Unit XIV
Assessment and Health Promotion of the Integumentary System
Napa Valley College
ADN-N141

Scientific Knowledge Base
Skin
Epidermis
Top layer of skin
Dermis
Inner layer of skin

Epidermis
Avascular
Two major layers
Top Layer: provides protection with dead, flattened keratinocytes
Lower Layer: basal layer
Contains melanocytes
Dermis
- Richly vascular connective tissue
- Supports epidermis
- Provides Protection

Subcutaneous Tissue
- Loose connective tissue & adipose cells
- Provides insulation, shock absorption, & calorie reserve

Nails
- Hard transparent plates of keratinized epidermal cells
- Highly vascular nail bed over capillary beds
Hair

- Color
- Quantity
- Distribution
- Texture

Changes related to Aging

- Epidermis thins and flattens collagen--is slowly lost = skin tears
- Subcutaneous tissue lost
- Sebaceous and sweat gland activity decreases
- Hair turns gray
- Nails become thicker, brittle, yellow, & prone to splitting as growth slows

Interviewing

- History
  - Skin changes?
    - Warts, moles or sores (lesions)?
    - Texture
    - moisture
  - Hair Changes?
    - Growth or pattern loss
    - Texture and color
  - Nail changes?
    - Color, thickness, ridges
    - clubbing
History continued

• Medical history
  – Radiation or chemotherapy
• Family history
  – Skin diseases (psoriasis, skin cancer etc)
• Personal history
  – Hygiene routine
  – Exposure to harmful agents

Older Adult History

Ask older patients about:
changes in touch sensation,
chronic itching,
susceptibility to skin infections,
changes or slowness in healing,
history of falling down, diabetes, vascular diseases, or hair loss.

Physical Examination

• General Tips
  – Adequate lighting
  – Comfortable room temperature
  – Focus on “clues” gained during interview
  – Sufficient exposure of skin
  – gloves as needed
• Exam Techniques
  – Inspection
  – Olfaction
  – Palpation
Expected Skin Color

- Assess color
  - generally over body
  - on palms
- Light-skinned
  - Ivory-light pink-ruddy pink-tan
- Dark-skinned
  - Olive-light brown-deep brown

Skin Color Variations

- Pallor
  - Lack of color
  - Light skinned
    - Pale with few or no pink tones
  - Dark skinned
    - Ashen gray or yellow-tinged

Skin Color Variations

- Erythema
  - Increased blood flow to skin
  - Light-skinned
    - Light to dark redness
  - Dark-skinned
    - Difficult to see feel skin for warmth
Skin Color Variations

Cyanosis
- inadequate blood $O_2$
  - Light-skinned blue-tinged
  - Dark-skinned dull, lifeless

Skin Color Variations
Jaundice
- Bilirubin build-up
- Light-skinned
  - Yellow pumpkin
- Dark-skinned
  - Yellow-yellow orange
- Sclera of eyes best

Diagnostic tests
- Biopsy
  - Tissue sample removed from the body
    - For microscopic examination
    - To establish a diagnosis
The American Cancer Society has identified 7 symptoms which could be a sign of cancer.

1. A change in bowel or bladder habits
2. A sore that does not heal
3. Unusual bleeding or discharge from any place
4. A lump in the breast or other parts of the body
5. Chronic indigestion or difficulty in swallowing
6. Obvious changes in a wart or mole
7. Persistent coughing or hoarseness

If you experience any of these warning signs, you should see your doctor right away. It does not mean you have cancer, but it is a sign you should not ignore.

www.cancer.org

Common alterations in the integumentary system

- Rash
- Lumps
- Sores
- Itching
- Drying
- Color change
- Change in hair or nails

Physical Examination

- Skin lesions
  - Primary
    - Initial reaction to a pathologic condition
  - Secondary
    - Change in the primary lesion or external trauma to the primary lesion
- Influencing factors
  - Age
  - Color of skin
Pressure Ulcers

- Forms as soft tissue is compressed for a long time between a bony prominence and an external surface, OR if skin is weakened, thin, easily injured and a small sore is left untreated.
- Also called pressure sore, decubitus ulcer, or bed sore.

Skin Lesions

- Skin usually smooth with some freckles, healed scars, moles (nevus), & stretch marks.

Yet, many disease processes seen on skin as "lesions"
- Primary
- Secondary.
- Vascular

Primary Skin Lesions

- Macule
- Papule
- Pustule
- Nodule
- Tumor
- Wheal
- Vesicle
Secondary Skin Lesions

• Fissure
• Ulcer

Vascular Skin Lesions

Petechiae
< 0.5 cm flat, non-blanching red-purple lesions

Purpura
> 0.5 cm flat, non-blanching red-purple lesions

Ecchymosis
large flat, non-blanching red-purple lesion
trauma. vascular wall destruction

Turgor

Reflects skin hydration
Pinch fold of skin
on forearm or sternal area
Fluid deficit
skin remains “tented”
Fluid excess
Edema-skin tight hard to pinch
Edema

Skin swells from buildup of fluids
Sites
  feet
  ankles
  legs
  sacrum

Texture, Moisture, Temperature

Texture
  consistently smooth
  no areas of roughness

Temperature
  Normally warm
  Peripheral may be cool

Moisture
  Moist in axillae & skin folds
  otherwise dry

Nails

Nails are reliable indicators of a person's oxygenation status
Capillary refill
Clubbing
Pressure Ulcer
Causes/Risk factors

- Impaired sensory perception
- Impaired mobility
- Friction

- Alterations in LOC
- Shear
- Moisture

Factors Influencing Pressure Ulcer Formation and Wound Healing

- Nutrition
- Tissue Perfusion
- Infection
- Age
- Psychosocial impact of wounds

Pressure Ulcer
Most Common Sites-Over bony prominences

- Occiput
- Ears
- Scapula
- Shoulder
- Elbow
- Iliac crest
- Sacrum/coccyx
- Heels
- lateral malleoli
- greater trochanter
- Ischial tuberosity
- Spinous process
Blood Vessels

Muscle

Bed Surface

Femur

Bone squeezes blood vessels

Body weight presses against surface

Low blood flow (ischemia) to muscle tissue
If no movement, muscle tissue dies from lack of O₂
Tissue death spreads to skin

Pressure Ulcer Classification

• Staging
• Identifies degree of “tissue destruction”
• Use to describe extent of ulcer
• Do not use to describe the “healing” of a wound

Pressure Ulcer Classification: Stage 1

Intact skin with nonblanchable erythema (redness)
Stage II
Partial thickness skin loss involving the epidermis and/or dermis.
Shallow open ulcer
Red-pink wound bed
Without slough
Intact or ruptured/serum filled blister

Stage III
Full thickness skin loss involving damage of subcutaneous tissue
May extend to, but not through, underlying fascia
Subcutaneous fat may be visible
Bone, tendon, muscle not exposed
Ulcer presents clinically as a deep crater

Stage IV
Full thickness skin loss with extensive damage to muscle, bone, or supporting structures, such as tendons or joint capsules.
Slough or eschar may be present
Wound Healing Types

Primary Intention
- clean incision
- edges approximated
- sutured or stapled
- top layer cells migrate
  "epithelization"
- prevents infection

Secondary Intention
- significant tissue loss
- edges don’t approximate
- greater risk of infection
- heals by “filling in”

Phases of Wound Healing

Inflammatory Phase
- Hemostasis with clot formation ("scab")
- White blood cells clean the wound of debris & stimulate fibroblasts to produce collagen
- Wound produces drainage (exudate)
- Epithelialization begins as epithelial cells from wound edges move under clot
**Proliferative Phase**

- Epithelialization continues
- New blood vessels and collagen are laid down in the wound bed resulting in “granulation tissue”
- Care must be taken not to damage granulation tissue
- Vitamin C & protein critical now

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**Maturation Phase**

- Collagen fibers are “remodeled”, which results in a “scar”
- Collagen remodeling and wound strength are decreased in the elderly
- Contraction of the wound also occurs

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**“Black”**

- Least desirable “color”
- Mostly necrotic (eschar) tissue
- No blood flow, no O₂
- No healing
- Eschar needs to be removed
- Debridement (removal) needed
  - Surgical
  - Mechanical (wet to dry dressings)
**“Yellow”**

- Eschar removed
- Blood flow returns - inflammation begins
- Much drainage
  - creamy ivory - yellow green
- Cleansing & drainage

**“Red”**

Healing taking place
Granulation tissue & capillary buds forming

Care focuses on gentle cleansing
no “wet to dry” dressings
no strong solutions

**Mixed**

- Combination of colors

| 70% Black-30% Red | 10% Black-20% Yellow-70% Red | 25% Black-75% Red |
Prediction & Prevention

- High Priority Goal
  - prevent pressure ulcers & maintain skin integrity
- Use Nursing Process
  - Assessment
  - Diagnosis
  - Planning
  - Implementation
  - Evaluation

Assessment

The Braden Scale
Used most commonly to identify pts at high risk

Sensory Perception
Moisture
Activity
Mobility
Nutrition
Friction & Shear

Assessment

- Assess skin q. shift especially over bony prominences
  - abnormal reflexive hyperemia?
  - induration (firmness)?
  - temperature?
  - edema?
- Assess mental status
- Assess for incontinence
- Assess nutritional intake
Pressure Ulcer Prevention

• Take action to reduce risk
  – Frequent and regular turning
  – 2 hours in a single position while in bed
  – 1 hour if in chair
  – Maintain HOB at 30’ when side lying
  – Float heels
  – Use pillows between legs and ankles
  – Educate pt and family

Protect bony prominences, skin barriers for incontinence

Interventions/treatments

• Daily skin Assessments
  – Keep skin clean and dry
  – Address nutritional and fluid needs
  – NEVER position pt on the pressure ulcer or wound-use pillows or wedges for support and cushioning
  – No creases in the linen-use drawsheet

Implementation

• Health promotion
  – Topical skin care
    • Protect bony prominences, skin barriers for incontinence
  – Positioning
    • Turn every 1 to 2 hours and indicated
  – Support surfaces
    Decrease the amount of pressure exerted over bony prominences.
Nursing Diagnosis and Planning

- The assessment will reveal important info regarding the client's status.
- Use NANDA-approved diagnoses
- Write patient goals and outcomes specific to needs