HARTMANN Wound Care Training

Session 2
Wound Care in General Practice

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20th October 2020

Topics to be covered

- Why some wounds are slow to heal
- The importance of wound assessment
- Wound Bed Preparation and TIME
- The benefits of good wound hygiene
- Provide an overview of the treatment of hard to heal wounds
- Simplify product selection based on the patient and the wounds' needs
- Summary and questions

Definition of a Chronic Wound

“Chronic wounds are defined as wounds that fail to proceed through the normal phases of wound healing in an orderly and timely manner”

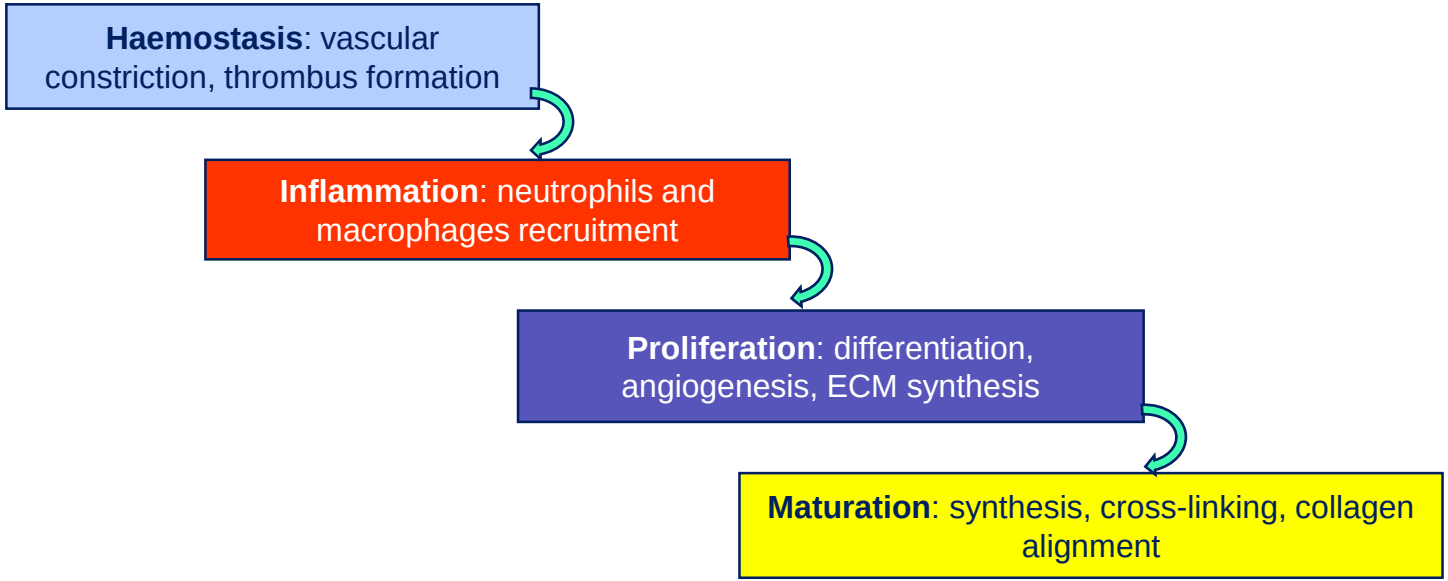
Source: Frykberg,R.;Banks,J; Challenges in the Treatment of Chronic Wounds.Advances in Wound Care 2015 Sep1; 4(9): 560-582.

Poll Question

Why won’t this wound heal?

Wound Healing Process

Wound healing is a physiological repair process made up of specific dynamic sequences and involving specific cells, mediators and growth factors.



Chronic Inflammation

A wound that has been present for longer than 6 weeks is classified as a chronic or hard to heal wound

It has become stuck in the inflammatory stage of healing & out of cellular balance

The body has lost the ability to produce the cells that allow the wound to progress through the normal phases of healing and is stuck.

This is known as chronic inflammation

Schultz GS, Sibbald RG, Falanga V, Ayello EA,Dowsett C, Harding K, Romanelli M, Stacey MC, Teot L, Vanscheidt W. Wound bed preparation:a systematic approach to wound management. Wound Rep Regen 2003;S11:1–28.

What makes the wound out of balance?

- MMPs (**Matrix metalloproteinases**) are enzymes that play an important role in wound healing.
- They are produced by:

  Inflammatory cells & wound cells such as **neutrophils (white cells), macrophages, epithelial cells and fibroblasts**
- Their role in wound healing is:

  Clear away damaged tissue and **promote growth** of new blood vessels for to provide oxygen and nutrition for **healing.**

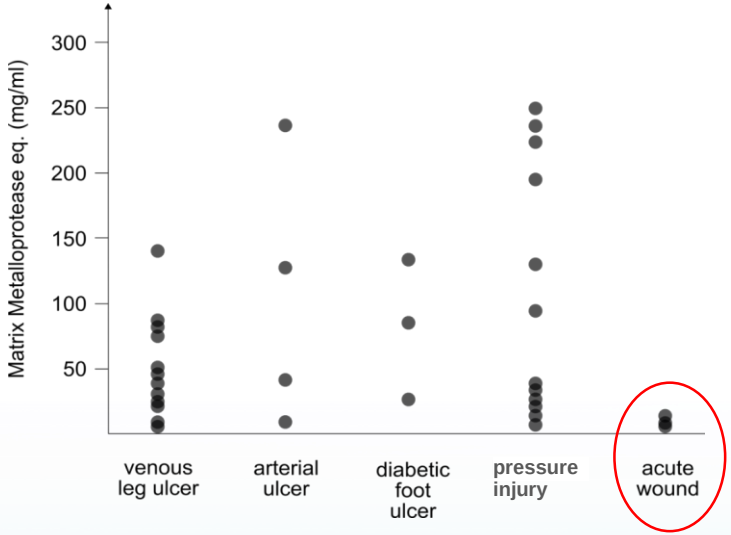
Gibson D, Cullen B, Legerstee R, Harding KG and Schultz G. MMPs Made Easy; Wounds International Volume 1 | Issue 1 | November 2009

How do they affect chronic wounds?

- MMPs are controlled by **Tissue Inhibiting Metalloproteinases** (TIMPs) by blocking their activation and allowing the wound to progress and heal
- In hard to heal wounds, higher levels of MMPs, persist longer and the wound bed gets out of balance
- Creates a highly destructive wound environment filled with cells that can't do their job and delay healing.

Gibson D, Cullen B, Legerstee R, Harding KG and Schultz G. MMPs Made Easy; Wounds International Volume 1 | Issue 1 | November 2009

Matrix Metalloproteinases levels in acute versus hard to heal wound



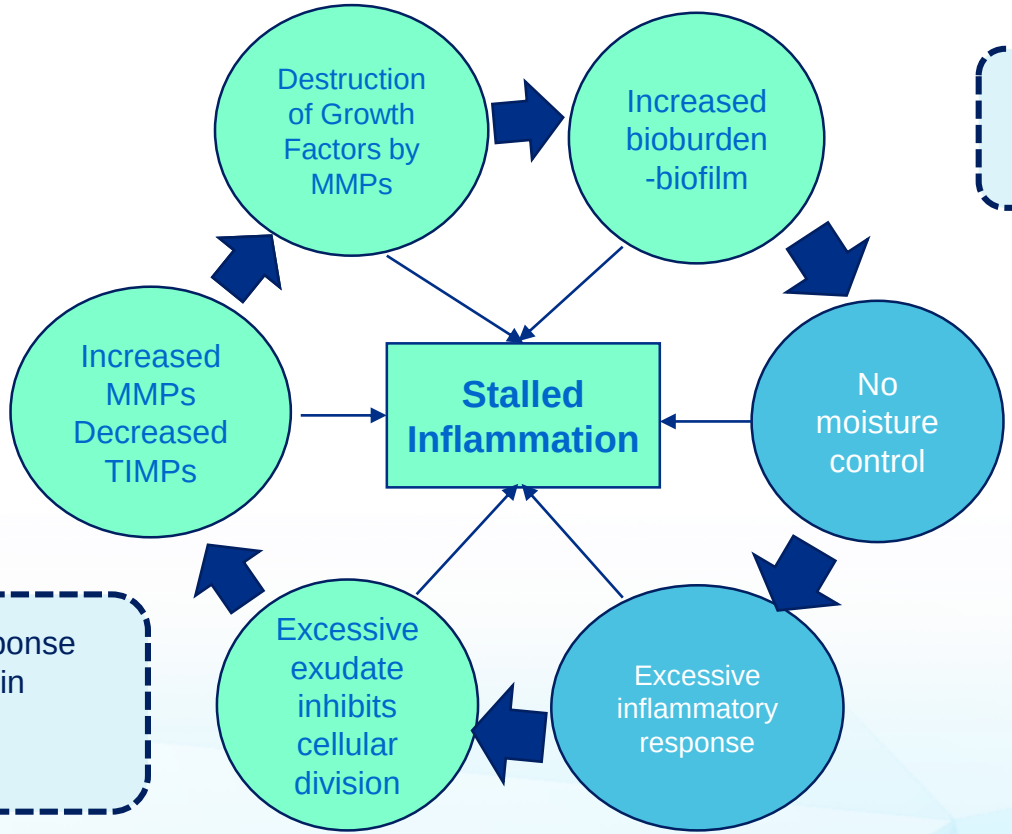
Wound healing requires the controlled activity of MMPs at all stages of the wound healing process.

Timed expression and activation of MMPs in response to wounding are vital for successful wound healing.

Impaired wounds are characterized by the loss of MMP regulation.
Excess of protease activity can lead to non-healing wounds.

Trengove et al., Analysis of the acute and chronic wound environments: the role of proteases and their inhibitors(1999) Wound Repair Regen 7:442-52

Hard to heal wounds - the inflammatory phase



Critical phase creating the vicious circle of impaired healing

The inflammatory response is significantly altered in hard to heal wounds.

The importance of assessment

Diseases that impact healing

- Diabetes Mellitus – uncontrolled BSLs reduce the ability to heal
- Anaemia – reduces oxygen to the tissues
- Malignancy – impact of tumour growth and health of patient
- Rheumatoid Arthritis – impact of anti-inflammatory medications
- Auto Immune disorders – impact the normal inflammatory response patients ability to fight infection
- Hepatic failure – reduces the level of circulating haemoglobin
- Inflammatory bowel disease – results in poor nutritional state

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Malnutrition & dehydration

- Causes delays in wound healing and increases the risk of infection.
- Competition for limited nutrients.
- Nutritionally balanced diet is essential for wound regeneration and repair.
- Nutrients such as amino acids are needed for tissue repair.
- Essential amino acids are provided by meat, fish, lentils and dairy.
- Water comprises 60% of body weight and is essential for tissue viability

Carville, K. Wound Care Manual 7th Edition Silver Chain Foundation

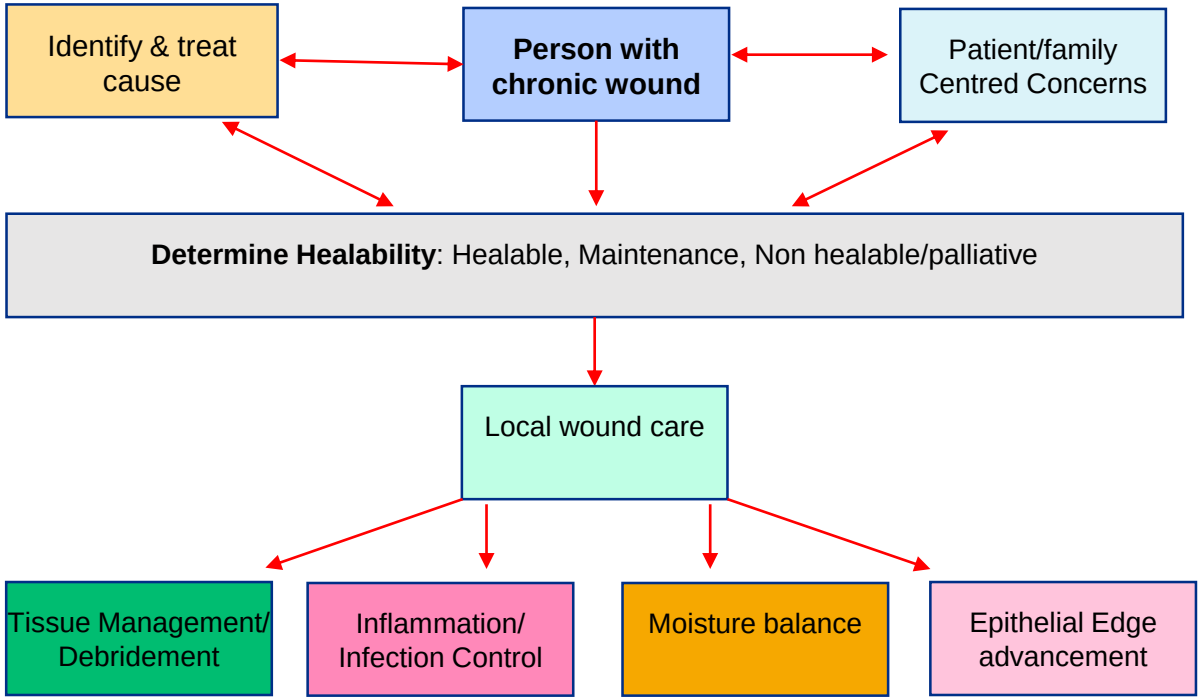
Other factors impacting healing

- Obesity & Cachexia – Can compromise blood supply and have a reduced nutritional state.
- Lack of sensation – leads to lack of awareness of injury.
- Drug therapy – anti-inflammatories, cytotoxics, steroids, antibiotics, anticoagulants & nicotine all impact healing.
- Radiation therapy – destroys both malignant and new cellular growth and diminishes nutritional state.
- Stress pain and anxiety - has been demonstrated to retard healing. (Pediani 1992;Scanlon 2005)

Carville, K. Wound Care Manual 7th Edition Silver Chain Foundation

Wound Bed Preparation & TIME

Wound Bed Preparation



Sibbald RG. Optimizing The Moisture Management Tightrope with Wound Bed Preparation 2015. Advances in Skin & Wound Care 2015;Oct 2015 Vol 28;466-475

T = Tissue

T= Tissue Non-Viable or Tissue Deficit

Identification of dead tissue that is sitting on the wound bed

This tissue is preventing healing and needs to be removed

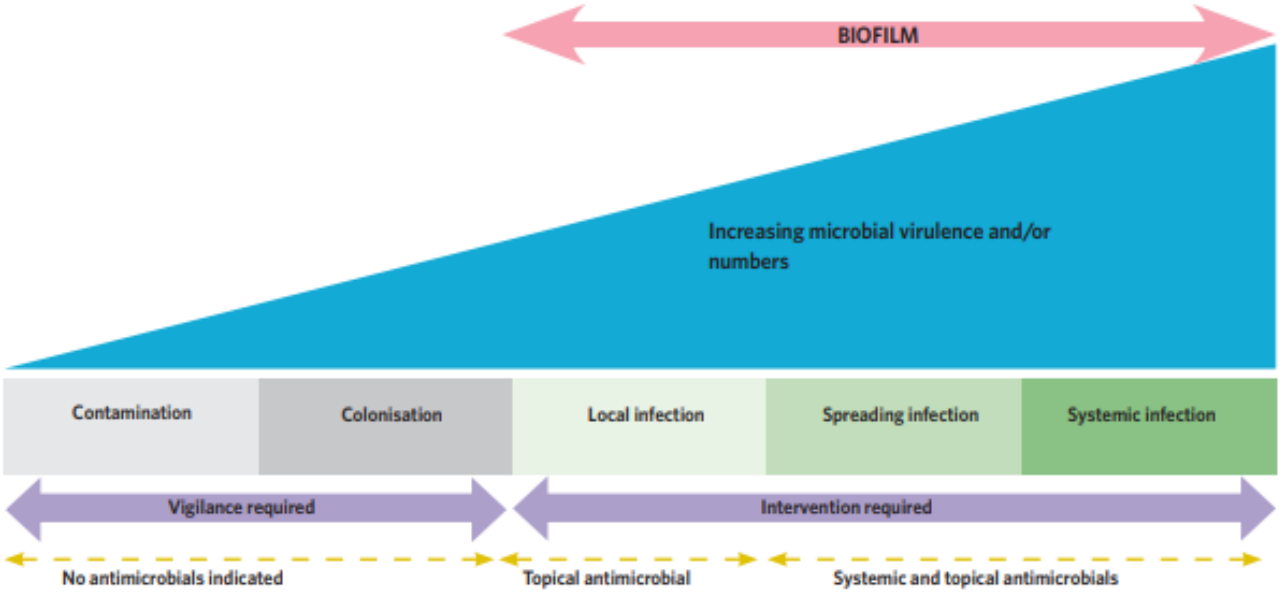
A lack of tissue which needs to regenerate from the base up before the cavity closes over

Schultz GS, Sibbald RG, Falanga V, Ayello EA,Dowsett C, Harding K, Romanelli M, Stacey MC, Teot L, Vanscheidt W. Wound bed preparation:a systematic approach to wound management. Wound Rep Regen 2003;S11:1–28.

I = Infection or Chronic Inflammation

The wound infection continuum

Figure 1 | IWII wound infection continuum[22, 24, 25]



International Wound Infection Institute(IWII) Wound infection in clinical practice. Wounds International 2016

Identifying Infection

Acute wound
Overt Infection

- Cellulitis
- Redness
- Heat
- Pain
- Swelling
- Pus
- Malodour
- Delayed healing

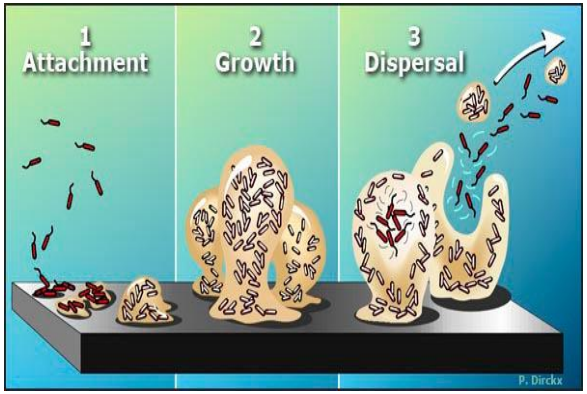
Hard to heal wound
Covert Infection

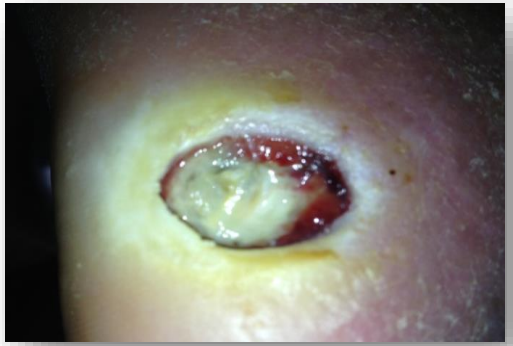
- Cellulitis
- Delayed healing
- Increase in local skin temperature
- Increase in pain
- New satellite ulcer formation
- Increased or changes in exudate

Cellulitis

http://www.woundinfection-institute.com/wp-content/uploads/2017/03/IWII-Wound-infection-in-clinical-practice.pdf

I = Infection





- Hard to heal wounds are unable to fight the invading bacteria
- They are unable to show signs of infection: Covert infection
- Bacteria can multiply and thrive on the surface of the wound
- They produce colonies with a protective slime coating covering them...this is called a Biofilm
- We should assume that all hard to heal wounds are coated in biofilm
- The most effective way to remove a biofilm is with ongoing debridement

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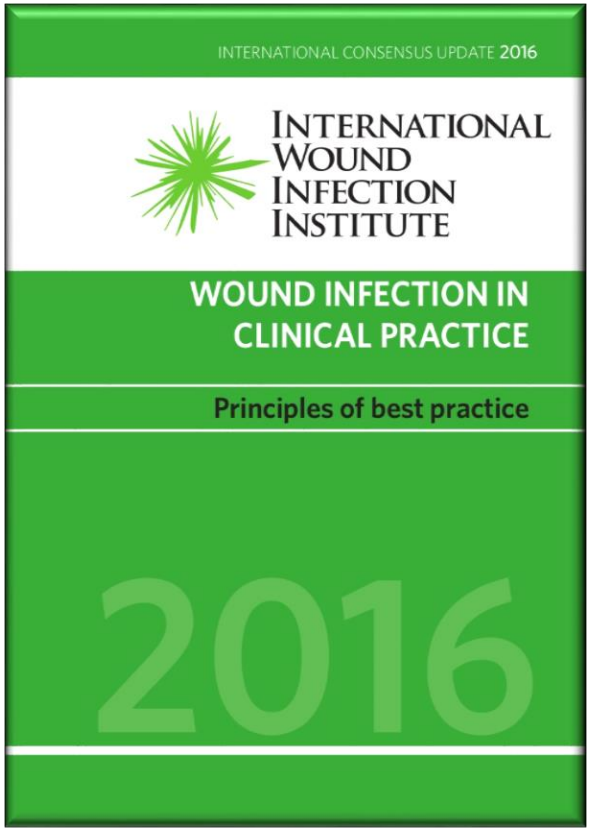


http://www.woundinfection-institute.com/wp-content/uploads/2017/03/IWII-Wound-infection-in-clinical-practice.pdf

Chronic Inflammation ⬆MMPs in impaired wound healing

Excessive wound proteases (MMPs) lead to the **degradation** of newly formed **Extra Cellular Matrix (ECM)** and of **growth factors**, **receptors**, other **proteins**

Wound healing is impaired due to ECM damage and abnormal prolongation of the inflammatory phase

HARD TO HEAL WOUNDS

M= Moisture Balance

M = Moisture Balance

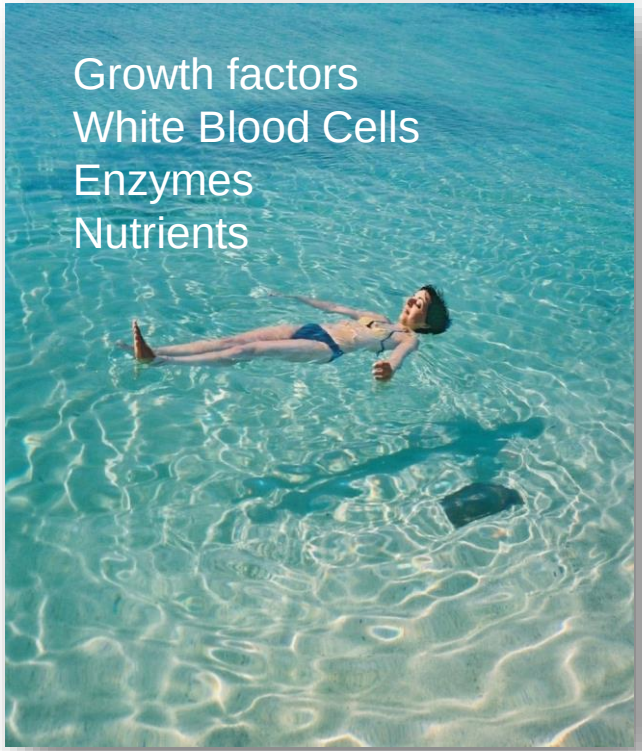
Drying out of a wound bed prevents growth of new tissue & stops the migration of the epidermal cells

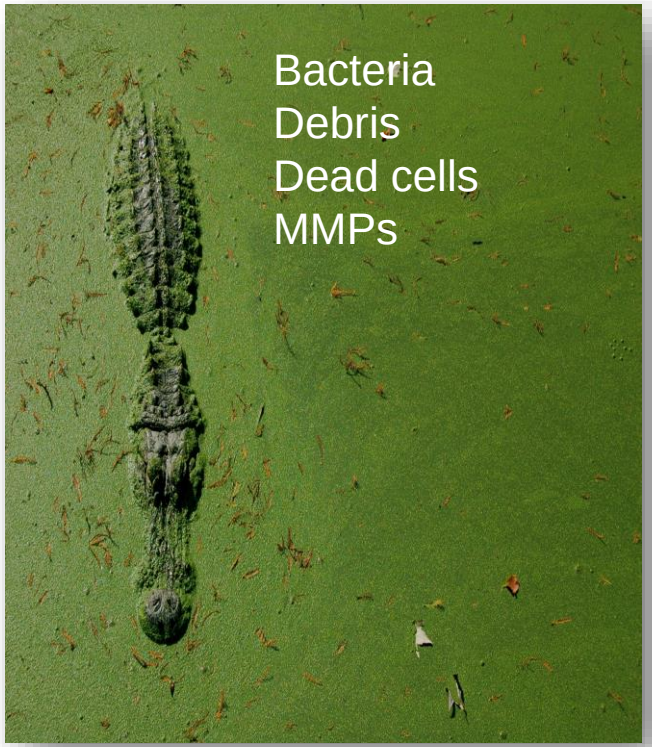
Excessive moisture can cause maceration leading to erosion of wound edges

This can be achieved by choosing the correct dressing for the level of exudate and condition of wound

Schultz GS, Sibbald RG, Falanga V, Ayello EA,Dowsett C, Harding K, Romanelli M, Stacey MC, Teot L, Vanscheidt W. Wound bed preparation:a systematic approach to wound management. Wound Rep Regen 2003;S11:1–28.

Acute vs. chronic wound fluid





Acknowledgement: Wendy White NP Wound Consultant

Impact on the quality of life for the patient

The effects of excess exudate, such as leakage, strikethrough and odour can negatively affect how a patient feels about themselves and how they interact with others.

E= Edge of Wound

E = Edge of wound

Non advancing wound edges are associated with:

- **Infection** –red angry appearance around the wound
- **Moisture** -Too much moisture or not enough moisture
- **Callous formation** – commonly found in diabetic foot injuries
- Always **measur**e wounds to ensure progress is accurately monitored

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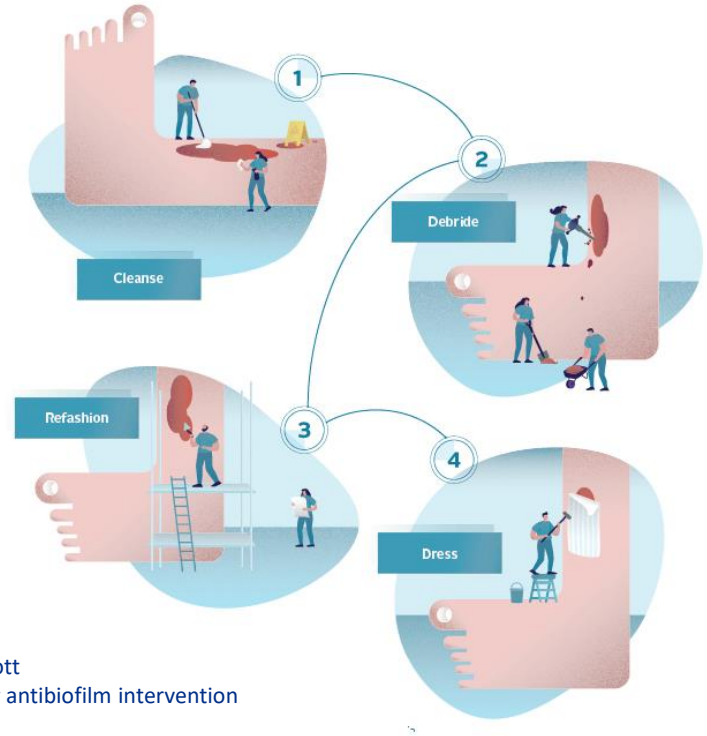
The benefits of good wound hygiene

The importance of good wound hygiene

Be sure in four

You can give every wound the best chance of healing with four simple steps.



Step 1 Skin & wound cleansing

Step 2 Debridement

Step 3 Refashioning of wound edges

Step 4 Dressing the wound

Murphy C, Atkin L, Swanson T, Tachi M, Tan YK, Vega de Ceniga M, Weir D, Wolcott R. International consensus document. Defying hard-to-heal wounds with an early antibiofilm intervention strategy: wound hygiene. J Wound Care 2020; 29(Suppl 3b):S1–28.

http://woundhygiene.com/useful-resources/

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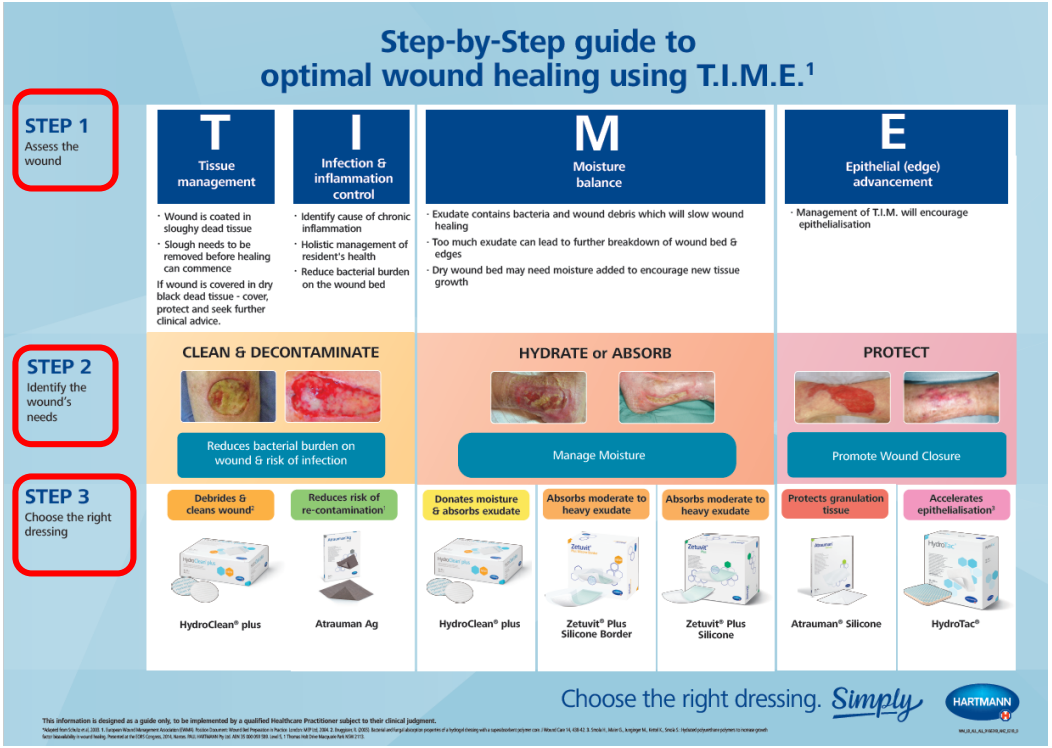
Beaches not Cliffs

Poll Question

Treatment Options

Introducing

Simply



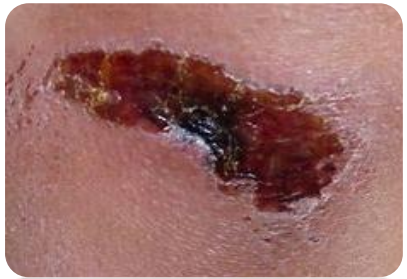
Evidence based approach to simplifying wound dressing selection

Simplifying Dressing Selection

- What is your clinical aim?

Clean
Debris and bacteria from wound surface

Absorb
exudate bacteria & debris from the wound



Hydrate
dry wound bed to promote new growth

Protect
while wound is healing

Clinical Action Required

Clean (Debride & kill bacteria)

- Remove debris & old blood
- Remove bacteria and dead tissue
- Remove senescent cells such as MMPs

- **Promote an optimal healing environment**

Types of Debridement

- **Surgical** – performed in the operating theatre or treatment room under aseptic conditions.
- **Sharp** – performed by a medical practitioner, podiatrist or nurse practitioner.
- **Conservative sharp wound debridement (CSWD)** – performed by a RN trained in debridement.
- **Autolytic** – selective debridement, not harmful to granulation or epithelial tissue.
- **Mechanical** – appropriate for extensive tissue necrosis e.g. hydrotherapy, whirlpool.
- **Low frequency ultrasound** – fast efficient and has a bactericidal effect.
- **Chemical debridement** – bactericidal and bacteriostatic agents but may be cytotoxic to healthy cells in the wound.
- **Larval** – fast and efficient but not always acceptable by patient

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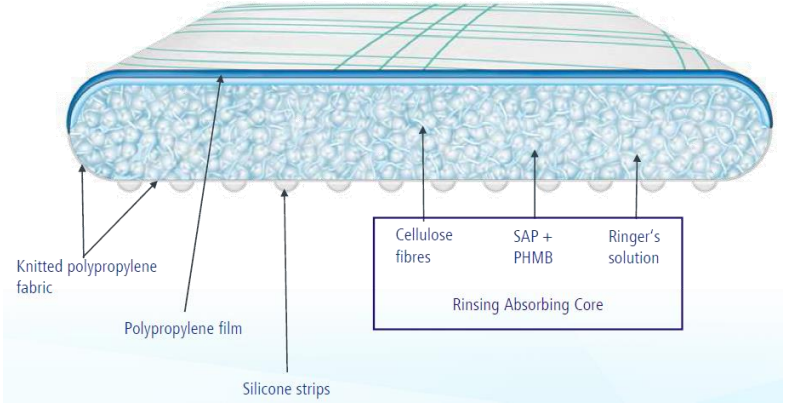
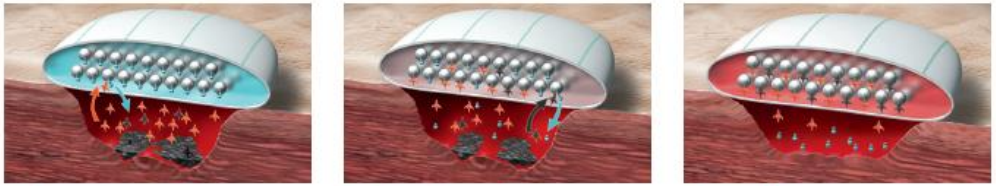
HydroClean® plus:
Your first-choice dressing to debride all wounds

CLEANSES, DEBRIDES AND ABSORBS





1. Cleanses
Cleanses fibrin and necrotic tissue effectively by its rinsing-absorbing action[1,2]

2. Debrides
Aborbs exudate and binds bacteria and proteins that inhibit wound healing[1,3]

3. Stimulates
Stimulates the formation of granulation tissue quicker than other dressings[2,4]

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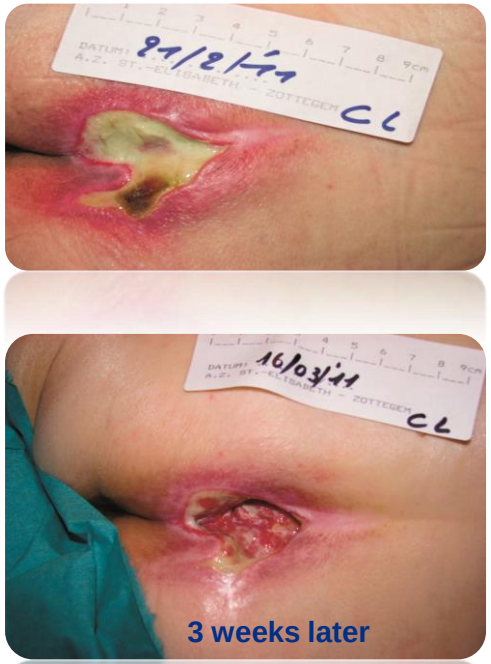
This is the result of debridement

Wound A

Wound B



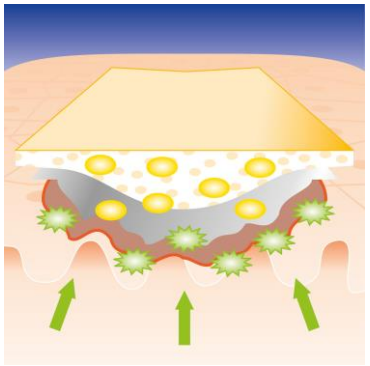
HydroClean® plus application

Low exudate

High exudate

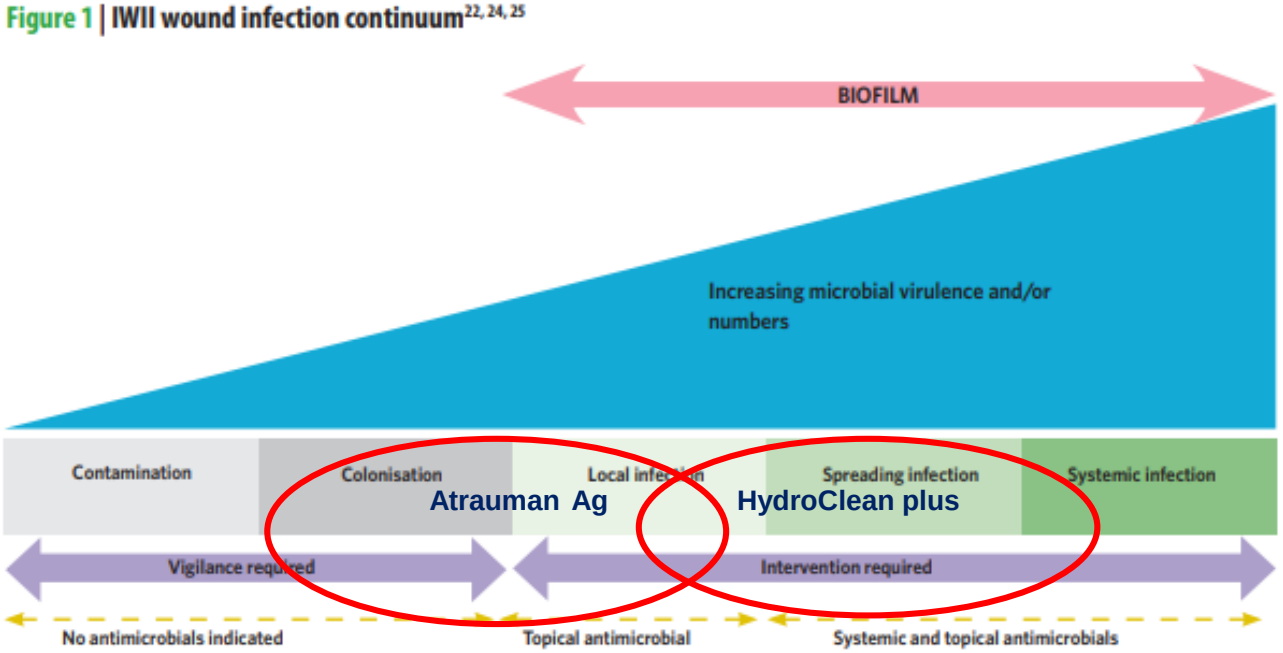
Inflammation or bacterial burden

- ✓ **Atrauman Ag** is a silver impregnated low adherent tulle dressing.
- ✓ The silver kills bacteria contained within the exudate as it comes in contact with the dressing.
- ✓ For wounds with spreading infection antibiotic therapy is recommended



Wounds suitable for Atrauman Ag

The wound infection continuum



International Wound Infection Institute(IWII) Wound infection in clinical practice.Wounds International 2016

Clinical Action Required

Absorb or Hydrate

- Excess toxic exudate needs to be removed
- A dry wound bed needs to be rehydrated
- **Promote an optimal healing environment**

Absorb or Hydrate

Absorb the toxic exudate away from the wound and up into the dressing

Zetuvit plus contains super absorbent polymers to manage large amounts of exudate.
Excellent for heavily oozing wounds

Hydrate a dry wound bed with the donation of moisture to the wound bed using **HydroClean plus**

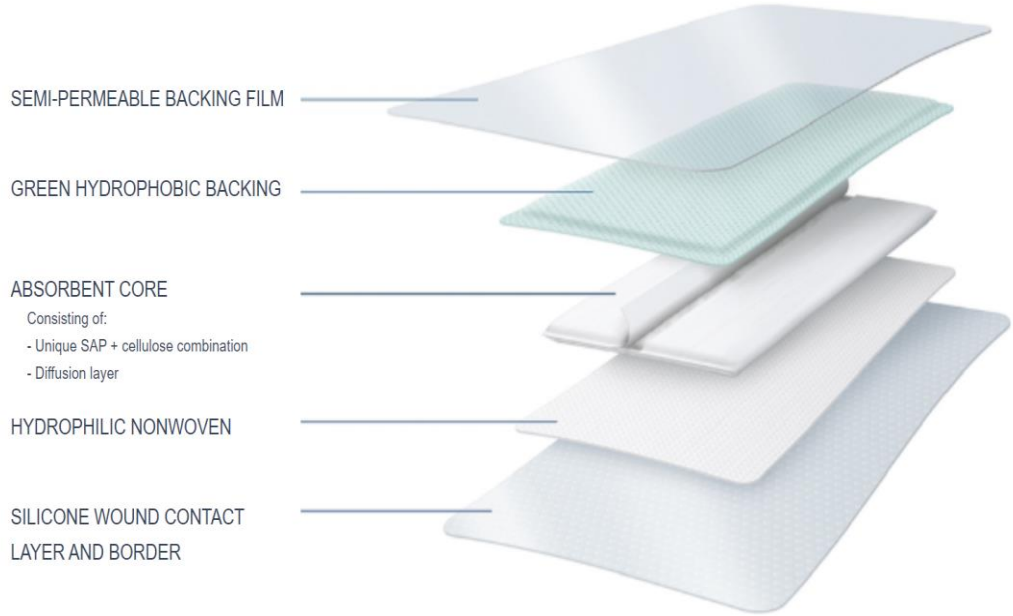
Zetuvit Plus Silicone Border

NEW

Effective

Versatile

Patient-Friendly



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Zetuvit plus Silicone Border

NEW

- Provides peace of mind between dressing changes
- Provides protection for peri wound skin
- Provides optimal moisture management to allow for improved healing outcomes
- Improves patients quality of life by managing exudate and reducing odour

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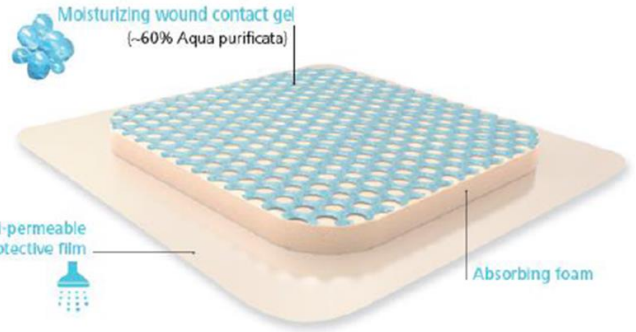
Clinical Action Required: Protection

Protection

- Delicate new granulation tissue needs protection to grow
- Protection against bacterial contamination
- Protection against damage from day to day living
- **Promote an optimal healing environment**

HydroTac® & HydroTac® Comfort

Hydroactive wound dressing for **absorbing** and **moisturizing** to accelerate wound healing.



Poll Question

In Summary

Wound management can be complex.
By taking a few simple steps this complexity can be reduced:

- **Step 1** Conduct a thorough systemic & local assessment to understand the needs of the patient and their wound.
- **Step 2** Address the identified issues, put together a treatment plan and discuss the plan with your patient & their family. Document your findings accurately
- **Step 3** Practice wound hygiene at every dressing change. Select a suitable dressing to meet the identified needs of the wound
- **Step 4** Review & reassess regularly to ensure progress is in the right direction

If you would like a Primary Care Sample Pack please email...

primarycare.enquiries@hartmann.info

Are there any questions?

References

- Frykberg,R.;Banks,J; Challenges in the Treatment of Chronic Wounds.Advances in Wound Care 2015 Sep1; 4(9): 560-582.
- Schultz GS, Sibbald RG, Falanga V, Ayello EA,Dowsett C, Harding K, Romanelli M, Stacey MC,Teot L, Vanscheidt W. Wound bed preparation:a systematic approach to wound management.Wound Rep Regen 2003;S11:1–28.
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