Integumentary Function in the Geriatric Patient: January 15, 2026 Prepared by Dr. Cheryl Huckins

Review age-related skin changes and evidence-based approaches to preventing and managing pressure injuries, skin tears, and chronic wounds. Emphasis on safety, prevention, and recognizing early signs of breakdown.

Study Guide for Integumentary Function in Geriatric Patients

I. Normal Aging changes
- A. rate of replacement of epidermis decreases by 50%
- B. increased separation between epidermis and dermis
  1. increased risk of shear injury
  2. increased moisture loss
  3. slower medication uptake
- C. Dermis-decreased sweat glands, blood vessels, nerve endings
  1. reduced thermoregulation
  2. reduced inflammatory response
  3. decreased tactile sense

II. Skin Assessment- Location, color, discharge, tenderness, amount of necrotic tissue or undermining, dimensions (length, width, depth). Can use cotton tip applicator and tape measure and stage. Use natural light, not fluorescent

A. skin temperature
B. edema
C. change in tissue consistency
D. pain
E. color (particularly in darkly pigmented skin)
   1. Difficult to assess blanching-look for darker areas than surrounding, or taut, shiny, indurated
   2. Erythema may cause hyperpigmentation rather than redness

III. Causes of injury

A. ischemic (arterial)
   1. cyanotic hue and coolness to extremity
   2. decreased distal pulses

3. cramping, burning or aching
4. skin thin, shiny, dry
5. loss of hair and thickened nails on extremity
6. ulcers usually on outer ankle, feet, toes
7. ulcerated area appears “punched out” with well defined wound edges

B. venous stasis (osmotic pressure)
1. cause of 57-80% of all lower extremity ulcers
2. brownish skin discoloration from release of hemoglobin
3. usually medial lower extremity
4. flat, shallow craters and irregular borders
5. accompanied by varicosities, lipodermatosclerosis
6. itchy
7. large amount of exudate
8. often surrounded by erythema and edema
9. important to distinguish venous ulcers and cellulitis-stasis dermatitis is usually bilateral, reddish brown. Cellulitis is usually unilateral and bright red or pink. Stasis is chronic, scaly, crusty, ozzing, itchy. Cellulitis skin is acute, smooth, swollen, warm, tender. May be associated with systemic symptoms-fever, chills.

C. Diabetic
1. Neuropathy in 90% of patients with diabetic ulcers
2. Tend to be bilateral and symmetric
3. Located on plantar foot
4. Complain of pain, often relieved by walking, and paresthesias
5. May also have arterial insufficiency

D. Pressure
1. areas-Sacrum, ischial tuberosity, lateral malleolus, trochanter, heels
2. 3 factors

a. intensity of pressure
b. duration of pressure

   c. tissue tolerance impacted by moisture, friction, shearing, poor nutrition, advanced age, hypotension, smoking , emotional stress, skin temperature
3. shear/friction

IV. Risk Assessment for pressure injury
   A. Norton vs Braden Index

V. Pressure wound stages
   A. Stage 1: Skin appears reddened and does not blanch , Skin temperature is often warmer- skin is intact.
   B. Stage 2: Partial thickness skin loss involving epidermis, dermis, or both. May clinically look like a shallow crater.
   C. Stage 3: Full thickness skin loss involving subcutaneous tissue, may extend down to, but not through underlying fascia. Clinically presents as a deep crater.
   D. Stage 4 : Full thickness skin loss with extensive damage to muscle, bone, supporting structures (e.g. tendon, joint capsule). -Undermining ,tunnelling and sinus tracts
   E. Unstageable: Cannot see base of ulcer, covered with pus, necrotic tissues, eschar.
   F. Deep Tissue Injury: (DTI) damage of underlying soft tissue from pressure. Overlying skin is structurally intact but discolored/bruised.

VI. Prevention strategies
   A. Turning and placement reduces the effects of pressure but not the intensity-
   B. Pressure reducing devices-mattress overlays, hair cushions, specialized beds. Foam should be at least 4 inches to bottom of induration.
   C. Specialty beds for multiple Stage III and IV or at high risk due to grafts or flaps
   D. Minimize moisture-incontinence, perspiration, wound exudate. Avoid catheters
   E. Nutritional /hydration

VII. Wound Care-To ensure proper wound healing achieve moisture balance

A. If a wound is too Wet- DRY IT!
B. If a wound is too Dry- WET IT!
C. f a wound is too Deep- PACK IT!
D. If a wound is Necrotic- DEBRIDE IT!
E. If a wound is infected- CLEAR infection (antimicrobials)
F. Avoid excessive drainage, and yet maintain enough moisture to promote activity of growth factors
G. leave dry stable eschar in place as a biologic dressing (except if infection is suspected)

VIII. The perfect dressing

A. Absorbs excessive wound fluid while maintaining a moist environment
B. Protects from further mechanical damage
C. Prevents bacterial invasion or proliferation
D. Conforms to wound shape and eliminates dead space
E. Debrides necrotic tissue
F. Does not macerate surrounding viable tissue
G. Achieves hemostasis and minimizes edema through compression
H. Does not contain compounds that elicit hypersensitivity reaction
I. Eliminates pain associated with dressing changes
J. Minimizes dressing changes
K. Is inexpensive, readily available, long shelf life
L. Is transparent to monitor wound appearance
M. NO SINGLE WOUND DRESSING IS PERFECT-individualize to the unique need of each wound, with **emphasis on creating moist wound bed without excess drainage**

IX. Types of Dressings

A. Open
B. Semi Open
C. Semi Occlusive
D. Occlusive

X. Other treatments

A. Topical
B. 1. Platelet-derived growth factor gel
   2. Beta blockers topically
C. Hyperbaric oxygen therapies-serious adverse events can be associated with HBOT including seizures and pneumothorax
D. Negative pressure-Wound vac. Best for clean wounds , no active infection, large amount of drainage. Useful to manage large defects
E. Debridement
   1. Autolytic
   2. Enzymatic
      a. chemical-collagenase (Santyl)
      b. biological-medical maggots
   3. Lavage
   4. Sharp debridement
F. Palliative-metronidazole gel

Access Recording