The *icky, squishy, & smelly:* Chronic Wound Care

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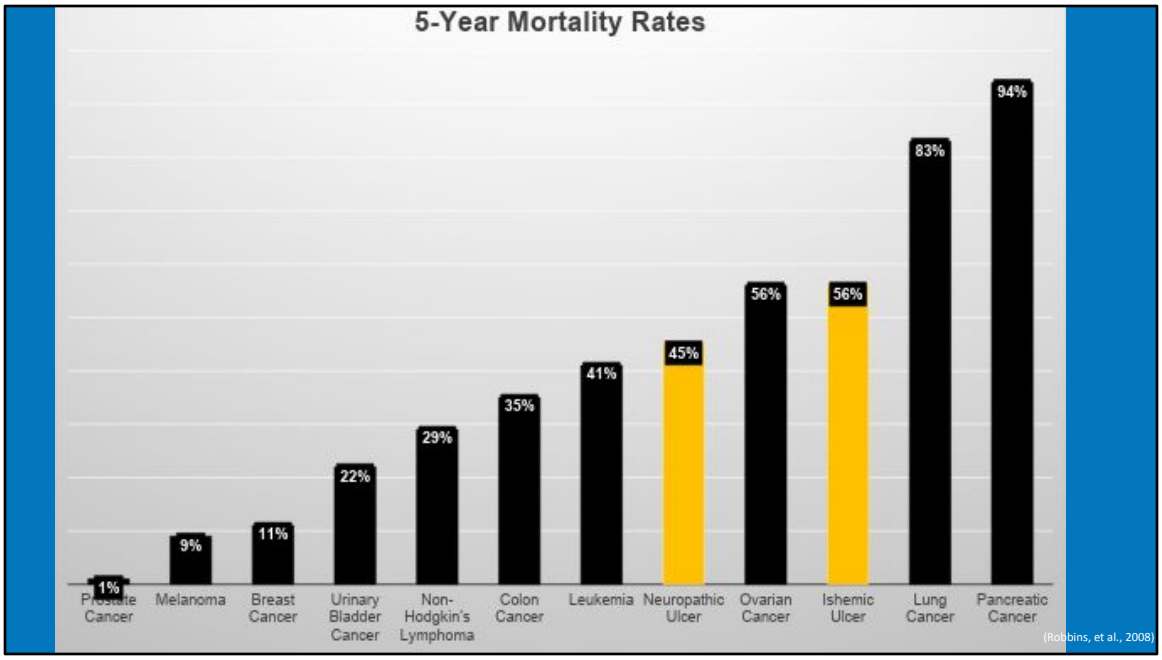
No financial disclosures


5-Year Mortality Rates
1%
9%
11%
22%
29%
35%
41%
45%
56%
56%
83%
94%
Prostate Cancer
Melanoma
Breast Cancer
Urinary Bladder Cancer
Non-Hodgkin's Lymphoma
Colon Cancer
Leukemia
Neuropathic Ulcer
Ovarian Cancer
Ischemic Ulcer
Lung Cancer
Pancreatic Cancer
(Robbins, et al., 2008)

Objectives

- Recognize a chronic wound and describe distinguishing factors.
- Identify the etiology of a non-healing wound.
- Discuss treatment options for chronic wounds.
- Assess the need for a multidisciplinary approach to wound healing.

This lecture is intended to cover the basics of chronic wound management: initial wound evaluation; cleaning a wound and patient education; choosing a dressing; antibiotic treatment if necessary; what NOT to do; and when to refer.

Question

What do you want to learn today?

a. Dressings are confusing
b. I feel completely lost with chronic wounds
c. When to use antibiotics?
d. Who do I refer to?
e. How do I get certified as a wound expert?
f. I'm here for the gross pictures
g. Other…

What is a chronic wound?

A wound which fails to advance through the normal healing process within an expected timeframe

A cute wound

Not cute

Unknown Author: http://www.tipsnips.com/tip/20/how-to-painlessly-remove-band-aids#.Xbmk1ehKhaQ

Chronic Wound Characteristics

- Devitalized tissue
- Decreased angiogenesis
- Hyperkeratotic tissue in/around
- Exudate
- Biofilm formation

→ it just looks bad

Save a leg, save a life

https://www.thesalsal.org/

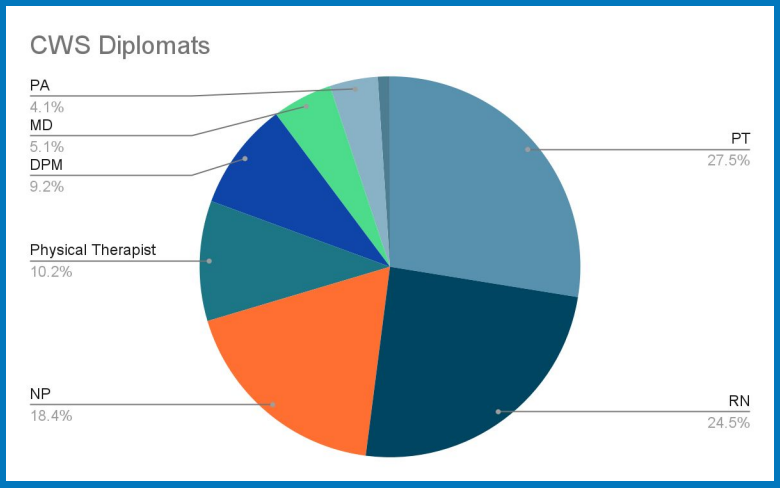
5-year mortality after an amputation is 50%.

NON-traumatic amputations occur **every 20 seconds**.

80% of nontraumatic amputations are preceded by diabetic ulcer.

- We need to be more aggressive in treating chronic wounds in order to heal chronic wounds, prevent amputations, decrease mortality, and increase the quality of life.
- More education → heal wounds before amputation → lower mortality
- Save a Limb = Save a Life

American Board of Wound Management Certified Wound Specialist



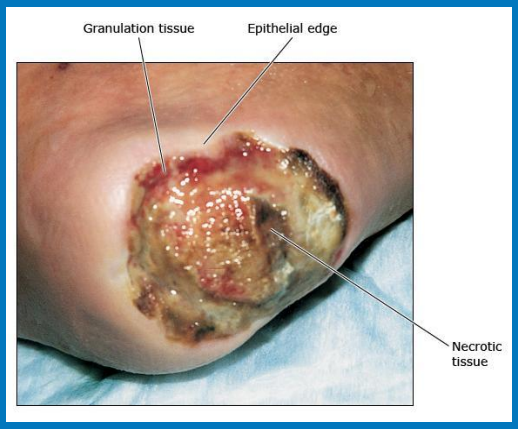
2,714 total

ABWMcertified.org/

https://abwmcertified.org/about-us/certification-statistics/ 2021 data

4.1% PAs → *only* **111 PAs**

Describe the wound



Location

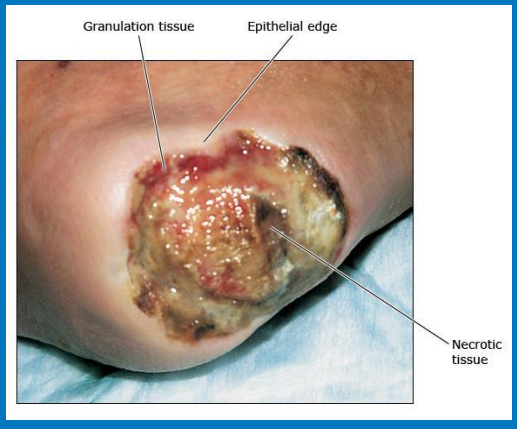
Exudate

Tissue description

Odor?

https://www.uptodate.com/contents/images/SURG/52383/RYB_wound_class_PR.jpg

Describe the wound



Location: right heel

Exudate: moderate serosanguinous drainage

Tissue: tan/brown slough

Odor: ?

https://www.uptodate.com/contents/images/SURG/52383/RYB_wound_class_PR.jpg

EXUDATE:
clear watery: serous
pink/bloody watery:

Wound Vocabulary

- **Granulation** – beefy, pink tissue
- **Slough** – devitalized tissue; various colors: yellow, tan, brown; +/- odor
- Eschar - scab-like tissue, dry
- Periwound – area around a wound
- Hypergranulation - pink, friable tissue above periwound level skin.

Epiboly - epithelialization can not advance past a rolled edge
Hypergranulation - Sign of tissue responding to dressing too fast

Peri wound - can be inflamed, macerated (too wet), erythematous, ischemic

Wound Vocabulary

- **Undermining** – wound progresses under epidermal edge **parallel** with skin
- **Tunneling** – wound progresses **deep** from the surface
- Communication – a wound progresses through tissue to another wound opening
- Epiboly - closed, rolled edge delaying epithelialization. needs debridement

Epiboly - epithelialization can not advance past a rolled edge

Question:

Describe this wound

a. Necrotic chronic wound
b. Mostly Slough
c. Mostly Granulated
d. Mix of hypergranulation & slough

Describe the LLE

Healthy full thickness ulcer left popliteal fossa with beefy granulation

Basics

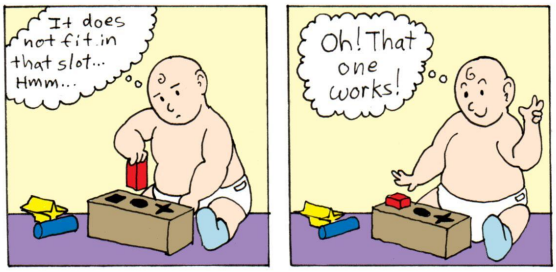
Treat the ***CAUSE***

Debridement prn

Choose a dressing

- Dry wound → moist dressing
- Wet wound → dry/absorbent dressing

Trial & error …



Debridement Q7-10 days prn

Step 1: Identify cause of wound

Identify why pt isn't healing

- Nutrition
- Education
- Blood sugars
- Vascular supply
  - arterial & venous
- Swelling
- Trauma
- Neuropathy
- Other? …

Trauma – pt may have repetitive trauma to the wound site because of NEUROPATHY (diabetics). Every step shears off good granulation tissue
Many other PMH illnesses can cause wounds: CHF – LE edema/lymphedema→ stasis ulcers; COPD– low O2 levels lead to ischemic tissue states; autoimmune d/o

- Smoking - "Effect of smoking on wound healing is multifactorial, with mechanisms that include vasoconstriction causing a relative ischemia of operated tissues, a reduced inflammatory response, impaired bacteriocidal mechanisms, and alterations of collagen metabolism [39]"
- Malnutrition – "screen for malnourishment by obtaining preoperative serum prealbumin and albumin levels and monitoring them to optimize nutritional status. Prealbumin and albumin are not perfect markers of nutritional status."
- Immunosuppression – systemic steroids can cause impaired immune response, but topical steroids can be beneficial. "Several studies have demonstrated the potential beneficial effects of topical steroid application in the treatment of chronic wounds, particularly when an abnormal and uncontrolled inflammatory stage is suspected within the stages of wound healing. " Topical steroids are not widely used in wound care.

- DM – The entire wound healing process is altered: “decreased or impaired growth factor production, angiogenic response, macrophage function, collagen accumulation, epidermal barrier function, quantity of granulation tissue, keratinocyte and fibroblast migration and proliferation, number of epidermal nerves, bone healing, and abnormal balance between the accumulation of extracellular matrix components and their remodeling by matrix metalloproteinases. “

Armstrong & Meyr, 2018

Diabetic Foot Ulcer (DFU)

DFU

Common sites affected:

- Pressure points
- Plantar foot

Originate from:

- Callus, infection, trauma, deformities, PAD...

Diabetic foot ulcer (DFU)

Impairments of healing [2]

- Decreased growth factor production & impaired GF function
- Macrophage dysfunction
- Collagen accumulation
- Decreased angiogenesis

1. (McCulloch, Nathan, & Mulder, 2018) 2. (Armstrong & Meyr, 2018)

"Numerous cytologic factors contribute to impaired wound healing in patients with diabetes [78]. These include decreased or **impaired growth factor** production, angiogenic response, **macrophage function**, collagen accumulation, epidermal barrier function, quantity of granulation tissue, **keratinocyte and fibroblast migration and proliferation**, number of epidermal nerves, bone healing, and abnormal balance between the accumulation of extracellular matrix components and their remodeling by matrix metalloproteinases"

"Neuropathy associated with diabetes affects sensory, motor, and autonomic nerves. **Sensory neuropathy** diminishes the perception of pain that is protective when tissue injury has occurred [84]. Patients with diabetes may not be aware of the injury, particularly if the injured region cannot be seen or if the patient has a visual impairment. The **motor nerves** to the intrinsic muscles of the foot are affected in approximately 50 percent of patients with diabetes, resulting in claw deformities in the digits that transfer pressure to the plantar metatarsal heads. Increased local tissue pressure on the plantar surface or in other regions where bony deformities contact the shoe may lead to skin erosion and ulceration that may go unnoticed in patients with sensory deficits. In addition, **autonomic neuropathy** causes the skin to become dry and susceptible to skin fissures, tearing, and infection due to a loss of sweat and oil gland function. Loss of vascular tone may lead to foot edema "(Armstrong & Meyr, 2018)

https://www.uptodate.com/contents/risk-factors-for-impaired-wound-healing-and-wound-complications?topicRef=15080&source=see_link

DFU

Most important treatment: OFFLOAD!

Consider pt's gait, strength, fall tendency.
Alternatives: wheelchair, Knee-rolling scooter

Total Contact Cast

Gold Standard for plantar foot offloading

95% of weight is offloaded

Change ~ Q7 days

Arterial Wounds

Ischemia:

Oxygenated blood flow *in*sufficient for metabolic demands of a tissue

Buerger's disease

Question

Arterial duplex & ABI

	Right	Left
Brachial	146 mmHg	150 mmHg
PT	220 mmHg monophasic	162 mmHg monophasic
DP	230 mmHg monophasic	200 mmHg monophasic
Toe	51 mmHg	56mmHg

Impression: Normal ABI. Right ABI 1.51; Left ABI 1.33

Question

Impression: Normal ABI. Right ABI 1.51; Left ABI 1.33

How do you interpret these results in light of a new wound on right lateral foot?

a. Wound will not heal
b. Normal vascular study
c. Wound expected to heal
d. No clue
e. Need more information

Arterial Testing

Ankle Brachial Index *with* *waveforms & toe index*

1.0 - Normal
0.7 - Claudication; refer to vascular surgery
0.5 - Rest pain
0.3 - Ulcer *unlikely* to heal; risk of limb loss; needs urgent revascularization

>1.3 is ABNORMAL! calcifications can occur intravascularly (common in diabetics) leading to vessels becoming NONcompressible. Look at the waveforms in this case. Don't be caught off guard

Arterial Wounds

Vascular surgery eval / tx

- Angiogram w intervention
- Bypass

Goal is limb salvage

Arterial wounds



Non-surgical candidates treated conservatively. NO COMPRESSION <0.5 ABI

Venous Stasis Ulcers

Irregular edges,

Heavily exudative,

Painful,

+/- Periwound inflammation

Venous Insufficiency

Symptom progression

- Itching, heaviness
- Edema
- Hyperpigmented – *hemosiderin deposition*
- Skin hardening - *lipodermatosclerosis*
- Skin atrophy – *atrophy blanche*
- Ulcer

Venous Stasis Ulcer (VSU)

Pathology: venous HTN +/- lymphedema

- Leakage of **protein** rich fluid out of high pressure capillaries

Time to heal 4 – 6 months

Most important treatment: **compression**

*Alguire & Scovell

~40% of all LE wounds*

Pathology: venous reflux → venous HTN → interstitial protein loss → edema → lymphedema

Refer to vein specialist

Venous duplex with mapping & reflex study

VSU & Lymphedema

Treatment: **COMPRESSION**

Compression wraps

- Unna Boot
- Multilayer wraps
- Short stretch Velcro wraps

First level of prescription grade compression: 20-30mmHg compression hose

ONLY reason not to apply compression is SEVERE PAD. Some sources say ABI >0.6. Essentially however, compression can still be applied with ABI >0.45. Some PAD pt have concomitant lymphedema or venous disease.

Compression wraps are EXCELLENT for wounds with edema because patient has difficult time removing them. DO NOT APPLY if any NEW untreated infection.

"...diuretics have **no role** in the treatment of edema due solely to chronic venous insufficiency…" - Alguire & Mathes

Deep Tissue Injury

aka decubitus ulcer

Pressure induced tissue ischemia causing injury to deep tissue over a bony prominence

Clark Kent - Christopher Reeve paralyzed after horse riding accident. Died from complications of decubitus ulcers

Stage 1

Skin **intact**; non-blanchable redness

Stage 2

Partial thickness skin loss

Stage 3

Full thickness tissue loss. Subcutaneous fat or muscle visible

Stage 4

Full thickness skin loss with involvement of **bone**

Unstageable

Base of wound is **not visible;** covered by slough and/or **eschar**

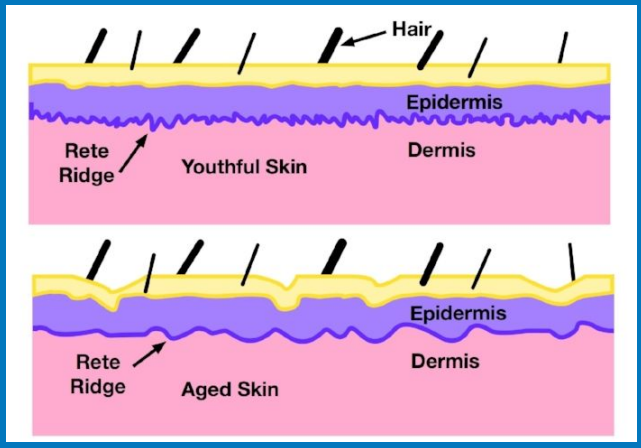
* From the National Pressure Ulcer Advisory Panel.

Causes

Pressure

Friction

→ increased risk in elderly



http://www.skinremodelingdiy.com/blog/http/wwwskinremodelingdiycom/2016/10/17/stimulatetheskinorelseuseitorloseit

within the basement membrane, the rete ridges are responsible for maintaining integrity of skin. They flatten with aging leading to more “loose” skin and easier torn or damaged

-Increased aging correlates with effacement of rete ridges, decreases of their height and a reduction of dermal papillary projections (Fig. 3) [68]. The number of rete ridges per unit skin surface length in the aged skin decreases to about half of what young skin displays [69].

https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6004930/#:~:text=Increased%20aging%20correlates%20with%20effacement,young%20skin%20displays%20%5B69%5D.

Surgical consult – gen vs plastics

Burns

Moist dressings

OT – frequent mobilization of affected joints

Debride devitalized tissue

Ex: Diabetic fell asleep with hot pack on popliteal fossa

hydrocolloid, antibiotic ointment

Burns

Dressing to ADD moisture

ex: hydrocolloid, antibiotic ointment, xeroform, hydrogel

~~*Silvadene cream*~~ (silver sulfadiazine 1%)

"No evidence to support improved wound healing or reduction in bacterial wound infections." -Gauglitz GG

Takes friction to remove to re-evaluate wound = **painful**

Antibiotic ointments – bacitracin, neomycin, mupirocin

Hydrocolloids - duoderm

Xeroform gauze (Vaseline impregnated gauze)

Holistic – aloe, Vaseline, neosporin etc

8/15/19 - 50% smaller, granulating

s/p xeroform and tegaderm dressing in place x1 week since burn

9/4/2019 - healed

Used duoderm hydrocolloid Q3 days the last week b/c of itching

Basics

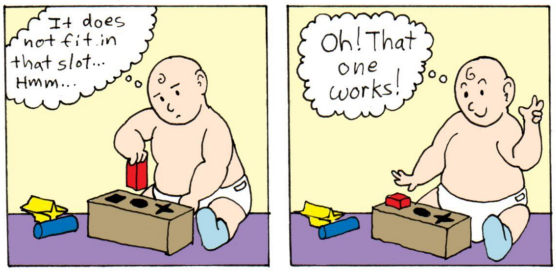
Treat the *CAUSE*

Debridement prn

Choose a dressing

- Dry wound → moist dressing
- Wet wound → dry/absorbent dressing

Trial & error …



Debridement Q7-10 days prn

Physiology of a Healing Wound

Hemostasis ~ first 10 minutes

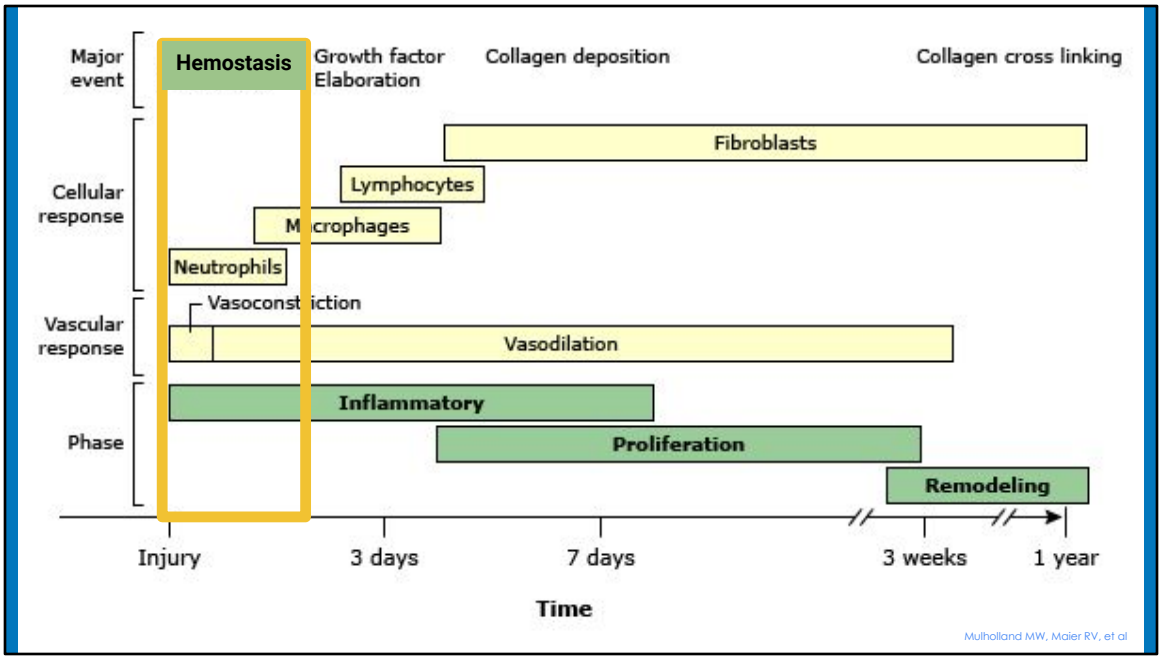
Inflammation ~ 1 – 7 days

Proliferation ~ 4 days – 3 weeks

Remodeling ~ 3 weeks – 1 year

McCulloch, Nathan, & Mulder, 2018

Don’t be afraid of blood. It is a part of healing. In fact, it is the initial part of healing.


Major event
Hemostasis
Growth factor Elaboration
Collagen deposition
Collagen cross linking
Cellular response
Fibroblasts
Lymphocytes
Macrophages
Neutrophils
Vascular response
Vasoconstriction
Vasodilation
Phase
Inflammatory
Proliferation
Remodeling
Injury
3 days
7 days
3 weeks
1 year
Time
Mulholland MW, Maier RV, et al

Debridement

Starts the healing cascade over

Remove non-viable tissue

Reduces bacterial load

"Clinicians should debride any wound that has necrotic tissue or surrounding callus."

- Infectious Disease Society

Various forms of debridement
Types of debridement: sharp, enzymatic, autolytic, mechanical, and biological

- Restores & helps regenerate normal tissues
- Reduces bacterial load of a wound

Sharp Debridement

Advantages:

- Fastest way to remove nonviable tissue

Disadvantages:

- Painful (??)
- Anesthesia risks

Selective removal of nonviable tissue
Curette, scalpel, scissors, other sharp instrument

Sharp debridement or surgical debridement is a Selective debridement
repeat sharp debridement every 7-10days PRN nonviable tissue to RE-start healing process

Topical anesthetics:
2-10% lidocaine gel, spray, cream (not prefered)
20% benzocaine spray (EXCELLENT!)

subQ injectables

Biological Debridement

Selective enzymatic debridement with sterile maggots

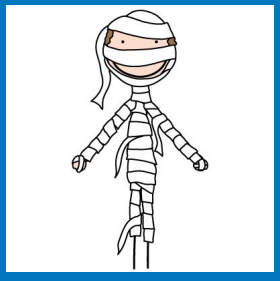
- ***Myiasis*** – maggot infestation

Rx **collagenase** (Santyl) ointment

Manuka honey or medihoney - encourages autolytic debridement. Medicare wont cover these dressings

Wound Treatment Basics

1. Keep wound clean
2. Wound bed preparation - debridement
3. Apply a new dressing
    a. Frequency of dressing changes dependent on saturation & type of dressing



Clean - irrigate, moist gauze rubbed across it. don't get dressing dirty or wet in shower. wear protective shoes
Dressing change frequency depends on saturation amount & type of dressing

Clean the Wound

Saline

Wound cleansers

Distilled water

Sodium hypochlorite (Dakin's)

Diluted Vinegar/water solution

NO:

- Hydrogen peroxide
- Tap water
- Washing wounds in shower

https://www.ncbi.nlm.nih.gov/books/NBK507916/

H2O2 damages healthy tissue.

DIY Dakin's solution

Makes approximately 0.025% sodium hypochlorite (Dakin's) solution

Supplies:
- Household bleach, unscented
- Baking soda
- Tap water

Instructions:
- Pour 4 cups (32 oz) of water into a clean pot.
- Boil for 15 min with lid on. Allow to cool completely.
- Add ½ tsp baking soda.
- Add 2 ½ tsp (12-14mL) bleach.
- Pour solution into a clean, sanitized jar.
- Keep protected from light.
- Discard after 4 days after opening. Unopened jar can be stored for 1 month.

Dakin's is cytotoxic – great to kill bacteria but long term use not recommended as it will harm your wound tissue.
Good for smelly wounds with heavy bacterial bioburden (looks junky).

Process of a wound visit: Remove dressing, Clean wound, debride if necessary, and apply dressing.

Pt/HHC may use Dakins to clean the wound but discontinue after 1-2 weeks (hopefully wound looks cleaner).

Dressings

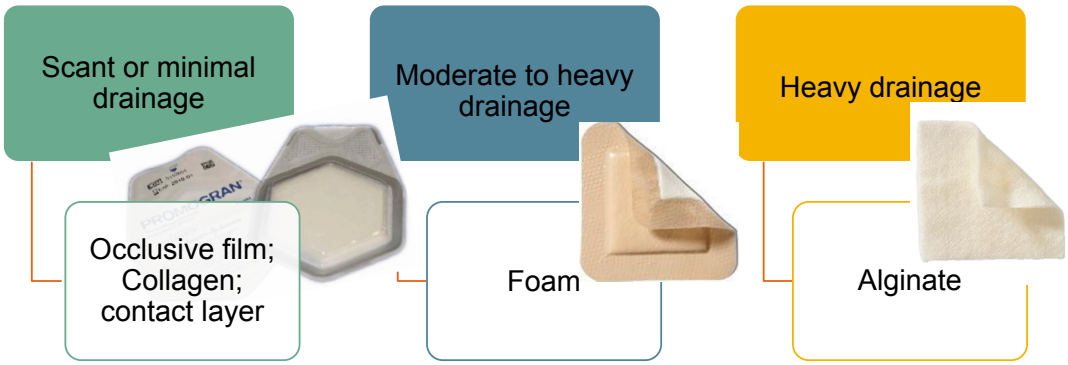
Always cover an open wound

- Protect wound from outside forces
- Prevent infection
- Promote autolytic debridement
- Protect periwound
- Absorb drainage but keep moist environment

Iodine dressing - https://www.sciencedirect.com/science/article/pii/S1743919117305368

Dressings

Step 1: Choose a dressing based on **exudate amount**



Dressings: order through DME provider
Choose a dressing based on drainage from wound, pt access to supplies, pt ability to change dressing

- Silver is an antimicrobial. Used to prevent pseudomonas colonization. Warning, overuse has shown pseudomonas resistance to silver
- Contact Layer – non-adherent; use when shallow wound and need to protect periwound; allows exudate to penetrate to secondary dressing. Great over skin grafts. Ex: Restore, Acticoat, mepitel, mepilex, adaptic
- Dressings which ADD moisture: hydrocolloids(duoderm), hydrogel, antibiotic ointment. Xeroform/vasaline impregnated gauze. NO SILVADENE!
- Collagen – scant to little drainage. Ex: Promogran (Prisma), endoform, collagen flakes
- Foam – moderate to heavy drainage. Ex: Hydrofera blue, silver or plain foam
- Alginate – heavy drainage. Ex: Aquacel (with or without silver), Algicell

Dressings

Step 2: Secondary dressing - add layers for absorbency & protection.

+

Step 3: Secure in place

Step 2: Secondary dressing - add layers for absorbency & protection.
Ex: gauze, kerlix, ABD pad, tegaderm
Step 3: Secure in place: tape, bordered dressing, coban, ace bandage

Dressings

Dressing choice is specific to the wound, patient, clinic, and provider.

Contact layers - nonstick; allow absorption of draining through the mesh

Hydrocolloid - add moisture to wounds; gentle on skin.

Hydrofera blue - foam dressing

woundeducators.com/wp-content/uploads/2013/03/Fleck.pdf

There is no right answer to which dressing you choose. Choose based on patient's access to supplies, amount of drainage, and your comfort/familiarity

woundeducators.com/resources/wound-dressings/

A few basic dressings:

- gauze - cheap, comes in bulk. Used to clean wound and dispose then new, dry piece applied over wound and secured with tape or wrap.
- Occlusive dressings - tegaderm (on a skin tear), silicone border dressing (Mepilex border). Can be left in place up to 1 week barring saturation of drainage.
- Contact layer (Brand ex: Sorbact, Restore) - nonstick to wound bed and allows absorption of scant to minimal fluid through perforations onto secondary dressing. Can be left in place up to 1 week.
- Hydrocolloids - (ex: duoderm). These add moisture to wounds. Great for small burns, stage I decubitus ulcers, skin tears. Can be left in place up to 1 week
- collagen (brand Promogran Prisma) - superficial, scant to small amount of drainage. Change QOD with secondary dressing on top. Collagen may absorb and "disappear" at next dressing change.
- alginate - (brand Aquacel) - absorb moderate to heavy exudate amount.

- Use with secondary dressing. Can use in deeper or tunneling wounds with a rope version.
- wound vac; i.e. Negative Pressure Wound Therapy (NPWT) - used to accelerate granulation growth by 50% and fill a large wound with heavy saturation

Wet to dry??

- **Not** an advanced wound dressing
- Affordable
- Easy to do
- NONselective mechanical debridement. **PAINFUL!**

https://www.jvascsurg.org/article/S0741-5214(15)02025-X/fulltext#sec1.4.3

Wet-to-Dry: **not** an advanced wound dressing. It dries to the wound bed and rips off the wound surface as it's removed. painful. Application: saturate gauze with saline and apply to wound surface. Cover with dry gauze and secure with tape. Change daily or BID depending on saturation. Good if resources are limited.

"Wet-to-dry dressings, in which saline-soaked gauze is allowed to dry on the wound then physically ripped off, were a past standard mechanical débridement technique. These have fallen out of favor as the débridement is nonselective, harming viable tissue in addition to removal of necrotic debris, and may be painful.[119]"

https://www.jvascsurg.org/article/S0741-5214(15)02025-X/fulltext#sec1.4.3

Question

For the next slide:

Question

53 YOM presents with wounds on bottom of his feet. He works in construction, weighs 300lb, 5’8” tall with only PMH of asthma as a child. He admits he only recently got insurance and hasn’t been to a doctor in many years. He has no pain, no idea how long wounds have been there. Denies fever, chills, claudication, or redness.

What do you suspect is the etiology of these wounds?

a) Arterial
b) Venous
c) Neuropathic
d) Decubitus
e) Unknown

Question

For the next slide:

Question

Which of these is NOT an appropriate dressing?

a) Gauze
b) Collagen
c) Foam
d) Alginate
e) Negative Pressure Wound Therapy

What dressing?

Alginate ag dressing until

Surgical debridement

then wound vac (NPWT)

OFFLOAD!

What's Manuka Honey?

Honey – antimicrobial

Keeps wound moist assists **autolytic debridement**

Manuka = honey harvested in Australia/New Zealand

Most common medically applied honey: medihoney

Not covered by Medicare

Infection, Inflammation, or colonization?

- **ALL** wounds are colonized
- **Not all** wounds are infected

Advanced wound dressings are antimicrobial

WHS guidelines: Systemic antibiotics do not effectively decrease bacterial levels in *granulating* wounds

Rule, don't use mupirocin ointment/gentamicin ointment on foot wounds. Acceptable on a burn. The ointment carrier often macerates periwound and worsens plantar wounds and leads to resistance

http://woundheal.org/files/2017/final_pocket_guide_treatment.pdf pg 5

To Culture or not to culture

When is it beneficial?

Tissue culture > swab culture

We want to know what is infecting the **tissue** not what is on the surface of a scab/dry wound.
Don't culture a DRY wound. If you are going to do a culture swab (*tissue cultures are more specific), debride FIRST then swab wound bed - grants true idea of what is invading the tissue instead of what bacteria are on top of the devitalized tissue.
Best results come from after or at end of sharp debridement by swabbing or sending tissue for culture. This way, results reflect pathogens *IN* the wound which are most likely causative agents in infection.

Tissue culture goes in a saline container

Tissue for pathology goes in formalin

Wound Pathogens & Antibiotics

Most Common:

- Staph G+
- Strep G+
- Pseudomonas G-
  - Foul odor, blue-green drainage

Others based on cultures

topical antibiotics such as mupirocin, bactroban, triple antibiotic, etc cause heavy maceration in LE ulcers. Understand the wound. The abx is not the problem; problem is the ointment delivery method.
Topical wound dressings are antimicrobial or there are topical abx powders available through compounding pharmacies.

Advances in Wound Healing

- Split thickness skin grafts
- Skin Substitutes – amniotic tissue, cadaver grafts, etc
- DNA Sequencing Biofilms
- Hyperbaric Oxygen Therapy

Other Pearls

- Order supplies through DME provider
- Order home health care
- No ointments on plantar feet (gentamicin, bactroban, etc)

Standard Wound Care Order

Change dressing on right foot 3x/week and prn as follows:

1. Clean wound with NS or wound cleanser. Pat dry.
2. Apply collagen dressing to wound bed.
3. Cover with mepilex border (or substitute with 4x4 gauze and kerlix).

Pt should leave dressing intact, clean, and dry when bathing.

Elevate & offload affected limb.

RTC in 1 week or prn.

Patient, caregiver, or home health nurse can change dressings depending on experience, comfort, and availability.
Generally, most dressings pt or caregiver can do if they are comfortable.
Home health qualifications: homebound status (only leaving home for medical apt, grocery store, and church). Check insurance coverage.
Send HHC a wound order (as above) after EVERY office visit.

Cleaning a wound: NS, wound cleanser, or distilled water ($0.88/gal). Use friction to remove bioburden. tap water can sometimes contain bacteria (+fungi?)

Bathing with dressing:

- sponge bath
- plastic bag sealed with seran wrap/tape/etc
- Cast Cover approx $15

Wound Healed!! Now what?

Gold standard to prevent foot ulcers:

- Daily foot exam
- Diabetic foot exam annually
- *Custom* diabetic shoe and insoles

High rate of recurrence: DFUs >50% re-open within 3 years (Boulton)

https://www.sciencedirect.com/science/article/pii/S0140673605676982

Summary

1. Treat the cause first, the wound second.
2. Pick a dressing based on drainage.
3. Debride nonviable tissue.
4. Follow often or refer to specialty clinic.
   - Find a ***certified*** wound specialist
     www.ABWMcertified.org

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Thank You!

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