



Principles of Wound Management and Enhanced Tissue Repair for the Podiatric Physician

These tenets should be the basis of your treatment protocol.

BY GERIT MULDER DPM, PHD, MS

Goals and Objectives

After completing this CME, the reader will:

- 1) Understand and apply the principles of wound management
- 2) Be able to apply principles of management to daily practice
- 3) Become familiar with guidelines for the treatment of chronic wounds.

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Following this article, an answer sheet and full set of instructions are provided (pg. 146).—Editor

Introduction

Advances in the treatment of acute and chronic wounds have resulted in a plethora of products available, including topical treatment devices, biologics, and pharmaceutical agents, all claiming to assist with tissue repair by a direct or indirect influence on the wound environment. The correct management and treatment of wounds, particularly those of a chronic nature, is especially important for the podiatric physician,

as a significant percentage of patients treated in private practices, ambulatory clinics, and acute care facilities present with wounds of the lower extremities.^{1,2}

The majority of patients with wounds seen by podiatrists are diabetics and those with vascular associated problems, including venous disease and vasculitis, although the wounds may be of a less common etiology. Appropriate care is important for optimal outcomes and to

avoid litigation when complications arise.

Guidelines for wound treatment, available through numerous societies, provide a general consensus on the best approaches to treating chronic wounds.^{3,5} These guidelines are designed to recommend possible care, not to define it. The same guidelines are frequently used by the legal community to establish whether the patient was provided with ap-

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appropriate care for his/her specific wound.

It is imperative for the physician to have an understanding of the guidelines; however, there are principles of wound management that are universal to all the publications regardless of whether they pertain to diabetic, venous, or other ulcers.

The purpose of this manuscript is not to dictate or recommend treatment approaches for different wounds; rather, it hopes to review universal principles of wound management relevant to the podiatric practice, with the hope that all aspects of care will be considered by the physician administering it.

Principles of Wound Management

Numerous national and international guidelines related to the treatment of wounds are available to help the clinician understand recommended approaches for the treatment of problematic wounds. The guidelines have the following principles in common:

- Assist with standardization of care
- Provide recommendations for most appropriate care
- Decrease morbidity and mortality associated with diabetic ulcers
- Educate medical community on recommended practice
- Provide recommendations based on available clinical and scientific evidence

Some of the more known guidelines are listed in Table 1.

Podiatrists may refer to these publications when determining the foundation

of their treatment of ulcers of the lower extremity. However, it is important to note that these publications are frequently updated and may change.

Furthermore, the information provided is meant to suggest or recommend various approaches to the

customized care that will eventually be provided.

Understanding the building blocks or principles of wound management will help strengthen the clinical treatment plan, while also assisting in deferring possible complications and litigation result-

ing from inappropriate or incorrect care. This manuscript is designed to introduce, not define, the concepts of care. The clinician is encouraged to stay current on new and updated publications and to further investigate the details of each of the principles.

Primary Principles

The six general principles common to most guidelines and protocols for the treatment of wounds include:

- Identifying and addressing bacterial burden
- Debriding non-viable and necrotic tissue
- Providing systemic support for wound healing
- Identifying and addressing underlying pathology
- Utilizing appropriate topical therapy including dressings, medications, and topical devices
- Considering advanced technologies

An additional recommendation not listed in the above principles, yet critical to the treatment of diabetic and pressure ulcers, is off-loading pressure from the ulcer's site. Pressure reduction and relief applies both to the diabetic or neuropathic foot and to non-diabetic or neuropathic patients with pressure ulcers.

Identifying and Addressing Bacterial Burden

The over-prescription of antibiotics, *Continued on page 141*

TABLE I:
Guidelines for the Treatment of Chronic Wounds

- IDSA: Diagnosis and Treatment for Diabetic Foot Ulcers (CID 2004:39 (1 October) Lipskey, et al.
- WHS: Guidelines for the treatment of diabetic, pressure and venous ulcers. (Wound Rep Reg (2006) 14 680-692
- ADA: Consensus Development Conference on Diabetic Foot Wound Care (Diabetes Care, Vol 22, No 8, August 1999).
- NPUACP
- American Venous Forum

care of wounds, not to provide a definitive means of treatment. All patients, as well as their lesions, are different. Assessing all aspects of the wound, the medical history, including medications, and the patient are important in defining the

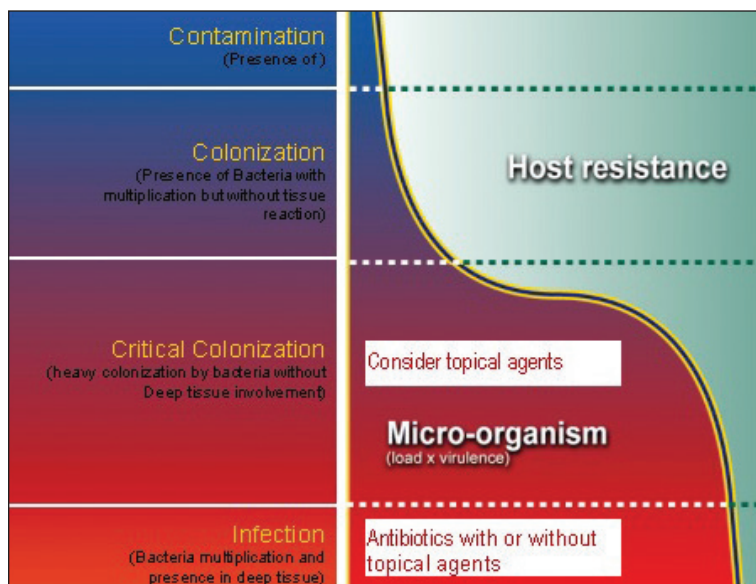


Figure 1: Differentiation of Bacterial

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particularly when not needed, has contributed to rapidly escalating resistance.⁷ Thus, it is important to distinguish between colonization, contamination, critical colonization, and deep tissue infection. Determining the level of bacterial burden will guide the clinician to choosing topical versus systemic treatment. The different levels of bacterial burden are illustrated in Figure 1.

It is important to note that the IDSA recommends use of topical antimicrobials, not antibiotics, for superficial infections although there is no contra-indication to using topical agents with an infected wound being treated with antibiotics. Key points to consider when considering bacterial colonization include the qualitative and quantitative factors identified when examining the wound, the medical status and history of the patient, and the identification of organisms in deep tissue.

Cultures may be used to identify types of bacteria to assist with prescribing the most appropriate antibiotic. However, the literature recommends not taking cultures routinely or when there are no clinical or other true signs of in-

signs of infection. Primary signs include cellulitis, pus emanating from the wound bed, sinus tracts, tunnels, or from underlying structures, fever, and leukocytosis associated with the wound.

Secondary signs may include odor, pain, generalized erythema, edema, and induration. Odor may be caused by poor hygiene and may no longer be present after wound cleansing. Diseases including but not lim-

sist the clinician in decreasing inflammation, decreasing the risk of colonization progressing to a deep tissue or systemic infection, and optimize the wound environment to allow more successful wound closure.

Debriding Necrotic and Non-viable Tissue

Necrotic tissue is known to impair healing and may lead to contin-

**Surgical debridement,
unless contra-indicated, is the fastest and
most efficient form of debridement.**

ited to vasculitic process may cause significant pain. Dermatitis may also be associated with erythema and drainage resulting from the disease process, and not infection. Venous ulcers may manifest edema and induration in the absence of infection. Inappropriate diagnosis may lead to inappropriate care. Further information on this subject is included in the section on understanding the disease process.

Understand the difference between contamination, colonization,

used wound deterioration and infection.¹⁰ Three of the primary effects of necrotic and nonviable tissue are listed below:

- Impairs wound healing/causes a prolonged inflammatory response
- Is a culture medium for bacteria
- Inhibits leukocyte phagocytosis and subsequent kill

Methods of debridement include autolytic, enzymatic, mechanical, biologic (e.g. maggots), and surgical. Surgical debridement is the fastest and most efficient means of debriding but requires that the wound and patient be carefully evaluated prior to debridement. Contraindications include but are not limited to poor vascular supply (especially in the area of the distal foot), medications, uncontrolled vasculitis as exemplified with an active pyoderma gangrenosum, exposure of underlying deep structures, and other factors that may result in serious sequelae.

Once the wound has been debrided to the extent possible, an appropriate wound treatment and covering must be applied. This is discussed in greater detail in the section on topical treatment of wounds.

Debridement along with general wound cleansing assist in the reduction or removal of Biofilm.¹¹ Biofilm characteristics are listed below. The effect of different topical antimicrobials on the presence of biofilm is

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**Documentable nutritional indices
include recent weight loss of greater than 15%
of body weight.**

fection.⁸ Culture technique, particularly with swabbing techniques, is also important. Ideally, when possible, the wound surface should be debrided and cleansed with a non-cytotoxic agent, followed by a culture of the wound bed, avoiding wound margins, which may contain only contaminants.⁹

Tissue biopsies are also useful in identifying deep tissue organisms but are more invasive and also require correct technique. Again, cultures are most useful in identifying organisms, not in diagnosing infection. Differentiate between primary and secondary

critical colonization, and deep tissue and/or systemic infection. Remember the following points with reference to antibiotics:

- Antibiotics are NOT indicated in non-infected ulcerations
- Antibiotics do not accelerate healing
- The use of “precautionary” antibiotics is not based on any scientific data
- Inappropriate use of antibiotics leads to resistance and adverse events (AEs)

Identifying, controlling, and treating the bacterial burden will as-

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discussed in the section on topical treatment of wounds.

- Biofilm as growth of large aggregates of cells on a surface encased within 3-D matrix of extracellular polymer substance (EPS) produced by sessile bacteria
- Extracellular polysaccharide matrix film (glycocalyx) that may require 50-1000 x MIC of antibiotic
- May be beneficial as with vaginal biofilm-blocks exogenous pathogens and allows for colonization resistance
- May occur in chronic wounds present for as little as two months
- Bacterial flora does not reflect planktonic bacteria in wound fluid

Providing Systemic Support

A brief comment on determining the patient's nutritional status and providing systemic support is warranted and integral to patient care. Although it is beyond the scope of this manuscript to go into the details of nutritional care, at a minimum, the podiatrist must be able to understand the effects of inadequate or poor nutrition and refer the patient to a nutritional specialist for consultation and guidance. The patient's primary care doctor also needs to be notified of deficiencies. Key laboratory tests are listed in Table 2.

The result of laboratory indices along with a patient's recent medical history, including diet history and recent loss of weight greater than 15% are documentable parts of the initial history and physical.

Terminally ill or end-of-life patients with poor nutrition may not be expected to attain wound closure. In the latter case, the treatment goal may be prevention of deterioration or improving the quality of life of the patient.

Identifying and Treating the Underlying Pathophysiology

Subsequent to an initial and thorough history and physical, review of medications and overall exam, and prior to treatment of the wound, determining the etiology and any underlying pathologies is an underlying factor in guiding the treatment process.

Diabetic ulcers will most likely comprise the majority of lower extremity wounds presenting to an outpatient clinic; however, other common lesions include venous, pressure, and arterial ulcers. Uncommon causes cannot be excluded, particularly the



Figure 2: Atypical Melanoma

wound treatment include treatment of the internal and external factors. Off-loading the diabetic foot is included in publications as well as in medical-legal guidelines on the principles of diabetic foot care.¹³ Identifying and removing the source of

A correct tissue biopsy should include the wound margin and base.

many ulcers classified as non-ischemic arterial lesions and malignancies. An excellent publication on the importance of understanding the many types of lower extremity ulcers was published by Susie Seaman.¹²

One cannot assume that an ulcer is a diabetic one simply because the patient may be diabetic. Nor is it cor-

rect to assume that the majority of ulcers on the medial lower extremity are venous. Laboratory and non-invasive tests are needed to assist with determining the cause of the lesion.¹²

trauma, injury, or repetitive pressure are needed for normal tissue repair to proceed, while identification also allows for improved patient education and reduced risk of wound recurrence or breakdown.

Unresponsive wounds, those with unusual presentation, or those that may not present with normal indicators consistent with the suspected etiology, need to be biopsied. Biopsy technique, as mentioned earlier, is important to the histologist examining the tissue.

Biopsies are important for the identification of malignancies, acute vasculitis, and abnormalities in the tissue. Biopsies may also be used to identify organisms present in deep tissue. Both a portion of the wound margin and the wound bed provide

TABLE 2:
Laboratory Indices

Index	Severe	Moderate	Mild
Prealbumin (16-30 mg/dL)	< 5.0	5.0-9.0	10-15
Transferrin (200-400mg/dl)	<160	160-180	180-200
Albumin (3.3-4.5g/dl)	<2.5	2.5-3.0	3.0-3.3
TLC (1500-3000/mm3)	<900	900-1500	1500-1800

rect to assume that the majority of ulcers on the medial lower extremity are venous. Laboratory and non-invasive tests are needed to assist with determining the cause of the lesion.¹²

Comprehensive patient care and

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valuable information to the histologist. A patient presenting with a painful and inflamed wound with elevated palpable purpura at the margins may be suspected of having an acute vasculitic lesion. Biopsy of the wound base and margin, along with laboratory indices, may confirm the diagnosis and provide useful baseline information when the patient is referred to a specialist.

Figure 2 illustrates a hallux wound present for greater than six months, with a clean and apparently granulating wound bed. At the time of presentation, the ulcer had been present for over six months, with change in appearance, unresponsiveness to standard dressings and wound care, and slow increase in size. Results from the biopsy were consistent with atypical malignant melanoma.

Prior to performing a biopsy, whether using a punch technique or excision of tissue, determine contraindications for an out-patient invasive procedure. These contraindications are similar to those of debridement, including risk of uncontrollable bleeding, breakdown of the lesion, or aggravation of the underlying disease process. When necessary, refer the patient to a specialist or center which is familiar with the biopsy process.

Appropriate Topical Therapy

Choosing an appropriate topical therapy is not a simple and routine

TABLE 3: Rules for Dressing Selection

- High Exudate —> absorb excess moisture
- Low Exudate —> maintain moisture
- No Exudate —> add moisture
- Infection —> antimicrobial dressings/frequent changes
- Immunosuppressed —> same as infection

wound dressings was based on the theory of George Winter, which encouraged keeping a wound moist to allow for better cell migration and activity, thus promoting closure. The weaknesses in this argument are that the level of moisture to be maintained is not identified and that all

dressings are not designed to maintain moisture. Some products may be designed to remove excess exudate containing high levels of bacteria and inflammatory enzymes, while yet other topical materials, including hydrogels, may introduce moisture.

The simplest rule of dressing selection is illustrated in Table 3.

A key point to remember, regardless of the dressing chosen, is that

in detail in this presentation. Key points of antimicrobial dressings should be reviewed and understood prior to using antimicrobial dressings.¹⁶ Universal recommendations regarding antimicrobial dressings and antibiotics include:

- Topical antimicrobials should be used for topical and local infections
- Antibiotics should be used for complicated, deep tissue, and systemic infections
- Overuse of antibiotics can lead to resistance

Topical antimicrobials, as emphasized throughout the infection's disease-related literature, are primarily a means of controlling potential presence and growth of topical organisms. The intent is to reduce the risk of a more complicated infection

Contra-indications to taking a tissue biopsy in the clinic include the danger of uncontrolled bleeding.

which would require antibiotics, possibly cause further tissue breakdown, and lead to systemic complications.

There is no significant evidence that use of antimicrobials is of additional benefit when compared to non-antimicrobial dressings, on non-compromised patients, patients without any evidence or signs of infection, and those with uncomplicated wounds progressing to healing.

Surgical Debridement

Surgical debridement, when not contraindicated, is still the fastest and most efficient means of removing superficial and often deep bacteria from a heavily contaminated wound. Mature biofilm in a wound may not be affected by antimicrobials such as silver, polyhexamethylbiguanide, or other agents found in dressings.

Apart from surgical excision, the only topical treatment known to have a significant effect on mature biofilm is cadexomer iodine.¹⁷ Additionally,

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Cultures should primarily be used for identifying the type of bacteria present in a wound.

task. Thousands of products exist to assist with wound coverage, treatment, and optimization of the wound environment. Simplifying these treatments to understand basic concepts allows for easier management of patients with wounds.

The original concept of advanced

dressings are meant for the wound environment. The underlying pathophysiology must be understood and addressed concomitantly for optimal results.

Topical antimicrobial dressings encompass a separate and more complex area that will not be addressed

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all silver-containing dressings do not have the same effect on superficial and planktonic biofilm.¹⁸ Understanding products, while inquiring about evidence and scientific support from the manufacturer regarding

the treatment modality is appropriate, the underlying pathology well defined, or intrinsic or extrinsic factors delaying healing have been missed. A key point, regardless of whether the treatment is negative pressure wound therapy, hyperbaric chambers, or use of topical growth

⁵ Diabetes and Foot Care. Available online at idf.org

⁶ Antimicrobial Resistance. Fact Sheet No. 184, updated April 2014 by the World Health Organization. Available online at who.int

⁷ Lipsky B, et al. IDSA Guidelines for Diabetic Foot Infections. *CID* 2012;54 (15 June).

⁸ Cooper R. Ten Top Tips for Taking a wound Swab. *Wounds International* 2010. Vol 1(3): pp 19-20.

⁹ Alavi A, Niakosari F, Sibbald RG. When and how to perform a biopsy on a chronic wound. *Adv Skin Wound Care*. 2010 Mar;23(3):132-40.

¹⁰ Hess CT. Checklist for Factors Affecting Healing. April 2011—Volume 24 (4): pp. 154-192.

¹¹ Keast D, Swanson T, Carville K, et al. Understanding and Managing Biofilm. *Wounds International* 2014. Vol 5(2): pp 20-24.

¹² Seaman S. Evaluation and management of lower extremity ulcers. *Advance for Nurse Practitioners*. 2002;10(3):32-47.

¹³ Mulder G, Armstrong D, Seaman S. Standard, appropriate, and advanced care and medical-legal considerations: Part one—diabetic foot ulcerations. *WOUNDS*. 2003;15(4):92-106.

¹⁴ Seaman S. Dressing selection in chronic wound management. *J Am Podiatr Assoc*. 2002;92(1):24-33.

¹⁵ Winter Gd. Formation of the scab and the rate of epithelialization of superficial wounds in the skin of the young domestic pig. *Nature* 1962; 193:293-294

¹⁶ Lipsky BA, Hoey C. Topical antimicrobial therapy for treating chronic wounds. *Clin Infect Dis*. 2009 Nov 15;49(10):1541-9. Doi: 10.1086/644732.

¹⁷ Phillips PL, Yang Q, Davis S et al. Antimicrobial dressing efficacy against mature *Pseudomonas aeruginosa* biofilm on porcine skin explants. *Int Wound J* 2013; doi:10.1111/ijw.12142.

¹⁸ Phillips PL, Yang Q, Sampson E, et al. Effects of Antimicrobial Agents on an In Vitro Biofilm Model of Skin Wounds. *Advances in Wound Care*: Vol 1. 299-304.

Cadexomer iodine is known to help address mature biofilm.

antimicrobial claims, further assists product selection and use.

It is not the intent of this manuscript to provide details on biofilm and its effect on the wound-healing process and infection. It is recommended that the clinician further research this interesting and important topic.

Consider Advanced Therapies

Advanced therapies include the use of more complex and frequently more expensive modalities. These may include, but are not limited to, the use of negative pressure wound therapy, hydrosurgical devices, hyperbaric oxygen, biological and pharmaceutical topical treatments. Any and all of these may contribute to the tissue repair and wound closure process at often high costs. This does not mean that they should not be used; rather it underscores the importance of understanding when, who, and why to apply them. Investing time to understand a more advanced treatment modality would support better usage and prevent unneeded additional costs of care.

When should a clinician consider the use of what are defined as advanced therapies? Wounds progressing to closure without difficulty or complications, without associated risks when treated with less expensive conventional dressings, need not have their treatment switched to a more expensive form of care. Conversely, wounds that show no change in their status or are beginning to deteriorate, need to be re-evaluated to determine whether

factors, is to discontinue use of the treatment when there are no beneficial results.

Summary

The principles of advanced wound management to enhance tissue repair are neither complex nor unreasonable. They are also universal concepts designed to guide, not define, the care provided by the clinician for patients with problematic wounds in order to support successful wound closure. This manuscript has superficially identified and addressed key considerations for the treatment of chronic wounds, particularly for the podiatric physician. It was not meant to, nor has it provided, detailed information associated with each of the principles listed above. It is the hope of the author that the brief review provided will encourage further reading and research by the podiatric physician. **PM**

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² Margolis DJ, Malay DS, Hoffstad OJ, et al. Prevalence of diabetes, diabetic foot ulcer, and lower extremity amputation among Medicare beneficiaries, 2006 to 2008: Data Points #1. 2011 Feb 17. In: *Data Points Publication Series* [Internet]. Rockville (MD): Agency for Healthcare Research and Quality (US); 2011-.

³ Prevention and Treatment of Pressure ulcers: Clinical Practice Guideline, available at <http://www.npuap.org/>

⁴ Chronic Wound Care Guidelines from Wound Healing Society available at woundheal.org



Dr. Mulder is internationally known for his work with chronic and problematic wounds. He has been extensively involved with research, lecturing, teaching, publishing and, most importantly, treating patients with

difficult-to-heal wounds.

SEE ANSWER SHEET ON PAGE 147.

- 1) Guidelines for wound management are designed to do all but which of the following?
 - a) Assist with standardization of care.
 - B) Educate the medical community on recommended practice.
 - C) None of the above
 - D) All of the above.

- 2) Which of the following statements is true?
 - A) All patients and their lesions are different.
 - B) Medications may influence tissue repair.
 - C) Social history is relevant to the treatment process.
 - D) All of the above

- 3) Which of the following is a primary principle of wound care?
 - A) Debride every wound regardless of etiology.
 - B) Identify the underlying pathophysiology.
 - C) Both of the above.
 - D) B only.

- 4) Which of the following has most contributed to antimicrobial resistance?
 - A) overuse of antibiotics.
 - B) choosing the incorrect antibiotic.
 - C) multiple antibiotic use.
 - D) use of antibiotics for deep tissue infection.

- 5) The IDSA recommends which of the following?
 - A) Use of topical antimicrobials for superficial infections.
 - B) Use of antibiotics only for deep tissue infections.
 - C) Use of antibiotics for systemic infections.
 - D) All of the above.

- 6) Cultures should primarily be used for:
 - A) Determining the presence of infection in a wound.
 - B) Identifying the type of bacteria present in a wound.
 - C) All the above.
 - D) a only.

- 7) Secondary signs of infection include which of the following:
 - A) Erythema.
 - B) Edema.
 - C) Induration.
 - D) All of the above.

- 8) Which of the following are true regarding use of antibiotics?
 - A) Inappropriate use of antibiotics may lead to resistance and adverse events.
 - B) Antibiotics are not indicated in non-infected wounds.
 - C) Antibiotics are not indicated for superficial infections.
 - D) All of the above

- 9) Which of the following is true about necrotic tissue:
 - A) Necrotic tissue is a culture medium for bacteria.
 - B) necrotic tissue may impair wound healing.
 - C) necrotic tissue may inhibit leukocyte phagocytosis and subsequent kill.
 - D) All of the above.

- 10) The contraindications to debridement include which of the following?
 - A) Poor vascular supply.
 - B) Active pyoderma gangrenosum.
 - C) Risk of uncontrolled bleeding.
 - D) All of the above.

- 11) Biofilm characteristics include:
 - A) Large aggregates of cells on a wound surface encased within a 3-D matrix of extracellular polymer substance produced by sessile bacteria.
 - B) Presence of free-floating planktonic bacteria in the wound fluid.
 - C) Mature biofilm developing in as little as 24 hours.
 - D) All of the above.

- 12) Documentable nutritional indices include:
 - A) Recent weight loss of greater than 15% of body weight.
 - B) Recent medical history.
 - C) Diet history.
 - D) None of the above.

- 13) A correct tissue biopsy should include which of the following:
 - A) A portion of the underlying muscle or tendon.
 - B) Only the central portion of the wound.
 - C) Only the margins of the wound.
 - D) The wound margin and base.

- 14) Contra-indications to taking a tissue biopsy in the clinic include:
 - A) Danger of uncontrolled bleeding.
 - B) Lesions of unknown etiology.
 - C) Wounds with irregular margins.
 - D) None of the above.

- 15) George Winter's concept of moist wound healing included which of the following?
 - A) Complete occlusion of all wounds.

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- B) Decreasing bacterial growth through use of occlusive dressings.
- C) Allowing improved cell migration by maintaining a moist environment.
- D) None of the above.

16) Dressings may do all of the following except:

- A) Protect the wound from outside contaminants.
- B) Assist with optimizing the wound environment.
- C) Primarily address the wound environment
- D) All of the above.

17) Which of the following concerning topical antimicrobials is true?

- A) Topical antimicrobials should be considered for topical and local infections.
- B) All topical antimicrobials have the same effect on bacterial levels.
- C) Topical antimicrobials should always be used for deep tissue infections along with antibiotics.
- D) None of the above

18) The fastest and most efficient form of debridement, unless contra-indicated, is:

- A) Enzymatic debridement.
- B) Biological debridement (maggots).
- C) Use of topical cadexomer iodine.
- D) Surgical debridement.

19) Which of the following agents is known to help address mature biofilm?

- A) Topical silver.
- B) PHMB.
- C) Cadexomer iodine.
- D) Moist saline dressings.

20) Advanced therapies should be considered for which of the following situations?

- A) Diabetic foot ulcers progressing to closure.
- B) Venous ulcers progressing to closure.
- C) Wounds not responding to conventional therapy in the absence of obvious barriers to healing.
- D) All wounds.

SEE ANSWER SHEET ON PAGE 147.

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2. The answers to the test
3. Your social security number
4. Credit card information

In the event you require additional CME information, please contact PMS, Inc., at **1-631-563-1604**.

ENROLLMENT FORM & ANSWER SHEET

Please print clearly...Certificate will be issued from information below.

Name _____ Soc. Sec. # _____
Please Print: FIRST MI LAST

Address _____

City _____ State _____ Zip _____

Charge to: Visa MasterCard American Express

Card # _____ Exp. Date _____

Note: Credit card is the only method of payment. Checks are no longer accepted.

Signature _____ Soc. Sec.# _____ Daytime Phone _____

State License(s) _____ Is this a new address? Yes _____ No _____

Check one: I am currently enrolled. (If faxing or phoning in your answer form please note that \$2.50 will be charged to your credit card.)

I am not enrolled. Enclosed is my credit card information. Please charge my credit card \$25.00 for each exam submitted. (plus \$2.50 for each exam if submitting by fax or phone).

I am not enrolled and I wish to enroll for 10 courses at \$195.00 (thus saving me \$55 over the cost of 10 individual exam fees). I understand there will be an additional fee of \$2.50 for any exam I wish to submit via fax or phone.

Over, please

ENROLLMENT FORM & ANSWER SHEET *(continued)*

EXAM #9/15 Principles of Wound Management and Enhanced Tissue Repair for the Podiatric Physician (Mulder)

Circle:

- | | |
|-------------|-------------|
| 1. A B C D | 11. A B C D |
| 2. A B C D | 12. A B C D |
| 3. A B C D | 13. A B C D |
| 4. A B C D | 14. A B C D |
| 5. A B C D | 15. A B C D |
| 6. A B C D | 16. A B C D |
| 7. A B C D | 17. A B C D |
| 8. A B C D | 18. A B C D |
| 9. A B C D | 19. A B C D |
| 10. A B C D | 20. A B C D |

Medical Education Lesson Evaluation

Strongly agree [5]	Agree [4]	Neutral [3]	Disagree [2]	Strongly disagree [1]
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- 1) This CME lesson was helpful to my practice ____
- 2) The educational objectives were accomplished ____
- 3) I will apply the knowledge I learned from this lesson ____
- 4) I will make changes in my practice behavior based on this lesson ____
- 5) This lesson presented quality information with adequate current references ____
- 6) What overall grade would you assign this lesson?
A B C D

How long did it take you to complete this lesson?
____ hour ____ minutes

What topics would you like to see in future CME lessons?
Please list :

