



## **Wet-to-Dry Dressings; The Good . . . the Bad . . . the Options**

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Objectives: Upon conclusion participants will be able to:

1. Discuss indications and contra-indications for Wet-to-Dry Dressings
2. Choose evidence based wound debridement options based upon wound characteristics

Outline

- I. Wound Healing
  - A. Hemostatic Phase<sup>1,2</sup>
    1. Platelet plug (fibrin mesh) stopping the bleeding
    2. Secretion of growth factors
  - B. Inflammatory Phase<sup>1,2</sup>
    1. Phagocytes cleaning up the wound of foreign debris and bacteria
    2. Neutrophils for the first 1-2 days
    3. Macrophages for the remainder of this phase
    4. Secretion of cytokines to continue the healing process
    5. Lasting around 1 week
    6. Only phase where any debridement technique, like Wet-to-Dry Dressings, might be indicated
  - C. Proliferative Phase<sup>1,2</sup>
    1. Filling the wound with granulation (scar) tissue
    2. Angiogenesis
    3. Wound contracture
    4. Wound covered with epithelial cells
    5. Lasting around 1 month
  - D. Maturation Phase<sup>1,2</sup>
    1. Remodeling of tissue to 80% of normal tensile strength
    2. Lasting around 2 years
- II. Wound Dressings - Criteria for selection of any dressing
  - A. Complex process, selection should be sophisticated and as evidence based as possible<sup>3</sup>
    1. No matter where you practice, you will be held to national/international standards of wound care practice. <sup>3,4</sup>
  - B. Goal: "Heal the wound" as quickly and painlessly as possible
    1. Control or eliminate causative factors
    2. Provide systemic support
    3. Maintain physiologic local wound environment
  - C. Considerations for Dressing Selection
    1. Utilization of the dressing as a Primary or Secondary dressing
      - a. Primary - therapeutic or protective covering applied directly to wounds or lesions<sup>5</sup>
      - b. Secondary - materials that serve therapeutic or protective function and are needed to secure a primary dressing. <sup>5</sup> Items such as adhesive tape roll gauze, or elastic bandages are examples of secondary dressings.

2. Indications for a particular dressing
3. Contra-indications for a dressing
4. Dressing selection supporting moist wound healing principles
  - a. Wet or moist wound treatment significantly reduces the time required for re-epithelialization, and leads to reduced inflammation, necrosis, and subsequent scar formation.<sup>6</sup>
5. Control of:
  - a. Exudate
  - b. Bioburden (bacteria level)
  - c. Pain
  - d. Bleeding
6. Frequency of dressing changes
  - a. Frequent dressing changes have been associated with evaporative cooling of the wound as it is exposed to the air
  - b. Experiments on humans demonstrated that wound temperature drops significantly at dressing changes, mitosis is inhibited and it takes 40 minutes for a freshly cleansed wound to return to normal temperature and three hours for cell mitotic division to restart.<sup>7-12,15</sup>
7. Temperature of wound bed as a result of the dressing selected
  - a. Dressing materials have differential thermal insulating properties that parallel their ability to impede evaporative cooling due to moisture vapor loss
8. Manufacturer's recommendations for using their product
9. Use with various forms of adjuvant therapy
10. Overall cost of utilization of the dressing and not just the unit cost per dressing
  - a. The real cost of a wound dressing considers the sum of:<sup>3,13,14</sup>
    - 1) the price of the dressing
    - 2) the labor cost of having a health care professional change the dressing
    - 3) the indirect costs of ancillary supplies and services used in changing the dressing (e.g., gloves and biohazardous waste disposal)
    - 4) the cost of duration of care (e.g., facility charges and travel costs for home care)
  - b. A more expensive dressing that requires less frequent dressing changes and results in shorter healing times can be much less expensive to use.<sup>3,13,14</sup>

### III. Wet to Dry Dressings

#### A. General Info

1. NON-selective mechanical debridement
2. Technique<sup>10,11</sup>
  - a. Application of sterile saline or water moistened woven gauze into the wound bed. As the moistened gauze dries out, it adheres to surface tissues. Once the gauze is dry, it is removed from the wound bed which pulls the adhered tissue out of the wound.
  - b. Removal: Every 4-6 hours. Gauze should be dry upon removal – DO NOT MOISTEN. Firmly pull dried gauze out of wound bed at a right angle.
3. Technique is not standardized
  - a. Some practitioners re-moisten gauze upon removal

- b. Utilizing solvents other than NS and water with some of them potentially toxic to the wound tissue (not standardized)
      - 1) Dakin's (hypochlorite acid)
      - 2) Betadine
      - 3) Acidic acid
      - 4) Alcohol
      - 5) Sulfamylon
      - 6) Hydrogen Peroxide
    - c. Frequency of dressing change is variable amongst practitioners
- B. Indications for utilization of Wet to Dry Dressings<sup>10-12,14,18</sup>
  - 1. Non-viable tissue during Inflammatory Phase of Full Thickness Wound Healing
  - 2. Applied on non-viable tissue as a "Mechanical" Debrider
- C. Contra-Indications for the utilization of Wet-to-Dry Dressings<sup>10-12,14,18</sup>
  - 1. Application to viable tissue such as granulation tissue and/or epithelizing wound
    - a. A retrospective chart review by Cowen & Stechmiller<sup>17</sup>, examined admission orders for 202 randomly selected Florida home care and health maintenance organization patients from 2002 to 2004. All subjects in the study had open wounds healing by secondary intention (42 partial-thickness and 160 full-thickness wounds).
      - 1) Wet-to-dry dressings accounted for 42% of wound care orders, followed by enzymatic (7.43%) and dry gauze (6.93%). Most wounds treated with wet-to-dry dressings were surgical (69%), followed by neuropathic ulcers (10%) and pressure ulcers (5.9%). Surgical specialists preferred wet-to-dry dressings (73%).
      - 2) Mechanical debridement was not clinically indicated in more than 78% of wounds treated with wet-to-dry dressings.
      - 3) Therefore, Wet-to-Dry Dressings were ordered inappropriately 78% of the time, not for its mechanical debridement capabilities in the Inflammatory Phase, but incorrectly in the Proliferative Phase where no techniques of debridement should be or need to be utilized.
    - 2. Utilization in the Proliferative Phase of Full Thickness Wound Healing
- D. Disadvantages of Wet to Dry dressing
  - 1. Wet-to-dry debridement is not selective and often also removes healthy tissues, causing re-injury.<sup>10-12,14,18</sup>
  - 2. Pain with dressing removal
  - 3. Bleeding with dressing removal
  - 4. In one dramatic in vitro study, it was shown that bacteria were capable of penetrating up to 64 layers of dry gauze.<sup>19</sup>
  - 5. Potential for leaving strands of gauze behind in the wound bed that could act as a residual foreign body, body may respond with granuloma formation or infection.<sup>13</sup> This might require surgical drainage and/or removal of the foreign body strand of gauze.
  - 6. Local tissue cooling during the evaporation period in wet-to-dry dressings results in local reflex vasoconstriction and hypoxia, impairment of leukocyte mobility and phagocytic efficiency, and increased affinity of hemoglobin for oxygen - all of which not only impede healing but increase susceptibility to infection.<sup>14,18</sup>

7. Removing a dry dressing may serve as an air-borne vector for bacteria contamination with each dressing change to other wounds of the patient, to the nearby healthcare staff, and/or to other patients. <sup>11,14,18</sup>
8. Is meant only for the Inflammatory Phase of Wound Healing and inappropriate to use over granulation and epithelization tissues/cells in the proliferative phase.
  - a. When used incorrectly during the proliferative phase of wound healing this technique could disturb the deposition of collagen, the needed in-growth of blood vessels (angiogenesis), as well as the re-epithelization of the wound. This ultimately slows down the healing of the wound and increases the risk of developing an underlying osteomyelitis.
9. Incorrect perception that this technique, using just saline and gauze, is more cost efficient than other advanced dressings.
  - a. Unit cost per dressing may be less expensive but there is the added cost of application due to the increase frequency of the dressing changes as well as the added expense for the increase length of treatment time compared with other more efficient techniques.
10. Maceration of the peri-wound skin can occur.
11. Overall Wet-to-Dry Dressing utilization is considered “substandard wound care” by various regulatory entities.
  - a. Prevention and Treatment of Pressure Ulcers: Clinical Practice Guideline<sup>20</sup>
    - 1) “Caution: Avoid use of wet-to-dry gauze dressings.”<sup>20</sup>
    - 2) “Avoid using gauze dressings for open pressure ulcers that have been cleansed and debrided because they are labor-intensive, cause pain when removed if dry, and lead to desiccation of viable tissue if they dry.”<sup>20</sup>
  - b. Department of Health & Human Services (DHHS) Centers for Medicare & Medicaid Services (CMS) Guidance to Surveyors for Long Term Care Facilities<sup>21</sup>
    - 1) “The use of wet-to-dry dressings or irrigations may be appropriate in limited circumstances, but repeated use may damage healthy granulation tissue in healing ulcers and may lead to excessive bleeding and increased resident pain.”<sup>21</sup>
    - 2) “A facility should be able to show that its treatment protocols are based upon current standards of practice”<sup>21</sup>
  - c. WOCN clinical practice guideline for management of wounds in patients with lower-extremity arterial disease<sup>22</sup>
    - 1) “Mechanical, non-selective debridement is contraindicated in arterial wounds.”<sup>22</sup>
  - d. Association for the Advancement of Wound Care Guidelines<sup>23</sup>
    - 1) “Mechanical debridement using wet-to-dry gauze is considered substandard practice.”<sup>23</sup>
    - 2) “Avoid gauze use as a primary PU dressing. It delays healing, increases pain, infection rates and dressing change frequency and is not cost effective”<sup>23</sup>
  - e. Institute for Clinical Systems Improvement
    - 1) “Moist wound healing....a wet-to-dry dressing is not typically considered continuously moist and therefore not recommended”

- 2) "Wet-to-dry dressings are indicated for heavily necrotic wounds, and not for wounds with primarily viable tissue."
12. Research yielding the negative effects of Wet-to-Dry Dressings but does not yield the positive effects of this type of wound therapy.
- E. WHY - Reasons Wet-to-Dry Dressings are ordered in spite of it being considered substandard wound care
  1. Clinician's training utilizing Wet-to-Dry Dressings
  2. Personal clinical experience utilizing Wet-to-Dry Dressings
  3. For Inflammatory Phase of Full Thickness Wounds Healing by Secondary Intention
  4. Clinical need for a form of Mechanical Debridement technique
  5. Perception that the utilization of Wet-to-Dry Dressings are more cost efficient than newer Advanced Wound Care Dressings that have a higher unit cost
  6. Unfamiliarity with the negative aspects of using Wet-to-Dry Dressings
  7. Unfamiliarity with the more Advanced Wound Care Dressings
  8. Lack of time (and possibly interest) in learning about the more Advanced Wound Care Dressings and Techniques
- F. "Evidence Based" vs. "Standard of Care" quandary with selecting or not selecting Wet-to-Dry Dressing Techniques
  1. "Evidence Based" Medicine  $\equiv$  The incorporation of the collective results of research and other sources into the care of the patient to improve the quality and effectiveness of therapy.
  2. "Standard of Care" Medicine  $\equiv$  Actions that any reasonable and prudent practitioner would take under the same or similar circumstance.
  3. Utilization of Wet-to-Dry Dressings the case could be made "Evidence Based" Medicine  $\neq$  "Standard of Care" Medicine
    - a. The evidence reveals that Wet-to-Dry Dressings are substandard wound care (Evidence Based)
    - b. The literature supports that Wet-to-Dry Dressings are the most frequently ordered dressing (Standard of Care)
  4. Is there enough evidence to exclude "Wet-to-Dry" Mechanical Debridement techniques from 21st Century Wound Care?
    - a. The evidence supports YES utilizing it in the Proliferative Phase of Wound Healing
    - b. The evidence supports YES as a mechanical debridement technique in the Inflammatory Phase
    - c. This should be considered an all or none proposition
    - d. Wet-to-Dry Dressing served its purpose in the past and should now be discarded
    - e. It is a procedure that was utilized ahead of the research and the development of better alternatives
      - 1) An analogy could be that cholecystectomies were done in the not so distant past only as "opened" procedures. Now laparoscopic cholecystectomy has been developed, researched, and is considered the "Gold Standard" for the removal of a gall bladder. A surgeon would not routinely have favored the open cholecystectomy over the laparoscopic approach just because they were trained only on the open procedure, they do not want to spend the time perfecting a

different operation that requires a different set of skills, they have successfully removed multiple gall bladders utilizing the open approach for years, and they do not see the need for change. This analogy could be carried over to the continued utilization of substandard Wet-to-Dry Dressings. It is past the time to discard this procedure just like the routine cholecystectomy.

- IV. Debridement options other than Wet-to-Dry Dressings (*without the negative effects of Wet-to-Dry Dressing for the Inflammatory Phase of Wound Healing*)
- A. Autolytic Debridement
    1. Selective debridement
    2. Uses the body's own enzymes to dissolve necrotic tissue within the wound.
    3. Maintains a moist wound base
    4. Occlusive, semi-occlusive dressings used
      - a. If wound dry – Hydrogel
      - b. If wound exudative – alginate, hydrofiber
    5. Slowest form of debridement
    6. Not recommended for infected wounds
  - B. Enzymatic Debridement
    1. Application of collagenase ointment
    2. Selective, not harmful to healthy tissue, fast
    3. Once daily application only
    4. Prescription product only
    5. Collagenase SANTYL® Ointment is the only FDA-approved enzymatic debrider in the USA.
    6. Can be used in combination with other methods
    7. Collagenase dissolves the collagen that attaches the avascular tissue to the wound surface
  - C. Biological Debridement
    1. Selective debridement
    2. Application of live maggots
    3. "Yuk factor" to some
    4. Promotes the growth of fibroblasts
    5. Applied for 1-3 days
    6. Multiple applications are the norm
  - D. Mechanical Debridement
    1. Non-selective debridement
    2. External force that is great enough to separate or break adhesive forces of necrotic tissue
    3. Whirlpool
    4. Irrigation (4-15 PSI)
    5. Scrubbing
  - E. Sharp Debridement
    1. Non-selective debridement
    2. Sterile technique
    3. At bedside, clinic, or in the operating room



4. Consider utilizing as first technique in questionable underlying infection
- V. Dressing options that could be used in the Proliferative Phase of Wound Healing instead of Wet-to-Dry Dressings (*from least absorptive to more absorptive*)
- A. Hydrogel<sup>25-27</sup>
    1. 90% water in a gel base; Useful for adding moisture to wound bed, softening/debriding necrotic tissue and for maintaining moist wound bed; various formulations available as free flowing gel, sheet, or saturated onto gauze
    2. Donates moisture without clinically absorption of exudate
    3. Possibly the best options directly on fascia, tendons, ligaments, muscle, cartilage, bone, or granulation tissue in the wound base
    4. May come mixed with various antimicrobial compounds (Silver, Hypochlorite Acid)
    5. Brand Name Examples:
      - a. Amorphous: Amerigel<sup>®</sup>, Anasept<sup>®</sup> Antimicrobial Skin and Wound Gel, AquaSite<sup>®</sup>, Curasol<sup>®</sup>, Curafil<sup>®</sup> Wound Gel, Dermasyn<sup>®</sup>, Excel<sup>®</sup> Gel, IntraSite<sup>®</sup> gel, Solosite<sup>®</sup>, NuGel<sup>®</sup>, Normlgel<sup>®</sup>, Regenecare<sup>®</sup>, RadiaPlex<sup>®</sup>Rx Wound Gel, DuoDerm<sup>®</sup> Hydroactive Gel
      - b. Impregnated Gauze: CarraGauze<sup>®</sup>, Transigel, <sup>®</sup> Curasol<sup>®</sup> 4x4, Dermagran<sup>®</sup> Gauze dressing
      - c. Gel Sheets: Aquasite<sup>®</sup> Hydrogel Sheet, Cool Magic<sup>®</sup> Sheet Hydrogel, Kendall<sup>®</sup> Curagel<sup>®</sup>, Kendall Island, Elastogel<sup>®</sup>, Vigilon<sup>®</sup>, NuGel<sup>®</sup>, Tender Wet<sup>®</sup>, TheraGauze<sup>®</sup>
  - B. Transparent film<sup>25-27</sup>
    1. Dressings made of polyurethane coated with an adhesive; Used for protection from friction and bacterial invasion, provides moist wound environment, assists with debridement while allowing for visualization of wound bed and may be left in place 3-7 days.
    2. No absorptive capabilities
    3. Waterproofs the underlying tissue
    4. Contraindicated in infected wounds
    5. Utilize instead of tape as part of a sterile dressing application with less chance of epidermal stripping
    6. Might be the “ideal” sterile operative taping technique instead of utilizing non-sterile O.R. tape
    7. Brand Name Examples: Bursamed<sup>®</sup>, DermaView<sup>®</sup>, Tegaderm<sup>®</sup>, OpSite<sup>®</sup>, Kendall <sup>®</sup>Transparent-Polyskin<sup>®</sup>
  - C. Contact layers<sup>25-27</sup>
    1. In general, no absorptive capabilities
    2. Meant to protect the wound base from trauma with dressing changes like bleeding, adherence, and/or pain
    3. Always serves as a Primary Dressing
    4. Consider using under Negative Pressure Wound Therapy (NPWT) to decrease the in-growth of Granulation Tissue into the system’s foam or AMD gauze
    5. May come impregnated with silver

6. Examples: COVRSITE® Wound Cover Dressing, Mepitel® One, Physiotope® Wound Contact Layer, Tegapore®, Dermanet®, Mepitel® Soft Silicone Wound Contact Layer, Telpha® Clear, Adaptic Touch®
- D. Collagen dressings<sup>25-27</sup>
1. Intended for Proliferative Phase of wound healing
  2. Not necessarily utilized for their absorptive properties
  3. To help the appropriate deposition of collagen in wound bed
  4. Concern for religious “sensitivity”
  5. As a category, not utilized frequently
  6. Brand Name Examples: BGC Matrix®; BIOSTEP\* Collagen Matrix; Catrrix® Wound Dressing; CellerateRX® Gel or Powder; ColActive® Plus, Excellagen®; Promogran Prisma® Matrix; FIBRACOL® Plus; Puracol® Plus; Stimulen™ Collagen Gel, Lotion, Powder or Sheets; Triple Helix Collagen Dressing.
- E. Hydrocolloid<sup>25-27</sup>
1. Wafer dressing containing gel-forming agents in an adhesive compound laminated onto a flexible water resistant outer layer; Used to protect wounds from urinary or fecal contamination, protect intact skin, keeps the wound bed moist, assists with debridement of necrotic tissue, provides insulation, and may be left in place 3 – 7 days.
  2. Totally occlusive dressings
  3. Contraindicated in infected wounds
  4. May be placed under Unna Boot, Venous Insufficiency wraps, and Total Contact Casts
  5. Absorption comparable to Foam dressings
  6. May be placed about a wound to help obtain a vacuum seal with Negative Pressure Wound Therapy
  7. Often odor and/or residue with dressing changes
  8. Brand Name Examples: DuoDERM®, DermaFilm Hydrocolloid Dressing, Excel Hydrocolloid, PrimaCol® Hydrocolloid Dressing, REPLICARE® Hydrocolloid, Tegisorb, Restore® Hydrocolloid, Comfeel.
- F. Foams<sup>25-27</sup>
1. Dressings made from polyurethane foam with small open cells capable of holding fluids; Used to control scant to small amount of wound drainage, keeps the wound bed moist, assists with debridement of necrotic tissue, provides insulation, and may be left in place 3 – 7 days
  2. Warmest dressing so has the least adverse effects of temperature (vasoconstriction) than the other dressings
  3. Applied with slight compression to treat Hypergranulation Tissue
  4. May be placed under Unna Boot, Venous Insufficiency wraps, and Total Contact Casts
  5. May come with various antimicrobials and surfactant (cleansing solution) within the dressing itself
  6. May be utilized over infected wounds
  7. Absorption variable based upon composition

8. Brand Name Examples: Allevyn<sup>®</sup>, Curafoam<sup>®</sup>, Flexzan<sup>®</sup>, Hydrasorb<sup>®</sup>, Isolate Hydrophilic Foam Dressing, LYOf foam<sup>®</sup>, Mitraflex<sup>®</sup>, Polymem<sup>®</sup>, Tielle<sup>®</sup>, Mepilex<sup>®</sup>, Biatain<sup>®</sup>, 3M<sup>®</sup> Heel Foam, Comfeel<sup>®</sup> Ulcer Dressing

G. Alginates<sup>25-27</sup>

1. Dressings with calcium and sodium fibers made from seaweed that absorb drainage and form a gel in the wound bed; Used to control moderate to heavy wound drainage, keeps the wound bed moist and assists with debridement.
2. Absorbs more than Foams and Hydrocolloids
3. Absorbs less than the Specialty Absorptive Dressings
4. Has hemostatic properties and consider its usage as primary dressing on patients undergoing sharp debridement.
5. Calcium form contraindicated in Pediatric population
6. Brand Name Examples:
  - a. Algicell<sup>®</sup>, AlgiSite<sup>®</sup> M, Curasorb<sup>®</sup>, Kaltostat<sup>®</sup>, Kalginate<sup>™</sup>, Maxsorb<sup>®</sup> Extra, Sorbsan<sup>®</sup>, Tegaderm<sup>™</sup> Alginate Dressings, Durafiber\* Gelling Fiber, Enluxtra<sup>™</sup>
  - b. Impregnated alginates – Medihoney<sup>®</sup>, ExcelGinate<sup>®</sup> AG Dressing, Silverlon<sup>®</sup> CA, Curasorb<sup>®</sup> ZN; Algicell<sup>®</sup> Ag

H. Composite dressings<sup>25-27</sup>

1. Absorptive capability with patients having mild to heavy volume of exudate
2. May be used as a primary or secondary dressing
3. Might be the “ideal” sterile operative dressing
4. Good adherent potential on areas difficult for other dressing to “stick”
5. Some products can absorb greater than Alginates
6. Brand Name Examples: 3M<sup>™</sup> Medipore<sup>™</sup> +Pad Soft Cloth Adhesive Wound Dressing, Alldress<sup>®</sup> Absorbent Composite Dressing, Covaderm Plus<sup>®</sup>, DermaDress<sup>™</sup>, DuDress<sup>®</sup> Film Top Barrier Island Dressing, McKesson Barrier Island Dressing, Mepore<sup>®</sup> All-in-One Absorbent Surgical Dressing, MPM Multi-Layered Dressing (Sterile), Repel<sup>™</sup> Wound Dressing, Telfa<sup>®</sup> Island Dressing.

I. Wound Fillers<sup>25-27</sup>

1. Meant to fill wound cavities
2. Various products available
3. Brand Name Examples: Gold Dust<sup>™</sup>, Altrazeal<sup>™</sup> Transforming Powder Dressing, Dermagran<sup>®</sup> Hydrophilic-B Wound Dressing, McKesson Hydrophilic Wound Dressing, Multidex<sup>®</sup> Gel or Powder, PolyMem WIC<sup>®</sup> Cavity Filler

J. Specialty Absorptive<sup>25-27</sup>

1. Absorbs the most exudate and forms a gel
2. Hydro-fibers (such as Aquacel) belong to this group
3. May have antimicrobials impregnated in fibers
4. Brand Name Examples: 3M<sup>™</sup> Tegaderm<sup>™</sup> Superabsorber Dressing, Biatain<sup>®</sup> Super Absorbent Dressing, Drawtex<sup>®</sup>, ENLUXTRA<sup>™</sup> Wound Dressing, McKesson Super Absorbent Dressing, Restore<sup>®</sup> TRIO Absorbent Adhesive Dressing with TRIACT<sup>™</sup> Technology, sorbion sachet<sup>®</sup> Dressing, XTRASORB<sup>®</sup> Classic Super Absorbent Dressing

VI. Conclusions from Author

- A. Wet-to-Dry dressings have been employed by generations of surgeons over many decades.
  - 1. At the time of my general surgical training in the 1970's, it was the main technique taught for healing open wounds by Secondary Intention.
  - 2. I like many of my colleagues before, at, and since that time have healed many wounds "successfully" utilizing this now outdated technique.
  - 3. However, this was at a noticeable expense to our patients that we now are able to recognize.
  - 4. Wound Care, even as an "unofficial" subspecialty was not in existence at that time.
  - 5. We did not have all the options, techniques, as well as the knowledge then as we do now.
- B. From the teaching and experiencing modern wound care, I can conclude
  - 1. Moist wound healing principles have been accepted since 1962
  - 2. Wet-to-Dry Dressings are considered substandard wound care for the multiple reasons cited above
  - 3. Multiple options presently do exist that are consistent with the clinical and experimental medicine better than Wet-to-Dry Dressings
  - 4. If we are considering trying alternative therapy to Wet-to-Dry Dressings, then these alternatives need to be readily available to the clinician to help in their attempt to change their practices
  - 5. It is very hard to adopt new technology in any area of medicine
  - 6. The technique of Wet-to-Dry Dressings should be completely abandoned by the medical profession
  - 7. There is no doubt that change is extremely difficult, but it is probably in the best interest of our patients.
  - 8. So if Wound Care Education Institute can help you along the way of your own personal "Learning Curve" with these alternative techniques, please feel free to contact us at 1-855-391-1556 or myself directly at Donald Wollheim (dawmd.implexus@sbcglobal.net)
- C. Let me end with a quote of Dr. A. John Popp, MD . . . that the patients we treat are not well served by physicians who fail to examine the validity of commonly accepted medical practices or who dismiss summarily new and innovative approaches that are proposed . . .

## References

1. Cowan L, Stechmiller J, Phillips P, Schultz G. Science of wound healing: translation of bench science into advances for chronic wound care. In Krasner DL, ed. *Chronic Wound Care: The Essentials*. Malvern, PA: HMP Communications; 2014:17-28.
2. Doughty DB, Sparks-DeFries B. Wound-Healing Physiology, In Bryant RA, Nix DA, eds. *Acute and Chronic Wounds: Current Management Concepts* (4rd Edition) Mosby, 2012, 4:63-82.
3. Krasner DL, Sibbald RG, Woo KY. Wound dressing product selection: a holistic, interprofessional, patient-centered approach. In Krasner DL, ed. *Chronic Wound Care: The Essentials*. Malvern, PA: HMP Communications; 2014: 165-172. Article available online at

[http://www.woundsource.com/sites/default/files/whitepapers/wound\\_dressing\\_product\\_selection\\_woundsource\\_wp.pdf](http://www.woundsource.com/sites/default/files/whitepapers/wound_dressing_product_selection_woundsource_wp.pdf).

4. Ayello EA, Capitulo KL, Fife CE, Fowler E, Krasner DL, Mulder G, Sibbald RG, Yankowsky KW. Legal issues in the care of pressure ulcer patients: Key concepts for healthcare providers. A consensus paper from the International Expert Wound Care Advisory Panel. June 22, 2009. Downloadable at <http://www.medline.com/media/assets/pdf/LegalImplicationsofPressureUlcers.pdf>
5. Rolstad BS, Bryant RA, Nix DP, Topical Management. In Bryant RA, Nix DA, eds. *Acute and Chronic Wounds: Current Management Concepts (4rd Edition)* Mosby, 2012,18:289-306.
6. Junker JPE, Kamel RA, Caterson EJ, Eriksson E. Clinical Impact Upon Wound Healing and Inflammation in Moist, Wet, and Dry Environments. *Advances in Wound Care*. 2013;2(7):348-356. doi:10.1089/wound.2012.0412.
7. McGuinness W, Vella E, Harrison D. Influence of dressing changes on wound temperature. *J Wound Care*. 2004 Oct;13(9):383-5.
8. Lock PM. The effects of temperature on mitotic activity at the edges of experimental wounds. Kent: Lock Laboratories Research ,1997 ;1:1-3.
9. Poltawski L, Watson T. Transmission of Therapeutic Ultrasound by Wound Dressings. *Wounds*. 2007 Jan;19(1):1-12.
10. Dale BA, Wright DH. Say goodbye to wet-to-dry wound care dressings: changing the culture of wound care management within your agency. *Home Healthc Nurse*. 2011 Jul-Aug;29(7):429-40. doi: 10.1097/NHH.0b013e31821b726e.
11. Wodash AJ. Wet-to-Dry Dressings Do Not Provide Moist Wound Healing. *The Journal of the American College of Clinical Wound Specialists*. 2012;4(3):63-66. doi:10.1016/j.jccw.2013.08.001.
12. Fleck CA. Why “Wet to Dry”? *The Journal of the American College of Certified Wound Specialists*. 2009;1(4):109-113. doi:10.1016/j.jcws.2009.09.003.
13. Sood A, Granick MS, Tomaselli NL. Wound Dressings and Comparative Effectiveness Data. *Advances in Wound Care*. 2014;3(8):511-529. doi:10.1089/wound.2012.0401.
14. Ovington LG. Hanging wet-to-dry dressings out to dry. *Home Healthc Nurse*. 2001 Aug;19(8):477-83; quiz 484.
15. Dini V, Salvo P, Janowska A, Di Francesco F, Barbini A, Romanelli M. Correlation Between Wound Temperature Obtained with an Infrared Camera and Clinical Wound Bed Score in Venous Leg Ulcers. *Wounds*. 2015 Oct;27(10):274-8.
16. Weir D, Brindle CT. Wound Dressings. In Hamm RL, ed. *Text and Atlas of Wound Care Therapy*. New York: McGraw-Hill; 2015:343-384.
17. Cowan L.J., Stechmiller J. Prevalence of wet-to-dry dressings in wound care. *Adv Skin Wound Care*. 2009;22(12):567–573.
18. Weir D, Scarborough P, Niezgodna JA. Wound debridement. In Krasner DL, ed. *Chronic Wound Care: The Essentials*. Malvern, PA: HMP Communications; 2014:63-77.
19. Lawrence JC. Dressings and wound infection. *Am J Surg*; 1994;167:(Suppl 1A):21S–24S.
20. National Pressure Ulcer Advisory Panel, European Pressure Ulcer Advisory Panel and Pan Pacific Pressure Injury Alliance. Prevention and Treatment of Pressure Ulcers: Clinical Practice Guideline. Emily Haesler (Ed.). Cambridge Media: Osborne Park, Western Australia; 2014.
21. Department of Health & Human Services (DHHS) Centers for Medicare & Medicaid Services (CMS); CMS Manual System Pub. 100-07 State Operations Provider Certification Transmittal 70

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22. Wound, Ostomy and Continence Nurses Society (WOCN). Guideline for management of wounds in patients with lower-extremity arterial disease. Mount Laurel (NJ): Wound, Ostomy and Continence Nurses Society (WOCN); 2014.
23. Association for the Advancement of Wound Care. Association for the Advancement of Wound Care (AAWC); 2010. Guideline of Pressure Ulcer Guidelines; pp. 1–14.
24. Perry D, Borchert K, Burke S, Chick K, Johnson K, Kraft W, Patel B, Thompson S. Institute for Clinical Systems Improvement. Pressure Ulcer Prevention and Treatment Protocol. Updated January 2012. Available at:  
[https://www.icsi.org/guidelines\\_more/catalog\\_guidelines\\_and\\_more/catalog\\_guidelines/catalog\\_patient\\_safetyreliability\\_guidelines/pressure\\_ulcer/](https://www.icsi.org/guidelines_more/catalog_guidelines_and_more/catalog_guidelines/catalog_patient_safetyreliability_guidelines/pressure_ulcer/)
25. Hess, CT. Skin and Wound Care Products. In Hess, CT. *Clinical Guide to Skin and Wound Care*, 7th edition, Philadelphia: Wolters Kluwer Health/Lippincott Williams & Wilkins, 2013, 140-559.
26. Rolstad BS, Bryant RA, Nix DP, Topical Management. In R. A. Bryant and D. P. Nix (Eds.), *Acute and Chronic Wounds: Current Management Concepts* (4rd Edition) Mosby, 2012, 18:289-306.
27. Scarborough P, Motta GL, eds. *WoundSource* 17th Edition. Hinsberg, VA: Kestrel Health Information; 2014.