

QUICK GUIDE



USING COLLAGEN DRESSINGS

in non-healing wounds

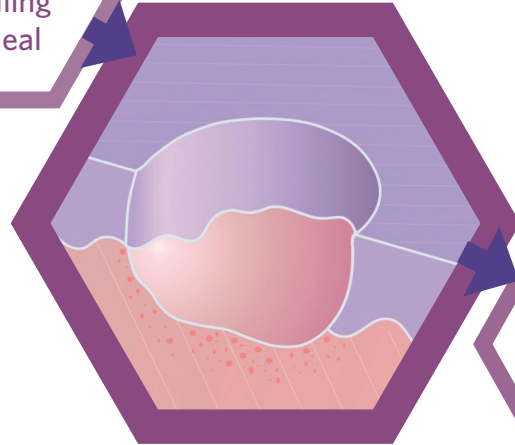


USING COLLAGEN TO RESTART HEALING IN A NON-HEALING WOUND

Wound is failing to heal

1

Multiple factors can result in a wound failing to heal along a normal trajectory (overleaf).



Collagen introduced to the non-healing wound

2

Collagen dressings can be used to restart the healing process:

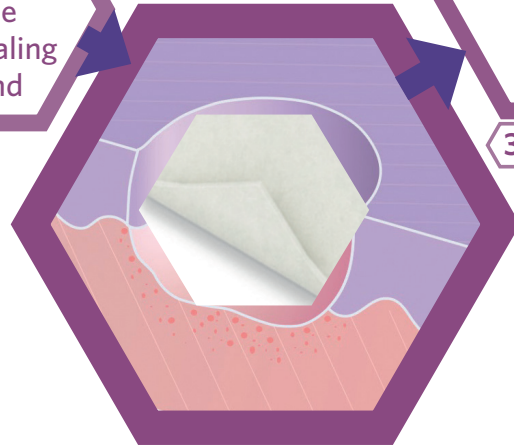
- 'Collagen' derives from 'kolla', meaning glue in Greek
- Collagen is a structural protein present in all animals, used to support and connect bodily tissues and organs
- Collagen is used across medical fields, in wound healing, haemostatis, sutures, artificial heart valves/arteries, hernia repairs, and soft tissue augmentation.

Collagen dressings play a number of important roles in tissue repair:

- Help to control bleeding
- Have a low-inflammatory and low-antigenic response
- Enhance the deposition of new collagen
- Reduce activity of matrix metalloproteinases (MMPs), which can fuel the inflammatory process in wound healing
- Collagen fragments can attract cells into the wound area and induce cell growth
- Collagen peptides break down to amino acids, which can be reused by the cells to help build new proteins.

Normal healing process restarts

3

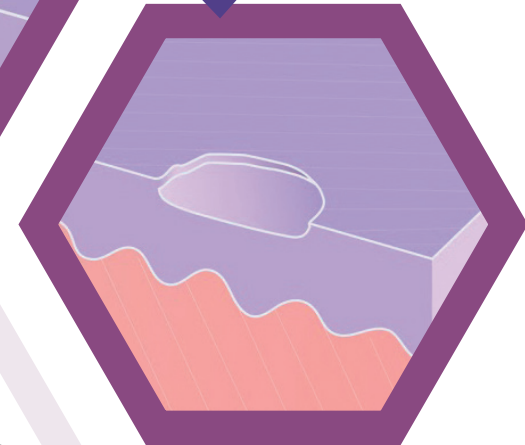


As the collagen dressing is absorbed into the wound, a normal healing process is restarted, due to:

- Reduced inflammatory proteases (e.g. MMPs) and inflammatory cytokines
- Improved control of bioburden
- Increased growth factors and cell proliferation.

4

Wound moves towards closure



The wound is able to re-epithelialise and move towards closure.

WHY WOUNDS DON'T HEAL

When one or more challenging factors is present, wounds may fail to heal according to a normal trajectory. Holistic wound assessment should take into account all of the following, to determine why the wound is not healing as expected.

» Patient-related factors

- Chronic illness
- Immune status
- Medications
- Stress
- Nutritional status
- Oxygenation/circulation
- Smoking
- Age

» Wound-related factors

- Wound size $>2\text{cm}^2$
- Wound duration >2 months
- Microbial colonisation
- Dessication or maceration
- Necrosis
- Pressure
- Oedema

» Biophysiological factors

- Prolonged inflammation
- Increased levels of serine proteases (e.g. MMPs) and inflammatory cytokines
- Suppression of growth factors

» Clinical and service-delivery factors

- Quality of holistic assessment
- Ability to control patients' symptoms
- Management of underlying conditions
- Knowledge of appropriate dressings for different wounds

COLLAGEN AND WOUND HEALING

Haemostasis

Collagen helps to stop bleeding (e.g. where there is sanguineous exudate or friable granulation)

Cell attraction and growth

Collagen stimulates growth and infiltration of healthy cells in the wound bed



Structure building and wound contraction

Collagen promotes deposition of new collagen, which provides structure for healing, and helps the wound contract towards closure

Suppression of inflammation

Collagen reduces high levels of serine proteases (e.g. MMPs) and inflammatory cytokines, which have been shown to increase inflammation and fuel the inflammatory process

References

1. Stacey M. Why don't wounds heal? *Wounds International* 2016; 7(1): 16–21
2. Gibson D, Cullen B, Legerstee R, Harding KG, Schultz G. MMPs Made Easy. *Wounds International* 2009; 1(1). Available from <http://www.woundsinternational.com>
3. Cullen B, Ivins N. *Promogran™ & Promogran Prisma™ Made Easy*. *Wounds International* 2010; 1(3). Available from <http://www.woundsinternational.com>



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