WOUND CARE TODAY AND MICROWORLD

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LEARN MORE ABOUT WOUND HEALING WITH

THE M.O.I.S.T. MODEL & MICROWORLD

FACEBOOK LIVE EVENT

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WOUND CARE TODAY

LIVE Q&A

SEND IN YOUR QUESTIONS BY COMMENTING ON THE VIDEO

Mölnlycke®

WHAT IS MICROWORLD?

- Microworld can connect and educate professionals from around the world
- Completing the module:
  - Counts towards revalidation
  - Opens other learning areas of the site
- Complex content delivered through fun, engaging, interactive animations, videos, games and illustrations.

CHARACTERS

GLUCOSE
(GLUCO)

MACROPHAGE
(MAC / THE CLEANER)

MONOCYTES
(MC)

PLATELETS
(CLOTSWORTH)

PROTEASE ENZYME
(PRO TWINS)

PROTEASE INHIBITORS
(PRO TWINS)

EXUDATE
(MR X)

NEUTROPHIL
(NEWT)

RED BLOOD CELLS
(SCARLET / THE RBCS)

GROWTH FACTORS
(THE CONTROLLER)

FIBROBLAST / MYOFIBROBLAST

NUTRIENTS & OXYGEN
(YELLOW) (BLUE)

INTRODUCING SOME NEW CHARACTERS

- Moisture Balance
- Oxygen Balance
- Infection Control
- Support
- Tissue Management
- Professor

CLASS 4: M.O.I.S.T.

This class will take you through:

- The importance of holistic wound assessment
- The M.O.I.S.T. model and its use in daily practice
- What each letter of M.O.I.S.T. represents
- Some treatment options that fit within each of the letters of M.O.I.S.T.

WOUND ASSESSMENT AND MANAGEMENT FRAMEWORKS

Using a wound assessment and management framework addresses:

- Concerns over inadequate wound assessment practice
- Variations in the delivery of wound management (Coleman et al, 2017).

Reducing practice variation involves:

- Adopting evidence-based methods of practice
- Improving the skills of healthcare professionals who may encounter wounds
- Supporting patient engagement (World Union of Wound Healing Societies [WUWHS], 2020).

M.O.I.S.T. MODEL

- Wounds are often referred to as '**chronic**' using a time-based definition
- However, the **underlying cause**, e.g. in diabetic foot ulcers and peripheral artery disease, needs to be addressed, often using **new therapies** (Dissemond et al, 2017)
- The **M.O.I.S.T. model** was developed by an interdisciplinary and interprofessional expert panel and allows for the inclusion of new treatment options.

M.O.I.S.T. MODEL

- M.O.I.S.T. is an evolution of the TIME model, and other models like it that came before
- It still applies, and slightly modifies the T, I and M from TIME – but new letters have been added to allow for other essential treatment options.

M + O + I + S + T =

M.O.I.S.T.

M – MOISTURE BALANCE

A high volume of wound exudate is associated with a wide range of acute and chronic wounds

Excessive exudate production that is managed inadequately can contribute to wound enlargement and peri-wound skin damage

Insufficient exudate production may delay wound healing, e.g. by delaying autolytic debridement

Different types of dressing have different degrees of absorbency and different ways of managing exudate (Davies, 2012).

M – MOISTURE BALANCE

- Absorbent dressings should be able to efficiently transfer exudate to prevent pooling
- Absorbent dressings should:
  - Support a clean wound bed by absorbing and retaining exudate and micro-organisms
  - Promote autolytic debridement which is essential for wound healing to progress
- An antimicrobial component to the dressing may be required when wound biofilm or infection are present to prevent biofilm reformation.

POINTS FOR PRACTICE

1. A large volume of exudate may contribute to malnutrition since exudate is rich in protein
2. A large wound may lead to significant protein deficiency
3. Poor nutritional status can have a direct effect on wound healing, therefore patients with highly exuding wounds will benefit from a full nutritional assessment and protein, vitamin and trace element replacement.

M.O.I.S.T.

O – OXYGEN BALANCE

- Hypoxia is a common cause of poor wound healing (Hu et al, 2020)
- Oxygen is needed during wound healing because of the increased demand for reparative processes (Schreml et al, 2010)
- Conditions, such as small and large blood vessel disease, hypoxia and ischaemia, can all impact on the delivery of oxygen (Gottrup et al, 2017; Atkin et al, 2019).

O – OXYGEN BALANCE: HAEMOGLOBIN SPRAY

- **Haemoglobin spray:** highly purified haemoglobin is released which binds with oxygen, facilitating diffusion through wound exudate, supplying the base of the wound with oxygen (Dissemond et al, 2015)
- A systematic review found that haemoglobin spray could substantially reduce the quantity of slough and can relive pain (Hu et al, 2020)
- It can be used in various settings without costly consumables or extras (National Institute for Health and Care Excellence [NICE], 2022).

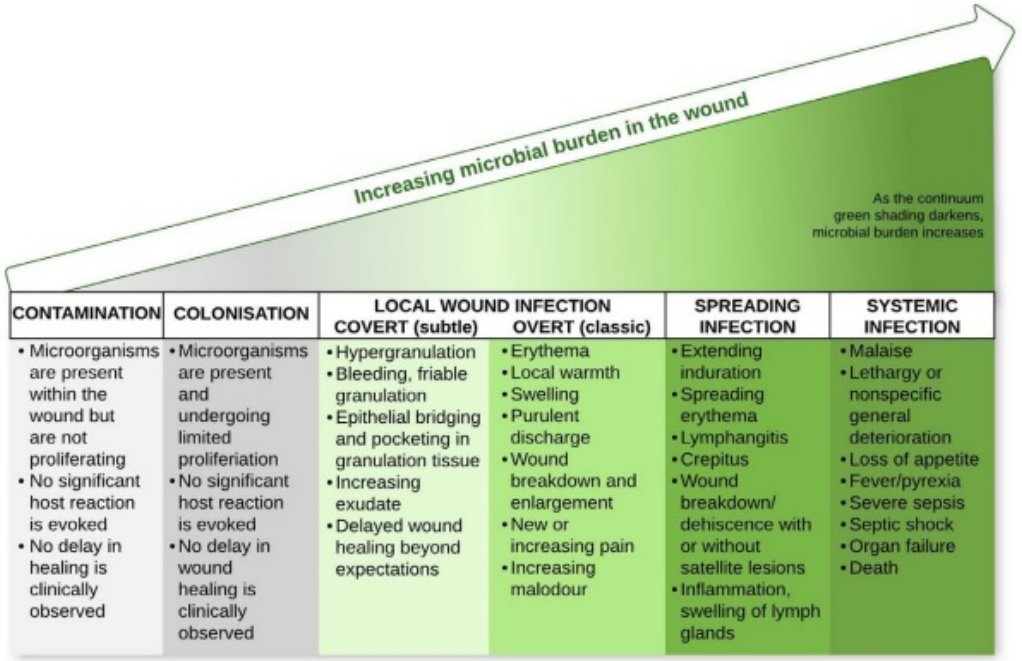
POINTS FOR PRACTICE

1. In patients with lower limb wounds, ankle brachial pressure index (ABPI) measurement are an essential component of assessment and will help identify any arterial disease which may impact on oxygen delivery.

M.O.I.S.T.

I – INFECTION CONTROL

- The International Wound Infection Institute (IWII) wound infection continuum provides a framework to assess the impact microorganisms are having on a host (IWII, 2022)
- Regular assessment can help prevent infection and early intervention may stop problems from escalating (IWII, 2022).



CONTAMINATION	COLONISATION	LOCAL WOUND INFECTION COVERT (subtle)	LOCAL WOUND INFECTION OVERT (classic)	SPREADING INFECTION	SYSTEMIC INFECTION
• Microorganisms are present within the wound but are not proliferating • No significant host reaction is evoked • No delay in healing is clinically observed	• Microorganisms are present and undergoing limited proliferiation • No significant host reaction is evoked • No delay in wound healing is clinically observed	• Hypergranulation • Bleeding, friable granulation • Epithelial bridging and pocketing in granulation tissue • Increasing exudate • Delayed wound healing beyond expectations	• Erythema • Local warmth • Swelling • Purulent discharge • Wound breakdown and enlargement • New or increasing pain • Increasing malodour	• Extending induration • Spreading erythema • Lymphangitis • Crepitus • Wound breakdown/ dehiscence with or without satellite lesions • Inflammation, swelling of lymph glands	• Malaise • Lethargy or nonspecific general deterioration • Loss of appetite • Fever/pyrexia • Severe sepsis • Septic shock • Organ failure • Death

I – INFECTION CONTROL

A wound infection prevention and management plan aims to:

- Optimise the individual host response (e.g. optimise any comorbidities, e.g. diabetes)
- Reduce local microbial burden (e.g. with topical antiseptics or antimicrobial dressings)
- Promote a positive wound healing environment (e.g. psychological support, clean environment) (IWII, 2022).

I – INFECTION CONTROL

Reducing local microbial burden (Hartford, 2021):

- Topical antiseptics, e.g. silver
- Topical antibiotics, e.g. metronidazole
- Non-medicated wound dressings or treatments, e.g. larvae.

POINTS FOR PRACTICE

1. Local infection is contained within the wound and the immediate periwound region and often presents with covert and overt signs and symptoms
2. Overt signs and symptoms include the classic signs of erythema, local warmth, swelling, increasing pain and wound breakdown
3. Cover, or subtle signs, include hypergranulation, bleeding and friable granulation tissue, epithelial bridging and pocketing, increasing exudate and delayed wound healing.

M.O.I.S.T.

S – SUPPORT

- Strategies that support the wound bed
- The most common reasons for the wound environment to become unbalanced are:
  - Excessive matrix metalloproteinases (MMPs)
  - An altered pH
  - Out of control pro-inflammatory mediators
  - A lack of growth factors or collagen
- Hard-to-heal or chronic wounds can either fail to go through the normal chain of events or get stuck in the inflammatory phase.

POINTS FOR PRACTICE

1. MMPs play an important role in wound healing: they remove specific damaged protein cells and bacteria; they prepare the wound for proliferation and help to contract and remodel the scar in the maturation stage

2. Sometimes MMPs are present in too high levels, for too long and in the wrong place. When this occurs, they start degrading other proteins (e.g. growth factors) that are essential for healing, and so wound healing is impaired (Gibson et al, 2009).

POINTS FOR PRACTICE

3. Interventions need to take place to break the cycle of delayed wound healing

4. These include treating the cause (reduce the inflammation) and manage the excess MMPs

5. Treatment options will need to address the increased volume of exudate and the pain.

M.O.I.S.T.

T – TISSUE MANAGEMENT

The presence of devitalised tissue can cause:

- Malodour
- Increase volume of exudate
- Increase the risk of inflammation and infection
- Physical barrier to healing
- Generally, reduce a patient's quality of life (Gray et al, 2010; Storhal et al, 2013).

T – TISSUE MANAGEMENT

Debridement is a foundation of wound healing and involves the removal of:

- Slough
- Haematoma
- Debris
- Infected tissue
- Necrosis
- Eschar
- Foreign bodies

...that accumulates on the surface of chronic wounds (Ousey and Schofield, 2021).

T – TISSUE MANAGEMENT

- Examples of types of debridement include:
  Surgical, Sharp and Autolytic
- It may be necessary to use **more than one method**, e.g. rehydration of hard, black eschar with autolytic debridement before surgical or mechanical debridement (Vowden and Vowden, 2011)
- **Debridement should be performed frequently**, on an ongoing basis, depending on the type and amount of devitalised tissue present.

POINTS FOR PRACTICE

1. Patients should be provided with information regarding the type of debridement, including benefits and risks, implications of having the treatment and alternatives available
2. Informed consent must be obtained
3. If you feel your patient requires a method of debridement that is outside your scope of practice, refer on to a specialist healthcare professional, e.g. tissue viability, vascular, podiatry services.

CONCLUSIONS

- Using a wound assessment and management framework can lead to optimal wound treatment and improved patient outcomes
- The M.O.I.S.T. model allows for new treatment options which may be necessary when dealing with chronic wounds
- The M.O.I.S.T. model extends beyond the well-established TIME wound assessment model, adding two new factors: restoring oxygen balance and supporting the wound bed
- Microworld offers a new animated way to learn and an enhanced learning experience.

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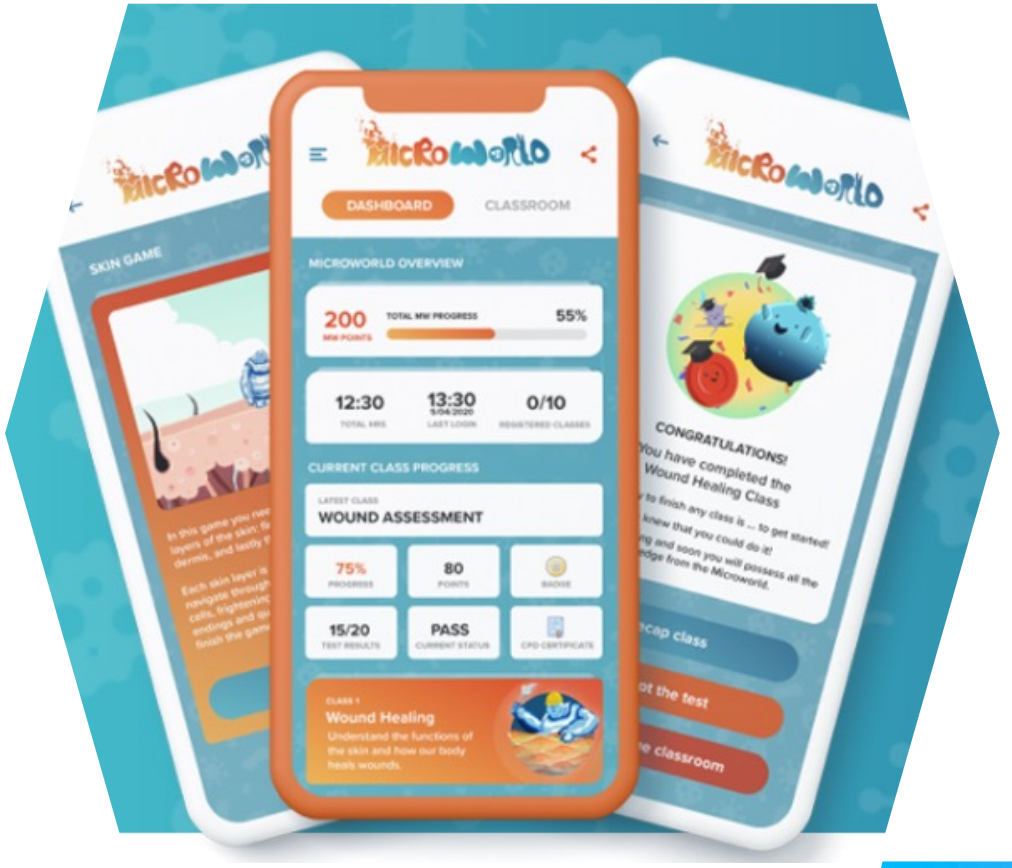

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