BASICS OF WOUND CARE

WHAT DO I REALLY NEED TO KNOW ABOUT WOUNDS?

KEIRA GEFROH, PT, WCC

We need to treat the whole patient, not just the hole in the patient

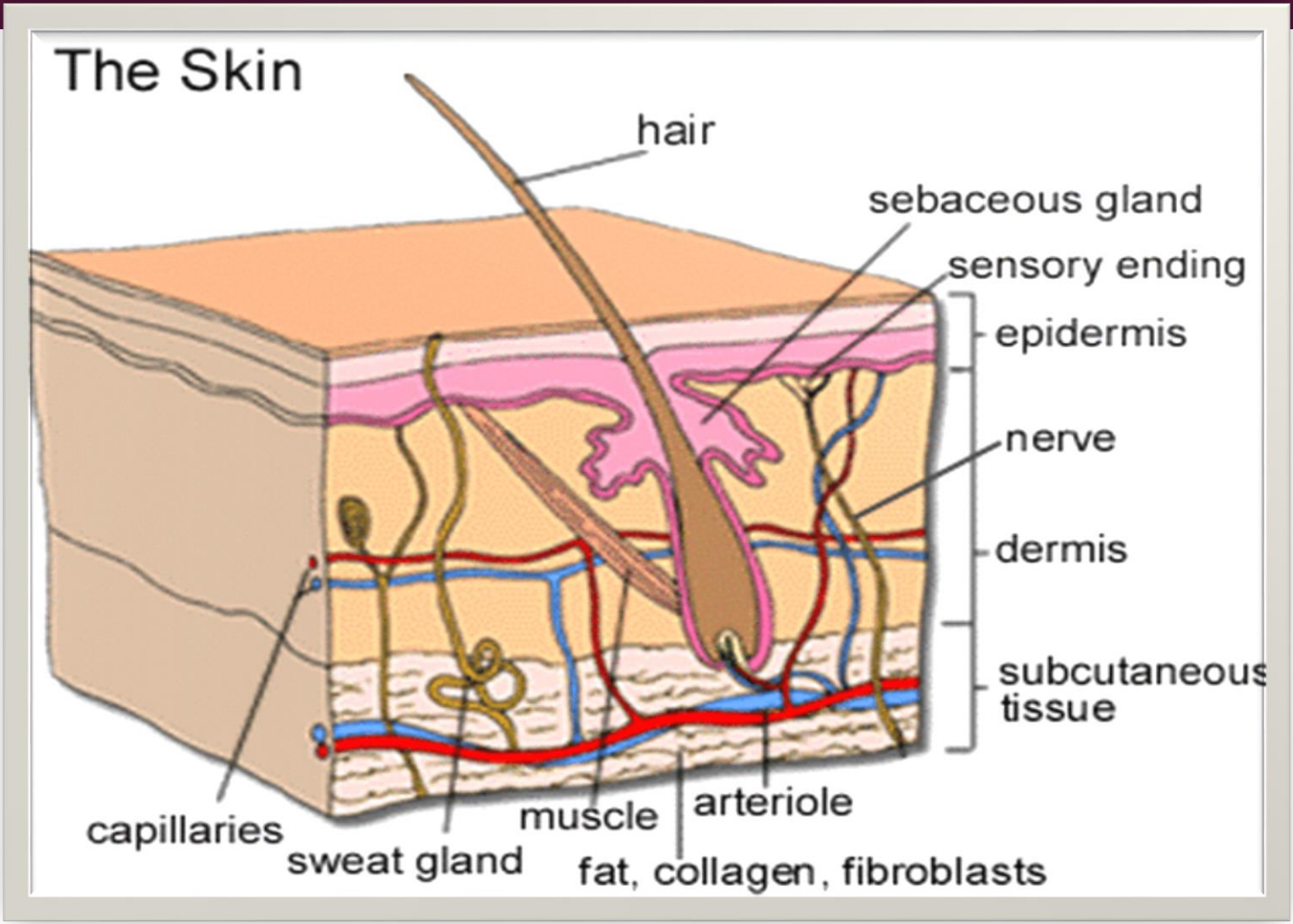
MEMBERS OF THE WOUND TEAM

- The Patient
- Medical Provider
- Nursing
- Physical Therapy (traditional PT and wound care)
- Pharmacy
- Dietician/Nutritionist

TYPES OF WOUNDS

- Acute Wound: disruption in the integrity of the skin and underlying tissues that progresses through the healing cascade in a timely and uncomplicated manner
- Chronic Wound: a wound that has failed to proceed orderly through the healing process
- Recalcitrant Wound: a wound that fails to respond to interventions despite various approaches

LAYERS OF THE SKIN



LAYERS OF THE SKIN

EPIDERMIS

- Usually about 0.1mm thick
- Barrier against toxic substances/microorganisms
- Prevents Water Loss
- Repels Water
- Avascular

LAYERS OF THE SKIN

DERMIS

- Contains: connective tissue, nerves, sweat glands, sebaceous glands, hair follicles, cells important for healing (macrophages, mast cells, fibroblasts)
- Supports & nourishes epidermis
- Protects against mechanical injury
- Thermoregulation
- Thick, dense, highly vascularized

LAYERS OF THE SKIN

- Subcutaneous Tissue: loose connective tissue, lymphatics, deep blood supply, subcutaneous fat (energy source, protective cushion, warmth); channels nutrients and O2 to dermis via capillaries
- Fascia: sheath covering for muscles, nerves and blood vessels; non-viable fascia is grayish in color
- Muscles: striated, contractile, dull-red; non-viable turn gray color
- Bone, Cartilage, Tendons

6 BASICS OF WOUND HEALING

1. Address/Remove the Cause
2. Remove Necrotic Tissue & Epibole
3. Moist Wound Therapy
4. Manage Bioburden
5. Adequate Tissue Perfusion
6. Adequate Nutrition

6 BASICS OF WOUND HEALING

ADDRESS/REMOVE the CAUSE

- Offload pressure
- Reduce friction and shear
- Protect from excessive moisture
- Compression to improve venous return
- Prevent trauma from insensate foot

6 BASICS OF WOUND HEALING

REMOVE NECROTIC TISSUE

- Necrotic tissue causes a wound to stay in the inflammatory stage
- Bacteria thrive in necrotic tissue!
- Debridement: mechanical, autolytic, enzymatic, chemical, sharp, biological

6 BASICS OF WOUND HEALING

MOIST WOUND THERAPY

- NEVER "air out" a wound
- Dry cells are dead cells
- In a dry environment the epithelial cells must burrow below the dry surface to reach a moist surface over which they can migrate

6 BASICS OF WOUND HEALING

MANAGE BIOBURDEN

- Bioburden: the number of microorganisms on a contaminated object (*all wounds are contaminated)
- High Bioburden: You always need topical treatment. Only sometimes do you need systemic treatment.

6 BASICS OF WOUND HEALING

ADEQUATE TISSUE PERFUSION

- Stop or Decrease Tobacco Use
- Elevate legs if edema present
- Gentle Exercise
- Nutritious Diet

6 BASICS OF WOUND HEALING

ADEQUATE NUTRITION

- Calories: 30-35 kcal/kg
- Protein: 1.2-1.5 g/kg
- Fluids: 30 ml/kg or minimum of 1,500 ml/day
- Glucose levels WNL (prevents protein being used as energy source)

Example: 150 lb person = 2040-2380 Cal; 81.6-102 g protein; 2.4L water

*based on ideal body weight

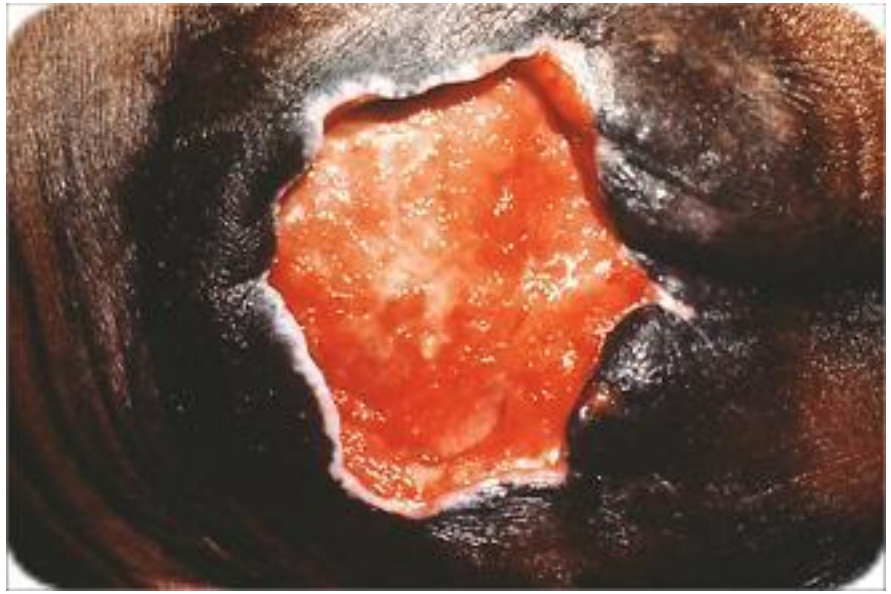
EVIDENCE-BASED PRACTICE

Need to avoid the pitfall of "We've always done it this way…"

WE'VE ALWAYS DONE IT THAT WAY…

- Wound Measurements
- Use of Antibiotics
- Culture Technique
- Use of Santyl
- Daily Dressing Changes
- Packing a Wound
- Partial vs Full Thickness
- Use of Silvadene

WOUND MEASUREMENTS



WOUND MEASUREMENTS

- Clock Method is Gold Standard
- Length is ALWAYS from 12 o'clock to 6 o'clock
- Width is ALWAYS from 9 o'clock to 3 o'clock
- Depth is straight down at deepest, visible aspect
- Undermining, Tunneling

Make the Wound Fit the Ruler, Not the Ruler Fit the Wound

LOCAL INFECTION

3 or more:

- Increasing pain in the wound
- Erythema
- Edema
- Heat of the periwound area
- Foul Odor
- Purulent drainage

SYSTEMIC INFECTION

- Local Infection along with:
- Elevated white blood cell count
- Elevated body temperature
- Confusion or agitation in older adults
- Red streak from the wound

TREATMENT OF INFECTION

LOCAL INFECTION

- Topical Antiseptics (betadine, dakins solution, chlorhexidine)
- Topical Antibiotics (Mupirocin/Bactroban, Bacitracin)
- Antimicrobial Dressings (Silver, Hydrofera Blue, Sorbact)

SYSTEMIC INFECTION

- Above treatment plus oral or intravenous antibiotics

ALWAYS TOPICAL. SOMETIMES SYSTEMIC

CULTURE TIPS

- Culture wound if multiple signs of infection present
- Always CLEAN the wound prior to culture
- Do not use purulent matter to culture
- Do no swab over hard eschar
- Obtain culture prior to initiation of antibiotics, if possible
- Levine Method: press, clean, compress, rotate

USE OF SANTYL

- Enzymatic debridement
- Should not be applied to wound covered with thick non-viable tissue. Debride first!
- Per label, should be applied 1-2x/day

DAILY DRESSING CHANGES

Dressing Changes

- Can be painful for the patient
- Can disrupt good tissue
- Decreases temperature of wound bed which slows healing
- Frequency of changes should be dependent upon amount of exudate, debridement needed, type of dressing used vs. habit of daily changes

PACKING A WOUND

- Packing a wound is necessary to fill dead space
- LIGHTLY…NOT TIGHTLY
- FLUFF..DON'T STUFF
- Overpacking increases pressure, decreases circulation, prevents communication between walls of tissue
- Decide if packing should be dry or moist prior to application

PARTIAL VS FULL-THICKNESS

Partial-Thickness

- Through the epidermis and part of the dermis
- NEVER any yellow tissue or granulation tissue

Full-Thickness

- Through epidermis, dermis and into sub Q…sometimes extending to muscle or bone

USE OF SILVADENE

- It is the most common topical used on burns at YKHC…BUT...research shows it's not the best choice
- Delays healing
- Increases scarring
- Other options: Bacitracin, Xeroform

DRESSINGS AT YKHC

GAUZE

- Good for cleaning wounds
- Absorptive BUT…
  1. Allows wound to dry out
  2. *Easily* sticks to the wound
  3. Bacteria can penetrate 64 layers of gauze!

(Lawrence, 1994, Ovington, 2001)

DRESSINGS AT YKHC

FOAM

- Provides moist wound environment
- Appropriate for light – heavily exudative wounds
- Generally changed up to 3 times/week
- Easily removed and less painful
- Examples: Polymem, Mepilex

DRESSINGS AT YKHC

HYDROCOLLOID

- Semiocclusive (impermeable to fluids and bacteria and semipermeable to gas and water vapor)
- Doesn't adhere to moist wound bed
- Usually in composite form and should not be cut
- Meant to be changed 2x/week
- Example: Duoderm

DRESSINGS AT YKHC

CALCIUM ALGINATE

- Excellent absorptive properties
- Create a moist wound environment
- Can be changed daily or left on several days*
- Not indicated for dry wounds or wounds covered with eschar
- Examples: Sorbalgon, Kaltosat, Restore

GENERAL TIPS TO PATIENTS

- No Steams with Open Wounds
- No Baths. May be able to shower (depends on the wound)
- No Tobacco or at least decrease tobacco use
- No Airing Out Your Wound
- Eat Protein