located on the face, hands, arms, back and feet
- May be accompanied by wrinkling, dryness and roughness

Skin Trauma

- Bruises – loss of fat and connective tissue weakens the support around blood vessels making them more susceptible to injury. Blood vessels of the dermis become more fragile, leading to bruising, bleeding under the skin (senile purpura) and cherry angiomas.
- Skin Tears – more fragile skin, loss of support causes skin to tear easily and take longer to heal.

Skin Cancer

- The most common type of cancer in the US
- Affects 40 – 50% of Americans who live to age 65...then the % goes up!
- UV radiation from the sun is the main cause of skin cancer.

Other Changes

- Sweat glands produce less sweat
 - Harder to keep cool
 - Increases the risk for becoming overheated or developing heat exhaustion or heat stroke
- Growths such as skin tags, warts and blemishes are more common

Healing

- Aging skin repairs itself more slowly
- Wound healing may be up to 4 times slower than younger skin
- Conditions such as diabetes, vascular disease, lung disease, lowered immunity, chronic illnesses affect the skin and increase the potential for injury, decline and delayed healing.

Aging Skin Recap

- Aging isn't for sissies!

Skin Assessment

- Components
 - General condition of the skin
 - Supple, moist, dry
 - Turgor
 - Good, fair, poor
 - Texture
 - Thin, fragile, smooth, rough, scaled, leathery, fatty
 - Coloring
 - Normal, pale, flushed, cyanotic

Skin Assessment

- Components
 - Scars
 - Location
 - Presence of specific skin concern
 - Surgical site, trauma (skin tear, abrasion, bruise, senile purpura), clear blister, blood blister, venous ulcer, arterial ulcer, neuropathic ulcer, excoriation, perineal dermatitis, shear/friction, Kennedy ulcer, burn, cellulitis, pressure ulcer (and stage), other concerns.

Skin Assessment

- Lower Extremities
 - Hair growth – present or absent
 - Pulses – present, diminished, absent
 - Temperature – cool, warm, different left to right
 - Edema – present, absent, amount
 - Appearance – normal, bronze color, pain/dusky, purple/red, flakey, scaled, distended veins, darker or discolored, other appearances

Skin Assessment

- Conduct an abbreviated skin assessment on a fellow participant of exposed skin (face, neck, arms, lower legs) and document the assessment.

PU Risk Assessment

- Pressure Ulcer Risk Assessment Tool – a tool that assists in identifying those patients/residents likely to develop a pressure ulcer. Through completing a pressure ulcer risk assessment, a predictable risk of developing a pressure ulcer is calculated, so the care giver can initiate interventions to minimize the potential of pressure ulcer development.
- Most common tools – Braden Scale, Norton Scale

Braden Subscales

- Sensory perception – ability to respond meaningfully to pressure related discomfort
- Activity – degree of physical activity
- Mobility – ability to change and control body position
- Skin moisture – degree to which the skin is exposed to moisture
- Nutritional intake – usual food intake pattern
- Friction and shear – degree of exposure to friction and shear forces

Braden Tool

- The subscales address the two primary etiologic factors of PU development:
 - Intensity and duration of pressure
 - Tissue tolerance for pressure
- Sensory perception, mobility and activity address clinical situations that predispose a resident to intense and prolonged pressure.
- Moisture, nutrition and friction/shear address clinical situations that alter tissue tolerance for pressure.

Braden Ranking

- Numerical Score for each subsection
- Total the scores
- Lower the score, higher the risk of PU development
 - 15 – 18 at risk
 - 13 – 14 moderate risk
 - 10 – 12 high risk
 - 9 & below very high risk

Braden Tool

- Rule of thumb – when the data is borderline, the lower level of care will be assigned
 - Sensory – decreased conscious state and decreased cutaneous sensation – lower of category is assigned
 - Moisture – consider the entire body surface in the control of moisture
 - Mobility and activity – if no motivation to change position or to sustain changes, then the lower of the category is assigned

Braden Tool

- Rule of Thumb
 - Nutrition – the “*usual*” amount of intake is assessed
 - Friction and Shear – consider diseases, medications and devices that contribute to friction and shear and assign the lower of possible categories.

Interventions to Risk Categories

- Sensory – No limitation = 4
 - Teach resident to report pain/discomfort over bony prominences
 - Check heels
 - Other?

Intervention to Risk Categories

- Sensory – slightly limited = 3
 - Skin assessment and inspection every shift
 - Off load heels
 - Minimize shear/friction forces
 - Avoid HOB elevated > 30 degrees
 - Chair cushions
 - Other?

Intervention to Risk Categories

- Sensory – very limited = 2
 - Skin assessment and inspection every shift
 - Off load heels
 - Minimize shear/friction forces
 - Avoid HOB > 30 degrees
 - Turning schedules
 - Re-distribution mattress
 - Chair cushions and redistribution schedules
 - Other?

Intervention to Risk Categories

- Sensory – completely limited = 1
 - All of the above
 - Pillows and positioning devices to minimize skin/skin contact
 - Medications to improve sensory – (treat neuropathy)
 - Control extreme temperature changes

Intervention to Risk Categories

- Moisture – rarely moist = 4
 - Use lotions and moisturizers to prevent drying of the skin
 - Observe for cracks, abrasions, excoriations to the skin
 - Avoid drying products to the skin

Intervention to Risk Categories

- Moisture – occasionally moist = 3
 - All of the above
 - Monitor under breast and appendages for moisture and maceration
 - Use moisture barriers in moisture prone areas of skin from perspiration and incontinence
 - Avoid hot water
 - Use mild soaps and soft wash cloths to minimize drying

Intervention to Risk Categories

- Moisture – moist = 2
 - All of the above
 - Check incontinent briefs/pads frequently and change
 - Consider bowel and/or bladder training

Intervention to Risk Categories

- Moisture – constantly moist = 1
 - All of the above
 - Use skin sealants to protect constantly moist skin
 - Consider external catheter and fecal containment
 - Consider low air loss or specialty bed
 - Increase hydration

Intervention to Risk Categories

- Activity – walks frequently = 4
 - Involve in center activities
 - Check skin daily
 - Monitor balance, safety, endurance – interventions as necessary

Intervention to Risk Categories

- Activity – walks occasionally = 3
 - All of the above
 - Walk and dine programs
 - Structured mobility program
 - Chair cushion
 - Center outings

Intervention to Risk Categories

- Activity – chairfast = 2
 - All of the above
 - Skin checks every shift
 - Specialty chair cushion, drop seat to chair
 - Re-distribution schedule for sitting
 - Exercise program to promote circulation
 - Therapy involvement
 - Use of positioning devices and footrests

Intervention to Risk Categories

- Activity – bedrest = 1
 - All of the above
 - Minimize HOB > 30 degrees
 - Heel off loading
 - Turning schedule
 - 30 degree lateral turns
 - Specialty mattress
 - Avoid skin/skin contact

Intervention to Risk Categories

- Mobility – no limitations = 4
 - Involve in center activities
 - Check skin daily
 - Monitor balance, safety, endurance – interventions as necessary
 - Assess and treat pain with movement

Intervention to Risk Categories

- Mobility – slightly limited = 3
 - All of the above
 - Reposition/redistribute weight frequently
 - Teach frequent small shifts in body weight
 - Therapy involvement
 - Formal mobility maintenance programs

Intervention to Risk Categories

- Mobility – very limited = 2
 - All of the above
 - Skin checks every shift
 - Turning schedule in bed and redistribution schedule when sitting
 - Off load heels
 - Consider specialty mattress
 - 30 degree lateral turns

Intervention to Risk Categories

- Mobility – completely immobile = 1
 - All of the above
 - Avoid skin/skin contact
 - Off load heels, elbows
 - Foot cradle
 - Formal ROM program

Intervention to Risk Categories

- Nutrition – excellent = 4
 - Dining room for meals and/or out of bed for all meals
 - Provide food choices (likes and dislikes observed)
 - Monitor dietary intake and hydration intake
 - Assess nutritional lab status
 - Monitor weight for changes

Intervention to Risk Categories

- Nutrition – adequate = 3
 - All of the above
 - RD assessment with interventions
 - Supplements as necessary
 - Monitor for changes in intake habits

Intervention to Risk Categories

- Nutrition – probably inadequate = 2
 - All of the above
 - Protein, vitamin, mineral supplements based on RD assessment
 - Hydration program
 - Fortified meal plan and/or small frequent meals
 - Encourage family to bring favorite foods
 - Dining programs (red napkin program)

Intervention to Risk Categories

- Nutrition – very poor = 1
 - All of the above
 - Protein supplementation
 - Skin assessments every shift
 - Speech therapy involvement
 - Consider alternative forms of nutrition
 - Consider appetite stimulants

Intervention to Risk Categories

- Friction and Shear – no apparent problem = 3
 - Avoid wrinkles in bed/chair linens
 - Do not massage pressure points
 - Use of trapeze bar for bed mobility
 - Strengthening exercises for self positioning

Intervention to Risk Categories

- Friction and Shear – potential problem = 2
 - All of the above
 - Protect friction prone skin with padding or transparent dressings (elbows, heels)
 - Avoid HOB > 30 degrees
 - Therapy to assess seating to minimize sliding
 - Assess skin every shift
 - Use lift sheets for turning

Intervention to Risk Categories

- Friction and Shear – Problem = 1
 - All of the above
 - Formal ROM program
 - Therapy to improve trunk stability
 - Footrest on wheelchairs
 - 30 degree lateral turns

Intervention to Risk Categories

- In general, based on the total score and not the sub scores...
 - At Risk (15 – 18)
 - Turn, turn, turn
 - Maximal remobilization
 - Protect heels
 - Manage moisture, nutrition, friction/shear
 - Pressure redistribution surfaces for bed and chair

Intervention to Risk Categories

- Moderate Risk (13 – 14)
 - All of the above
 - Turning schedule with 30 degree rule
- High Risk (10 – 12)
 - All of the above
 - Increase the turning and redistribution frequency
 - Use of positioning devices to minimize pressure and friction/shear

Intervention to Risk Categories

- Very High Risk (9 or below)
 - All of the above
 - Low air loss mattress
 - Address each subcategory independently
- If other major risk factors are present (advanced age, fever, diastolic blood pressure below 60, pulse oxygenation below 90) advance to the next more significant level of risk

Pressure Prevention Plan of Care

- Create a care plan
 - Problem:
 - At risk for pressure ulcer development
 - At _____ (risk, moderate, high, very high) risk for PU development secondary to _____ (sub category area(s) of concern)

Pressure Prevention Plan of Care

- Goal:
 - The resident will for the next 90 days...
 - Maintain integrity of the skin as evidenced by:
 - Absence of skin breakdown
 - Adequate skin turgor
 - Absence of friction/shear
 - decreased risk for developing pressure ulcers as evidenced by:
 - Relief from source of pressure
 - Stimulation of circulation
 - Ingesting adequate food and fluids
 - Adequate hygiene
 - Moisture control
 - Maintenance or improvement in activity
 - Maintenance or improvement in mobility

Pressure Prevention Plan of Care

- Interventions
 - Assess and monitor
 - Sensory awareness
 - Moisture control
 - Activity
 - Mobility
 - Nutritional and hydration status
 - Evidence of friction and/or shear

Pressure Prevention Plan of Care

- Interventions
 - Assess, monitor and treat pain
 - Assess, monitor and document skin assessments
 - Communicate abnormal, unusual or changes in skin assessments to the physician
 - Provide off loading, repositioning, redistributing devices based on resident specific need
 - Provide nutrition and hydration based on the comprehensive nutritional assessment

Pressure Prevention Plan of Care

- Interventions
 - Avoid hot water, use mild soaps and cleansers for personal hygiene and bathing
 - Utilize moisturizers to skin
 - Utilize moisture barriers and skin sealants to areas of skin prone to excessive moisture
 - Avoid extreme temperature changes and dress resident appropriately for the temperature and humidity

Pressure Prevention Plan of Care

- Interventions
 - Turn and reposition in bed based on resident need, but a standard of every 2 hours
 - Reposition and redistribute weight when sitting based on resident need, but a standard of every hour
 - Elicit a 30 degree turning program to reduce direct pressure over the trochanter, shoulder, elbow, ankle, and lateral side of the foot
 - Provide prompt incontinent care

Pressure Prevention Plan of Care

- Interventions
 - Monitor and assess skin folds for excessive moisture
 - Utilize products to minimize sustained excessive moisture in skin folds
 - Avoid elevating the head of bed greater than 30 degrees
 - Utilize transfer sheets/lift sheets to move the resident in bed
 - “Gatch” the knee of the bed to minimize shearing forces when the HOB is elevated

Pressure Prevention Plan of Care

- Interventions
 - Monitor and record nutrition and hydration intake
 - Provide nutritional supplements as ordered
 - Provide protein supplements as ordered
 - Provide mineral and vitamin supplements as ordered
 - Encourage hydration
 - Encourage activities and exercise to stimulate circulation

Pressure Prevention Plan of Care

- Interventions
 - Provide active/passive range of motion
 - Engage therapy in functional training programs to attain/maintain physical function
 - Provide medication to promote circulation as ordered by the physician
 - Provide medication to treat neuropathy as ordered by the physician
 - Provide medication to treat anemia as ordered by the physician

Pressure Prevention Plan of Care

- Interventions
 - Provide medications to manage diabetes as ordered by the physician