

WOUND ASSESSMENT FOR THE UPPER EXTREMITY



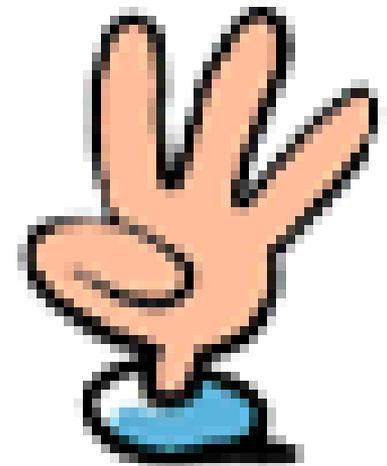
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Today's Objectives



Within the context of upper extremity wounds:

- Identify the components of wound assessment
- Understand factors that impact wound healing
- Become familiar with wound terminology definitions



Assessment Process



- I- Reason for referral, Diagnosis, Systems review, physical exam, appropriate for therapy?
- II-Therapy diagnosis, wound exam
- III-Goals, prognosis, outcomes, evaluation of progress
- IV- Planned interventions

General Overview



- UE wounds almost never become a chronic wound unless initial treatment is delayed, co-morbidities severely impact healing, or wounds exist in other regions impacting available coverage for the U.E.
- Many hand wounds lack moisture
- Insensate skin will heal more slowly

Chronic ankle wound



Wound with devitalized tissue after near amputation in pt. with heavy nicotine use.





A common example of healing by secondary intention

WOUND ASSESSMENT



Phase I



- Reason for referral
 - Prepare for surgical closure
 - Facilitate closure though secondary intention
 - Enhance graft or flap coverage healing
- Comprehensive assessment (WHO): Wound problem in context of the whole person. Interview is rapport building.
- Chief complaint: duration, why seeking tx, pt. understanding of condition
- Symptom criteria: location, characteristics, severity, timing, setting, antecedents and consequences

Purpose of referral may change, wound healing is a dynamic process



Phase I



- **Health history, habits, roles, family medical history**
 - Factors impacting tissue perfusion and nutrition for healing
 - Immune system function, glucose levels, clotting disorders
 - Alcohol, substance abuse, nicotine, caffeine, nutrition
 - Skin: radiation, prior wound history
- **Medications, allergies**
 - Those that interfere or interact with wound healing and tx. choices
- **Exercise and sleep habits, AD for ambulation**

Phase I



- **Sociologic**
 - Family support, economics, environment, occupation, patterns of health care, daily life, agreement to treatment
- **Psychological**
 - Cognition, learning styles, response to illness, response to care (participation), coping
- **Cultural**
- **Functional outcome measures**

Wound Evaluation Indexes



COMPOSITE OF WOUND CHARACTERISITICS

Wound and periwound terminology



- Refer to your handouts
- You will see examples of wound terms throughout the presentation.

Phase II: Indexes for Wound Assessment



- Wound etiology
 - Trauma
 - Pressure
 - Neuropathic
 - Other
 - Environment where injury occurred
 - Duration of wound
- Prior treatments and responses
- Surgical coverage is a good option



Inspection



- Redness, swelling, and warmth
- Cellulitis or red streaking
- Patient's pain reports



Webmd.com



Helio.com



Dermnetz.com

Inspection



- Purulence does not always mean infection
- Wound culture to determine wound infection/MRSA
- Signs of fever, chills, lethargy



Inspection



Palpation

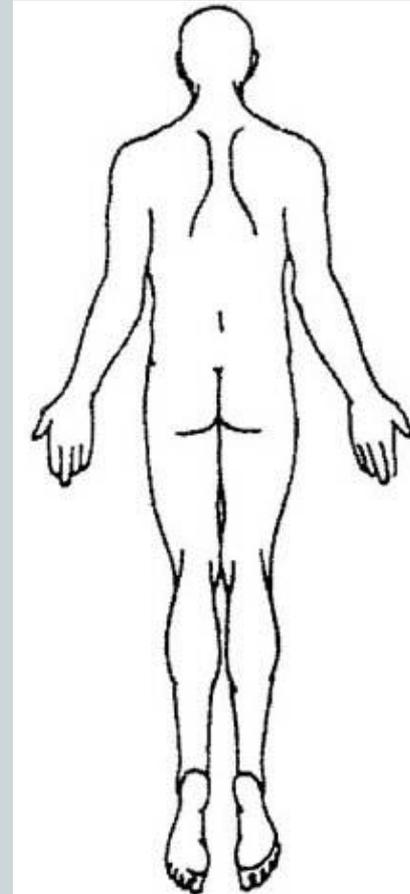


- Back of examiners hand: temperature (or temperature tapes)
- Your finger pads: texture, fibrotic tissue
- Your thumb: hardness/softness at various tissue depths
- Your palm: edema, induration

Wound Location



- Body diagram
- Refer to anatomical region
 - E.g.: medial volar distal 1/3 of forearm



Washington.edu

Wound Size and Shape

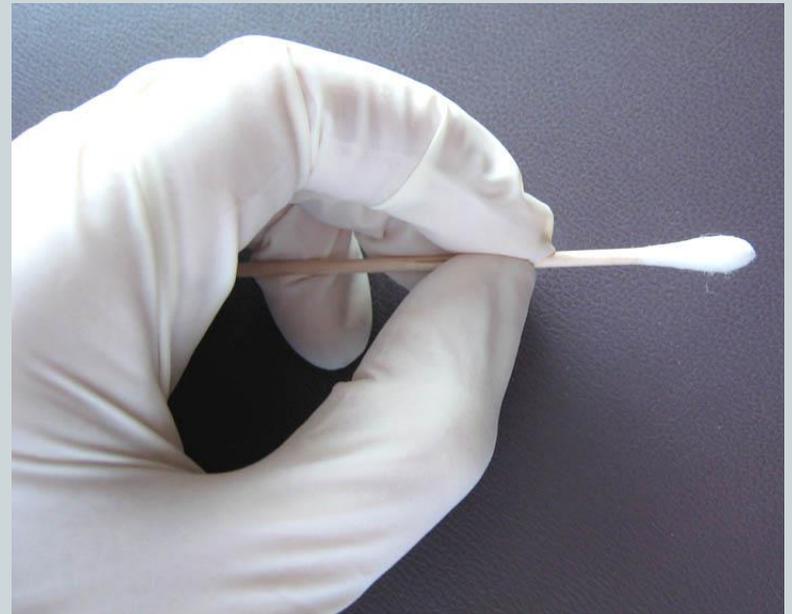
- Measure length and width-
 - Clock method
 - longest/widest portions of the wound
- Wound drawing
- Photography
- Same evaluator with same terms
- Assistant to help record



Wound Depth



- Wound surface to visible deepest part of the wound or clock method
- Saline moistened sterile cotton tip applicator
- Place fingers at location where applicator is flush with top of skin.
- Can be too shallow to measure



Undermining/Tunneling



- **Undermining:**
 - Wound edges are deeper than superficial epidermal edges. Typically wide

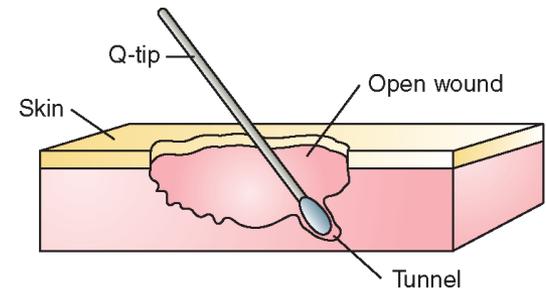


Undermining/Tunneling

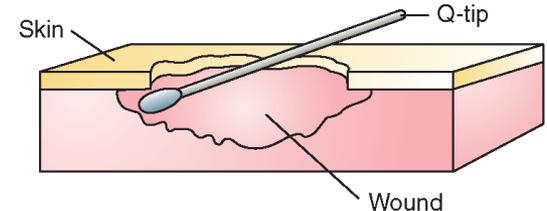


- **Tunneling:**
 - Narrow channel extending from the wound, often deep
- **Clock method with sterile swab**
 - Start/stop for undermining
 - “Time” where tunnel is

A. Tunneling



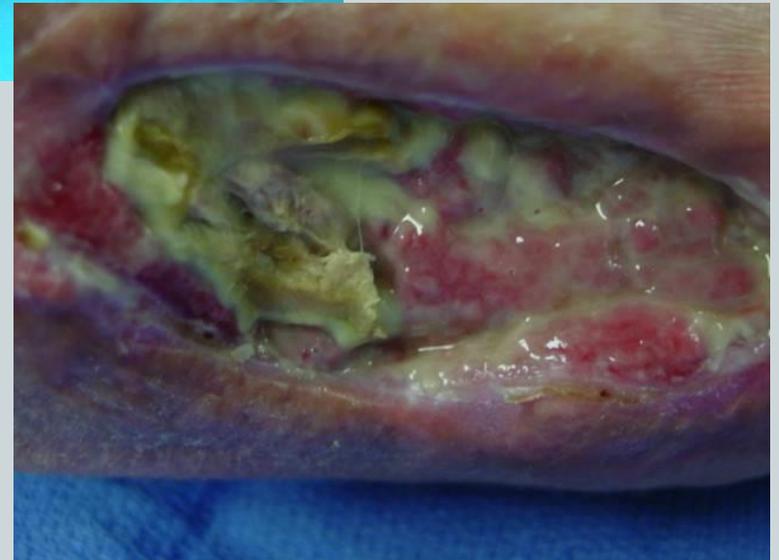
B. Undermining



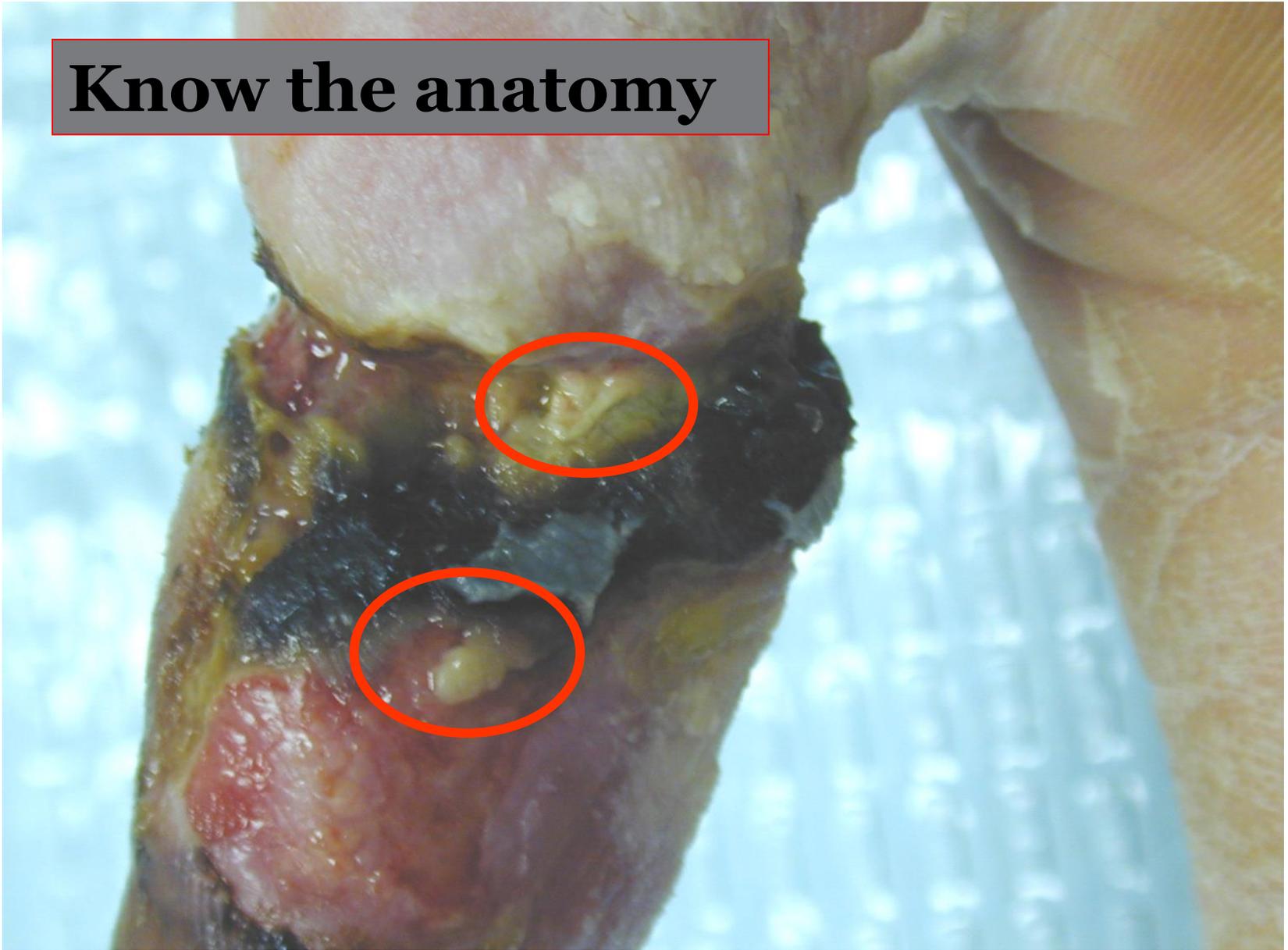
how.com

Stage of Healing for Wound bed

- Stage:
 - *Inflammatory*
 - *Proliferative*
 - *Epithelialization*
 - *Remodeling*
- Chronic Stage
- Absent Stage



Know the anatomy



Wound Bed: Necrotic Tissue



- As tissues die, they change in color/consistency. Dead tissue retards wound healing.
- Full thickness or partial thickness
- Tissue cultures determine infection
- Color, Moisture content, Adherence, Size/Amount



Color Evaluation of Tissue

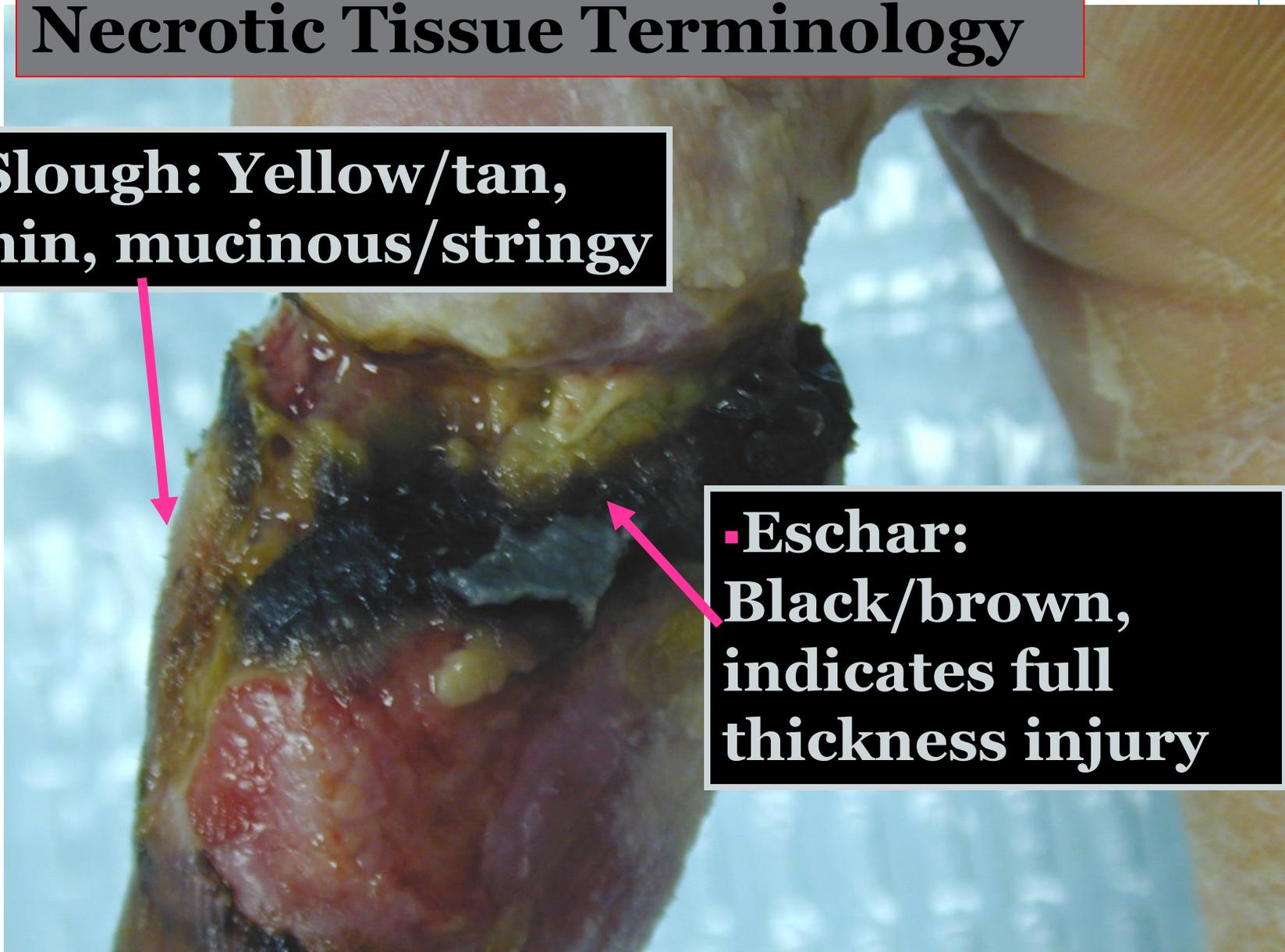


- RED: Healthy granulation tissue and good blood flow-*Keep wound bed moist*
- YELLOW: Fibrous nonviable tissue, necrotic fat-*Debride, Absorb exudate*
- BLACK: Nonviable tissue-*Thorough debridement, treat infection*
- Yellow +/- or Black does not IMPLY infection. Culture must be positive.
- Drawing/photo/description
 - Marion Laboratories/Cuzell J. 1988

Necrotic Tissue Terminology

▪ **Slough: Yellow/tan, thin, mucinous/stringy**

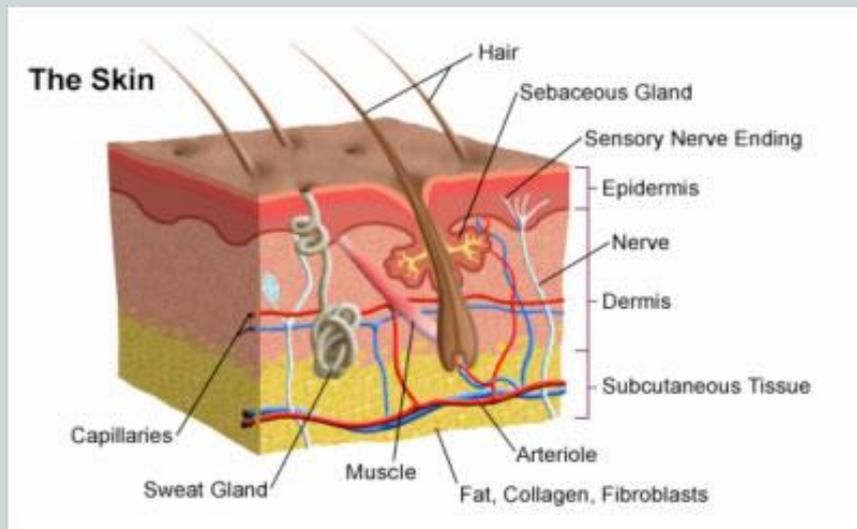
▪ **Eschar: Black/brown, indicates full thickness injury**



Tissue involvement



- Observation/description
- Full thickness: damage extends into subcutaneous tissues
- Partial thickness: damage to epidermis and dermis



Wound Drainage: Exudate Terminology



- Transudate: clear fluid
- Serous: yellow and odorless
- Sanguineous: red, bloody, thin
- Serosanguineous: pink
- Purulent: thick, white blood cells and living/dead cells which is yellow green brown

- **Exudate: Wound fluid/drainage that contains dead cells and debris.**



Exudate documentation



- Color and terminology
- Consistency
- Odor: After irrigation
- Amount
 - None-wound tissues dry
 - Scan-moist, no measurable exudate
 - Small: 25% of dressing
 - Moderate: 25-75% of dressing
 - Large: >75 % of dressing, easily expressed
 - Copious: >90 % of dressing

Pain and Sensibility



- Pain (Questionnaires/VAS)
 - + Infection, deep tissue injury, vasc. insufficiency
 - Neural injury/Neuropathy
- Sensibility-surrounding tissue. Protective and thermal sensibility

Temperature and Edema



- Temperature-excess warmth/coolness- temperature tape (normal 95 deg. F)
- Edema-fluid excess in tissues causing congestion to block the spread of infection
 - Circumferential measurements
 - Palpation

Periwound Area Terminology



- Erythema: Redness of skin surrounding the wound, warmth
 - Measure extent(clock method or length/width)
- Cellulitis: Streaking red: length
- Ecchymosis: Purple discoloration due to rupture of blood vessels and subcutaneous bleeding
- Hyperkeratosis/rolled epidermal ridge: callous formation at wound edges. Often occurs with neurotrophic wounds.
- Maceration: Excess moisture contributes to extension of wound bed.

Hyperkeratosis/roll
ed epidermal ridge



Erythema

Periwound indexes



- Texture: Moist, dry, indurated, boggy, macerated
- Integrity: maceration, excoriation, erosion, denudement

Structures exposed due to an open wound



▪ **Tendon: Initially white organized tissue, later yellow and dry**

Muscle bone



Standardized wound evaluation tools



- Most standardized tools are for pressure ulcers.
- SWHT: Sussman Wound Healing Tool
 - ✦ (Adv.Wound Care 1997)