Pressure Ulcers in the Developmentally Disabled

Arizona Department of Economic Security
Division of Developmental Disabilities

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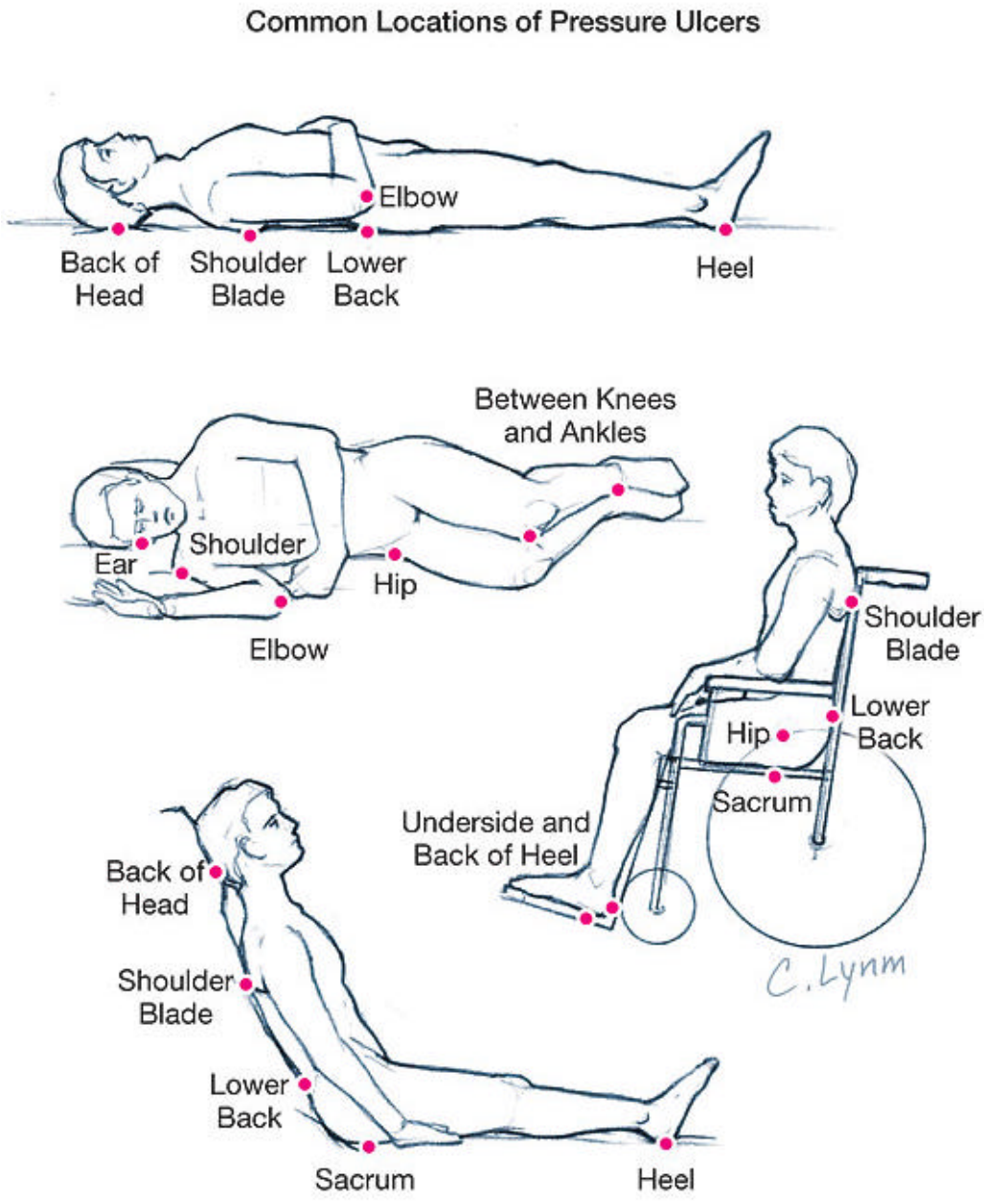
PRESSURE ULCERS

Pressure ulcers are skin injuries that result from constant pressure. This pressure reduces blood flow and eventually causes skin breakdown, and an open wound develops. These ulcers can develop in a short time in patients who are immobile, sometimes in just a couple of hours. If the pressure is not relieved and infection treated, the damage will spread to deeper layers such as the muscle, tendon and bone. Bony prominences are the most vulnerable to pressure ulcers, such as the sacrum (tailbone), buttocks, heels, back of the head and elbows.



1 FIGURE USED WITH PEMISSION John L. Zeller, MD, PhD, Writer; Cassio Lynm, MA, Illustrator; Richard M. Glass, MD, Editor *JAMA.* 2006; 296:1020.

PREVENTION AND TREATMENT OF PRESSURE ULCERS

Causes of skin breakdown:

- People who can't reposition themselves on their own
- Sustained pressure, especially in areas with little fat/muscle underneath the skin
- Other causes:
    - Wrinkled sheets
    - Crumbs in bed
    - Wheelchair with an uneven tilt
    - Perspiration rivets or creases in clothing
    - FRICTION- body rubbing against another surface when turning or transferring
    - SHEAR- skin moves in one direction, while the underlying bone moves in another direction. Occurs when sitting in bed, and slides down. This stretches and tears skin cells and blood vessels

Prevention:

- Reposition in bed every 2 hours
- Reposition in wheelchair every ½ hour
    - Encourage lifts or tilts
    - Pressure relief cushions
    - Padded footrests and arms
    - Prevent feet from sliding off foot rests
- Keep off bony prominences
- Protective loose clothing
- Eliminate friction and shear
    - Never drag a person across a bed/sheet
    - Always LIFT
    - Keep head of bed 30 degrees or less to prevent shear
- Keep skin clean, dry and moisturized
- Protect areas of dry skin
- Specialized mattresses
- Balanced diet: high in protein, vitamins A, C, E and Zinc if tolerated
- Adequate hydration
- SKIN MUST BE CHECKED EVERY DAY (See Braden Scale)
    - Report any broken skin, open sores
    - Immediate attention if any signs of infection- fever, drainage, foul odor, increased heat or redness.

    - If patient will not allow you to check, get them to sign a statement, refusing to allow medical treatment.

- Use the modified Braden Q Scale for children <5y of age. [2]

If patient will not allow you to check, get them to sign a refusal to allow medical treatment.

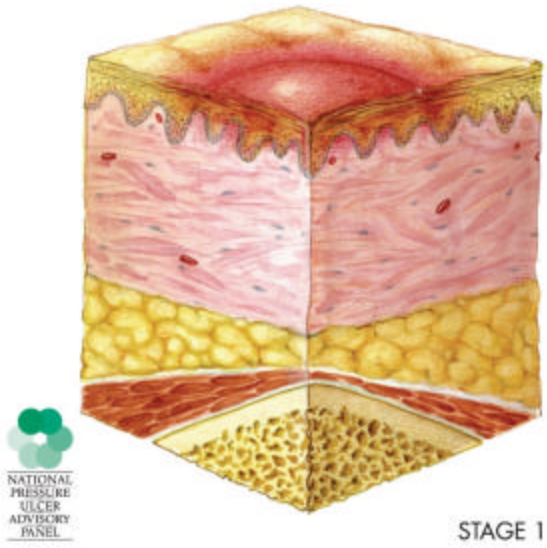
Once an ulcer develops, treatment may be needed for several months:

- Antibacterials (local and/or systemic)
- Periodic Debridement (trimming away dead tissue)
- Surgery may be needed to cover the area with a flap or graft of tissue or to divert urine or fecal material from the area.

STAGING PRESSURE ULCERS

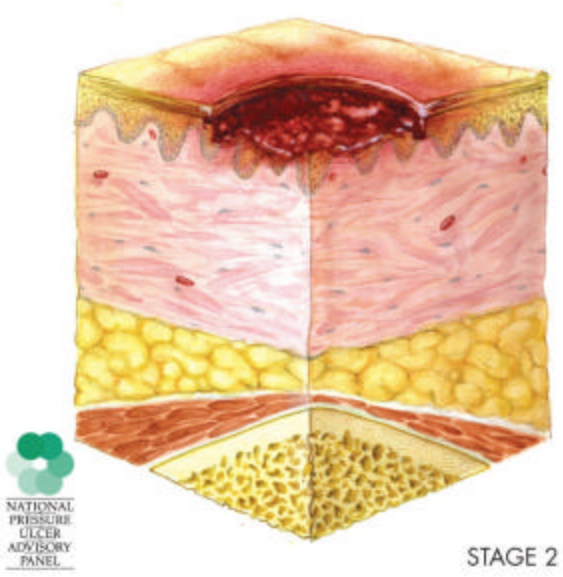
http://www.npuap.org/resources.htm

***Use of drawings is permitted for educational purposes only.**

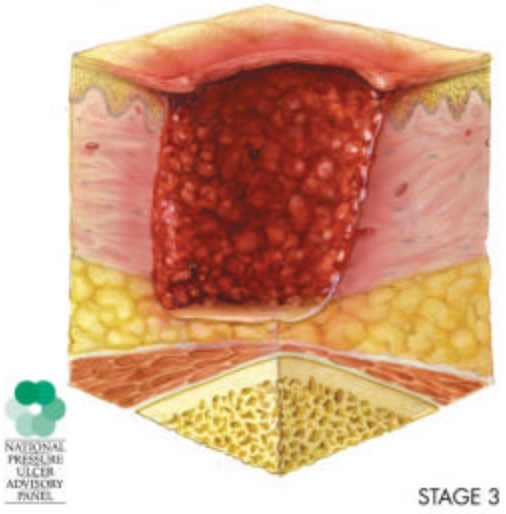


Stage 1

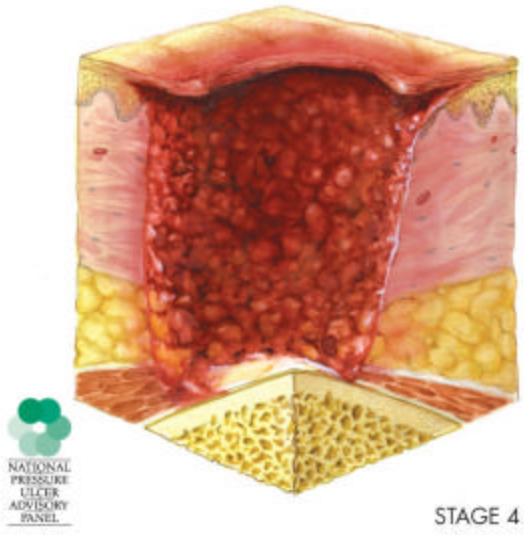
Skin is red or darker in color, but no breaks in the surface. Should heal within 2 months, if properly treated.



- **Stage 2** skin breakdown, and an ulcer forms



- **Stage 3**
  ulcer goes deeper. Usually not painful, since nerves are damaged.



- **Stage 4**
  Deeper crater, now involves muscles, tendons and bones. Patient may develop sepsis (blood infection) or osteomyelitis (bone infection).

BRADEN PRESSURE ULCER RISK ASSESSMENT

ACT TO PREVENT PRESSURE ULCERS

	4	3	2	1	
SENSORY PERCEPTION Ability to respond meaningfully to pressure-related discomfort	**NO IMPAIRMENT** Responds to verbal commands. Has no sensory deficit which would limit ability to feel or voice pain or discomfort.	**SLIGHTLY LIMITED** Responds to verbal commands but cannot always communicate discomfort or ask to be moved or turned OR has some sensory impairment which limits ability to feel pain or discomfort in 1 or 2 extremities.	**VERY LIMITED** Responds only to painful stimuli. Cannot communicate discomfort except by moaning or restlessness OR has a sensory impairment which limits the ability to feel pain or discomfort over 1/2 of body.	**COMPLETELY LIMITED** Unresponsive (does not moan, flinch, or grasp) to painful stimuli due to diminished level of consciousness or sedation OR limited ability to feel pain over most of body surface.	ADD TO TOTAL SCORE
MOISTURE Degree to which skin is exposed to moisture	**RARELY MOIST** Skin is usually dry; linen only requires changing at routine intervals.	**OCCASIONALLY MOIST** Skin is occasionally moist, requiring an extra linen change approximately once a day.	**OFTEN MOIST** Skin is often but not always moist. Linen must be changed at least once a shift.	**CONSTANTLY MOIST** Skin is kept moist almost constantly by perspiration urine, etc. Dampness is detected every time patient is moved or turned.	ADD TO TOTAL SCORE
ACTIVITY Degree of physical activity	**WALKS FREQUENTLY** Walks outside the room at least twice a day and inside room at least once every 2 hours during waking hours.	**WALKS OCCASIONALLY** Walks occasionally during day but for very short distances, with or without assistance. Spends majority of each shift in bed or chair.	**CHAIRFAST** Ability to walk severely limited or non-existent. Cannot bear own weight and/or must be assisted into chair or wheelchair.	**BEDFAST** Confined to bed	ADD TO TOTAL SCORE
MOBILITY Ability to change and control body position	**NO LIMITATIONS** Makes major and frequent changes in position without assistance.	**SLIGHTLY LIMITED** Makes frequent though slight changes in body or extremity position independently.	**VERY LIMITED** Makes occasional slight changes in body extremity position but unable to make frequent or significant changes independently.	**COMPLETELY IMMOBILE** Does not make even slight changes in body or extremity position without assistance.	ADD TO TOTAL SCORE
NUTRITION Usual food intake pattern *NPO: Nothing by mouth. *IV: Intravenously. *TPN: Total parenteral nutrition.	**EXCELLENT** Eats most of every meal. Never refuses a meal. Usually eats a total of 4 or more servings of meat and dairy products. Occasionally eats between meals. Does not require supplementation.	**ADEQUATE** Eats over half of most meals. Eats a total of 4 servings of protein (meat, dairy products) each day. Occasionally will refuse a meal, but will usually take a supplement. If offered, OR is on a tube feeding or TPN* regimen, which probably meets most of nutritional needs.	**PROBABLY INADEQUATE** Rarely eats a complete meal and generally eats only about 1/2 of any food offered. Protein intake includes only 3 servings or meat or dairy products per day. Occasionally will take a dietary supplement, OR receives less than optimum amount of liquid diet or tube feeding.	**VERY POOR** Never eats a complete meal. Rarely eats more than 1/3 of any food offered. Eats 2 servings or less of protein (meat or dairy products) per day. Takes fluids poorly. Does not take a liquid dietary supplement, OR is NPO* and/or maintained on clear liquids or IV* for more than 5 days.	ADD TO TOTAL SCORE
FRICTION & SHEAR		**NO APPARENT PROBLEM** Moves in bed and in chair independently and has sufficient muscle strength to lift up completely during move. Maintains good position in bed or chair at all times.	**POTENTIAL PROBLEM** Moves feebly or requires minimum assistance. During a move, skin probably slides to some extent against sheets, chair, restraints, or other devices. Maintains relatively good position in chair or bed most of the time but occasionally slides down.	**PROBLEM** Requires moderate to maximum assistance in moving. Complete lifting without sliding against sheets is impossible. Frequently slides down in bed or chair, requiring frequent repositioning with maximum assistance. Spasticity, contractures, or agitation leads to almost constant friction.	ADD TO TOTAL SCORE

RISK SCALE	NONE	MILD	MODERATE	HIGH	SEVERE	TOTAL SCORE USE CHART ON LEFT TO DETERMINE YOUR PATIENTS RISK
	23 22 21 20 19	18 17 16 15	14 13	12 11 10	9 8 7 6	

EQUIPMENT	No additional pressure support required	High specification foam mattress or static air overlay. Consider cushion for chair, Bedcradle/gooseneck	Dynamic air overlay, Dynamic air cushion Dynamic mattress Replacement or Low Air Loss
PRACTICE	• Educate Weight-shifting, Skin inspection • Evaluate on change of condition	• Reposition Weight-shifting, Skin inspection • Promote Activity • Manage individual risk factors nutrition; shear; friction; continence • Educate • Evaluate on change of condition	ALL PLUS • Supplement with small positional shifts • Seating/posture assessment • Nutritional assessment • Educate • Evaluate on change of condition

References: "The Braden Scale of Predicting Pressure Sore Risk" Bergstrom, N; Braden, B et al. Nursing Research 1987 Vol.36 No.4 pp205-210.
Issued by Royal Adelaide Hospital Staff Development Department in conjunction with South Australian Quality Council. Pressure Ulcer Prevention Practices - Integration of Evidence.

Braden Risk Assessment Tool		Affix patient identification label in this box		
	Date of Assessment			
CATEGORY	DESCRIPTOR	SCORE	SCORE	SCORE
Sensory Perception Ability to respond meaningfully to pressure related discomfort	**Completely Limited:** Unresponsive (does not moan, flinch or grasp) to painful stimuli due to diminished level of consciousness or sedation. **OR**, limited ability to feel pain over most of body surface.	1	1	1
	Very Limited: Responds to only painful stimuli. Cannot communicate discomfort except by moaning or restlessness; **OR** has sensory impairment that limits the ability to feel pain or discomfort over half of body.	2	2	2
	Slightly Limited: Responds to verbal commands, but cannot always communicate discomfort or need to be turned; **OR**, has sensory impairment that limits the ability to feel pain or discomfort in one or two extremities.	3	3	3
	No Impairment: Responds to verbal commands. Has no sensory deficit that would limit ability to feel or communicate pain or discomfort.	4	4	4
Mobility Ability to change and maintain own position	**Completely immobile:** Does not make even slight changes in body or extremity position without assistance.	1	1	1
	Very limited: Makes occasional slight changes in body or extremity position but unable to make frequent or significant changes independently.	2	2	2
	Slightly limited: Makes frequent though slight changes in body or extremity position independently	3	3	3
	No limitations: makes major and frequent changes in position without assistance.	4	4	4
Activity Degree of physical activity	**Bedfast:** confined to bed (can't sit at all).	1	1	1
	Chairfast: Ability to walk severely limited or non-existent. Cannot bear own weight and/or must be assisted into chair or wheelchair.	2	2	2
	Walks occasionally: walks occasionally during day, but for very short distances, with or without assistance. Spends majority of each shift in bed or chair.	3	3	3
	Walks frequently: Walks outside the room at least twice a day and inside room at least once every 2 hours during waking hours.	4	4	4
Moisture Degree to which skin is exposed to moisture	**Constantly moist:** skin is kept moist almost constantly by perspiration, urine, drainage etc. Dampness is detected every time patient is moved or turned.	1	1	1
	Very moist: Skin is often, but not always, moist. Linen must be changed at least every 8 hours. Dry 2-3 hours at a time	2	2	2
	Occasionally moist: Skin is occasionally moist, requiring linen change every 12 hours	3	3	3
	Rarely moist: Skin is usually dry, linen only requires changing every 24 hours.	4	4	4
Friction Shear	**Problem:** Requires moderate to maximum assistance in moving. Complete lifting without sliding against sheets is impossible. Frequently slides down in bed or chair, requiring frequent repositioning with maximum assistance. spasticity, contractures, itching or agitation leads to almost constant friction	1	1	1
	Potential problem: Moves feebly or requires minimum assistance. During a move, skin probably slides to some extent against sheets, chair, restraint or other devices. Maintains relative good position in chair or bed most of the time but occasionally slides down.	2	2	2
	No apparent problem: Able to completely lift patient during a position change, moves in bed and in chair independently and has sufficient muscle strength to lift completely during move. Maintains good position in bed or chair at all times.	3	3	3
Nutrition	**Very poor:** NPO and/or maintained on clear fluids, or IV's for more than 5 days OR never eats a complete meal. Rarely eats more than 1/3 of any food offered. Protein intake includes only 2 servings of meat or dairy products per day. Takes fluids poorly. Does not take a liquid dietary supplement.	1	1	1
	Inadequate: Is on a liquid diet or tube feedings/TPN, which provide inadequate calories and minerals for age OR rarely eats a complete meal and generally eats only half of any food offered. Protein intake includes only 3 servings of meat or dairy products per day. Occasionally will take a dietary supplement	2	2	2
	Adequate: Is on tube feedings OR eats over half of most meals. Eats a total of 4 servings of protein each day. Occasionally eats between meals. Does not require supplementation.	3	3	3
	Excellent: Is on TPN, which provides adequate calories and minerals for age OR is on a normal diet providing adequate calories for age. For example, eats most of every meal. Never refuses a meal. Usually eats a total of 4 or more servings of meat and dairy products. Occasionally eats between meals. Does not require supplementation.	4	4	4
	mild risk- 18-15 moderate risk - 14-13 **TOTAL SCORE** high risk - 12-10 severe risk - <9			

PATIENTS SCORING 12 OR BELOW SHOULD BE CONSIDERED FOR A DYNAMIC AIR MATTRESS

REFERENCES:

[1] John L. Zeller, MD, PhD, Writer; Cassio Lynm, MA, Illustrator; Richard M. Glass, MD, Editor *JAMA*. 2006; 296:1020. Copyright © 2006 American Medical Association. All rights reserved

[2]http://www.safetyandquality.sa.gov.au/Portals/0/Braden%20Q%20Risk%20Assessment%20scale.pdf accessed on May 27th, 2009. (Braden scale poster, Braden Q scale)

[3]http://www.guideline.gov/summary/summary.aspx?doc_id=7006&nbr=004215&string=pressure+AND+ulcers accessed on May 27th, 2009

[4]http://www.npuap.org/resources.htm accessed on May 27th, 2009. ***Use of drawings is permitted for educational purposes only.**