Name: _____

Preventing Skin Breakdown

(3 credits)

After completing this section, you should be able to:

1. Define pressure sores by stages, early observable phases, and healing factors
2. Describe a proper inspection for skin weakness and breakdown
3. List three categories of risk and the care plan indicated for each
4. List six main areas of concern in care of persons with pressure sores

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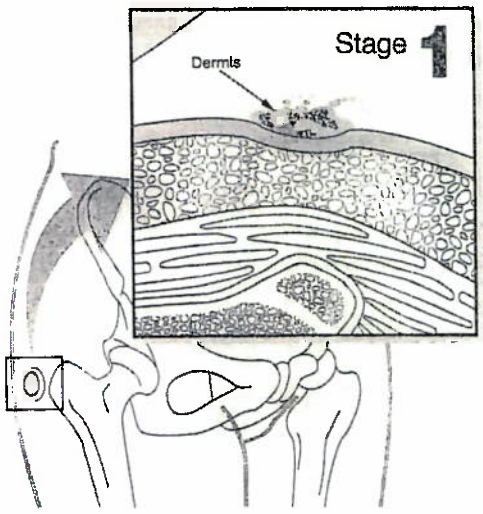
1. Define pressure sores by stages, early observable phases, and healing factors

Immobility reduces the amount of blood that circulates to the skin. Persons who have restricted mobility have a higher risk of skin deterioration at pressure points. Pressure points are areas of the body that bear much of its weight. Pressure points are mainly located at bony prominences. Bony prominences are areas of the body where the bone lies close to the skin. These areas include elbows, shoulder blades, tailbone, hip bones, ankles, heels, and the back of the neck and head. The skin here is at a much higher risk for skin breakdown.

Other areas at risk are the ears, the area under the breasts, and the scrotum. The pressure on these areas reduces circulation, decreasing the amount of oxygen the cells receive. Warmth and moisture also contribute to skin breakdown. Once the surface of the skin is weakened, pathogens can invade and cause infection. When infection occurs, the healing process is slower.

When skin begins to break down, it becomes pale, white, or a reddened color. Darker skin may look purple. There may also be tingling or burning in the area. This discoloration does not go away, even when the person's position is changed. If pressure is allowed to continue, the area will further break down. The resulting wound is called a pressure sore, pressure ulcer, bed sore, or decubitus ulcer. Once a pressure sore forms, it can get bigger, deeper, and infected. Pressure sores are painful and difficult to heal. They can lead to life-threatening infections. Prevention is very important and is the key to skin health. There are four accepted stages of pressure sores:

Stage 1: Skin is intact but there is redness that is not relieved within 15 to 30 minutes after removing pressure.



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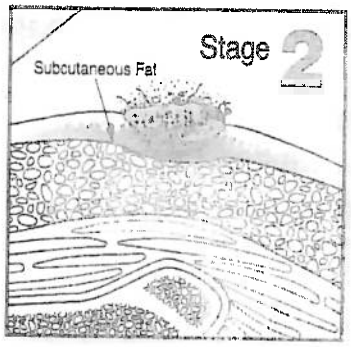
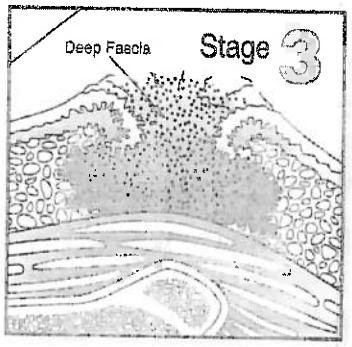
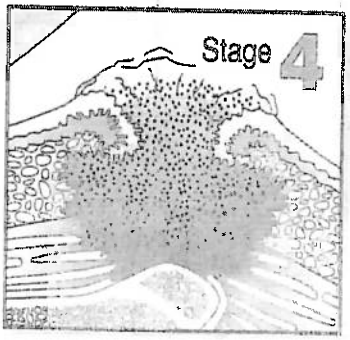
Stage 2: There is partial skin loss involving the outer and/or inner layer of skin. The ulcer is superficial. It looks like a blister or a shallow crater.



Stage 3: There is full skin loss involving damage or death of tissue that may extend down to but not through the tissue that covers muscle. The ulcer looks like a deep crater.



Stage 4: There is full skin loss with major destruction, tissue death, damage to muscle, bone, or supporting structures.



There are certain factors that could slow a person's natural healing process. These include the following:

- Presence of infection
- Presence of a foreign body in the wound
- Lack of oxygen to tissue
- Presence of diabetes
- Adequacy of circulation
- Use of corticosteroid therapy
- Age
- Presence of renal (kidney) disease
- Presence of hepatic (liver) disease
- Presence of edema (fluid retention)
- Presence of contractures (permanent muscular contraction)
- Presence of malignancy
- Presence of blood disorders
- Nutritional status of patient
- Hydration status of patient
- Presence of necrotic (dead) tissue
- Use of radiation therapy (past or present)
- Amount of moisture in the wound
- Incontinence

The closer the wound is to the upper region of the body, the greater the likelihood of healing. Wounds in the elderly are often slow to heal.

Directions. Answer the following questions.

1. What does the term "pressure sore" mean? _____

Name: _____

2. Briefly describe the four accepted stages of pressure sores.

Stage 1: _____

_____

_____

_____

Stage 2: _____

_____

_____

_____

Stage 3: _____

_____

_____

_____

Stage 4: _____

_____

_____

_____

Directions. *Complete the following factors that can slow the healing process for pressure sores.*

3. Presence of i _____

4. Presence of f _____
b _____

5. Lack of o _____

6. Presence of d _____
7 _____
Adequacy of
c _____

8. Use of c _____
t _____

9. Presence of r _____
disease, _____
disease, e _____,
c _____,
m _____, or
b _____
disorders.

10. N _____
status of patient.

11. H _____
status of patient.

12. Presence of n _____
tissue.

13. Use of r _____
t _____.

14. Amount of
m _____
in wound.

15. I _____

Directions. *For each of the following sentences write "T" for true or "F" for false.*

16. ____ The closer the wound is to the upper region of the body, the greater the likelihood of healing.

17. ____ Wounds in the elderly are often slow to heal.

2. Describe a proper inspection for skin weakness and breakdown

Caregivers should inspect persons in their care for skin breakdown or for signs of skin weakness. No one is in a better position than you to observe the early stage of pressure sores. Remember to observe the skin every time you provide personal care, such as bathing, giving back rubs, toileting, and repositioning.

If you find a warm, reddened, pale, white or purple area that does not go away when pressure on the area is relieved, it may be the early stage of a pressure sore.

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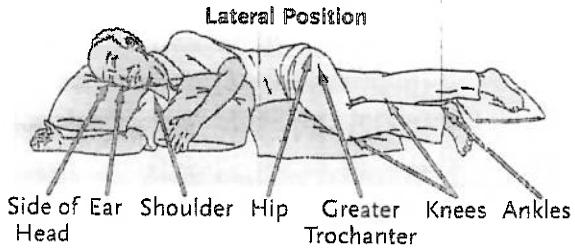
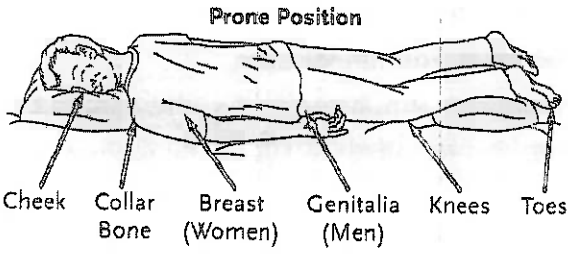
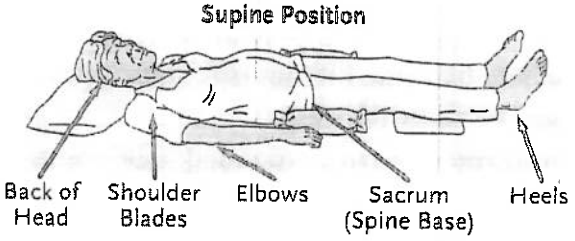
Inspections should also be done to look for any breaks in the skin, especially over bony areas. Look for blisters, puffiness, or a break through the first layer of skin.

To inspect for possible pressure sores, do the following:

- Look for warm, reddened, pale, white or purple areas
- Check bony areas
- Look for blisters, puffiness, or broken skin
- Observe and report complaints of tingling, warmth or burning; dry or flaking skin; itching or scratching; fluid or blood draining from skin; changes in wound or ulcer
- In darker complexions, also look for: any change in the feel of the tissue, any change in the appearance of the skin, a purplish hue, and dry, crust-like areas that might be covering a tissue break







If you find any of the signs listed above, report them immediately to your supervisor.

Directions. Complete the following blanks on inspecting for skin breakdown with the words listed below. Each word is used only once.

breaks flaking fluid relieved reddened purplish warmth

1. Is there a pale, white, _____, or purple area?
2. When pressure on the area is _____ does the redness go away?
3. Check for any _____ in the skin, especially over bony areas.
4. Do you notice _____ or burning, or dry or _____ skin?
5. Do you notice any _____ or blood draining from the skin?
6. In darker complexions, look for a _____ hue.
7. When should you make skin observations? _____

Name: _____

8. If you find any signs of skin problems, what should you do?

_____

_____

_____

3. List three categories of risk and the care plan indicated for each

Read each of the three worksheets on how to care for low-, medium-, and high-risk individuals. Then answer the following questions.

Caring for Low-Risk Individuals		
Plan	**Intervention**	**Frequency**
I. Skin Hygiene	• Bathe with mild soap, rinse, and dry thoroughly.	Daily
	• Keep local areas of skin clean, dry and free of body wastes such as urine, feces, perspiration, and wound drainage.	As needed
	• Lubricate the skin with lotion to keep it soft and pliable. Give special attention to weight-bearing prominences.	Twice a day and as needed
	• Inspect skin frequently for signs and symptoms of skin breakdown.	Twice a day
II. Activity	• Encourage ambulation and out-of-bed activity.	As tolerated
III. Pressure Relief	• Encourage mobility.	As tolerated
	• Position body with pillows and other support devices.	As needed
	• Keep foundation sheets dry and wrinkle-free	As needed
IV. Circulation	• Massage and stroke lightly around bony prominences, but not over them.	Daily and as needed
V. Skin Protector	• Avoid shearing force. Employ good transfer techniques—lift, do not slide, the person.	Continual
	• Place incontinence pads under or between draw sheets, NOT next to patient's skin.	Continual
	• Avoid friction.	As needed
	• Provide padding for casts, braces, and splints.	As needed
	• Apply a barrier product to: a. skin, prior to applying adhesives b. ears, to protect from O_2 cannula irritation c. bony prominences	As needed
	• Secure appliances and dressings properly.	As needed
VI. Nutrition	• Well-balanced diet.	Three times a day
	• Encourage fluids, unless contraindicated.	As tolerated

Name: _____

Caring for Medium-Risk Individuals		
Plan	Intervention	Frequency
I. Skin Hygiene	◦ Bathe with mild soap, rinse, and dry thoroughly.	Daily
	◦ Keep local areas of skin clean, dry and free of body wastes such as urine, feces, perspiration, and wound drainage.	As needed
	◦ Lubricate the skin with lotion to keep it soft and pliable. Give special attention to weight-bearing prominences.	Twice a day and as needed
	◦ Inspect skin frequently for signs and symptoms of skin breakdown.	Every 2-4 hours
II. Activity	◦ Encourage ambulation and out-of-bed activity.	As tolerated
	◦ Assist with ROM exercises if necessary.	Every shift
III. Pressure Relief	◦ Turn patient every two hours if immobile. Encourage activity.	As tolerated
	◦ Position body with pillows and other support devices.	As needed
	◦ Keep foundation sheets dry and wrinkle-free.	As needed
	◦ Place pressure-relieving mattress on bed if indicated.	Continual
IV. Circulation	◦ Massage and stroke lightly around bony prominences, but not over them.	Daily and as needed
V. Skin Protector	◦ Avoid shearing force. Employ good transfer techniques—lift, do not slide, the person.	Continual
	◦ Place incontinence pads under or between draw sheets, NOT next to patient's skin.	Continual
	◦ Avoid friction.	Continual
	◦ Provide padding for casts, braces, and splints.	Continual
	◦ Apply a barrier product to:	
	a. skin, prior to applying adhesives	As needed
	b. ears, to protect from O_2 cannula irritation	As needed
	c. bony prominences	As needed
	◦ Secure appliances and dressings properly.	As needed
VI. Nutrition	◦ Well-balanced diet.	Three times a day
	◦ Encourage fluids, unless contraindicated.	As tolerated
	◦ Dietician assessment.	

Name: _____

Caring for High-Risk Individuals		
Plan	Intervention	Frequency
I. Skin Hygiene	• Bathe with mild soap, rinse, and dry thoroughly.	Daily
	• Keep local areas of skin clean, dry and free of body wastes such as urine, feces, perspiration, and wound drainage.	As needed
	• Lubricate the skin with lotion to keep it soft and pliable. Give special attention to weight-bearing prominences.	Twice a day and as needed
	• Inspect skin frequently for signs and symptoms of skin breakdown.	Every 2-4 hours
	• Use appropriate cleansers, moisturizers, and lubricants on skin.	As needed
II. Activity	• Encourage ambulation and out-of-bed activity.	As tolerated
	• Assist with ROM exercises if necessary.	2 times per shift
III. Pressure Relief	• Turn patient every two hours if immobile. Encourage activity.	As tolerated
	• Position body with pillows and other support devices.	As needed
	• Keep foundation sheets dry and wrinkle-free.	As needed
	• Place pressure-relieving mattress on bed if indicated.	Continual
IV. Circulation	• Massage and stroke lightly around bony prominences, but not over them.	Every 2-4 hours and as needed
V. Skin Protector	• Avoid shearing force. Employ good transfer techniques—lift, do not slide, the person.	Continual
	• Place incontinence pads under or between draw sheets, NOT next to patient's skin.	Continual
	• Avoid friction.	Continual
	• Provide padding for casts, braces, and splints.	Continual
	• Apply a barrier product to:	
	a. skin, prior to applying adhesives	As needed
	b. ears, to protect from O_2 cannula irritation	As needed
	c. bony prominences	As needed
VI. Nutrition	• Well-balanced diet.	Three times a day
	• Encourage fluids, unless contraindicated.	As tolerated
	• Dietician assessment.	

Name: _____

The four steps to skin hygiene are the same for all three levels of risk. What are they?

1. _____
2. _____
3. _____
4. _____

What are four pressure relief techniques for medium- and high-risk individuals?

5. _____
6. _____
7. _____
8. _____

4. List six main areas of concern in care of persons with pressure sores

Skin Care, Protection, and Hygiene

Skin care, protection and hygiene are the most important measures in prevention and care of a pressure sore. The following should be considered in a good skin care, protection, and hygiene program:

- Avoid severely dry skin by rinsing off all soap during the bath and using moisturizing creams and lotions.
- Restore blood supply to bony areas by relieving pressure.
- DO NOT massage reddened or bony areas, as this may actually contribute to tissue breakdown. You may gently massage around bony prominences to help improve circulation.
- Keep persons in your care clean and dry from incontinence, perspiration and drainage. Wear gloves and follow Standard Precautions when dealing with incontinence.
- Do not pull the person across sheets during transfers or repositioning. This causes shearing, which can lead to skin breakdown. Shearing is rubbing or friction that results from the skin moving one way and the bone underneath it remaining fixed or moving in the opposite direction. Handle people carefully and keep your nails short. Use draw sheets to avoid skin injury due to friction of skin dragging over sheets.
- Observe the skin for new ulcer areas.
- Report any breaks in the skin.
- Always check a diabetic's feet for open sores caused by rubbing shoes (diabetics have poor sensation in their feet).
- Always keep the bed linens dry and free from wrinkles and crumbs, which could irritate the skin.

- Keep plastic or rubber materials from coming into contact with the person's skin. These materials prevent air from circulating, which causes the skin to sweat.
- Assist the person in applying creams and ointments as ordered by the physician. Be sure the skin is not left wet or damp.
- Use powders or talc to absorb wetness, but not enough to clump or crumble.
- Offer a back massage daily; give special attention to the sacral area, which is prone to pressure sores. Always use this time to observe the skin carefully for warm, red, or white or pale areas.

Activity

Inactivity is a major problem for persons at higher risk for skin breakdown. Unless otherwise ordered, you should encourage persons at risk of skin breakdown to be as active as is safely possible. ADLs, or activities of daily living, should be designed to increase activity. For example, if the person can go from bed to a chair by the sink or in the shower for bathing, the activity of getting there can be beneficial.

Lack of activity can also cause or contribute to difficulties with maintaining good nutrition. Appetite can be increased with even a little additional activity or moderate exercise. The inactive person is more likely to be depressed because of a feeling of dependence. If at all possible, the aide should be the motivating force to encourage activity. In the home, the aide can involve the family in encouraging activity, even if it is simply to turn the person frequently.

Circulation

Impaired circulation to extremities and pressure points is a major cause of pressure sores. When the blood supply is poor, the tissues do not receive adequate oxygen, and cells are destroyed. Major medical conditions such as diabetes and heart disease can cause poor circulation, as can pressure on the tissue. Once a breakdown of tissue occurs, healing is slowed because of the same poor circulation.

Other disease situations that impair circulation are venous ulcers, anemia, renal failure, spinal injuries, stroke, neurological impairment and poor venous return.

Pressure Relief

Turning the person frequently is an important aspect of pressure relief. Turning at least every two hours and positioning the person correctly and comfortably are the first measures of pressure relief. In addition, there are many pressure sore prevention and pressure-relieving devices on the market:

- **Air Mattress** - The mattress, filled with air, continuously changes the pressure areas. Some are motorized and change air distribution on an automatic and timed sequence. Only a single sheet should be applied over this mattress. Examples are an alternating pressure mattress and air flow mattress.
- **Water Mattress** - This mattress redistributes body weight and conforms to body shape. However, it is difficult to move the person and, of course, punctures can ruin a water mattress.
- **Gel-Foam Cushions or Mattress** - These can be used in chairs to prevent sores. Inflatable rings should not be used as they may increase pressure in the center of the ring.
- **Sheepskin or Lamb's Wool Pads** - These can be excellent between the body and the sheets to reduce friction and

Name: _____

rubbing. They also make good heel and elbow pads, but they must be removed daily to allow air to circulate.

- **Heel and Elbow Protectors** - These protetors made of foam and sheepskin help prevent pressure sores. Heel protectors help keep feet properly aligned, too.
- **Bed Cradles** - Bed cradles help keep top sheets off legs and feet and prevent them from rubbing the skin.

Nutrition

Poor nutrition and inadequate fluid intake increase a person's risk of developing pressure sores, because poorly nourished tissue breaks down more easily than healthy tissue. Inadequate nutrition also contributes to poor healing and reduces the body's resistance to infection.

There are a number of factors which contribute to poor nutritional status of the person in your care:

- Swallowing difficulties due to strokes and neurological diseases
- Poor absorption of food due to intestinal disease
- Dental problems, mouth sores, and lesions
- Anorexia due to disease or medication
- Loneliness
- Depression
- Reduced income
- Inability to buy and prepare food
- Inactivity

Certain nutrients play different roles in wound healing. Protein, vitamins A and C, zinc, and iron are all essential for assisting the body to heal. A person with pressure sores should be on a high-calorie, high-protein diet. If the person is gaining weight and the pressure sore is healing, nutrition is probably adequate.

The following are general guidelines to maximize calorie, protein, vitamin, and mineral intake:

- Eating small, frequent meals of high-calorie, high-protein foods
- Serving food when the person is most hungry
- Preparing a variety of foods
- Offering nutritious beverages instead of sodas, tea, or coffee

Prevention of New Ulcer Sites

Pressure sores can be prevented if prediction, risk assessments, and risk factors are considered for every person with the factors or conditions we have discussed. All healthcare personnel should be well educated in skin assessment, skin care, positioning, and use of supportive devices. Breaks in the skin can cause serious, even life-threatening, complications. It is much better to prevent skin problems and keep the skin healthy than it is to treat skin problems. Therefore, nurses and aides must provide excellent care, and members of the care team must communicate well, especially if there are changes in the condition of a person with a pressure sore.

In home care, turning and positioning schedules should be very visible so the family and the person receiving care can cooperate. In long-term care facilities, turning and repositioning schedules may be posted. Immobile persons should be repositioned at least every two hours. People seated in chairs or wheelchairs need to be repositioned often, too. Reposition people every 15 minutes if they are in a wheelchair or chair and cannot change positions easily.

Other skills in caring for a person with skin impairments may include:

Name: _____

- Assisting with range of motion (ROM) exercises and ambulation to increase circulation
- Observing and reporting drainage
- Maintaining a clean, safe, and dry environment
- Offering nutrition and fluids
- Taking temperature, pulse, and respirations (TPRs)

Directions. *Answer the following questions.*

What are the six main areas of concern discussed in the reading above?

1. _____
2. _____
3. _____
4. _____
5. _____
6. _____

What are ten of the considerations given for skin care, protection and hygiene?

7. _____
8. _____
9. _____
10. _____
11. _____
12. _____
13. _____
14. _____
15. _____
16. _____

17. Why does poor nutrition affect skin integrity?