

FACEBOOK LIVE

24 SEP

OPTIMISING THE SPACE WHERE WOUND HEALING TAKES PLACE



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OPTIMISING THE SPACE WHERE WOUND HEALING TAKES PLACE: THE 24-HOUR BIOFILM WINDOW

Joy Tickle, John Timmons

OBJECTIVES

At the end of this presentation you will be able to understand:

- Complex clinical challenges in wound care
- Exudate management: what exudate is and its importance in wound healing
- The impact that poor exudate management has on the patient, clinician and healthcare provider
- Managing devitalised wound tissue
- Reducing microorganisms and biofilm formation — ‘the 24-hour window’
- Solutions for effective management of wound exudate and associated clinical challenges

HIGH EXUDATE

WHY DOES EXUDATE OCCUR?

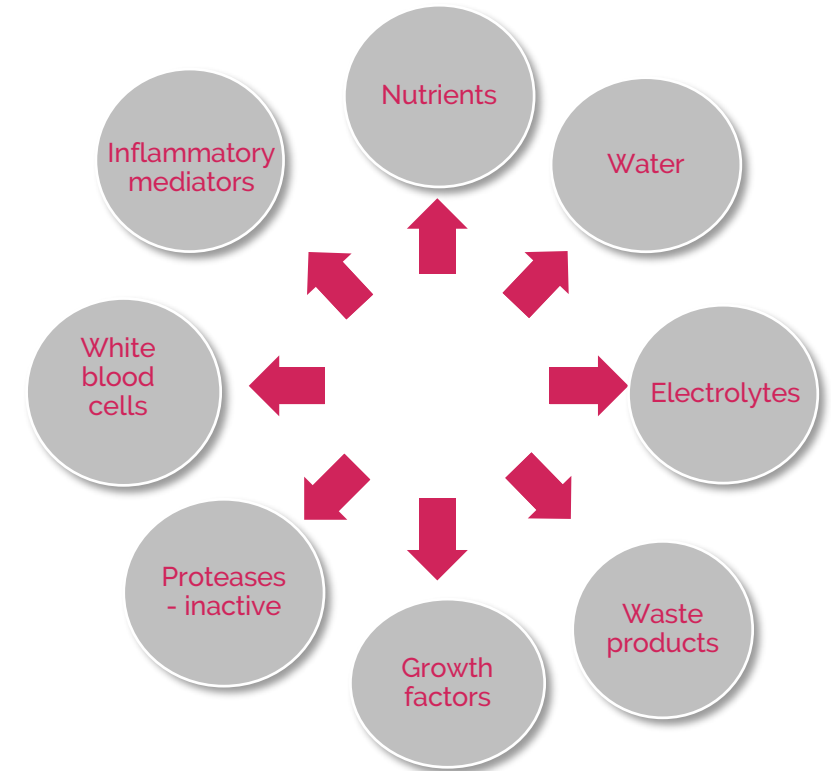
- Exudate is liquid produced from wounds
- It is derived from interstitial fluid found in spaces between cells
- Most exudate is produced during the inflammatory and proliferative stages of the healing process
- It is essential and normal for the wound healing process.

(Moore and Strapp, 2015)

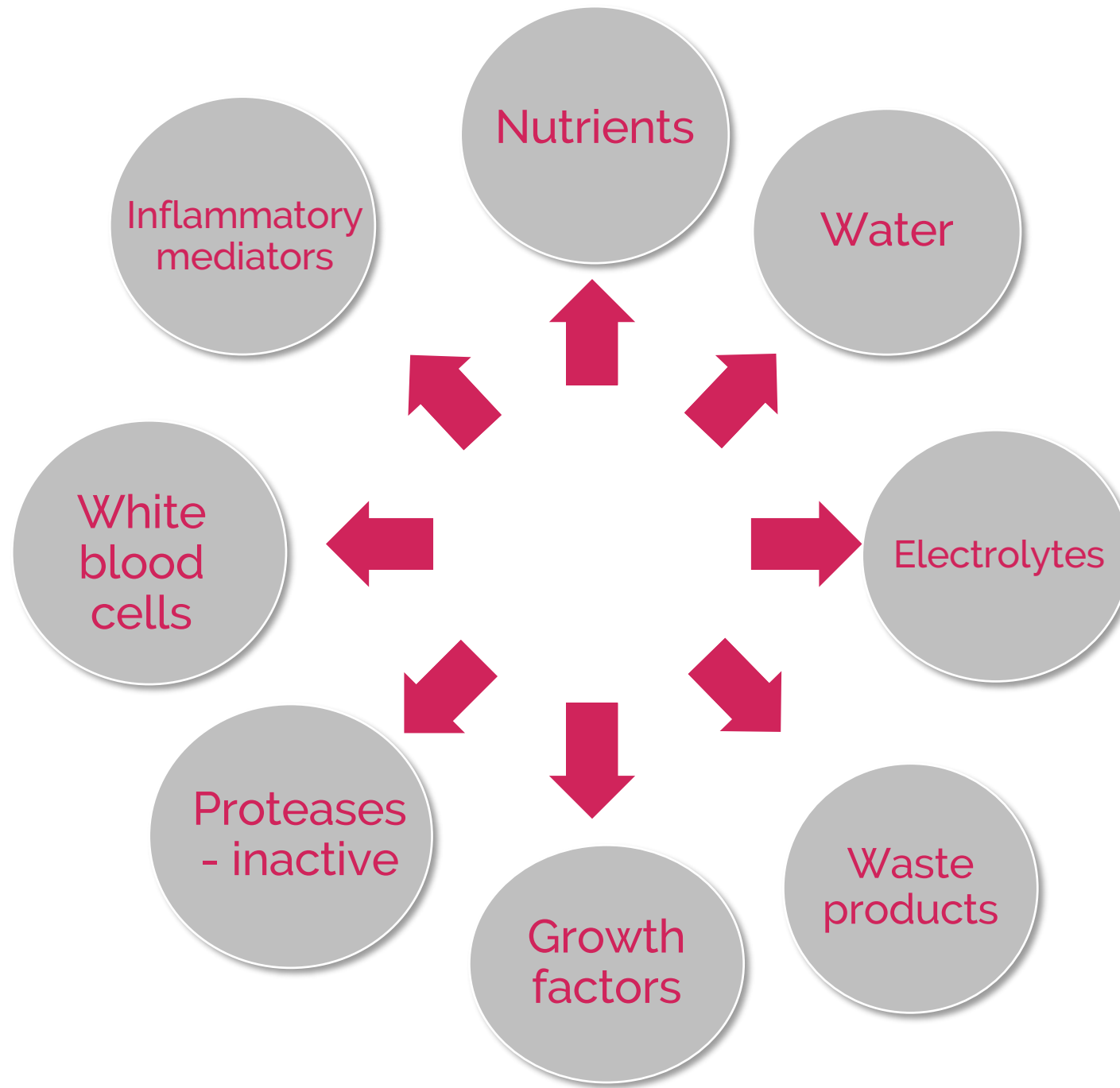


WHAT IS EXUDATE? THE GOOD

- Diffusion of vital healing factors
- Migration of tissue repairing cells across the wound surface
- Promotes cell proliferation and delivers nutrients required for cell metabolism
- Provides a moist wound environment
- Facilitates autolysis.



(White and Cutting, 2006)



EXUDATE: THE WOUNDING AGENT

Exudate volume will vary:

- At different stages of the wound healing continuum
- Between different wound types (e.g. burns), location (e.g. lower limbs and gravity), and size (larger wounds produce more exudate).

(Dowsett, 2012)



EXUDATE: THE WOUNDING AGENT (CONT.)

If a high volume of exudate is mismanaged, it can lead to:

- Increased level of micro-organisms
- Higher levels of inflammatory factors
- Prolonged inflammatory phase
- Damage to the wound bed and peri-wound skin
- Reduced growth factor availability
- Delay in, or even prevent cell proliferation
- Delayed wound healing.

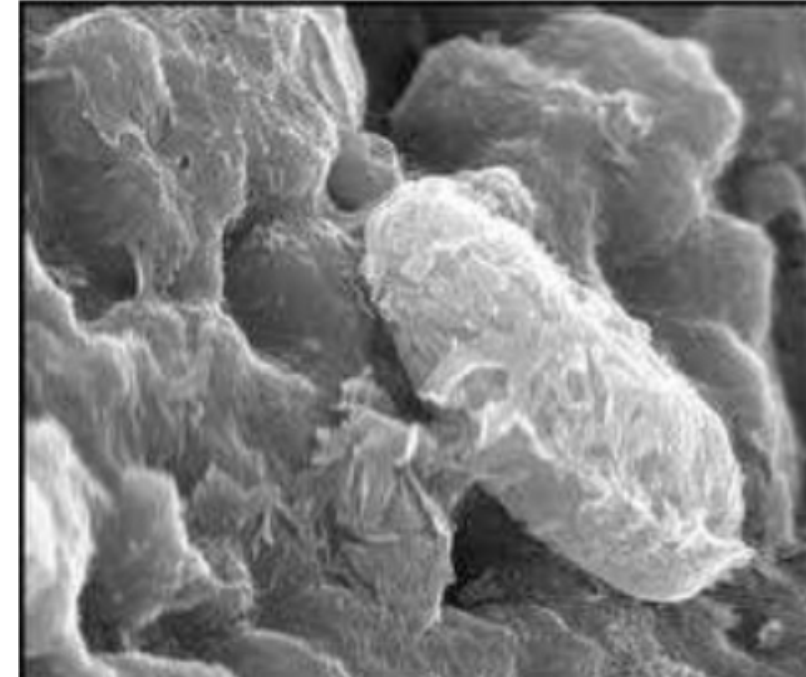


THE IMPORTANCE OF THE 24-HOUR WINDOW TO PREVENT BIOFILM REFORMATION

John Timmons

DEFINITION OF BIOFILM

- 'Bacteria attached to surfaces, encapsulated in a self-produced extracellular matrix and tolerant to antimicrobial agents (including antibiotics and topical preparations or impregnated dressings).
- In addition, biofilm development is often described as multi-stage, beginning with the initial attachment of single cells to a surface, maturation of the biofilm and, lastly, dispersal of bacteria from the biofilm.



BIOFILM-BASED WOUND CARE

- 1. Cleansing and/or antiseptics**
- 2. Debridement**
- 3. Topical antimicrobials**
- 4. Reassessment**



DEBRIDEMENT

Most often it is vital to **physically disrupt** and remove existing biofilm. Slough or necrosis should be removed as it may support the attachment and development of biofilm (Bjarnsholt et al, 2017).

Removal of slough and necrosis:

- Autolytic
- Sharp
- Larval
- Enzymatic
- Mechanical.

Reformation, you never get the entire biofilm.

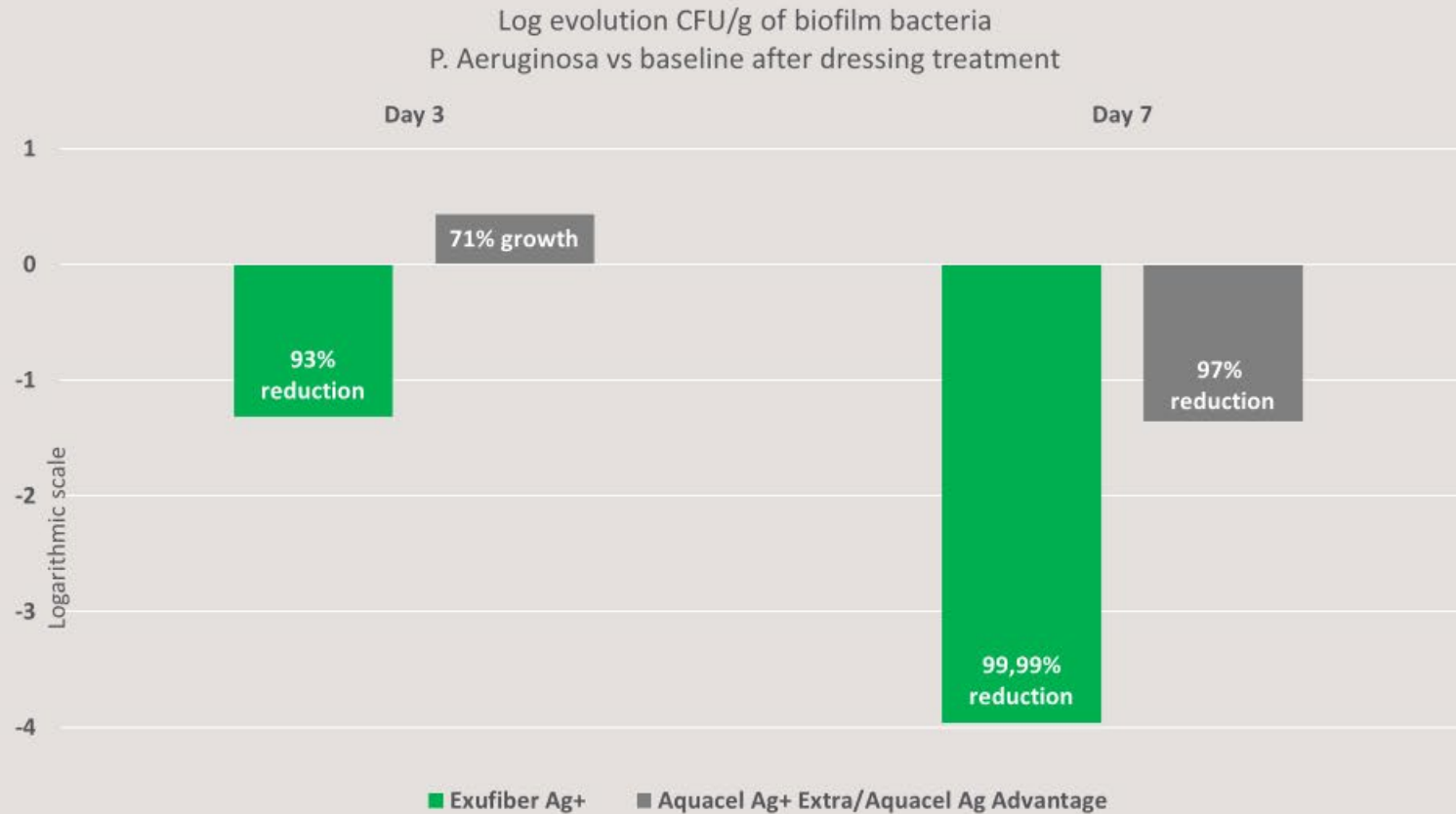
THE TOPICAL ANTIMICROBIAL THERAPY WINDOW

The physical removal of biofilm opens up the 24-hour therapeutic window that enables the topical antimicrobial treatment to **a)** prevent biofilm reformation and **b)** aid active killing of planktonic bacteria (International Wound Infection Institute [IWII], 2016).

Davis studies

Exufiber Ag+ is superior in reducing biofilm bacteria *in vivo*

Log evolution in bacterial counts of *Pseudomonas aeruginosa* biofilm after treatment



BIOFILM MANAGEMENT PROTOCOL



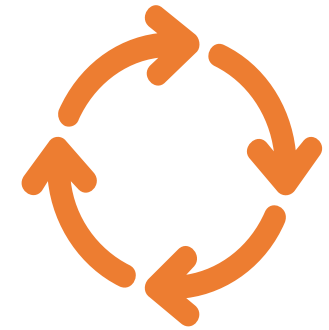
Debridement



24-hour window



Exufiber Ag+



Reassess
healing

**Holistic approach
for optimal clinical outcomes**

CHALLENGES TO THE PATIENT AND CLINICIAN

CHALLENGES TO THE PATIENT: QUALITY OF LIFE

- Peri-wound skin damage has a significant debilitating impact on patient quality of life
 - Increased frequency of dressing change leading to increased pain and discomfort
 - Malodour
 - Leakage/strikethrough
 - Patient embarrassment and social isolation.
- (Benbow and Stevens, 2010; WUWHS, 2019)



CHALLENGES TO THE PATIENT: QUALITY OF LIFE

'14 months I have suffered with my wet leg. I feel so depressed.'

'The smell is the worst thing!
When it is really bad I cannot go to work.'

'I won't go out to meet friends in case my wound leaks! It is so embarrassing.'



CHALLENGES TO THE CLINICIAN/HEALTHCARE PROVIDER

- Financial implications
- Funding community services/staff retention
- Increasing costs — resources visits/time/costs and patient morbidity
- Increase in the number of chronic wounds, delayed wound healing/increased infections and poor patient outcome measures
- Covid-19 pandemic
- Availability and access to evidence-based education
- Increased referral to other members of the multidisciplinary team (MDT)/specialists.



HOW DO WE ADDRESS THE CHALLENGES?

IT ALL BEGINS WITH EXUDATE ASSESSMENT

Wound exudate assessment is a vital part of holistic wound assessment:

- Patient medical history, wound diagnosis and aetiology
- Phase of wound healing and wound bed tissue type
- Presence of wound biofilm/infection
- Volume (subjective)/colour/consistency/malodour
- Examination of soiled dressing
- Peri-wound skin condition
- Involving the patient/carer.

(WUWHS, 2019)

EFFECTIVE EXUDATE MANAGEMENT: KEY PRINCIPLES

Address and
optimise
underlying patient
co-morbidities and
aetiology

Effective and
consistent wound
bed preparation –
debridement and
biofilm
management

Appropriate wound
dressing selection
and exudate
retention



ADDRESS UNDERLYING COMORBIDITIES AND AETIOLOGY

- Systemic factors, such as cardiac disease, renal failure and liver disease
- Chronic oedema, lymphoedema, dependent oedema
- Consider the wound type, e.g. venous leg ulcers and compression therapy
- Subtherapeutic compression therapy.

(WUWHS, 2019)

OPTIMISE WOUND BED AND PERI-WOUND SKIN EFFECTIVE DEBRIDEMENT

- Removal of unwanted or devitalised tissue
- Removes physical barrier to granulation, epidermal resurfacing and wound contraction
- Reduces bacterial burden by removing dead tissue
- To convert chronic wound to an acute wound by stimulating healing cascade
- To physically disrupt the extracellular matrix of the biofilm and allow a window of opportunity to enable the microorganisms to be targeted
- To facilitate earlier healing of a wound.

(Percival and Suleman, 2015)



EFFECTIVE AND APPROPRIATE DRESSING SELECTION

Addresses the clinical need:

- What is it I want to achieve?
- What do I want the product to do?
- Will it be appropriate for the wound bed?

EFFECTIVE AND APPROPRIATE DRESSING SELECTION

This should:

- Manage exudate volume and viscosity
- Promote a moist wound environment without damaging the wound bed or periwound skin
- Improve patient experience and quality of life
- Be comfortable and atraumatic
- Facilitate the change of dressing frequency and extend wear time

(Dowsett, 2012)

EFFECTIVE AND APPROPRIATE DRESSING SELECTION

- Facilitate undisturbed wound healing, improving wound outcomes
- Be easy to apply — clinical education and familiarity
- Assist in supported self-management.
- Be available

(Dowsett, 2012)

EFFECTIVE AND APPROPRIATE DRESSING SELECTION

- Dressings manage exudate by absorption or by facilitating evaporation
- Some absorb the exudate and lock it within the dead spaces of the dressing
- Some dressings form a gel on contact with the wound bed and exudate
- This will also allow the dressing to fill any dead space where exudate or microorganisms may 'pool'.

(Wounds UK, 2013)

EFFECTIVE AND APPROPRIATE DRESSING SELECTION

Gelling fiber dressings:

- Aid moist wound healing
- Aid autolytic debridement and removal of debris
- Vertically wick
- Lock in exudate
- Contour to the wound bed
- Fill dead space
- Silver dressings assist in reduction of microorganisms and prevention biofilm reformation when the window of opportunity presents.

Do you
experience
gelling fiber
dressings
breaking up
on removal?

(Sweeney et al, 2012; Browning et al, 2016)

SECONDARY DRESSINGS IN EXUDATE MANAGEMENT

If a secondary dressing is required, it too needs to:

- Manage the type and volume of exudate
- Be able to transfer exudate efficiently from the wound bed to a secondary dressing
- Address any complications, e.g. peri-wound skin maceration.

(Browning et al, 2016)



IN SUMMARY

- Exudate is vital for effective wound healing
- When its management is unbalanced, it may become a wounding agent
- Effective wound bed preparation, prevention of infection/biofilm formation and exudate management will have clear and positive outcomes for clinicians, healthcare providers, and most importantly, patients.

IN SUMMARY

- A robust individualised and patient-centred wound assessment/management and re-assessment plan can achieve positive clinical outcomes
- Clinicians must maintain their knowledge and skills and ensure that they are aware of appropriate dressings and new innovations to support themselves and their patients.

TOMORROW'S PLEDGE

- Reflect on what you have learnt today
- Ask what does it mean to me in practice today
- Choose a patient who you are caring for
- Implement your learning
- Follow the patient's journey and look at the positive outcomes
- Share your knowledge and experience with your colleagues
- Share with your patients.

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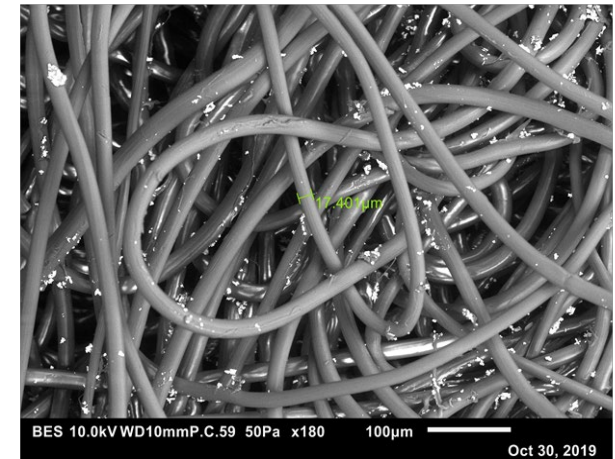
NEW TECHNOLOGY NEXT GENERATION

With Exufiber and Exufiber Ag+ we have new technology that can really help with challenging wounds

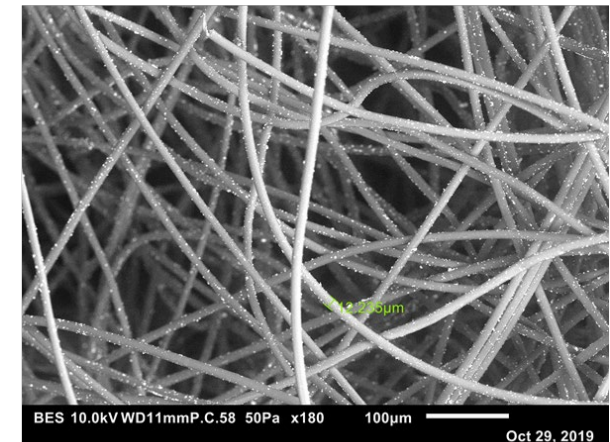
- Better exudate management
- Wound debridement
- Prevention of biofilm reformation

Take the 2 week challenge and tell us what you think!!

Exufiber Ag+



Aquacel Ag+ Extra



MORE INFORMATION

For more information on Exufiber or Exufiber Ag+ please visit our website;
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