QUICK GUIDE

NON-HEALING WOUNDS

Wounds International

WHY WOUNDS DON'T HEAL

When one or more challenging factors are present, wounds may fail to heal along a normal trajectory. Holistic wound assessment should take into account all of the following, to determine why the wound is not healing as expected[8].

Patient-related factors

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

Wound-related factors

- Wound size >2 cm^2
- Wound duration >2 months
- Microbial colonization
- Dessication or maceration
- Necrosis
- Pressure
- Edema.

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.

THE PROPERTIES OF COLLAGEN, ORC AND SILVER[1-7]

COLLAGEN

WHAT IT IS

- 'Collagen' belongs to a family of proteins with 28 members. It is one of the most abundant organic materials in the human body and is a major constituent of skin, bone, tendons, muscles and cartilage. It has a high tensile strength and plays an important role in tissue repair.

WHAT IT DOES

- Collagen has a low inflammatory and antigenic response, and can help to control bleeding
- Collagen enhances the deposition of new collagen fibres, attracts cells into the wound area and induces cell growth
- Collagen is bio-reabsorbable and biodegradeable
- Collagen can act as a sacrificial substrate for excessive matrix metalloproteinases (MMPs).

OXIDIZED REGENERATED CELLULOSE

WHAT IT IS

- Cellulose is the most abundant material on the surface of the earth and is mainly obtained from wood pulp and cotton. Oxidation makes cellulose biodegradable. Oxidized regenerated cellulose (ORC) readily degrades through fluid absorption and subsequent gelling.

As protease activity increases, probability of healing decreases without appropriate intervention.

WHAT IT DOES

- ORC degrades in a predictable and consistent manner
- Published *in vitro* studies show ORC has no detrimental effects on cell growth, has hemostatic properties, scavenges free radicals, and binds excess metal ions
- ORC has demonstrated bactericidal properties *in vitro* and reduces protease activity, specifically elastase and MMPs
- Studies have shown that with the addition of ORC to collagen, reduction in elastase activity increases from 30% (collagen only) to 100%.

SILVER (AG)

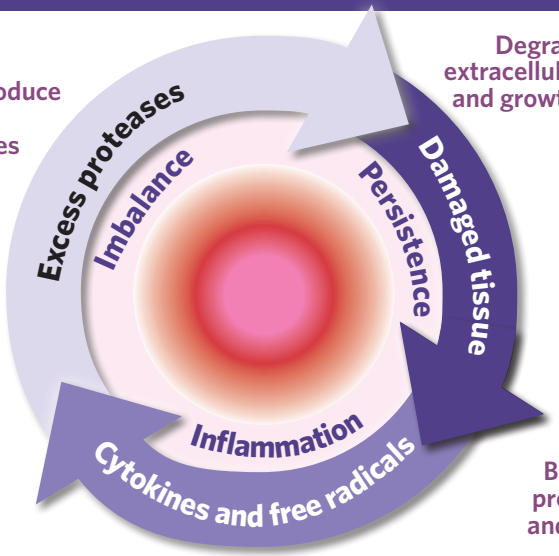
WHAT IT IS

- Silver is a broad spectrum antimicrobial that controls bacteria, fungus, algae and yeast. Use of silver does not contribute to antimicrobial resistance.

WHAT IT DOES

- In order to realise the benefits of silver, an optimum concentration should be utilized whereby there is antimicrobial effect but no cell toxicity
- Published *in vitro* studies have shown that collagen/ORC with silver does not inhibit cell growth.

THE CYCLE OF NON-HEALING[7]



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