

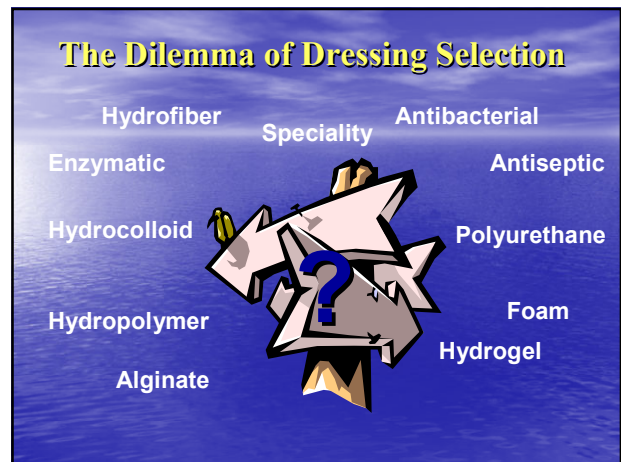
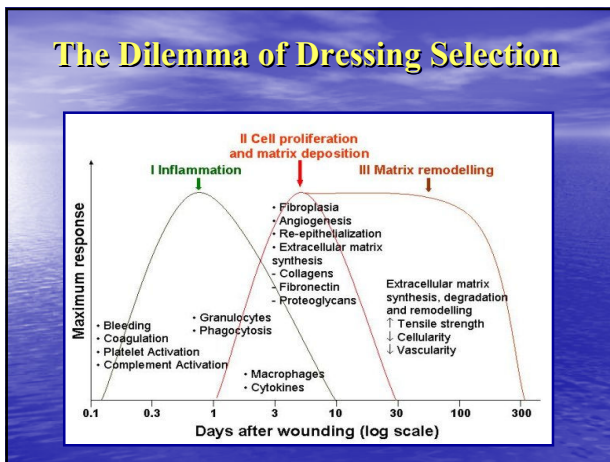


The Dilemma of Dressing Selection

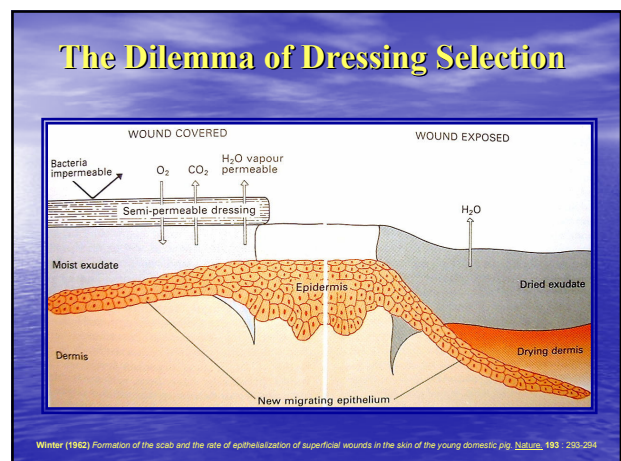
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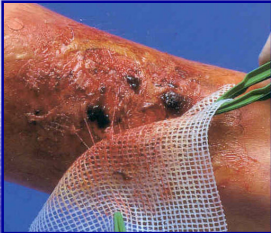
Honorary Secretary EWMA & Chair
Education Group

- ## The Dilemma of Dressing Selection
- The ideal wound dressing should keep the wound:
- ❖ Moist but not macerated
 - ❖ Non-adherent
 - ❖ At the optimum temperature (Thomas, 1990)
 - ❖ Undisturbed by frequent dressing changes
 - ❖ At the optimum PH value



The Dilemma of Dressing Selection




Layers of gauze become saturated, adhere to the wound, cause pain, trauma, granulation becomes damaged and bleeds

The Dilemma of Dressing Selection

The Right Temperature


Relates to the work of Lock, 1980; Myers, 1982
Has been explored by others
Cherry & Ryan, 1986



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The Optimum PH Value

Directly or indirectly reducing the PH of the wound facilitates the maximum release of oxygen to meet the metabolic needs of the wound, thereby encouraging rapid healing
(Thomas, 1990)




The Dilemma of Dressing Selection



The Dilemma of Dressing Selection

Hydrocolloids

A microgranular suspension of natural or synthetic polymers in an adhesive matrix, the granules are hydrophilic whereas the adhesive matrix is hydrophobic



The Dilemma of Dressing Selection

Hydrocolloids

- ❖ For low - moderately exuding wounds
- ❖ Form a gel with the wound
- ❖ Create a moist wound dressing interface
- ❖ Facilitate autolysis, granulation, epithelialisation



The Dilemma of Dressing Selection



Hydrogel

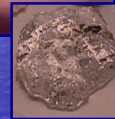
Insoluble polymers with hydrophilic sites, made from natural and synthetic materials, water/saline/polymer and preservative, absorb and retain fluid

The Dilemma of Dressing Selection



Hydrogels

- ❖ For low - moderately exuding wounds
- ❖ Create a moist wound dressing interface
- ❖ Facilitate autolysis, granulation, epithelialisation



The Dilemma of Dressing Selection



Alginates

Derived from seaweed rich in alginic acid, consists of a polymer with mannuronic and guluronic acid, in contact with the wound the insoluble calcium alginate is converted to a soluble sodium alginate

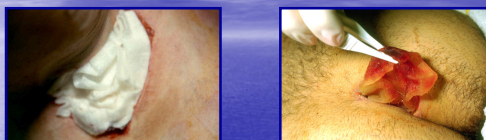
The Dilemma of Dressing Selection



Alginates

- ❖ For moderate – highly exuding wounds
- ❖ Absorb fluid from the wound forming a gel
- ❖ Maintain moist wound-dressing interface
- ❖ Facilitate autolysis, granulation, epithelialisation

The Dilemma of Dressing Selection



Hydrofiber

Non woven pad or ribbon made of hydrocolloid (carboxymethylcellulose) fibres. Absorbs wound fluid and forms a gel, use on light-moderately exuding wounds

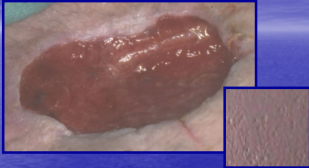
The Dilemma of Dressing Selection



Foams

Hydrophilic/hydrophobic polyurethane dressings, absorb wound fluid, the fluid is evaporated through the back of the dressing


The Dilemma of Dressing Selection



Foams

- ❖ For low-moderately exuding wounds
- ❖ Absorb fluid from the wound
- ❖ Maintain moist wound-dressing interface
- ❖ Facilitate granulation, epithelialisation

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Hydropolymer

Is a non-particulate polymer or mixture of polymers, is hydrophilic, has the characteristics of the ideal dressing

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Low/Non Adherent

Knitted cellulose acetate, impregnated with a specially formulated petrolatum emulsion

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Silver



- ❖ Broad spectrum antibiotic
- ❖ Action related to amount and rate of silver released
- ❖ Impair bacterial cell respiration and function
- ❖ "Global influence on healing"
- ❖ Newer slow release formulations favoured

(Landsdown, 2005)

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Silver



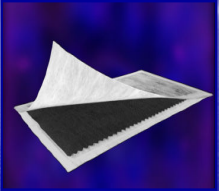
Three forms of silver dressings:

- ❖ Silver released into the wound bed
- ❖ Absorb wound fluid and silver works within the dressing, or absorb wound fluid and release silver into wound
- ❖ Release silver sulphadiazine into wound

(Landsdown, 2005; White, 2003; Sibbald, 2003)

The Dilemma of Dressing Selection

Ideal Silver Dressing



- ❖ Low solubility, provides sustained release
- ❖ No substantial chemical reactivity of the silver with exudate
- ❖ Have an odour control function
- ❖ Local concentration adequate

(White, 2003)

The Dilemma of Dressing Selection

I

Iodine

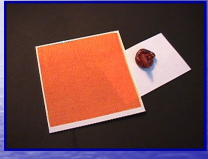
Atomic Number: 53
Atomic Mass: 126.9

Iodine

- ❖ Povidone iodine
- ❖ Cadexomer iodine - hydrophilic beads of cadexomer-starch
- ❖ Toxicity related to iodine availability
- ❖ Newer formulations have lower concentrations but maintain efficacy

(Drosou *et al*, 2003; Cooper, 2004)

The Dilemma of Dressing Selection




(Drosou *et al*, 2003; Cooper, 2004)

Iodine

- ❖ Release sustained low concentrations of free iodine
- ❖ Has multiple cellular effects, inhibits bacterial proliferation
- ❖ Broad spectrum of activity against bacteria, mycobacteria, fungi, protozoa and viruses


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Larvae

The main effect of the larvae is in their ability to serve as efficient scavengers, removing dead or necrotic tissue without destroying living tissue

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(Thomas *et al*, 1997)

Larvae

- ❖ Secrete proteolytic enzymes
- ❖ Kill bacteria in their gut due to asidic protein
- ❖ Secrete allantoin and urea
- ❖ Secrete ammonia and calcium carbonate

The Dilemma of Dressing Selection




(Molan, 1999)

Honey

- ❖ High Osmolarity
- ❖ Alters Wound PH
- ❖ Has anti-inflammatory effect due to anti oxidants
- ❖ Generates hydrogen peroxide at low levels stimulates angiogenesis & fibroplasia

The Dilemma of Dressing Selection



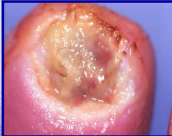
(Davidson *et al*, 2000)

Enzymes

- ❖ Collagenases degrade natural collagen,
- ❖ Collagen is broken down into high molecular weight peptides that can be broken down further by specific proteases,
- ❖ Break down dead tissue in the wound

The Dilemma of Dressing Selection

Enzymes

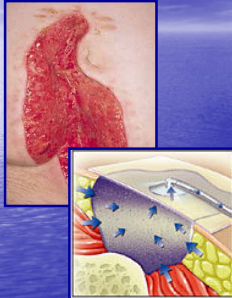


- ❖ Mixture of streptokinase and streptodornase
- ❖ Streptokinase reacts with plasminogen, transforms it into plasmin, an active proteolytic enzyme which is able to degrade fibrin and fibrinogen
- ❖ Streptodornase is a group of enzymes, liquefy and facilitate removal of DNA derived from cell nuclei

(Bux *et al*, 1997)

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Topical Negative Pressure



- ❖ Enables wound drainage – reduces oedema
- ❖ Creates moist wound healing environment
- ❖ Creates mechanical forces within wound bed
- ❖ Stimulates fibroblasts

(Evans & Land, 2001; Teot, 2002)

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Advanced Products

Growth Factors

- ❖ Most promising PDGF
- ❖ Growth specific?
- ❖ Wound bed preparation?
- ❖ Identification of need




Bioengineered skin

- ❖ Living cells
- ❖ Acellular materials
- ❖ Extracts of living cells
- ❖ May release growth factors and cytokines
- ❖ Limited life span on chronic wounds



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Protease Modulation



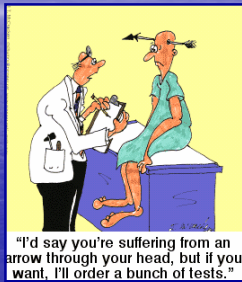
- ❖ MMP binding and inhibition
- ❖ Reduces degradation of the ECM
- ❖ Facilitates chemotaxis and cell proliferation
- ❖ Moist wound healing environment

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Evidence?

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"I'd say you're suffering from an arrow through your head, but if you want, I'll order a bunch of tests."

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What is it all about?
Where do we go?

The Dilemma of Dressing Selection

- ❖ 1 – evidence from meta-analysis of RCT's or at least one RCT
- ❖ 11 – Evidence from at least one controlled trial without randomisation of at least one other type of quasi-experimental study
- ❖ 111 – Evidence from non-experimental descriptive studies
- ❖ IV – Evidence from expert committees or reports/clinical experience/respected authorities

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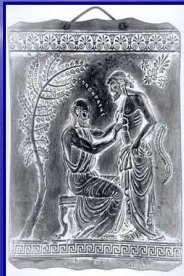
Patient Related Factors

Wound Related Factors

Dressing Factors

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Hippocrates stressed the importance of observation, diagnosis and treatment. He noted the importance of a good diet, exercise and fresh air, to allow the body to heal itself



The Dilemma of Dressing Selection

- ❖ Wound aetiology
- ❖ Wound bed condition
- ❖ Fluid production
- ❖ Dressing characteristics
- ❖ Cost
- ❖ Efficacy
- ❖ Patient preferences
- ❖ Competency

Choosing the right dressing

The Dilemma of Dressing Selection

Has the wound enough blood supply?

If non-healability is identified, moist wound therapy is contraindicated, keep wound clean and dry in order to prevent bacteria from spreading to the surrounding tissue

The Dilemma of Dressing Selection

Has the wound enough blood supply?



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Infected?



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Wound Bed?



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Cavity/Shallow?




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Level of Exudate?



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The Dilemma of Dressing Selection



“To succeed,
we must
first believe
that we can”

EWMA - 2008 Conference



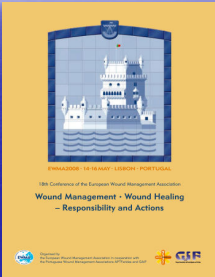
Lisbon, Portugal
Conference Dates
**14 – 16
May 2008**

Important Dates

Deadline for abstracts
1 February 2008

Early registration deadline
1 March 2008

Registration possible
1 November 2007



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