**What's new in wound management??**

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**Medical therapies**

- Pentoxifylline
- Horse chestnuts (Escin)
- Hydroxyethylrutoside (HER) semisynthetic flavonoids
- Daflon
- Sulodexide (LMWH + dermatansulfate)
- NSAIDs
- Zinc sulphate
- Anticoagulation
- Diuretics?
- Cilostazol (vasodilator)
- Topical nitroglycerine
- Prostacyclin analogues
Surgical intervention

- Vein ligation/stripping
- Radiofrequency ablation (RFA)
- Endovenous laser therapy (EVLT)
- Foam sclerotherapy

Evidence for compression

- >21 RCT
- Compression better than no compression
- High compression better than low compression
- Use high compression system best suited to the patient, provider and health care system (modified)
- No difference between short stretch and long stretch
- Multi-component is not better

Laplace’s Law-

The interaction of factors that affect the pressure produced by a compression therapy system

Diagnostic criteria to determine vascular supply for healing

<table>
<thead>
<tr>
<th>Assessment methods</th>
<th>Comments</th>
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</thead>
<tbody>
<tr>
<td>ABPI &gt;0.5</td>
<td>sensitivity = 90%; specificity = 95%</td>
</tr>
<tr>
<td>Transcutaneous oxygen tension</td>
<td>sensitivity = 77% (increases to 100% post exercise); specificity = 83%</td>
</tr>
<tr>
<td>&gt; 30 mmHg</td>
<td></td>
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<tr>
<td>Toe pressure &gt;55 mmHg</td>
<td>sensitivity =8%, the specificity =96%, the positive predictive value 12%, and the negative predictive value = 94%.</td>
</tr>
<tr>
<td>Skin perfusion pressure SPP of 40 mm Hg</td>
<td>sensitivity= 72%; specificity= 88%</td>
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</table>
Foot ulcers (diabetes)

• 2–3% PWD develop a foot ulcer/year
• 25% lifetime risk of developing a foot ulcer
• cost of diabetic foot ulcers (not requiring amputation): US$993 to US$17,519 (1998)
• Foot ulcers precede 84 percent of all nontraumatic lower limb amputations in PWD
• Diabetic associated lower-extremity ulcers are responsible for 92,000 amputations annually

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Ingrown nails

• pincer nail (overcurvature of the nail plate that may be genetic with an adult onset), subcutaneous ingrown toenail, and hypertrophy of the lateral nail fold.

Nail care

Correctly trimmed toenail

Incorrectly trimmed toenail

Your nail edge should grow past the flesh of your toe. Cut your nails straight across and don’t cut too low at the edges.

Cutting your nails too short and into a curved shape can make your nail more likely to grow into your skin.

How to trim your toenails correctly
DFU prevention

The 4 Essentials for Preventing DFU
- Patient Education
- Keys to Prevention
- Foot Skin & Toenail Care
- Protective Footwear
- Protective Surgeries

Transitional Approach to Tissue Protection

Deep open wound
- Total Contact Cast (TCC)

Shallow wound
- Removable Cast Walkers
- Felted Foam

Newly closed wound
- Carville Healing Sandal
- Diabetic Healing Shoe

Closed wound x 2-4 Weeks
- Depth Shoe with Rocker Sole

Practical approach to biofilm management

Chronic wound
- Static healing, moderate improvement with repeated rounds of oral antibiotics

Suspected biofilm

Reduce biofilm burden
- Debridement/vigorous cleansing

Prevent recontamination with microorganisms
- Barrier dressing

Suppress biofilm reformation
- Sequential topical antimicrobials

Reassess healing

Healed

Silver

Benefits
- Variety of forms and vehicles available to optimize moist healing environment (gel, cream, powder, foam, alginate, hydrofiber, collagen, and fabric/cloth)
- Minimal systemic absorption (ionic silver dressings)
- Ionized silver (Ag⁺) has potent antimicrobial property
- Ag⁰ has anti-inflammatory property

Limitations/cautions
- Ionization requires aqueous environment
- Not appropriate for wounds that do not produce exudate
- Tissue staining and formation of pseudoeschar (with silver sulfadiazine and silver nitrate)
- Indications of cytotoxic effect on host cells, specifically fibroblasts and keratinocytes
- Electrolyte leaching with topical silver nitrate (for use on burns)
- Can develop argyria from long-term use (permanent blue or grayish discoloration of the skin)
- May cause burning and pain (Dressings with high silver concentration)
### Honey

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<thead>
<tr>
<th>Benefits</th>
<th>Limitations/cautions</th>
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<tr>
<td>• Good debriding agent for stubborn fibrin</td>
<td>• Effects may not always be the same due to varying honey composition and method of production</td>
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<tr>
<td>• May reduce inflammation and wound pain</td>
<td>• Increase in wound drainage due to osmotic effect</td>
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<tr>
<td>• May help neutralize odor</td>
<td>• Decreased effectiveness with high volume of exudate (diluting effect)</td>
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<tr>
<td>• Contains antioxidants</td>
<td>• Increased time to soften some dressing materials</td>
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<td></td>
<td>• Not appropriate for dry necrotic wounds</td>
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### Iodine

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<tr>
<td>• Available as a solution that can be used to paint on wounds</td>
<td>• Thyroid function should be monitored related to increased serum iodine levels, especially for prolonged use, large vascular wounds and patients with uncontrolled thyroid disease</td>
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<tr>
<td>• Cadexomer iodine is hydromorphous (can both absorb and donate moisture)</td>
<td>*Sensitivity</td>
</tr>
<tr>
<td>• PVP-I and polyethylene glycol dressing is not likely to adhere to wound base</td>
<td>*Cadexomer iodine can harden when dried up</td>
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<tr>
<td>• Small molecules allow penetration into biofilms</td>
<td>*Use with caution in inflammatory type wounds (iodine is pro-inflammatory)</td>
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### PHMB

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<td>• PHMB molecule has multiple binding sites</td>
<td>• Certain gauze format is loosely woven and it may adhere to wound base and/or leave behind gauze fragments</td>
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<tr>
<td>• Low risk with respect to tissue toxicity and contact sensitization (not released into wound bed)</td>
<td>*Gauze format has limited absorptive capacity</td>
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<tr>
<td>• Structurally similar to naturally occurring antimicrobial peptides (AMPs)</td>
<td>*Certain dressings do not donate PHMB to wound surface and they are less effective at dispersing antimicrobial action beyond the wound bed to the periwound.</td>
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<tr>
<td>• Available as dressings (foam, packing strips/ropes, rolls) and cleansing solutions</td>
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<td>• High tensile strength material for packing</td>
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<td>• Can be combined with antiseptics such as povidone iodine</td>
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