Skin Breakdown Risk & Prevention

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Skin Assessments

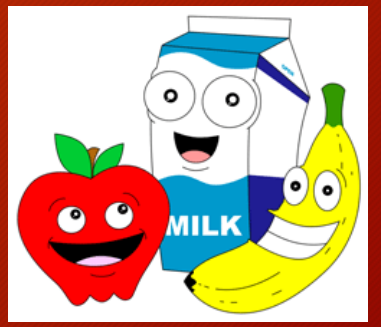
An Organ Deserving of Respect

Skin is….

- The *largest* organ of the body
- Responsible for
  - Physical protection from external factors (i.e. chemical, mechanical, U.V., moisture, pathogens)
  - Immune protection
  - Thermoregulation
  - Sensation
  - Metabolism
  - Communication
  - Hydration preservation

Factors that Affect Skin Health

- Age (very young and becoming older)
- Sun
- Smoking (just say No)
- Hydration
- Soaps
- Nutrition
- Many Medications
- So many Comorbidities!



Nurses Role in Skin Preservation and Wound Healing

- Assess (patient & their lifestyle)
- Prevent skin breakdown
- Treat wounds & abnormalities
- Communicate with the team (patient, doctor, discharge planner, nutritionist, etc)
- EDUCATE
- Document

Integumentary Assessment is vital

A thorough assessment of the skin will reveal a lot about a patient:

- Warning signs for pressure injuries
- Malnutrition
- Physical abuse
- Adverse medication side effects
- Incontinence
- Self-care deficits
- Knowledge deficits
- Physical limitations leading to increased need for aid

Integumentary Assessment parameters

A thorough assessment of the skin includes:

- Skin color
- Skin temperature
- Skin turgor
- Skin moisture
- Skin integrity
- Mucous membrane color
- Mucous membrane description

Some Examples of Terms Used…

Parameter	Normal	Abnormal
Color	Normal for ethnicity	Jaundice Cyanotic Pallor
Temperature	Warm	Hot; Cold
Turgor	Elastic	Tenting Tight
Moisture	Dry	Excessive dryness Diaphoretic Clammy
Integrity	Intact with no abnormalities	Not intact Intact, with abnormalities
Mucous Membrane Color	Pink	Cyanotic Dusky White
Mucous Membrane Description	Moist	Cracked Dry Ulcerated

Skin Integrity

Integrity means “unimpaired”, so when you answer about skin integrity, we are asking if there are any impairments. Most impairments fall under three descriptors:

1. INTACT: Skin is not open anywhere and no other abnormalities exist either.

2. NOT INTACT: Skin is open somewhere

3. INTACT WITH ABNORMALITIES: Skin is not open, but an abnormality exists. Some examples:
   - Blanchable erythema or Stage 1 Pressure Injury
   - Unopened Deep Tissue Pressure Injury
   - Hives; Bruises; Rashes
   - Weeping areas due to edema, but no obvious skin break.

Respond to SKIN assessment

If any parameters were not normal, either respond with nursing care that can help right away or communicate with the other interdisciplinary team members if necessary.

For example: Patient has excessive dryness of their skin, mucous membrane is dry and urine is dark yellow. Communicate with the doctor to discuss, but also remember a doctor's order is not needed for everything (i.e. skin moisturizer, encourage drinking water).

Preventing Skin Breakdown

BRADEN SCALE – Evidence based tool that calculates a patient's risk of experiencing skin breakdown based on their physical, environmental and functional assessments.

Calculate the Braden scale and **use it to guide your practice** for that particular patient. Individualize your patient's plan of care.

Braden Scale

Braden scale components

Sensory Perception
+ Moisture
+ Activity
+ Mobility
+ Nutrition
+Friction & Shear

Total Braden Score

The total Braden score is calculated by giving the patient a score of 1-4 for each of the "sub-scales" listed to the left.

Preventing Skin Breakdown

WARNING!

Extremely often we score our patients higher because we are giving the patient the benefit of the doubt in the sub-scales.

READ THE DESCRIPTIONS carefully when choosing a score for your patient.

Braden Score Tool

Scale	1	2	3	4
Sensory Perception	1. 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	2. 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.	3. Slightly Limited Responds to verbal commands, but cannot always communicate discomfort or the need to be turned. OR has some sensory impairment which limits ability to feel pain or discomfort in 1 or 2 extremities.	4. No Impairment Responds to verbal commands. Has no sensory deficit which would limit ability to feel or voice pain or discomfort..
Moisture	1. Constantly Moist Skin is kept moist almost constantly by perspiration, urine, etc. Dampness is detected every time patient is moved or turned.	2. Very Moist Skin is often, but not always moist. Linen must be changed at least once a shift.	3. Occasionally Moist: Skin is occasionally moist, requiring an extra linen change approximately once a day. 4. Rarely Moist Skin is usually dry, linen only requires changing at routine intervals.	4. Rarely Moist Skin is usually dry, linen only requires changing at routine intervals.
Activity	1. Bedfast Confined to bed.	2. Chairfast Ability to walk severely limited or non-existent. Cannot bear own weight and/or must be assisted into chair or wheelchair.	3. Walks Occasionally Walks occasionally during day, but for very short distances, with or without assistance. Spends majority of each shift in bed or chair	4. Walks Frequently Walks outside room at least twice a day and inside room at least once every two hours during waking hours
Mobility	1. Completely Immobile Does not make even slight changes in body or extremity position without assistance	2. Very Limited Makes occasional slight changes in body or extremity position but unable to make frequent or significant changes independently.	3. Slightly Limited Makes frequent though slight changes in body or extremity position independently.	4. No Limitation Makes major and frequent changes in position without assistance.
Nutrition	1. Very Poor Never eats a complete meal. Rarely eats more than a 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=s for more than 5 days.	2. Probably Inadequate Rarely eats a complete meal and generally eats only about 2 of any food offered. Protein intake includes only 3 servings of meat or dairy products per day. Occasionally will take a dietary supplement. OR receives less than optimum amount of liquid diet or tube feeding	3. Adequate Eats over half of most meals. Eats a total of 4 servings of protein (meat, dairy products per day. Occasionally will refuse a meal, but will usually take a supplement when offered OR is on a tube feeding or TPN regimen which probably meets most of nutritional needs	4. 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.
Friction & Shear	1. 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	2. 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.	3. 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.	

Preventing Skin Breakdown

Sub-scale	Reasoning - Why so important for skin health?
Sensory Perception	If a patient cannot feel prolonged pressure, they do not move away from it.
Activity (Physical activity)	If a patient is less active, the less they move around (lying, sitting, standing up to walk). In turn, the less change in pressure redistribution.
Mobility (Localized movements)	If a patient is less mobile locally, the less they can turn in bed, adjust in their chair, or take pressure off boney prominences.

Preventing Skin Breakdown

Sub-scale	Reasoning - Why so important for skin health?
Nutrition	Poor nutrition = lack of hydration, protein, vitamins, and minerals necessary to keep skin healthy (and also heal any wounds). FYI: Patients with obesity typically have inadequate balanced nutrition.
Moisture	Maceration weakens and swells skin cells. Stool is acidic and "eats" at skin. Skin breaks down or rubs off with friction/shear/cleansing.
Friction & Shear	Epidermis & dermis are connected. Pulling the body in one direction tends to move the dermis, but the epidermis lags behind. The epidermal-dermal bond is broken and breakdown is not far behind.

Braden Scores

Total Braden scores range from 6 – 23

18 or below is at risk for skin breakdown and requires interventions.

The ***lower*** the number, the ***higher*** the risk.

Braden Score	Risk Level	Prevention Needed?
15-18	Low risk	Yes
13-14 →	Moderate Risk	Definitely
10-12	High Risk	For Sure!!
≤ 9	Very High Risk	ABSOLUTELY!!!

ALSO, if any one of the 6 sub-scales scores is 2 or less, the patient is particularly at risk in that area.

Braden Case Study

Let's practice!

Braden Case Study

An elderly patient is found down at home after at least 4 days alone:

- He is NPO today (just admitted last night) except for ice chips.
- The patient has four significant deep tissue pressure injuries of the upper back, sacrum, left heel, right heel.
- Also present is painful incontinence associated excoriation of the gluteal cleft, peri-rectal, and perineal skin.
- An indwelling urinary catheter is in place, but liquid diarrhea has been occurring 4-6 times over the past shift.
- Patient's right arm and right leg have decreased sensation and increased weakness as compared with the left extremities.
- He is fully dependent on the healthcare providers for all significant movement and care.
- He has mild expressive aphasia and short-term memory issues.
- He is hemodynamically stable and has the core strength to spend time up in a reclining chair.

Braden Case Study

What score would you choose for "Sensory Perception"?

An elderly patient is found down at home after at least 4 days alone:

- Patient's right arm and right leg have decreased sensation and increased weakness as compared with the left extremities.
- He is fully dependent on the healthcare providers for all significant movement and care.
- He has mild expressive aphasia and short-term memory issues.

Scale	1	2	3	4
Sensory Perception	**1. 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	**2. 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.	**3. Slightly Limited** Responds to verbal commands, but cannot always communicate discomfort or the need to be turned. OR has some sensory impairment which limits ability to feel pain or discomfort in 1 or 2 extremities.	4. **No Impairment** Responds to verbal commands. Has no sensory deficit which would limit ability to feel or voice pain or discomfort..

Braden Case Study

What score would you choose for "Moisture"?

An elderly patient is found down at home after at least 4 days alone:

- Also present is painful incontinence associated excoriation of the gluteal cleft, perirectal, and perineal skin.
- An indwelling urinary catheter is in place, but liquid diarrhea has been occurring 4-6 times over the past shift.

Scale	1	2	3	4
Moisture	**1. Constantly Moist** Skin is kept moist almost constantly by perspiration, urine, etc. Dampness is detected every time patient is moved or turned.	**2. Very Moist** Skin is often, but not always moist. Linen must be changed at least once a shift.	**3. Occasionally Moist** Skin is occasionally moist, requiring an extra linen change approximately once a day. 4. Rarely Moist Skin is usually dry, linen only requires changing at routine intervals.	**4. Rarely Moist** Skin is usually dry, linen only requires changing at routine intervals.

Braden Case Study

What score would you choose for "Activity"?

An elderly patient is found down at home after at least 4 days alone:

- Patient's right arm and right leg have decreased sensation and increased weakness as compared with the left extremities.
- He is fully dependent on the healthcare providers for all significant movement and care.
- He has mild expressive aphasia and short-term memory issues.
- He is hemodynamically stable and has the core strength to spend time up in a reclining chair.

Scale	1	2	3	4
Activity	1. **Bedfast** Confined to bed.	2. **Chairfast** Ability to walk severely limited or non-existent. Cannot bear own weight and/or must be assisted into chair or wheelchair.	3. **Walks Occasionally** Walks occasionally during day, but for very short distances, with or without assistance. Spends majority of each shift in bed or chair	4. **Walks Frequently** Walks outside room at least twice a day and inside room at least once every two hours during waking hours

Braden Case Study

What score would you choose for "Mobility"?

An elderly patient is found down at home after at least 4 days alone:

- Patient's right arm and right leg have decreased sensation and increased weakness as compared with the left extremities.
- He is fully dependent on the healthcare providers for all significant movement and care.
- He has mild expressive aphasia and short-term memory issues.
- He is hemodynamically stable and has the core strength to spend time up in a reclining chair.

Scale	1	2	3	4
Mobility	**1. Completely Immobile** Does not make even slight changes in body or extremity position without assistance	**2. Very Limited** Makes occasional slight changes in body or extremity position but unable to make frequent or significant changes independently.	**3. Slightly Limited** Makes frequent though slight changes in body or extremity position independently.	**4. No Limitation** Makes major and frequent changes in position without assistance.

Braden Case Study

What score would you choose for "Nutrition"?

An elderly patient is found down at home after at least 4 days alone:

- ❑ He is NPO today (just admitted last night) except for ice chips.

Scale	1	2	3	4
Nutrition	**1. Very Poor** Never eats a complete meal. Rarely eats more than a 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=s for more than 5 days.	**2. Probably Inadequate** Rarely eats a complete meal and generally eats only about 2 of any food offered. Protein intake includes only 3 servings of meat or dairy products per day. Occasionally will take a dietary supplement. OR receives less than optimum amount of liquid diet or tube feeding	**3. Adequate** Eats over half of most meals. Eats a total of 4 servings of protein (meat, dairy products per day. Occasionally will refuse a meal, but will usually take a supplement when offered OR is on a tube feeding or TPN regimen which probably meets most of nutritional needs	**4. 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.

Braden Case Study

What score would you choose for “Friction & Shear”?

An elderly patient is found down at home after at least 4 days alone:

- Patient’s right arm and right leg have decreased sensation and increased weakness as compared with the left extremities.
- He is fully dependent on the healthcare providers for all significant movement and care.
- He has mild expressive aphasia and short-term memory issues.
- He is hemodynamically stable and has the core strength to spend time up in a reclining chair.

Scale	1	2	3
Friction & Shear	**1. 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	**2. 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.	**3. 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.

Braden Case Study

What score did you choose for "Sensory Perception"?

Scale	1	2	3	4
Sensory Perception	**1. 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	**2. 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.	**3. Slightly Limited** Responds to verbal commands, but cannot always communicate discomfort or the need to be turned. OR has some sensory impairment which limits ability to feel pain or discomfort in 1 or 2 extremities.	4. **No Impairment** Responds to verbal commands. Has no sensory deficit which would limit ability to feel or voice pain or discomfort..

"Patient's right arm and right leg have decreased sensation…".

This patient is not a "4' because he has impaired sensation in his right leg and right arm. He is not a "2" because the limited sensation is in 2 extremities, not half of the body.

Braden Case Study

What score did you choose for "Moisture"?

Scale	1	2	3	4
Moisture	**1. Constantly Moist** Skin is kept moist almost constantly by perspiration, urine, etc. Dampness is detected every time patient is moved or turned.	**2. Very Moist** Skin is often, but not always moist. Linen must be changed at least once a shift.	**3. Occasionally Moist** Skin is occasionally moist, requiring an extra linen change approximately once a day. 4. Rarely Moist Skin is usually dry, linen only requires changing at routine intervals.	**4. Rarely Moist** Skin is usually dry, linen only requires changing at routine intervals.

"An indwelling urinary catheter is in place, but liquid diarrhea has been occurring 4-6 times over the past shift".

This patient is not a "3' because the linens and absorbent pads are being changed more than once a day. He is not a "2" because the linens and pads are being changed more than once per shift.

Braden Case Study

What score did you choose for "Activity"?

Scale	1	2	3	4
Activity	1. **Bedfast** Confined to bed.	2. **Chairfast** Ability to walk severely limited or non-existent. Cannot bear own weight and/or must be assisted into chair or wheelchair.	3. **Walks Occasionally** Walks occasionally during day, but for very short distances, with or without assistance. Spends majority of each shift in bed or chair	4. **Walks Frequently** Walks outside room at least twice a day and inside room at least once every two hours during waking hours

"The patient is "fully dependent on the healthcare providers for all significant movement…and is hemodynamically stable and has the core strength to spend time up in a reclining chair.

This patient is not a "3' because he is unable to walk at this time, and he is not a "1" because he is able to get out of bed, he just requires assistance.

Braden Case Study

What score did you choose for "Mobility"?

Scale	1	2	3	4
Mobility	**1. Completely Immobile** Does not make even slight changes in body or extremity position without assistance	**2. Very Limited** Makes occasional slight changes in body or extremity position but unable to make frequent or significant changes independently.	**3. Slightly Limited** Makes frequent though slight changes in body or extremity position independently.	**4. No Limitation** Makes major and frequent changes in position without assistance.

"The patient's right arm and right leg have increased weakness, he is fully dependent for all significant movement and care, has mild expressive aphasia and short-term memory issues".

This patient is not a "3" because he is not able to make significant body movements on his own. He is not a "1" because he does shift and move, but just not enough to make a difference in preventing skin breakdown. His memory and aphasia issues also mean the patient will not remember to reposition as needed either.

Braden Case Study

What score did you choose for "Nutrition"?

Scale	1	2	3	4
Nutrition	**1. Very Poor** Never eats a complete meal. Rarely eats more than a 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=s for more than 5 days.	**2. Probably Inadequate** Rarely eats a complete meal and generally eats only about 2 of any food offered. Protein intake includes only 3 servings of meat or dairy products per day. Occasionally will take a dietary supplement. OR receives less than optimum amount of liquid diet or tube feeding	**3. Adequate** Eats over half of most meals. Eats a total of 4 servings of protein (meat, dairy products per day. Occasionally will refuse a meal, but will usually take a supplement when offered OR is on a tube feeding or TPN regimen which probably meets most of nutritional needs	**4. 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.

This patient is clearly a "1" in nutrition because he has not eaten in 5 days.

Braden Case Study

What score did you choose for “Friction & Shear”?

Scale	1	2	3
Friction & Shear	**1. 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	**2. 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.	**3. 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.

The patient is “fully dependent on the healthcare providers for all significant movement and care…and has the core strength to spend time up in a reclining chair.

This patient is unable to lift himself up without sliding along the bed or chair so his score is not “3” but he does have the core strength to sit up in a reclining chair safely, so he falls into the “2” description. If he lacked core strength and the caregivers were concerned he would slip down in the chair, he would be considered a “1”.

Braden Case Study

As healthcare providers, we get into the habit of thinking “Well, everyone loses sensation as we age” or “Neuropathy is common in people with Diabetes” and so we do not think of it as very abnormal.

Just because it is common to us healthcare providers does not make it “normal” and so use the score card’s specific parameters to decide the score.

A common example is incontinence and the moisture sub-scale.
Just because it is normal for us to change bedding/absorbent pads multiple times in a 12 hour shift when a patient is incontinent does not make them a “3 – Occasionally moist”. The score card says multiple times a shift = 2.

For “Sensory Perception” it is alright to consider an older patient as having a score of “3” because our sensation decreases as we age.

Braden Score Values

Total Braden scores for the case study = 11 which is in the HIGH RISK range.

Also, look at the sub-scales with a score of 1 or 2:
Moisture, Activity, Friction/Shear, Nutriiton and Mobility.
Use this information to individualize your patient's plan of care

Braden Score	Risk Level	Prevention Needed?
15-18	Low risk	Yes
13-14 →	Moderate Risk	Definitely
10-12	High Risk	For Sure!!
≤ 9	Very High Risk	ABSOLUTELY!!!

At-Risk Braden Score

So now what??

Think S-S-K-I-N!

Prevention Acronym

Skin Assessment

Support Surfaces

Keep Moving

Incontinence Management

Nutrition

Skin Assessment

Thorough assessment: Front to back, head to toe, socks off, heels and folds, around & under medical devices

With pressure injuries, the initial admission assessment is most crucial for putting prevention interventions into place asap to have the most benefit. Just a handful of hours without intervention and rounding on the patient to ensure intervention is still in place can lead to detriment.

But also be cautious when assessing your patient even if it is not on admission. Few people exist that have not caught something inadvertently missed by a previous person's assessment. We are all guilty of missing something too. Plus a patient's condition changes (i.e. sudden stroke) and needs may change. Recalculate Braden scores in these cases.

Support Surfaces

Support Surface = Mattresses, Chair cushions, Wheelchair cushions, etc.

Types of bed surfaces can be a confusing topic to learn. It is actually an area many specialists find difficult to teach in a clear manner. So the focus here is to describe the features to look for in a bed or chair surface.

Sadly, due to copyright and legal issues, we cannot share photos of actual products. So if you are looking at a product, just ask if the product has these features we are about to cover.

What to Look For in a Support Surface

The three characteristics to a support surface that land them in a higher category of protection over another are:

1) Surface cover material
2) How is pressure redistributed?
3) Microclimate Management

Surfaces may have the best of all three features or maybe only one.

Frequently total cost can influence decisions. Most specialists will agree, the future savings from improved outcomes far outweighs the initial investment. However, one cannot invest with money that may not exist.

S

Surface Cover Material

The material should be “Low-friction, Low-shear”.

Many hospital beds are equipped standard with this feature as are many of the overlays you can place on top a standard bed to make it a better surface. Some skin breakdown prevention chair cushions are now covered in this material as well.

Without this feature, significant friction and shear injury will occur for patients that require assistance with boosting, transfers, and turning.

If you have ever tried to boost a patient over an “egg crate” looking material, you are aware of the resistance that occurs, pulling the body in one direction while leaving the epidermis to lag behind.

Pressure Redistribution

When a person sits on a support surface, the pressure from their weight pressing down via gravity, especially in those boney prominence areas, needs to be off set so that part of the body is not experiencing intense prolonged pressure. The four main ways this can occur via a specialty support surface are covered next. They are listed in order of lowest to highest therapeutic effect with regards to pressure redistribution:

1) Static Reactive (i.e. Gel, Foam)

2) Non-Powered Reactive Air (i.e. Communicating air bladders)

   Non-Reactive Powered Air (i.e. "Alternating Air" pump)

3) Powered Reactive Air (i.e. "Low Air Loss" pump)

4) Air Fluidized (i.e. "Sand bed" – common but inaccurate nickname)

Pressure Redistribution

1) Static Reactive: Non-powered surface; The material absorbs and spreads out the impact of pressure to ease the stress on the boney prominences (i.e. Gel, Foam material).

2) **Non-Powered Reactive Air**: Air moves via resistance from one pocket, bladder or cell under or near the patient's boney prominences to another in order to off set those higher pressures. (i.e. communicating air bladders).

   Non-Reactive Air: This powered surface has air cells that inflate and deflate on a timed sequence. The cells are alternated into two groups. Group "A" cells inflate, while group "B" cells deflate, then they hold positions for a certain time before switching roles (i.e. Alternating air surface).

   FYI: These last two surfaces are in the same level of therapy because based on a large literature review, there was not evidence enough to say the "Non-Reactive Air" is comparable to the "Low Air Loss" surface in the next therapy level. Individual expert opinions will fall on either side of that argument though.

Pressure Redistribution

2) **Non-Reactive Air** (Continued…)

This surface with the alternating "A" and "B" cells is called "non-reactive" because the surface does not respond to the patient's weight sinking into the surface, or the patient moving and changing levels of pressure in different areas. It simply changes the amount of pressure in each group on a timed schedule.

The inflation of one group synchronized with the deflation of the other group may occur as a:

- ***SINGLE-STEP*** → "A" cells goes up while "B" cells go down over a short timeframe.
- ***MULTI-STEP*** → "A" cells go up some, "B" cells go down some, and hold. "A" cells go up more, "B" cells go down more, and hold. This continues until each cell reaches the lowest or highest threshold and then switch roles.

Between single and multi step alternating air, multi step has evidence based support as the better of the two options.

Pressure Redistribution

3) Powered Reactive Air: Air moves out from one cell under or near the patient's boney prominences to another, in this case because the advanced technology of the mattress can detect the increased pressure from the patient's body weight. In response, the mattress pump moves air away from that area to another in order to alleviate pressure. (i.e. Low Air Loss)

4) Air Fluidized Surface: Millions of tiny microbeads circulate inside the surface at such a high rate that no one area of pressure is much higher than another. This therapy allows for the greatest immersion of the patient into the surface, and is the highest level of pressure redistribution available. i.e. Incorrectly, but commonly called the "sand" bed.

No matter which surface is being used, if the patient reports they feel like they are sitting on something hard, or you notice the surface has bottom out when the patient gets up, the surface likely has failed and needs replacing or repair.

Microclimate Management

What is “Skin Microclimate”?

It is the temperature and moisture levels at the skin’s surface.
Our body naturally controls our skin microclimate by heat and moisture leaving through our skin into the environment around us.

When we lay on a bed, the areas that are blocked from this free flow of heat and moisture into the air become warmer (requiring more bloodflow and nutrients to stay healthy) and wetter (risking maceration injury).

Surfaces that have a microclimate management (i.e. Low Air Loss, Air Fluidized) feature a flow a steady stream of air over these body parts, protecting the patient from skin breakdown when compared with a surface without microclimate control

Specialty Surfaces

WARNING!

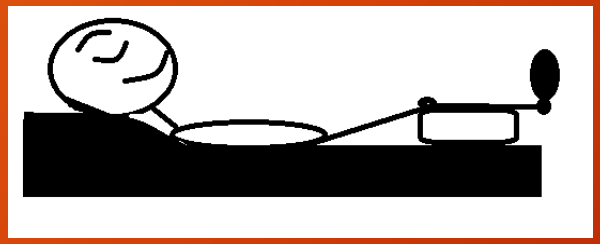
Too often caregivers will not offload heels or reposition patients *because they* are on a specialty surface.

NO SURFACE EXISTS that can take the place of floating heels and repositioning. Continue these interventions for everyone at risk for skin breakdown.

K

Keep Moving

- ✓ Help/Remind patient to reposition every 2-3 hours
- ✓ Elevate heels up off the bed/end of recliner
- ✓ Head of bed < 30 degrees. Takes pressure off the sacrum and buttocks.
- ✓ Physical therapy
- ✓ It also keeps the patient from slipping down in bed as easily.
- ✓ Put foot of bed up some before the head of bed goes up to avoid sliding down



Common pitfalls:

You may say "the patient seems to move pretty good".

If they cannot reposition their trunks/pelvis 30 degrees left and right every 2-3 hours, they need your assistance.

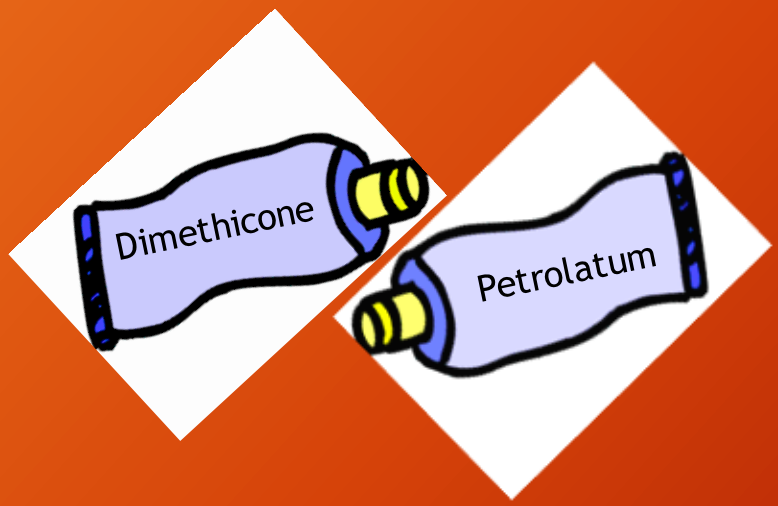
If they cannot REMEMBER to reposition, they need your assistance.

If there is any question at all whether the patient can reposition well, err on the side of caution and remind/assist them.

Incontinence (Moisture) Management

If a patient is not 100% continent, then consider if any of the following are appropriate for your patient:

1) Offer the urinal or walk patient to the toiler on rounds
2) External male or female urinary catheter
3) External fecal pouch
4) Internal fecal management system
5) Protective barrier ointment (should contain dimethicone or petrolatum)
6) Body worn absorpent products (BWAP)



Incontinence (Moisture) Management

Wound Care Products with Incontinence

AVOID absorbent wound dressings (like bordered foam) in areas that will get saturated with urine if you can use a topical barrier ointment instead. When these absorbent dressings become saturated with incontinence, they trap this moisture right up against the warm body and damage skin. This damage likely outweighs any padding or protection the dressing may provide.

Incontinence (Moisture) Management

Adult Briefs & Diapers

There is evidence that adult diapers cause skin breakdown to occur faster and avoiding them where possible is recommended. However, there is also little argument that body worn absorbent products are the most effective at controlling and containing incontinence in patients while ambulating.

If the patient does use adult briefs, a high quality product is best and can be identified by a more complex stitching pattern on the absorbent portion and also contains superabsorbent polymer technology. Educate that as soon as moisture is detected, replace it.

Visit https://bwap.wocn.org/#home to check out the Wound Ostomy Continence Nurse Society's algorithm on when and what Body Worn Absorbent Products (BWAP) to consider for your individual patient.

N

Nutrition

Dietician consult if:

- wounds are present
- nutrition subscale is 2 or less
- patient is losing weight without trying
- patient looks malnourished.

Vitamins and Nutrients!
Vitamin D, C, B's, Iron, Zinc, Magnesium…a deficiency in any of these can lead to weaker skin and delayed wound healing.

Advocate for NPO patients to eat as soon as situation allows

Track nutrition and fluids intake. Respond if intake is showing a pattern of poor nutrition.

Read Braden score carefully re: nutrition. Clear liquids and NPO automatically decrease the score.

Preventions by Braden Sub-Scale

Sub-scale	Interventions
Sensory Perception	• **Reposition your patient every 2-3 hours (or remind your patient to do so).** • **Float heels** • **Specialty surface for the bed and chair** • **Head of bed less than 30 degrees** • **Prophylactic 5 layer silicon border foam dressing if not at risk for incontinence saturation** • **Physical therapy**
Activity – Physical activity	
Mobility – localized movements	

Preventing Skin Breakdown

Sub-scale	Interventions
Nutrition	• **Document how much the patient is eating** • **Dietician consult** • **Help when needed so the patient can eat.** • **Right consistency food** • **Vitamins and Nutrients** • **Ask questions if they are not eating well. Do they need their dentures to eat? Do they dislike the food? ☹**

Preventing Skin Breakdown

Sub-scale	Interventions
Moisture	• **Check on hourly rounds for incontinence** • **Avoid adult briefs/diapers when possible. Use BWAP algorithm when unavoidable.** • **Limit layers of absorptive pads on the bed** • **Protective ointment (dimethicone, petrolatum) on intact skin at risk for contact with incontinence patients.** • **Consider external fecal pouch and/or urinary catheters; Internal fecal management system for liquid diarrhea** • **Specialty surface with microclimate management (Low Air Loss; Air Fluidized)**

Preventing Skin Breakdown

Sub-scale	Interventions
Friction & Shear	• **Head of bed less than 30 degrees (if not contraindicated)** • **Put foot of bed up a little before raising head of bed** • **Low shear, low friction boost or transfer product.** • **Automatic patient repositioners are on the market.** • **Ceiling lifts for boosting and transfers** • **Patient lift equipment in general**

Conclusion

Skin is an amazing organ, capable and responsible for so much. Protect it by:

1. Assess your patient's skin well
2. Calculate an accurate Braden score for the time you are caring for the patient.
3. Use that score to individualize your patient's plan
4. Put those interventions into place.