

**29 FEBRUARY 2024 7:30**

**CAVITY WOUNDS  
UNPLUGGED:  
PROMOTING  
EFFECTIVE HEALING**

**PROFESSOR  
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# CAVITY WOUNDS UNPLUGGED: PROMOTING EFFECTIVE HEALING

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- Fellow Researcher Melbourne University
- Member of the European Pressure Ulcer Advisory Panel (EPUAP)
- EWMA Education Teach the Teachers Project
- Member International Wound Infection Institute (IWII)
- Member of Institute of Skin Integrity and Infection Prevention (ISIIP)
- International Surgical Wounds Complications Advisory Panel (ISWCAP).



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LISBOA · PORTO · VISEU



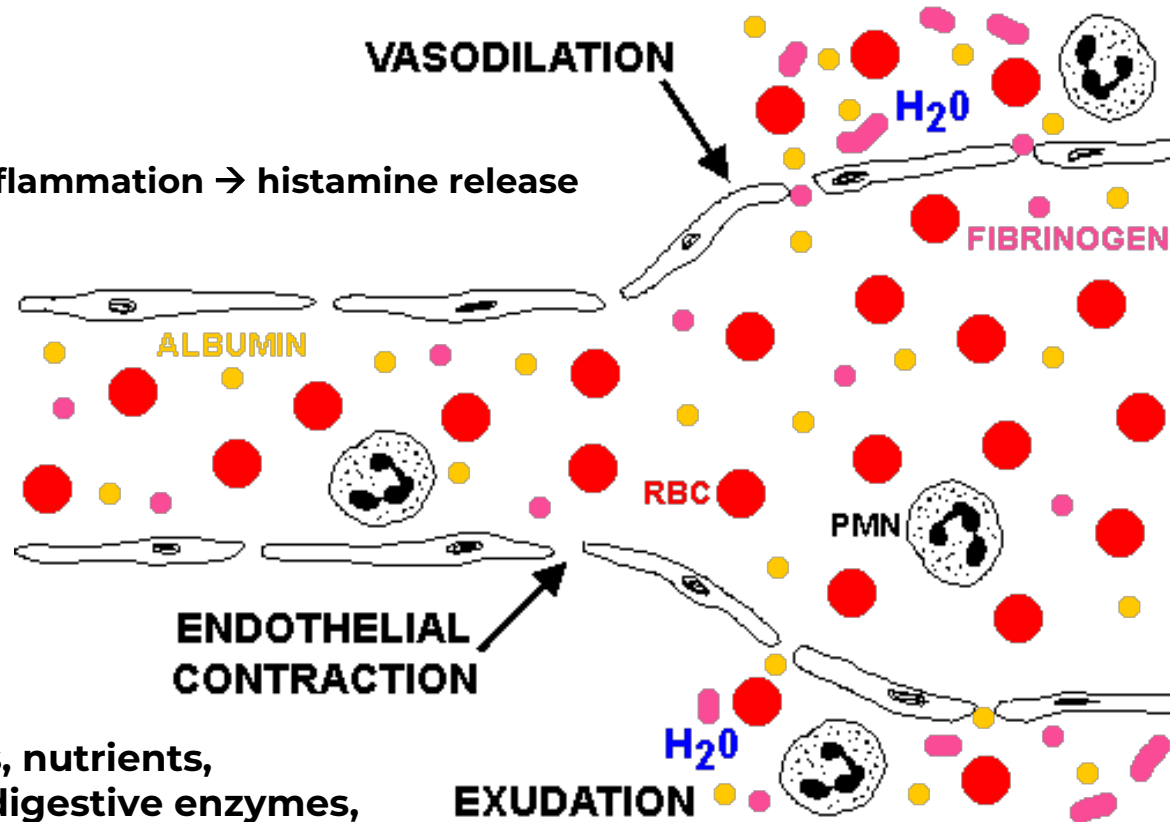
THE UNIVERSITY OF  
MELBOURNE



# EXUDATE IS A SERUM-BASED FLUID FROM THE WOUND

Normal wound healing → inflammation → histamine release

Capillary permeability ↑  
Excess fluid enters the wound bed (= exudate) and is reabsorbed



Exudate contains proteins, nutrients, inflammatory mediators, digestive enzymes, growth factors, waste products, cells (e.g. neutrophils, macrophages), platelets.

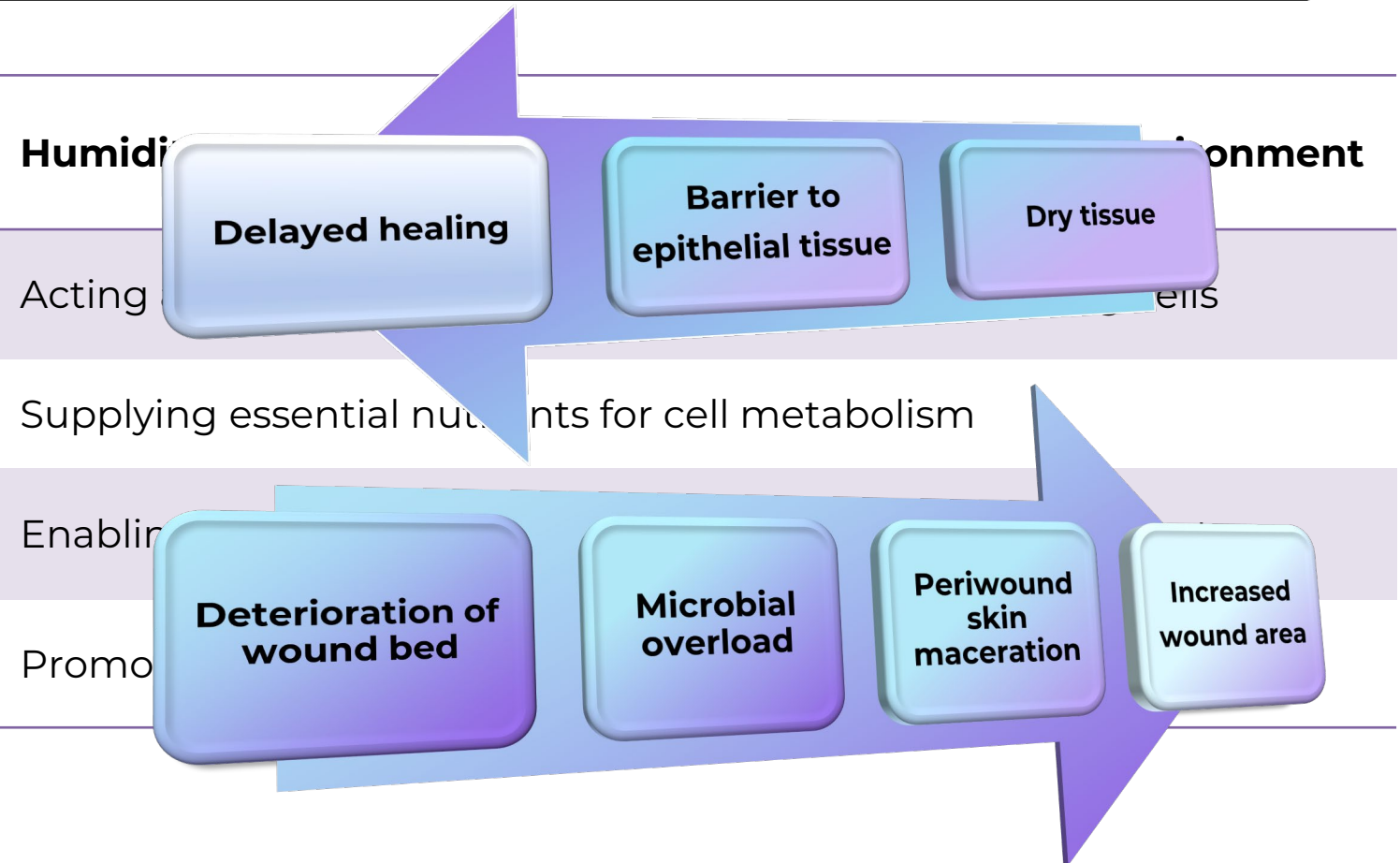
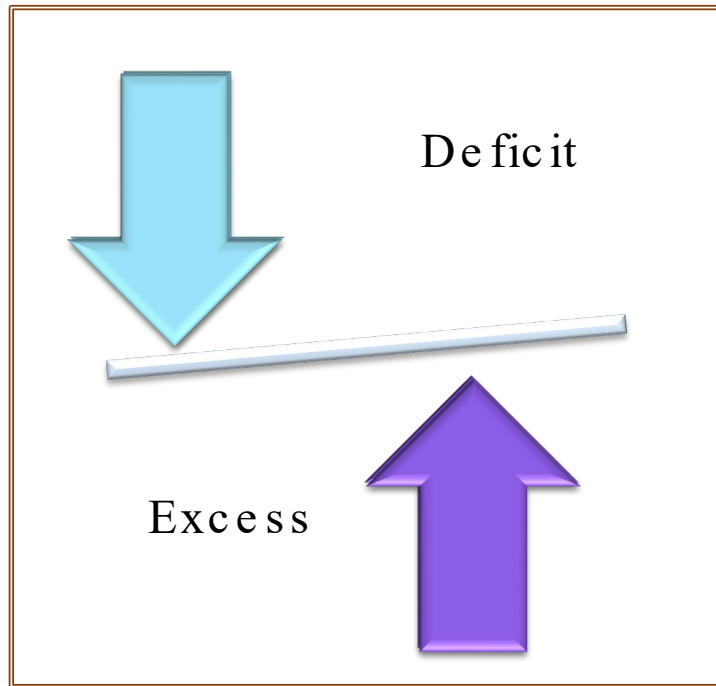
Fluid reabsorbed



Excess fluid released (exudate)



# NEGATIVE EFFECTS OF EXUDATE (DEFICIT OR EXCESS)



(Bishop et al, 2003; Cutting, 2003; WUWHS, 2007; Romanelli et al, 2010; Benbow and Stevens, 2010; Moore and Strapp, 2015; WUWHS, 2019)



The presence of excess exudate not only affects the clinical outcome of the wound (e.g. delay in healing, infection), but it can also negatively impact patients in terms of discomfort and pain, leakage, malodour, increased frequency of dressing changes and soiling of clothes.

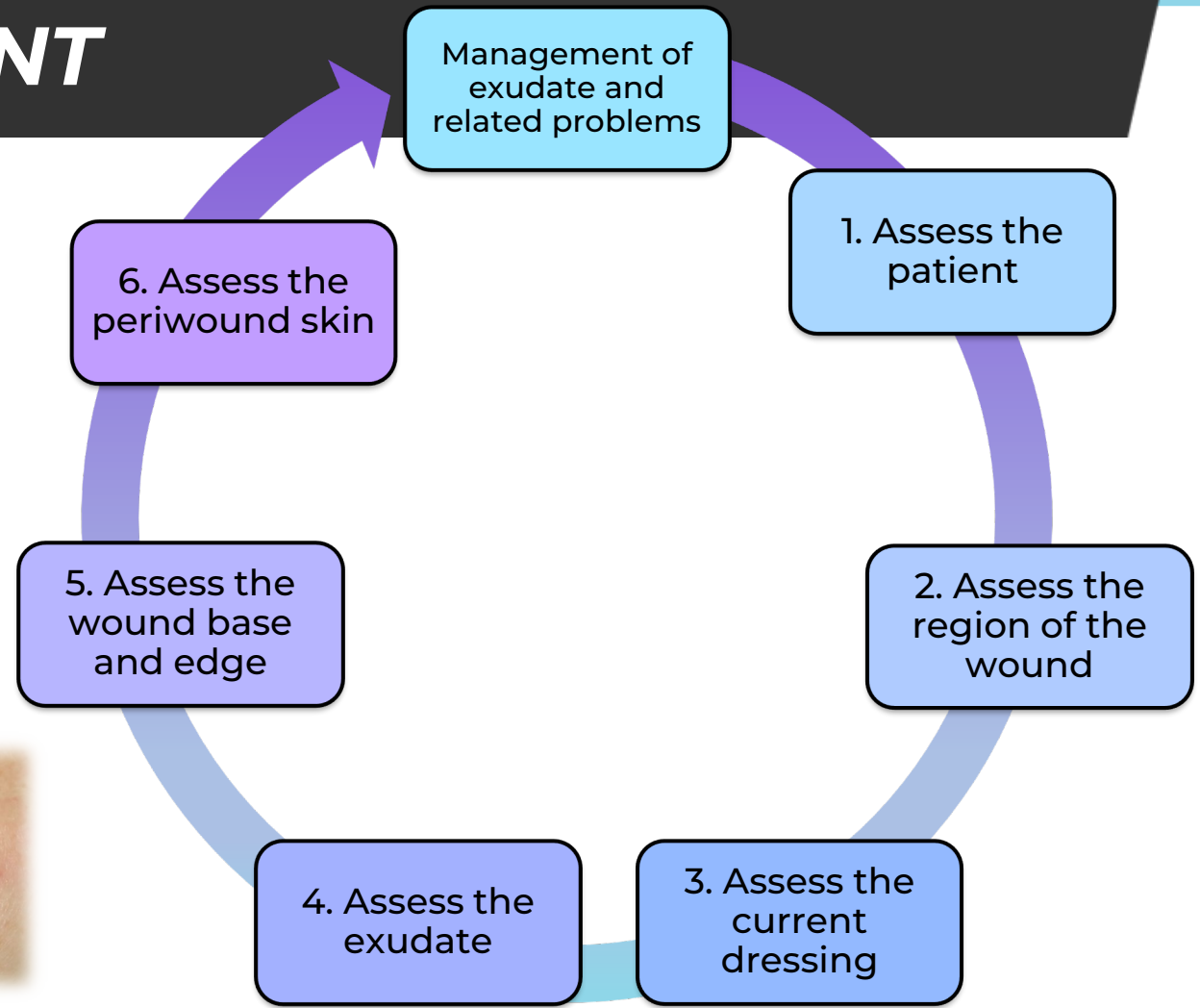




SHOT ON MI 8  
AI DUAL CAMERA



# CLINICAL PROBLEMS EXUDATE MANAGEMENT



(Bishop et al, 2003; Cutting, 2003; WUWHS, 2007; Romanelli et al, 2010; Benbow and Stevens, 2010; Moore and Strapp, 2015; WUWHS, 2019)

# ASSESS THE PATIENT



(WUWHS, 2019)

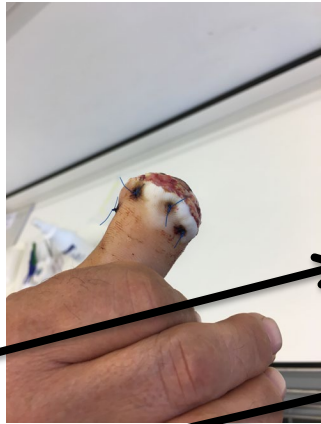
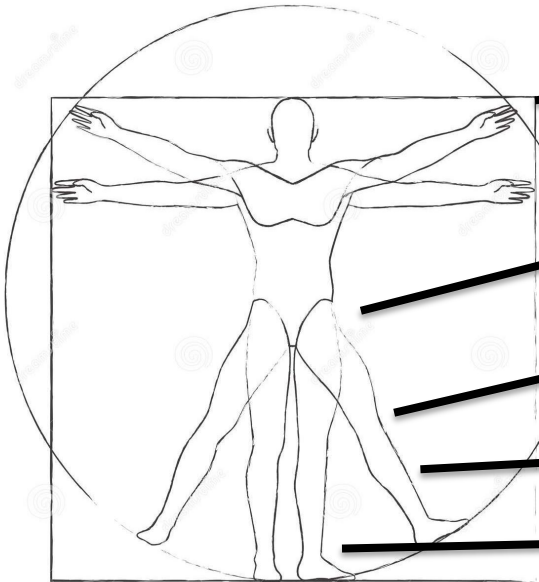
Increased exudate production	Decreased exudate production
<ul style="list-style-type: none"> <li>• Congestive cardiac, renal or hepatic failure</li> <li>• Infection/inflammation</li> <li>• Endocrine disease</li> <li>• Obesity</li> <li>• Fluid overload during intravenous therapy</li> <li>• Malnutrition</li> <li>• Increased age</li> <li>• Low serum albumin levels</li> <li>• Raised C-reactive protein (CRP)</li> </ul>	<ul style="list-style-type: none"> <li>• Dehydration</li> <li>• Hypovolemic shock</li> <li>• Microangiopathy</li> </ul>
<ul style="list-style-type: none"> <li>• Systemic medication – e.g. calcium channel blockers, non-steroidal anti-inflammatory drugs (NSAIDs), steroids, glitazones</li> </ul>	
<ul style="list-style-type: none"> <li>• Reduced willingness or ability of the patient to co-operate with pharmacological or non-pharmacological treatment</li> </ul>	

Superficial

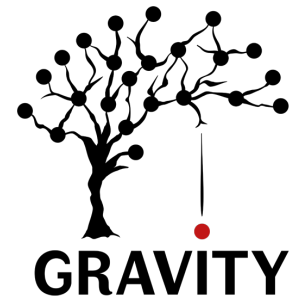
Cavity

# ASSESS THE REGION OF THE WOUND

- Local disease/other skin conditions
- Wound position



The dressing should absorb in the area of the wound bed, sealing the contact with the surrounding skin, reducing the risk of maceration.



# ***ASSESSMENT***

- Assess the region of the wound
- Assess the current dressing
- Assess the exudate
- Assess the wound base and edge
- Assess the periwound skin.



# Exudate varies in viscosity and can be watery or sticky

Composition if the exudate is abnormal

Amount of exudate: excessive or insufficient

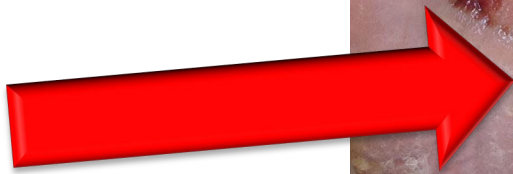
Types of exudate		
Type	Consistency	Clinical significance
Serous	Thin, watery	Often considered normal, but increased volume may indicate infection
Fibrinous	Thin, watery	May indicate presence of fibrin strands
Serosanguinous	Thin, slightly thicker than watery	Presence of red blood cells indicates capillary damage
Sanguineous	Thin, watery	Low-protein content due to venous or congestive cardiac disease, malnutrition
Purulent	Viscous, sticky	Presence of wound white cells, bacteria, slough or bacterial infection
Hemopurulent	Viscous	Bacterial infection
Hemorrhagic	Viscous	Bacterial infection/ Capillary damage indicative of trauma

(Vowden et al, 2015)

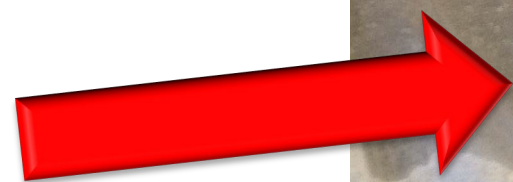


## Viscosity

GRAVITY



VISCOSITY







# ***INFECTION?***



# ***CAVITY WOUNDS?***



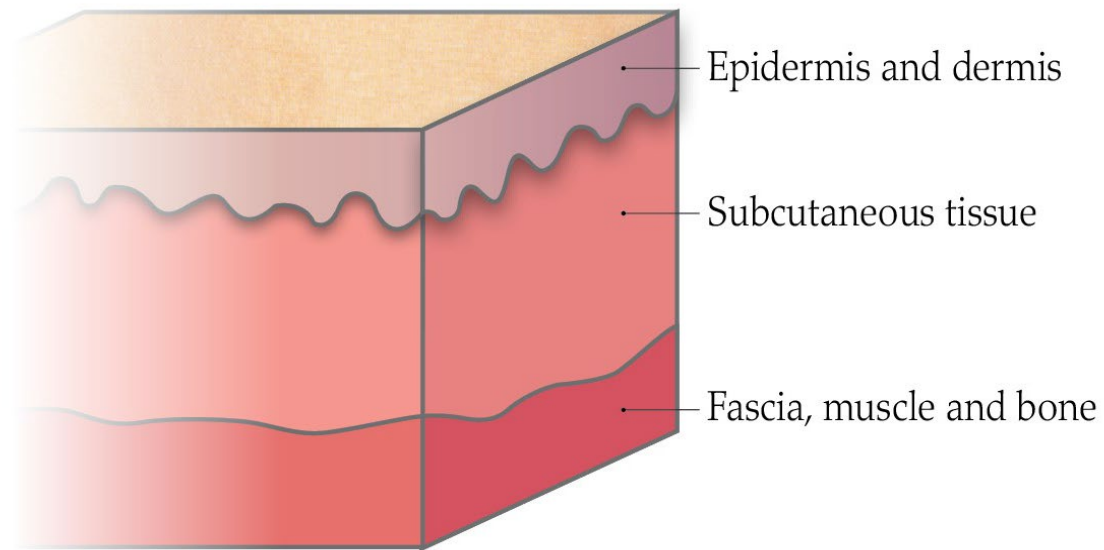
WOUND CARE TODAY



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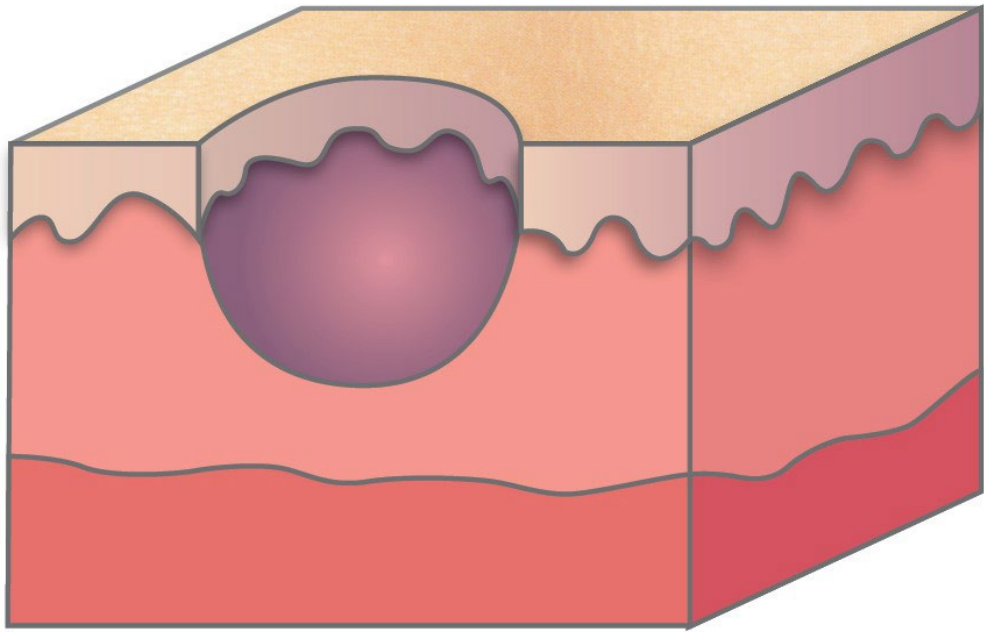
# DEFINING CAVITY WOUNDS

Know the wound: each cavity tells a different story.



(Tickle, 2020)

# REGULAR-SHAPED CAVITY

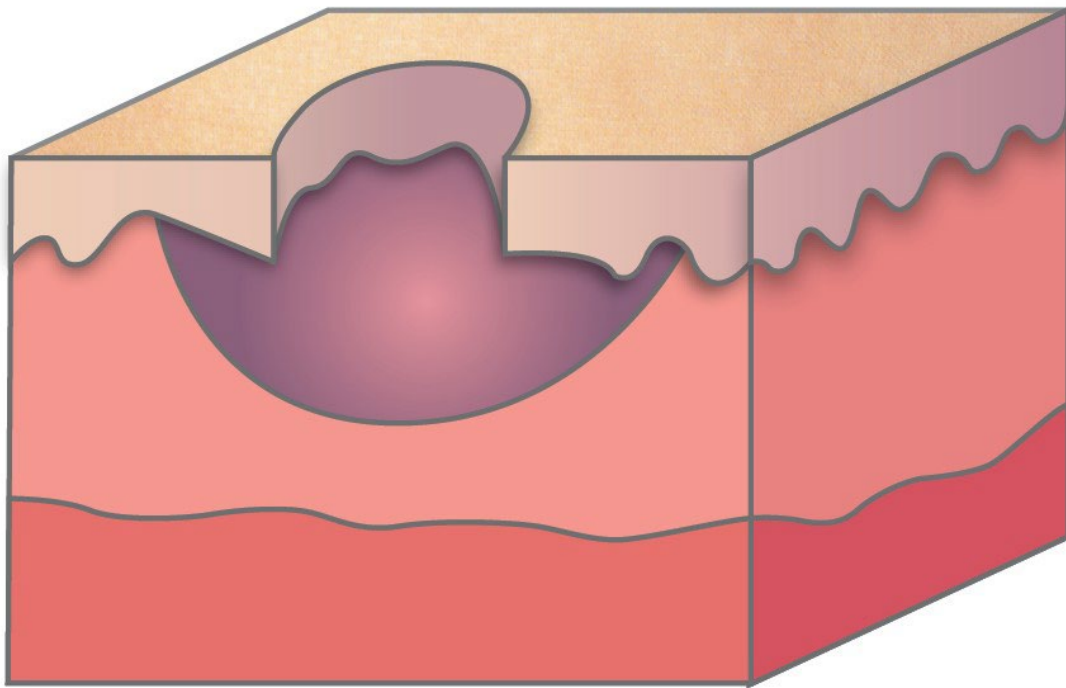


A regular-shaped cavity, with uniform shape and sloping sides.

(Tickle, 2020)



# CAVITY WITH UNDERMINING



Tissue destruction underneath intact skin around the wound margins.

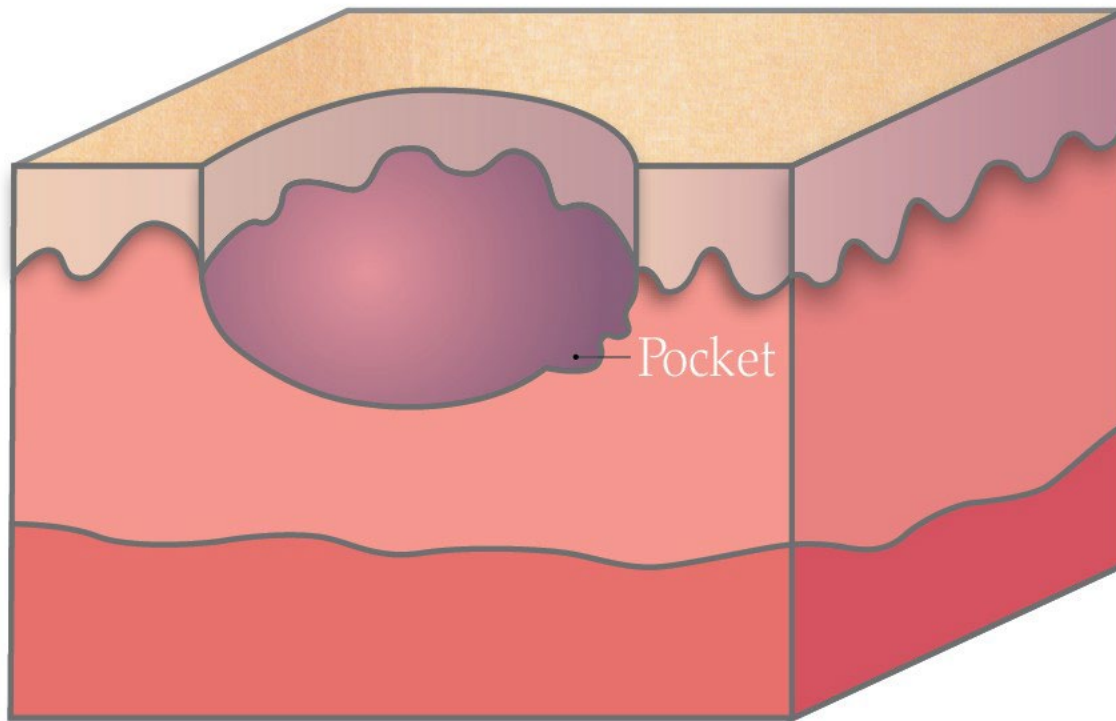








# TUNNELLING AND POCKETING



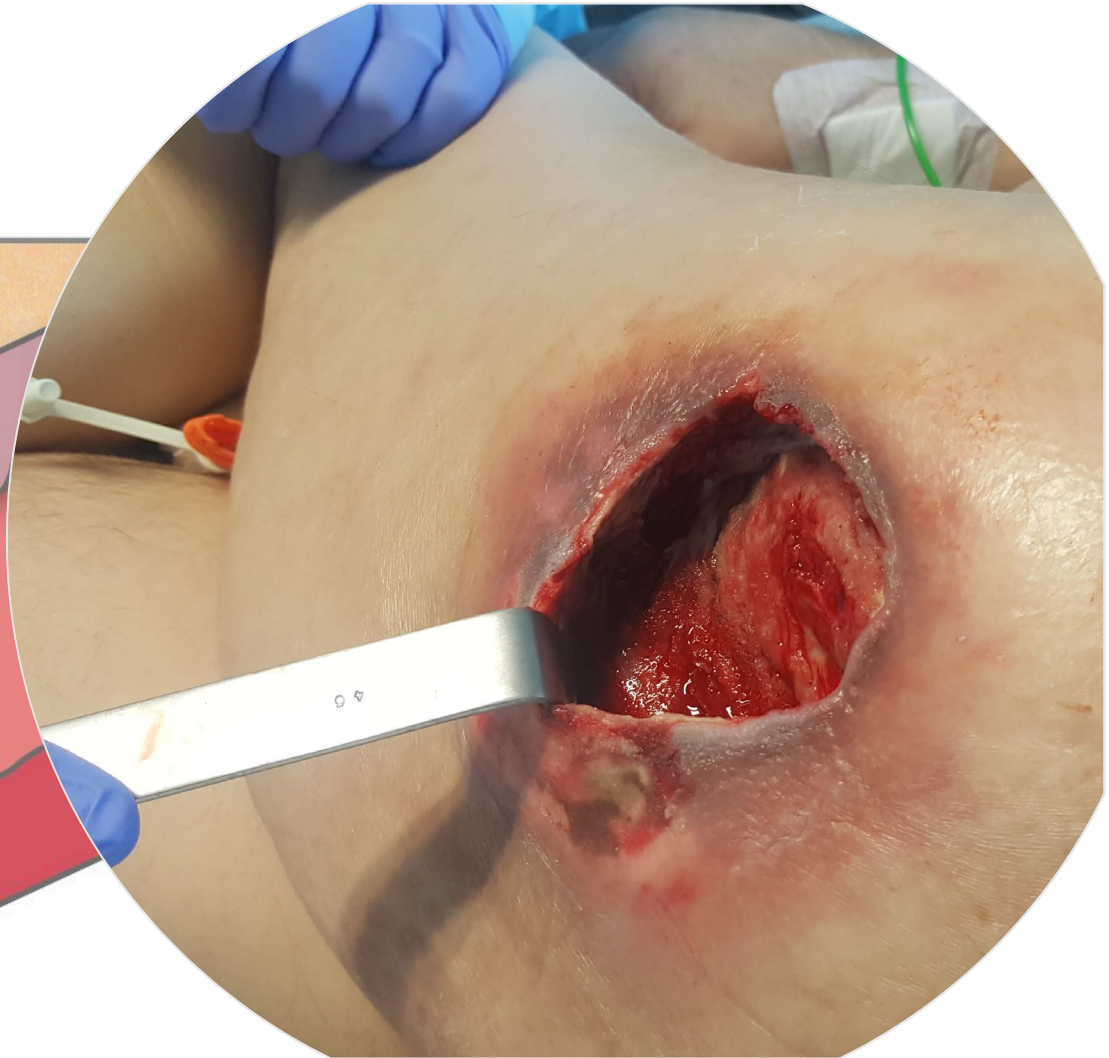
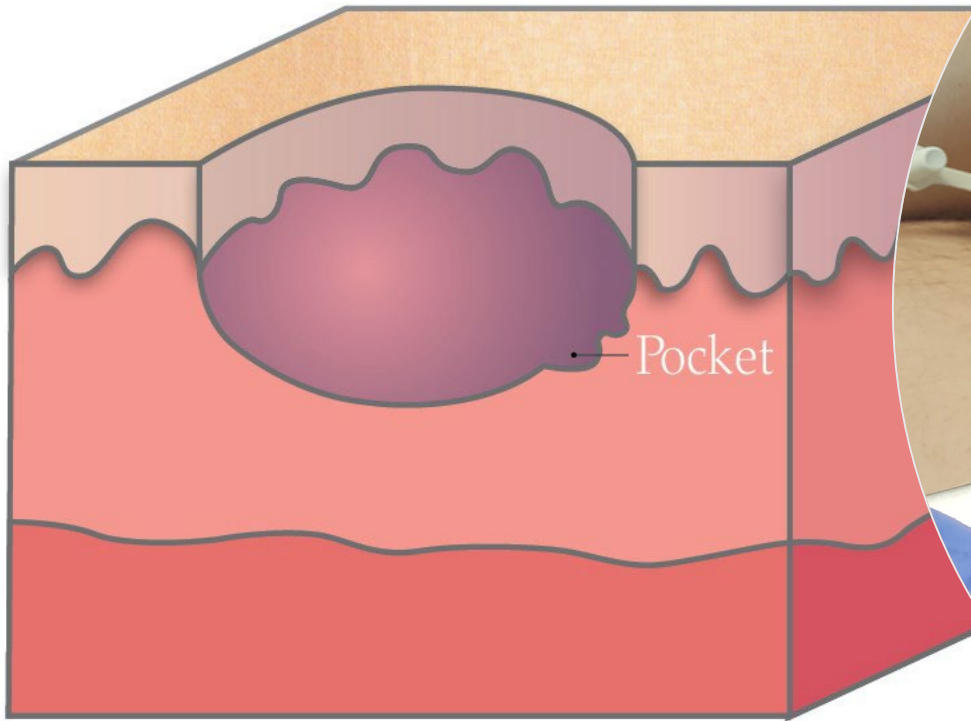
## **Cavity with a tunnel**

(a pathway extending from the cavity).

## **Cavity with a pocket**

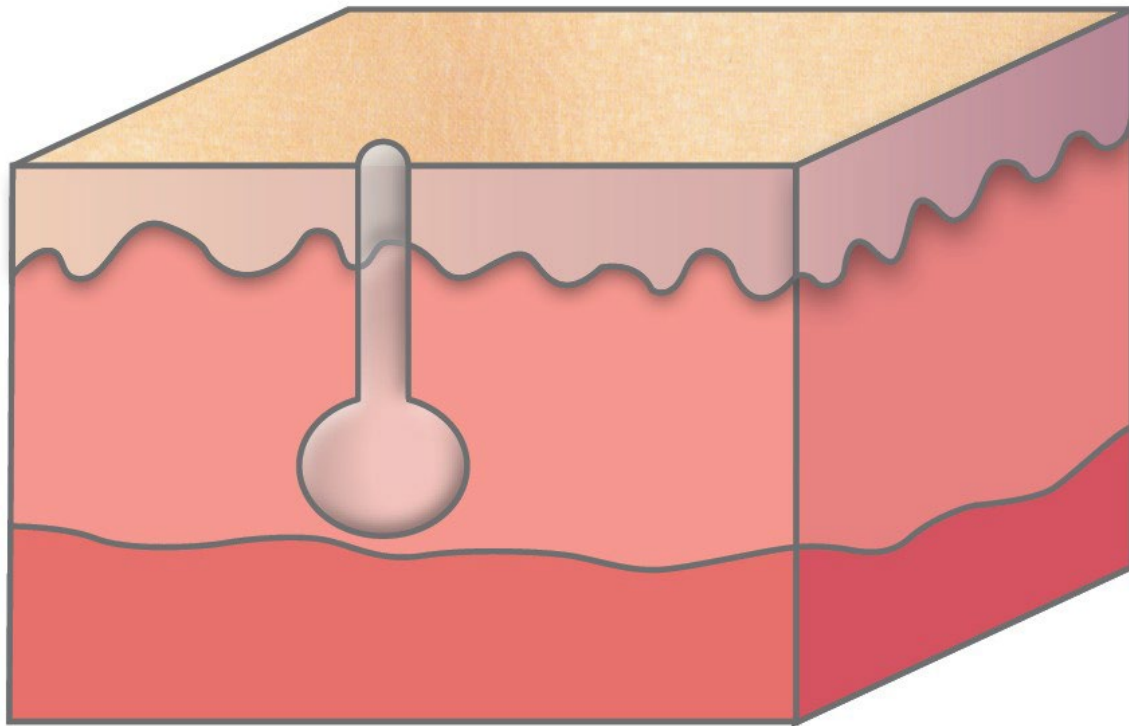
(an area of dead space).

(Tickle, 2020)



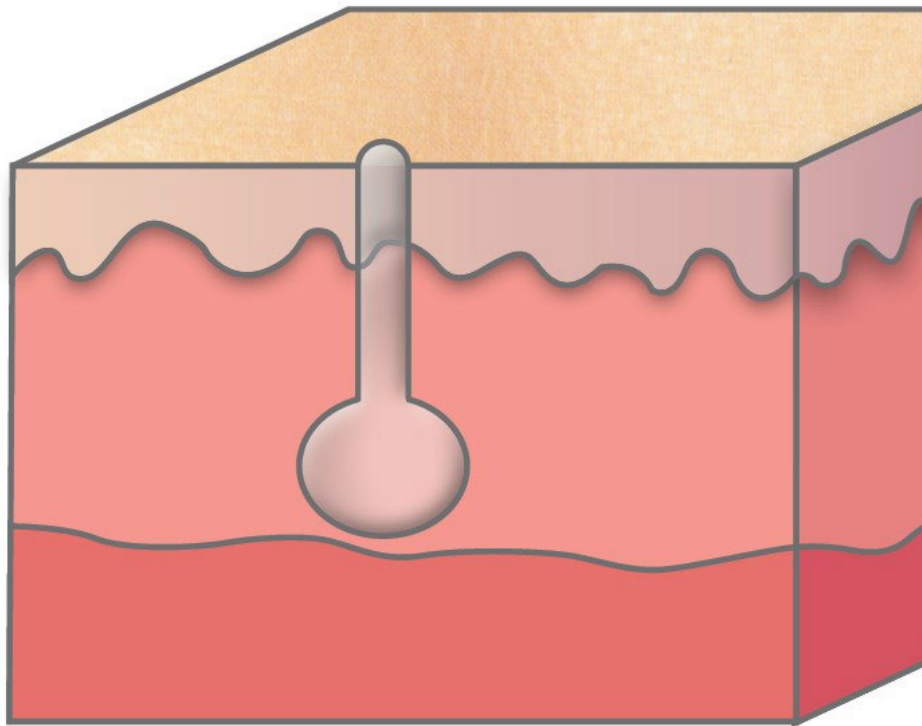


# SINUS

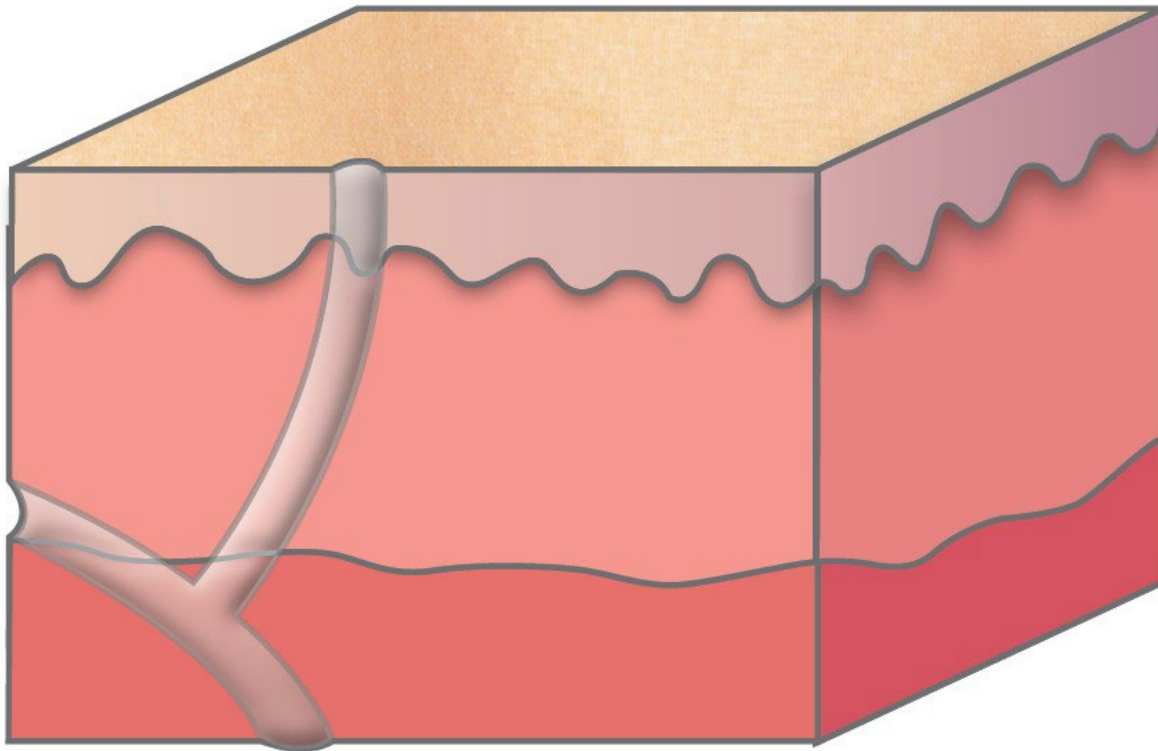


A blind-ended tunnel leading to a cavity which commonly contains a collection of infected matter.



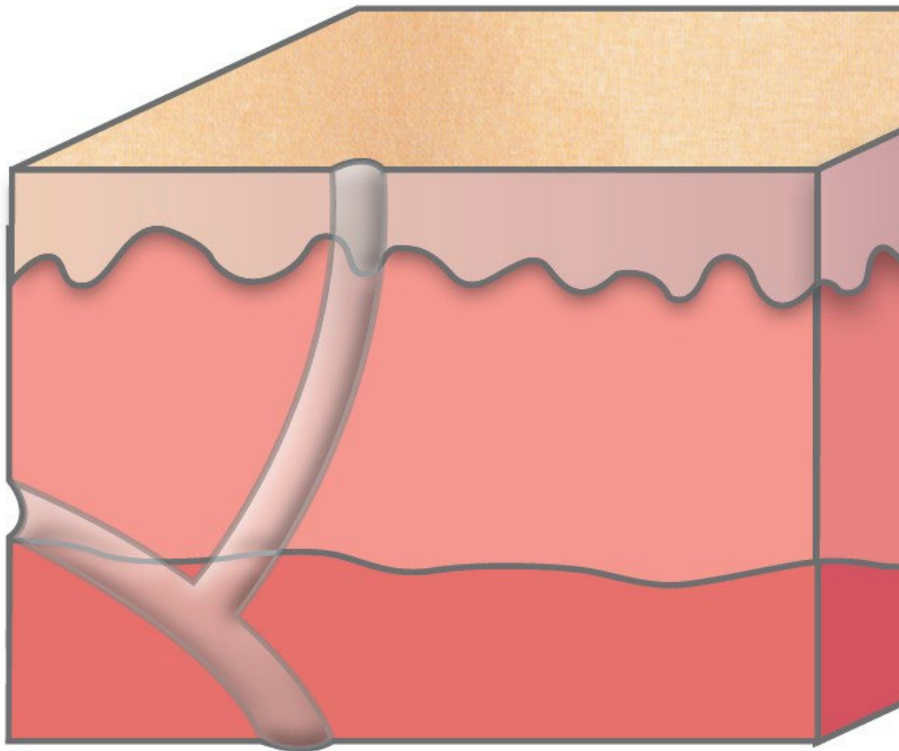


# FISTULA

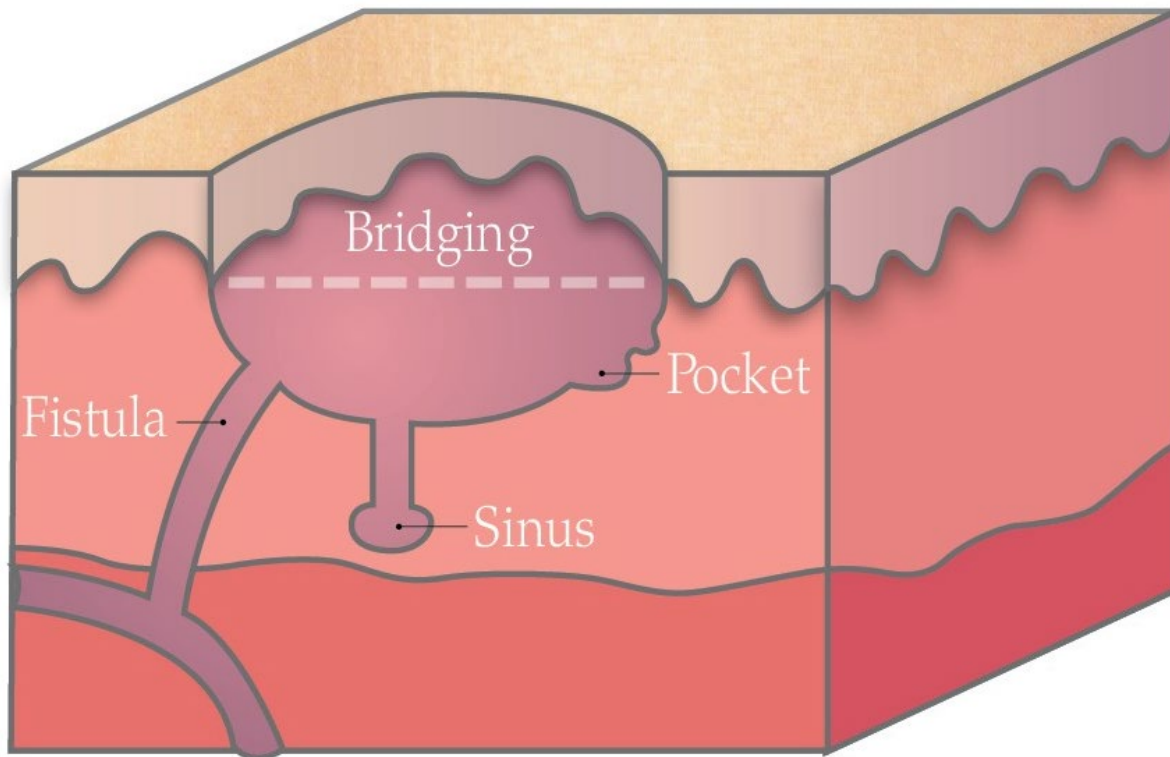


An abnormal tunnel connecting two organs or an organ to the skin.

(Tickle, 2020)



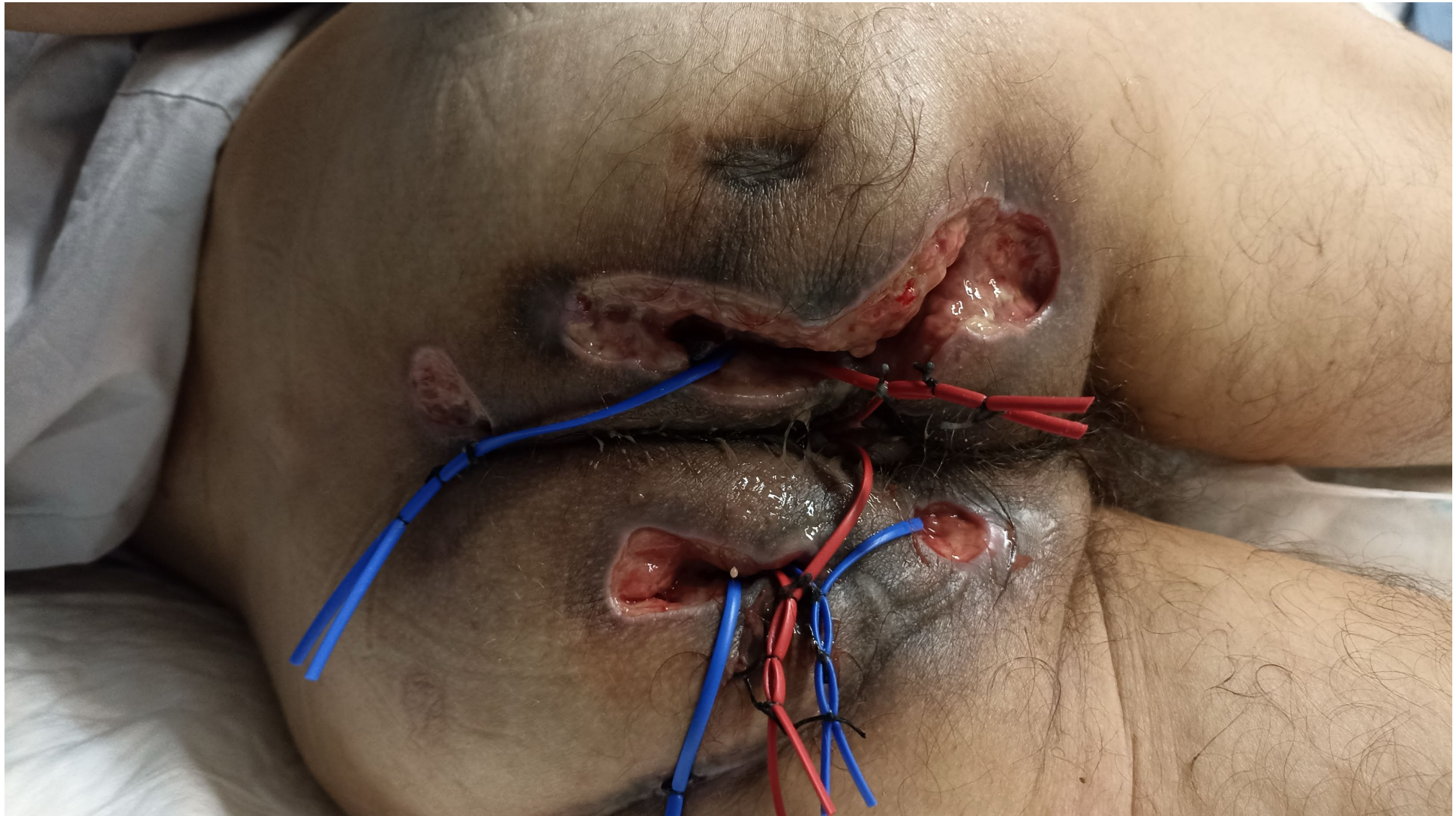
# BRIDGING



A cavity wound with tissue that bridges one side of the cavity to another.

(Tickle, 2020)





# CHALLENGES



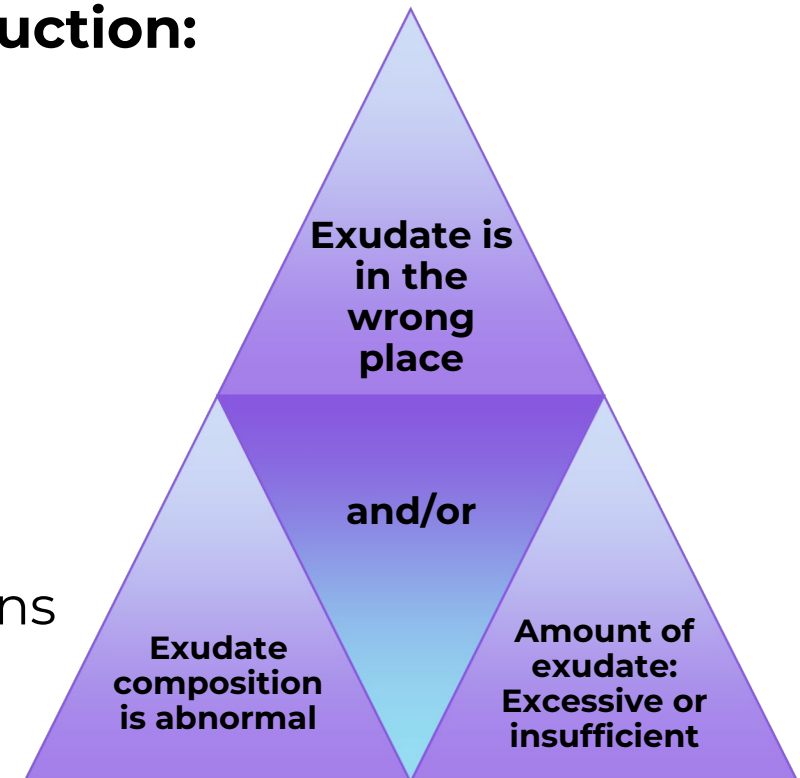
# CHALLENGES



# CLINICAL PROBLEMS WITH EXUDATE MANAGEMENT

## Problems associated with excessive exudate production:

- Leakage and soiling
- Discomfort/pain
- Psychosocial effects
- Increased risk of infection
- Malodour
- Frequent dressing changes
- Protein loss and fluid/electrolyte imbalance
- Periwound skin damage, e.g. maceration and erosions
- Wound expansion.

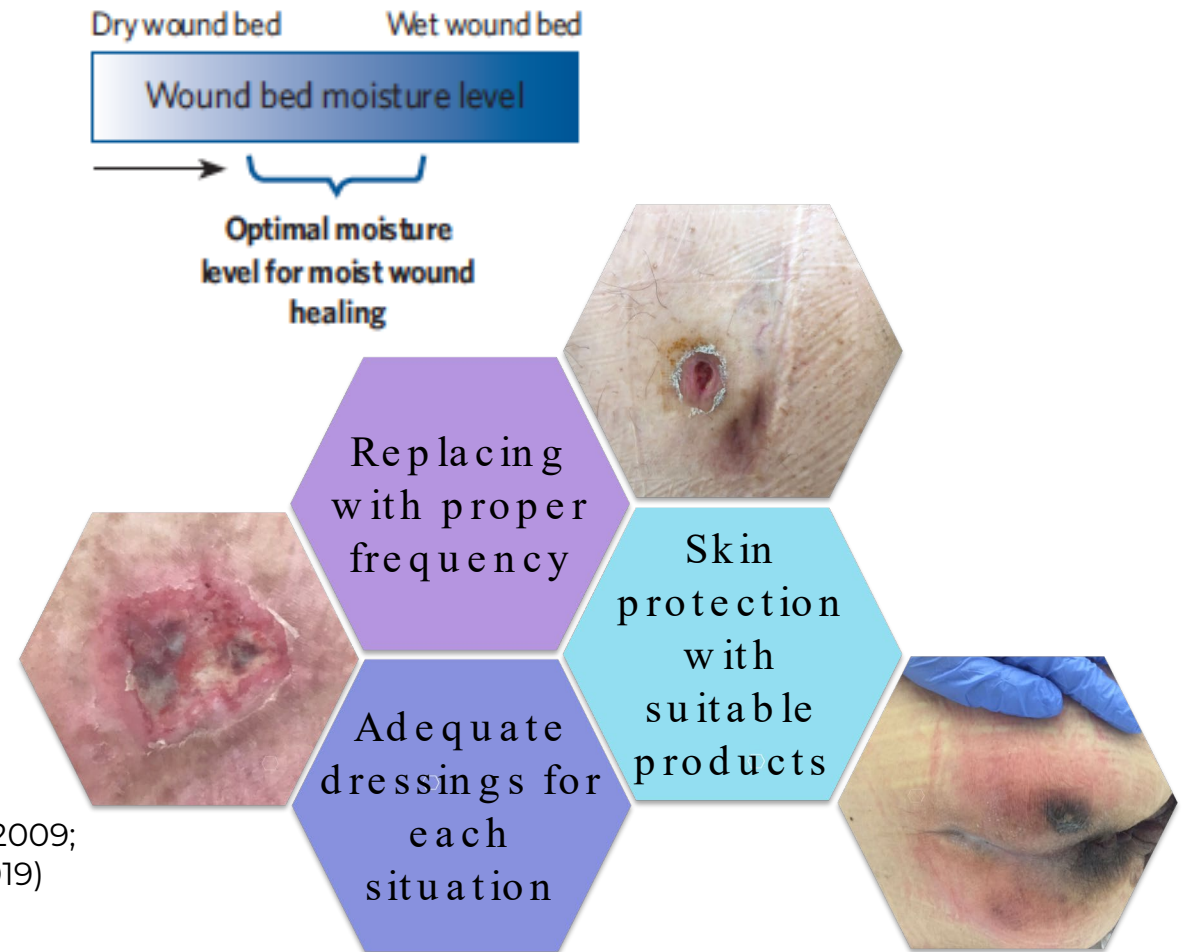


(Bishop et al, 2003; Cutting, 2003; WUWHS, 2007; Romanelli et al, 2010; Benbow and Stevens, 2010; Moore and Strapp, 2015; WUWHS, 2019)

# EVALUATING EFFECTIVENESS OF OUR MOISTURE MANAGEMENT

- Available in a range of shapes and sizes across care settings
- Easy to apply
- Does not require a secondary dressing
- Comfortable/reduces pain/does not cause pain on application
- Conformable
- Prevents leakage and strikethrough
- Absorbs odour
- Stays intact and remains in place during wear
- Suitable for extended wear\*
- Suitable fluid-handling capacity as per level of exudate
- Retains fluid-handling capacity under compression therapy or when used with an offloading device
- Atraumatic and retains integrity on removal
- Unlikely to cause sensitisation or to provoke an allergic reaction
- Cosmetically acceptable and available in a range of colours to match the patient's request
- Does not impede physical activity
- Patient can shower with the dressing in situ
- Incorporates sensors/alerts to feedback on dressing performance, need for change and wound condition
- Inactivates factors that enhance inflammation (i.e. MMPs)
- Cost-effective - considering factors such as the unit cost of dressing versus time taken to change, the potential impact on healing by use of cheaper dressings, how to make the case to procurement

(Bishop et al, 2003; Cutting, 2003; WUWHS, 2007; Romanelli et al, 2009; Benbow and Stevens, 2010; Moore and Strapp, 2015; WUWHS, 2019)



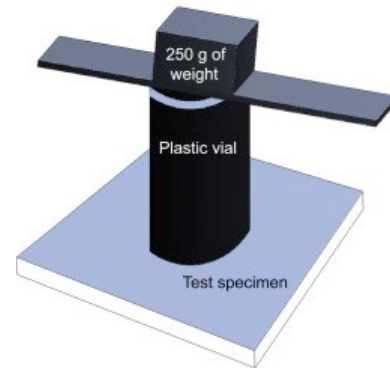
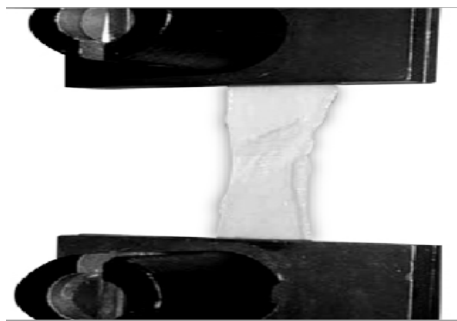
# ***EVALUATING EFFECTIVENESS OF OUR MOISTURE MANAGEMENT***

A good dressing product for exudate management must:

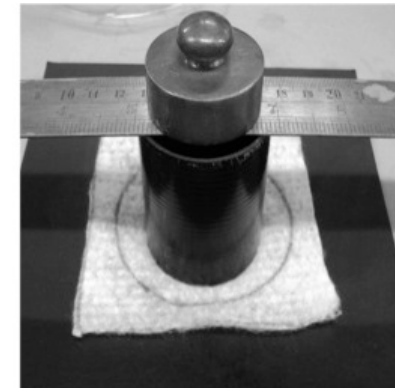
- Always keep the wound-bed moist
- Prevent leakage of excessive exudate to periwound skin or exudate returning to the wound-bed
- Not disintegrate, leave debris in the wound bed, either over time or while changing dressings (Gefen, 2011).

# MATERIAL PROPERTIES

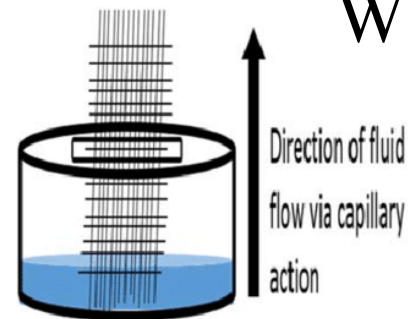
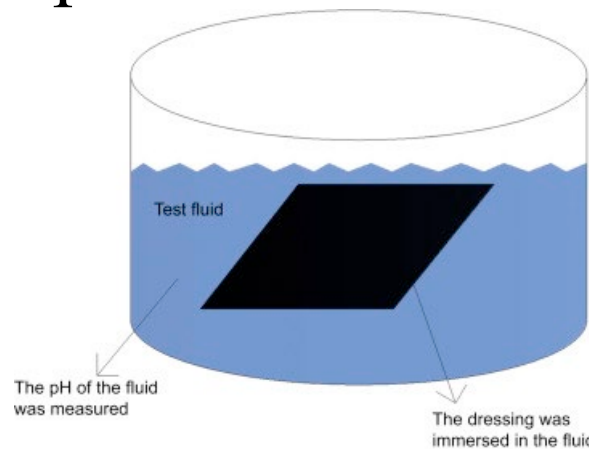
## Dressing strength



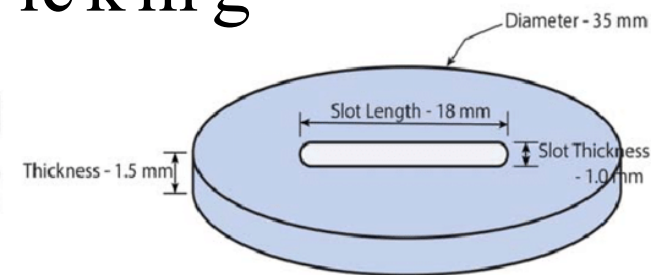
## Retention

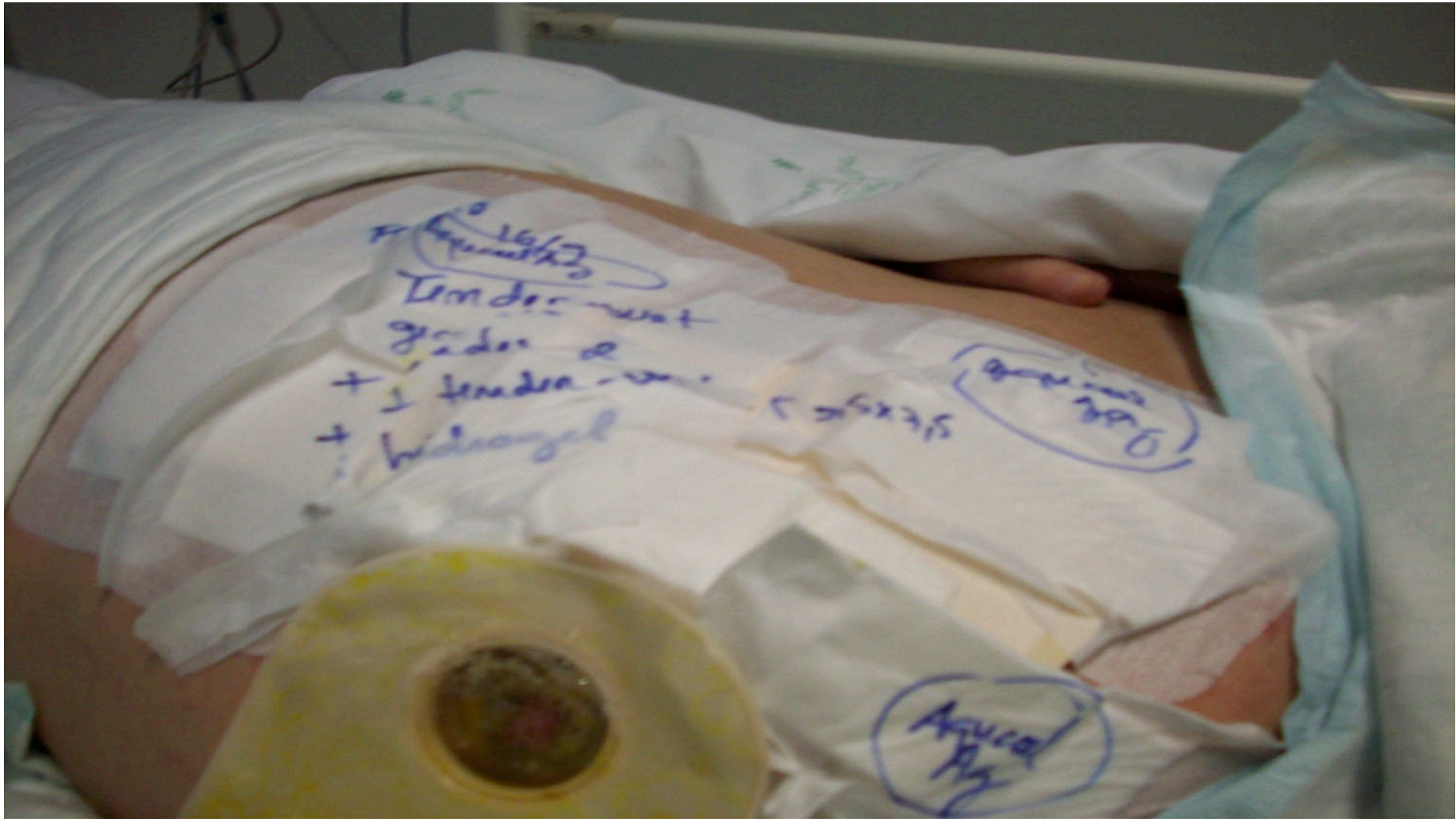


## Absorption



## Wicking



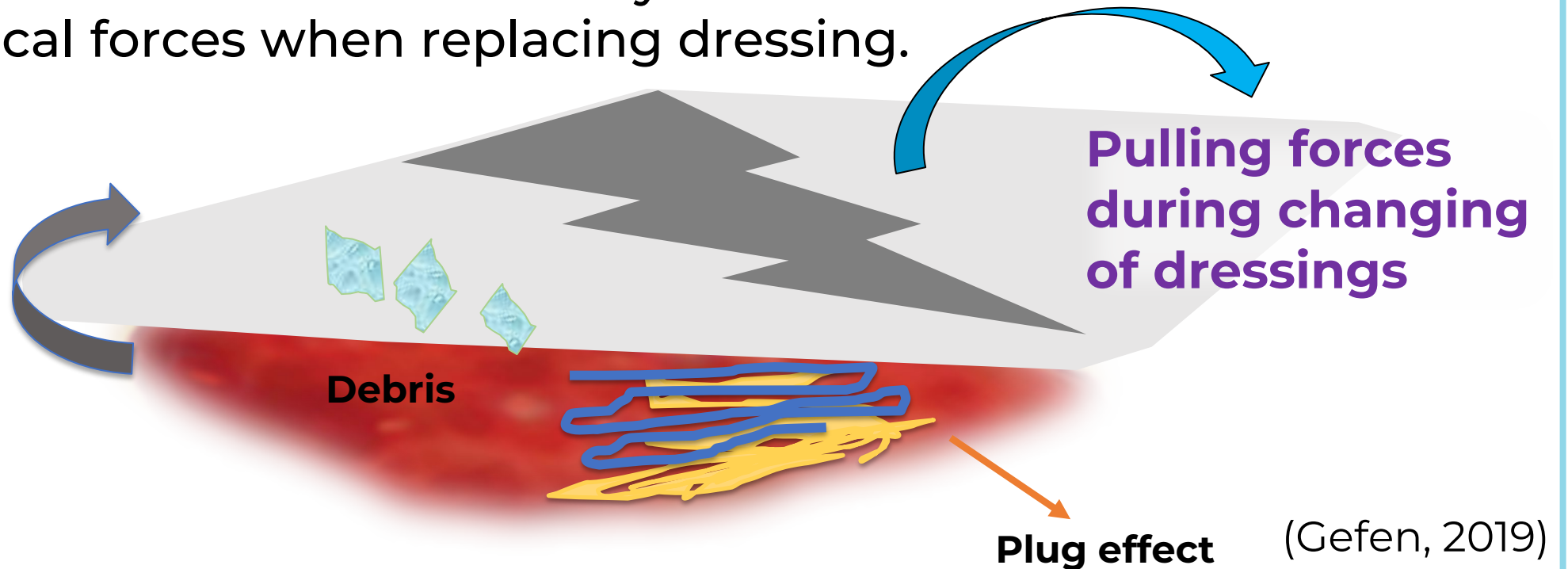




# THE BASIC CHARACTERISTICS

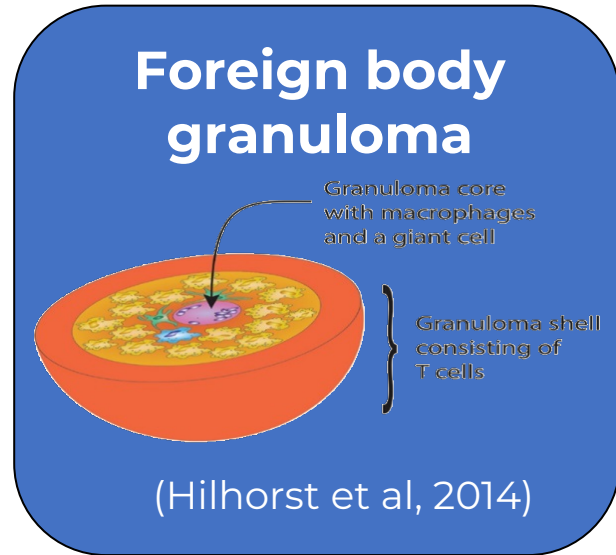
Dressing products may be exposed to:

- aggressive exudate fluids over days
- mechanical forces when replacing dressing.



(Gefen, 2019)

# Dressings should not disintegrate and leave debris in the wound bed

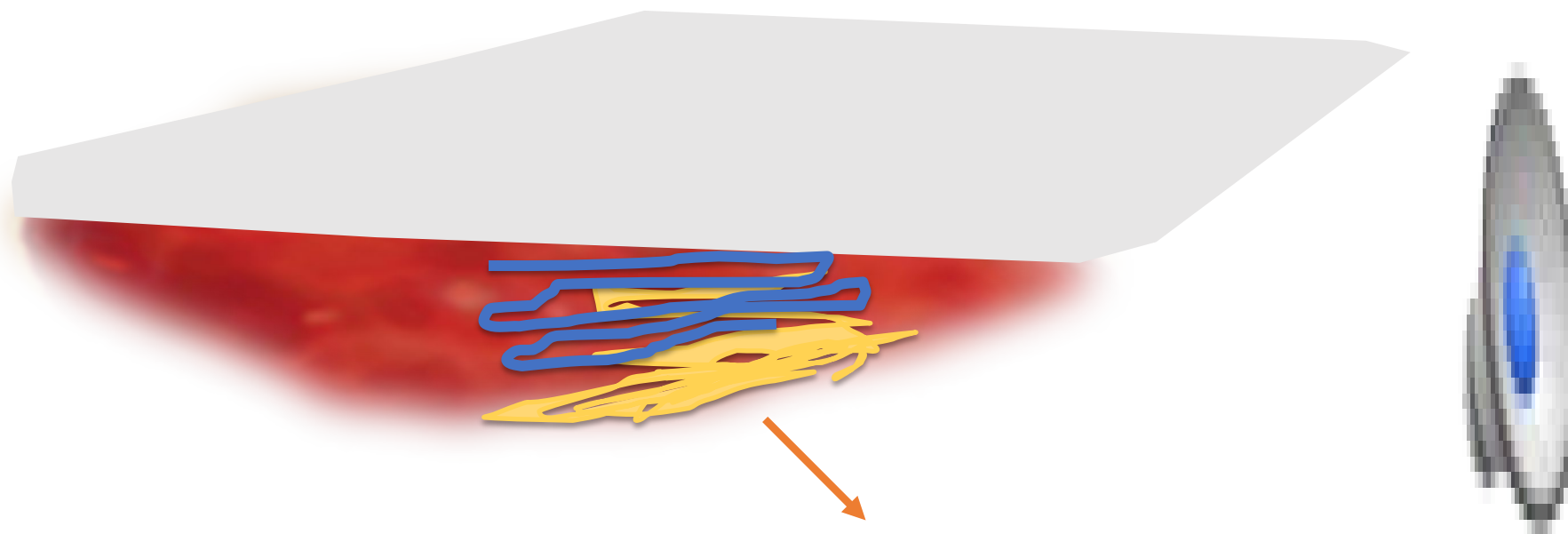


Inflam mation ↑  
Healing capacity ↓





# THE BASIC CHARACTERISTICS



Plug effect



# CASE STUDY

## Sacral pressure ulcer

- 75-year-old patient, independent for activities of daily living
- Sent to the hospital after falling in care home
- One day at the Hospital
- Not tested for COVID-19 and so quarantined for 14 days
- Isolated in a nursing home room (reduced visits – no nurse employed)
- Skin evaluation: performed during hygiene and incontinence pad change
- Pain during movements in bed (fall)
- Long periods in the chair (no support surface)
- After seven days, a registered nurse was called (dark tissue – sacrum)
- Presented as a DTI.



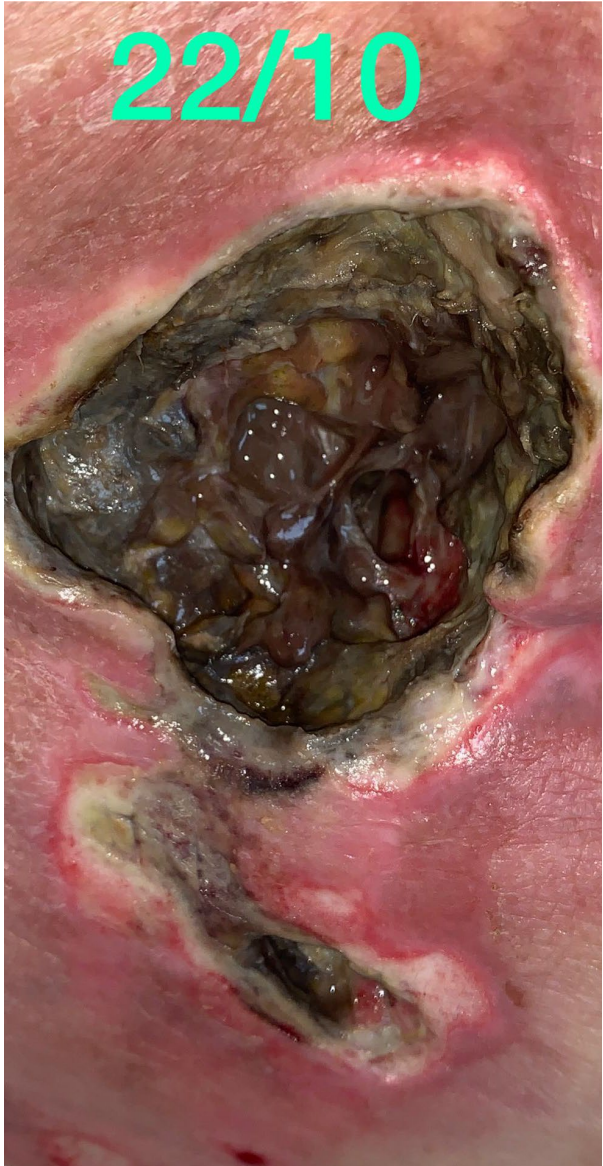
**48 hours**



**6 days**



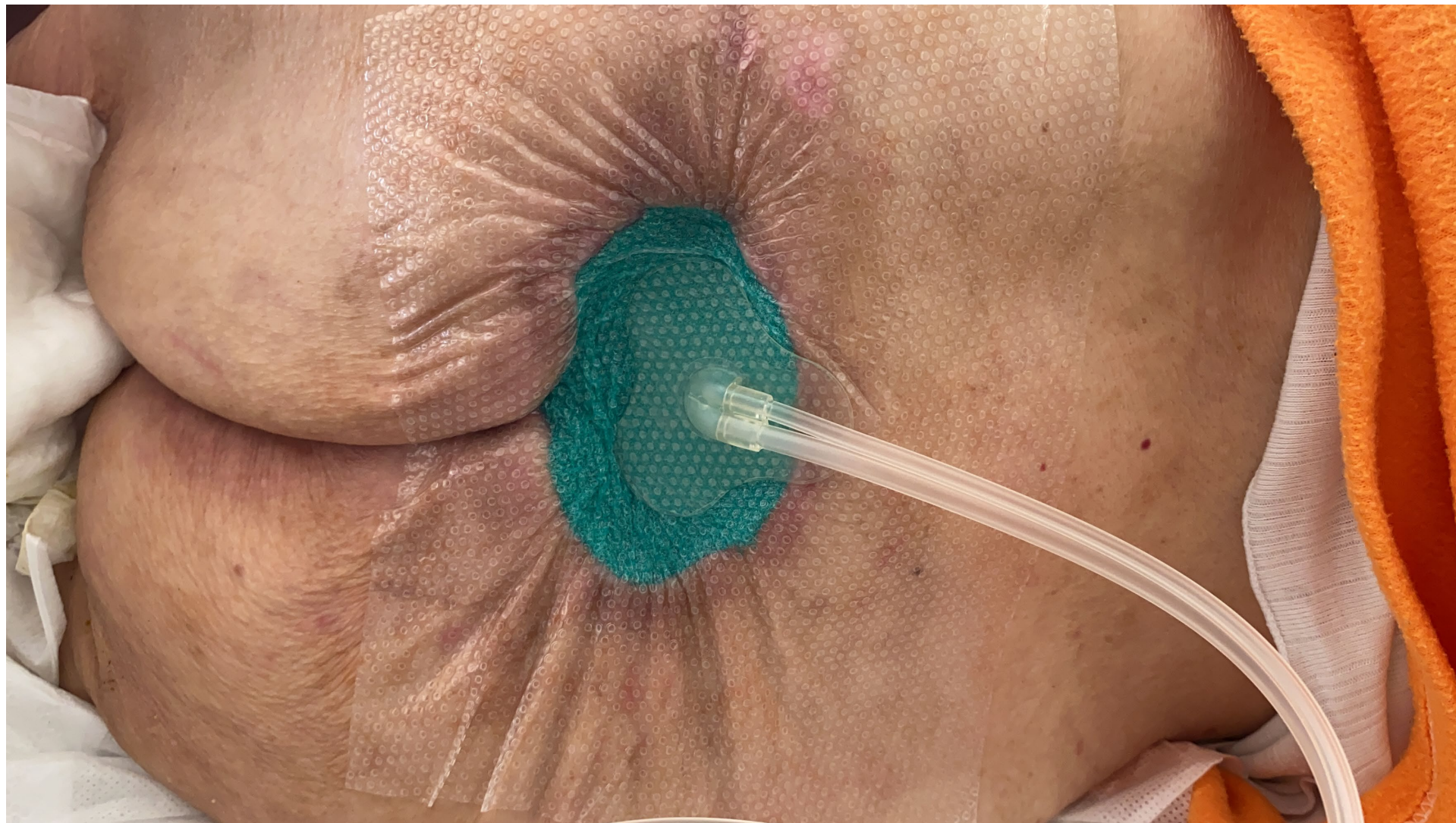
























# CASE STUDY

- Patient: 61-year-old female
- Neutrophilic dermatosis
- No infection
- Necrosis
- Diagnosis
- Peeling edges from the surface – painful
- Dressing change frequency – three times per week
- Clinic history: digestive inflammatory disease, ulcerative colitis, dyslipidemia
- Wound: stagnant ulcer without any improvement in previous four weeks.





- Exclusion diagnosis
- Biopsy
- Local observation and evaluation
- Associated diseases.

DIFFERENTIAL DIAGNOSIS







CLEAN | PROTECT

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PYODERMA  
GANGRENOSUM





Four weeks – one dressing per week







01/03/2024

68

# CASE STUDY: SINUS

77-year-old patient:

- Dependent on carers for activities of daily living (ADL)
- Osteoarticular pathology and limited mobility
- Previous history of pressure ulcers
- Wound: stagnant without any improvement in previous 12 weeks.

Local treatment:

- Irrigation with saline solution, but no guarantee of success
- Fear that the dressing material will get stuck inside
- Heavy oozing with thick fluid at times
- Pain to touch
- Superabsorbent wound dressing
- Dressing change frequency – twice per day.



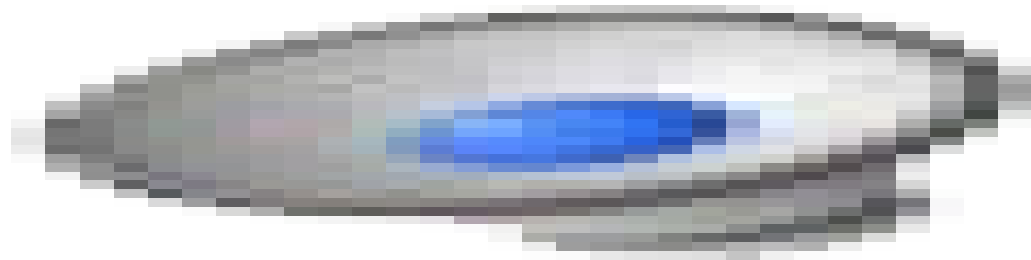


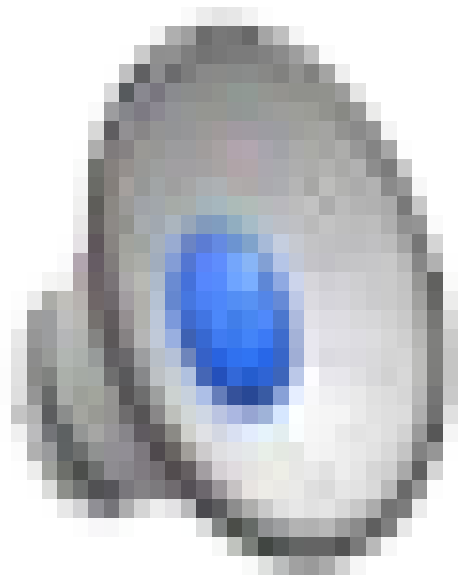




















# MANUFACTURER'S INSTRUCTIONS

Careful attention must be paid to manufacturers' instructions for dressing use. Clinicians using dressings creatively should be aware of the responsibilities of doing so.





# TAKE HOME MESSAGES

- Effective exudate management ensures that the wound remains in optimal condition for healing, minimising discomfort and potential complications
- Consider the patient's overall health and lifestyle when planning exudate management
- Exudate can provide a vast amount of information about wound status – learn to read it
- Regular comprehensive assessment and documentation: when there is lack of progress, reassess
- The dressing selection should consider the characteristics of the patient and the wound.

# TAKE HOME MESSAGES

- The dressing should be excellent at managing exudate and maintaining an ideal environment for healing
- The dressing should not fragment on removal and remain intact when saturated
- The dressing selected should not compromise the surrounding skin.

**If not,  
change it!**

# THANK YOU

pjalves@ucp.pt



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WOUND CARE TODAY



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# ***TRANSFERS EFFICIENTLY. REMOVES CLEANLY.***

Exufiber<sup>®</sup> and  
Exufiber<sup>®</sup> Ag+

Optimising the space where  
healing happens.



WOUND CARE TODAY



Mölnlycke<sup>®</sup>

# HYDROLOCK® TECHNOLOGY



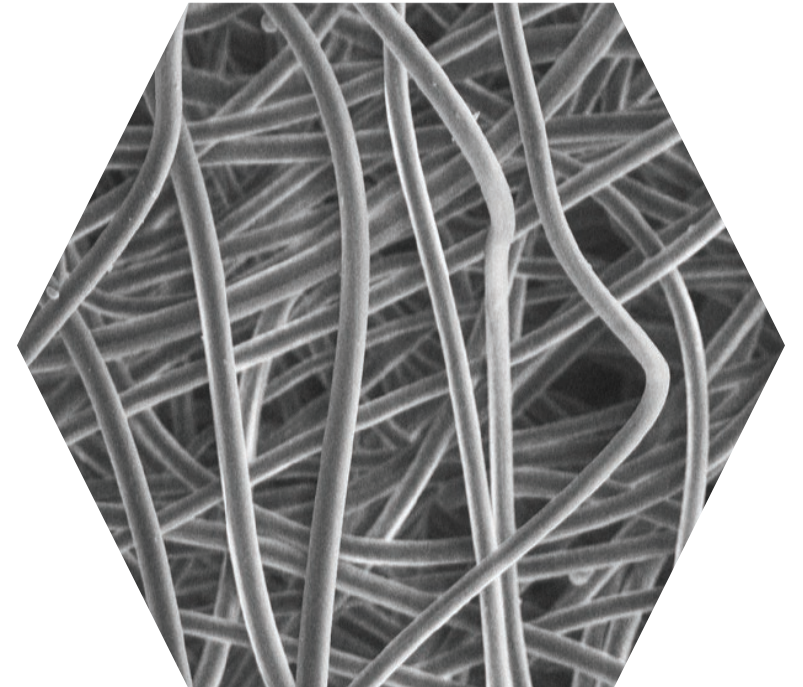
Transfers exudate efficiently



Fluid absorption and retention



Stays intact.



# ***SUPPORTED BY CLINICAL EVIDENCE***



A positive trend for wound size reduction



Clinician satisfaction for overall experience of use, ease of removal, and non-adherence to wound bed



Clinicians reported better absorption and lock-in of exudate, and better lock-in of blood and slough.

# THE EXUFIBER EFFECT

Mölnlycke Facebook page:

<https://www.facebook.com/MoInlyckeUK/>

To request samples:

<https://www.molnlycke.co.uk/exufiber-range/>

General information:

[www.molnlycke.co.uk](http://www.molnlycke.co.uk)

Exufiber at Wound Care Today

[www.woundcare-today.com/exufiber](http://www.woundcare-today.com/exufiber)



**27 MARCH 2024 7:30**

# **HEALING VENOUS LEG ULCERS:**

A NEW ANIMATED WAY  
TO LEARN

**DR LEANNE ATKIN**

*LECTURER PRACTITIONER, UNIVERSITY  
OF HUDDERSFIELD, VASCULAR NURSE  
CONSULTANT, MID YORKS NHS TRUST*

