

Raising the standard of care for difficult-to-heal wounds

Hyalomatrix is a unique regenerative matrix being the only matrix product that is hyaluronic acid-based (HA), rather than collagen based. HA's natural wound management properties led to the development of HYAFF, completely esterified HA specifically engineered for tissue regeneration by delivering longer wear times in the wound bed. With its biocompatibility and resorption qualities, Hyalomatrix's HYAFF helps to facilitate the dermal reconstruction process in hard-to-heal wounds.¹⁻⁴

How Hyalomatrix works

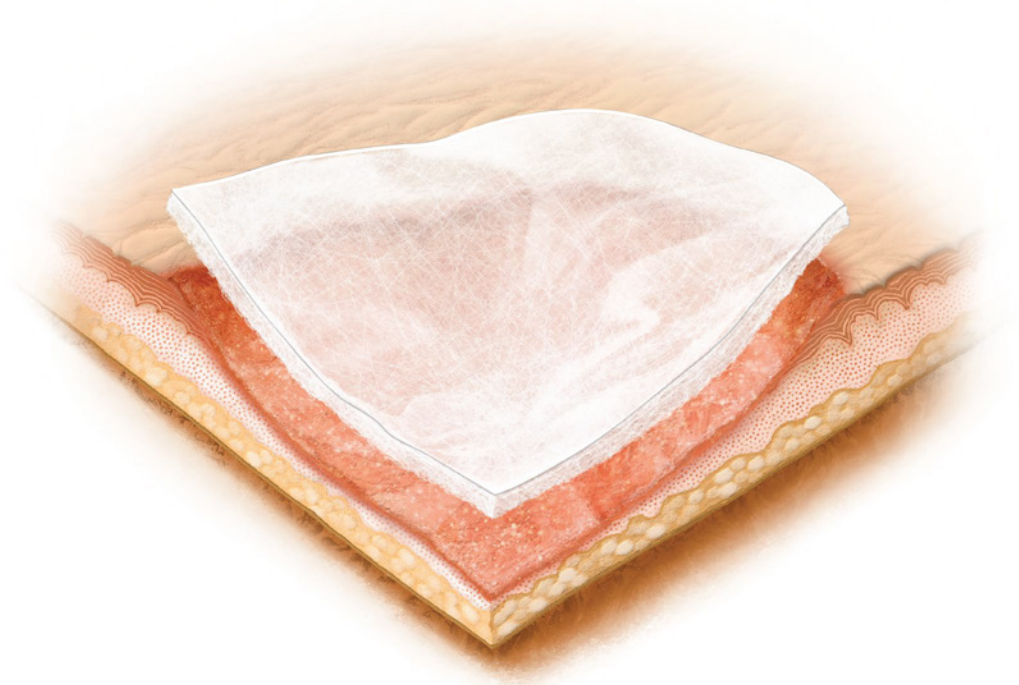
Hyalomatrix is a sterile, flexible wound device consisting of two layers: a non-woven pad of esterified HYAFF and a semi-permeable silicone membrane.

Upon contact with the wound bed, the HYAFF layer transforms into a hydrophilic gel and integrates with the surrounding tissue. This biodegradable matrix acts as a 3-D scaffold for cellular invasion—facilitating the colonization of fibroblasts and vascular cells—as well as capillary growth.^{2,4}

The HYAFF fibers provide HA to the wound bed in a prolonged manner, encouraging cell migration. This leads to ordered dermal reconstruction, along with spontaneous re-epithelialization.⁴

On the outer side, the thin, semi-permeable silicone layer protects the wound from external contamination, prevents moisture loss and increases tear strength. Semi-transparent, it allows continuous monitoring of the wound healing process without dressing removal.

Following the formation of the new tissue, the silicone layer can be released without discomfort or wound bed damage.⁴



Innate biology. Replenished.

Clinical observations and animal studies have shown that developing in the womb, tissue has an inherent quality—scarless wound healing.^{5,6} As you age, however, that remarkable ability begins to disappear. Bodies naturally produce less and less of a substance called hyaluronic acid over time, and eventually, that ability to rapidly regenerate tissue is lost.⁵⁻⁷

A naturally-occurring component of the extracellular matrix (ECM), hyaluronic acid (HA) provides continuous moisture to the skin by binding up to 1000 times its weight in water. Fetal skin uniquely contains high levels of sustained HA, resulting in regenerative and scarless healing. With age, the skin's ability to produce HA decreases, tissue elasticity decreases, and wound healing is fibrotic.⁵⁻⁹

HA is widely recognized as playing a multifaceted role in each stage of wound healing—inflammation, granulation tissue formation, re-epithelialization, and remodeling.⁵ It stimulates angiogenesis, fibroblast migration and the orderly deposition of essential ECM (extracellular matrix) components.²

The presence of HA is the major biochemical difference between fetal and adult wound environments.⁸ It's time to bring the unique benefits of HA to wound care.

Why hyaluronic acid?

A major component of the extracellular matrix, HA promotes tissue regeneration in two unique ways:

Hydrodynamic effect of HA

Binds 1,000 times its weight in water.

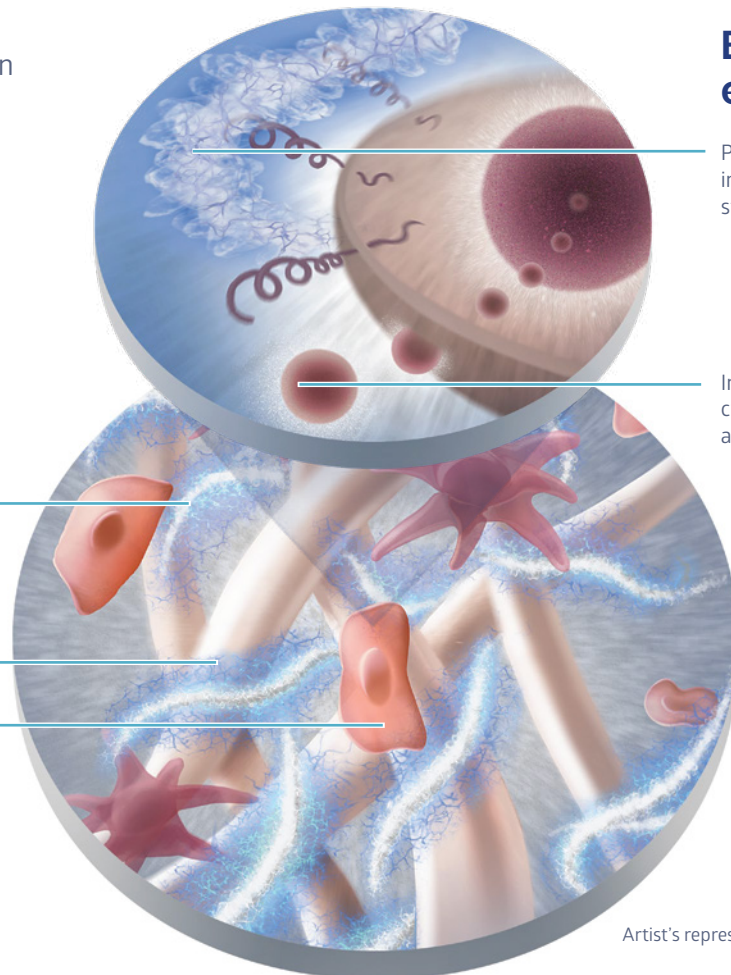
Creates water-rich space within the newly formed tissue for orderly dermal reconstruction.¹⁰

Enables optimal cellular migration.^{10,11}

Biological effect of HA

Promotes a productive inflammatory phase by stimulating cell receptors.^{12,13}

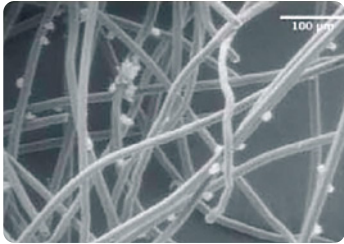
Increases pro-inflammatory cytokines to help activate and recruit native cells.^{12,13}



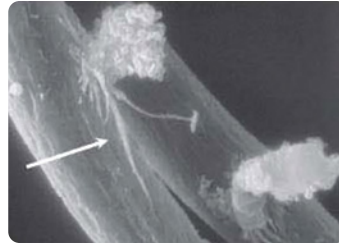
Artist's representation

The science behind the scaffolding effect

Hyaluronic acid's (HA) unique role in wound healing led to the development of HYAFF—an exceptionally long-lasting, esterified form of HA. Without cross-linking, HYAFF's open scaffold allows for cellular infiltration and capillary growth!¹⁴



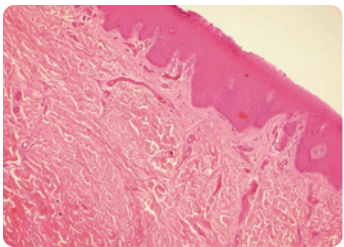
Scanning electron microscopy (SEM) shows percentage of the polymer surface was covered with early endothelial progenitor cells (eEPCs).¹⁴



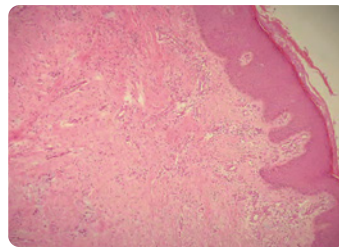
Adherent eEPCs display a spherical shape and contact adjacent fibers through thin and slender cytoplasmic projections (arrow).¹⁴

Hyalomatrix in action

Before and after photos show existing scar tissue (left) before it was surgically revised and the area treated with Hyalomatrix (right).



A preoperative skin biopsy showing marked collagenisation and decreased vascularisation (HEmagnification x200).¹⁵



A postoperative skin biopsy shows orderly reconstruction of newly formed tissue (HEmagnification x200).¹⁵

Well-established. Well-documented.

The roles of HA, HYAFF and Hyalomatrix are supported by more than 800 peer-reviewed published papers.¹⁶

750+ Exploratory research studies on hyaluronic acid

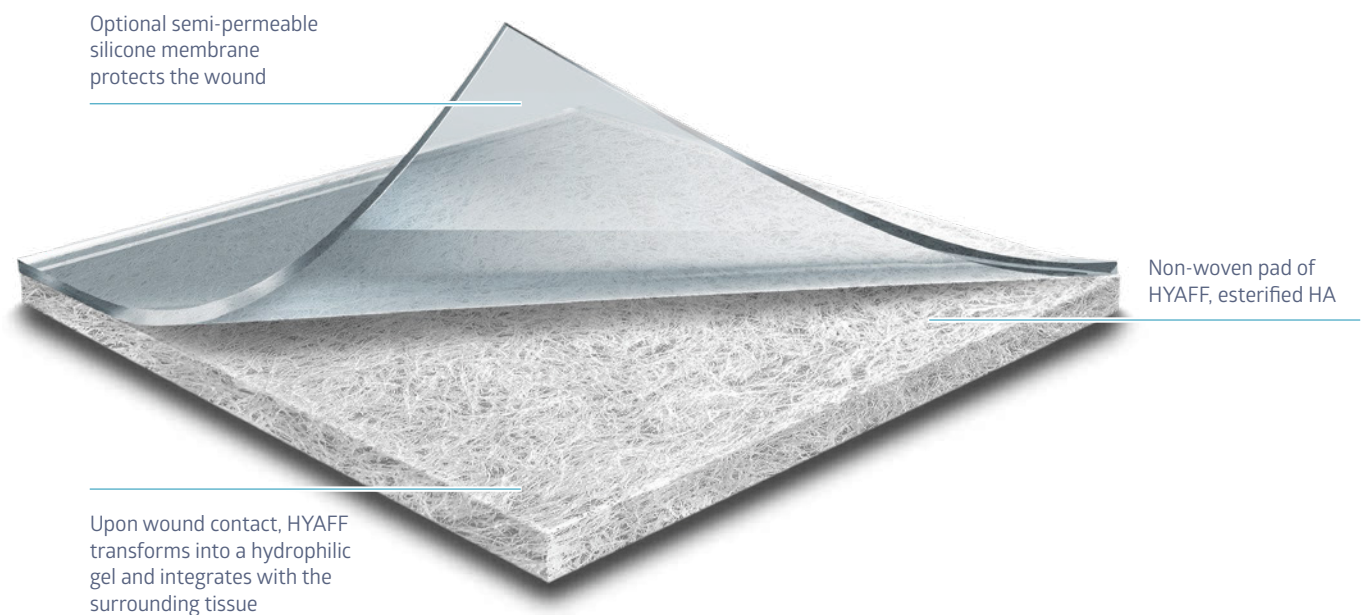
45 HYAFF technology studies

34 Hyalomatrix clinical studies

Top Ten Innovations award in Podiatry Today¹⁷

Two easy-to-use forms

The Hyalomatrix wound device provides the ultimate clinical usefulness. Hyalomatrix is available in two easy-to-use forms—with and without a protective silicone membrane. Hyalomatrix Non-Silicone (NS) delivers all the benefits of the original Hyalomatrix, while also solving for additional clinical scenarios, including: tunneling and undermining, irregular wound surfaces, and full thickness wounds with exposed bone and tendon.



Indications

- Chronic vascular ulcers
- Diabetic ulcers
- Draining wounds
- Partial- and full-thickness wounds
- Pressure ulcers
- Second-degree burns
- Surgical wounds (donor sites/grafts, post-Mohs surgery, post-laser surgery, podiatric, wound dehiscence)
- Trauma wounds (abrasions, lacerations, skin tears)
- Tunneled/undetermined wounds
- Venous ulcers

Contraindications

Individuals with a hypersensitivity to hyaluronan and/or its derivatives, or silicone.

Value and mechanisms of action

WHY

Clinical advantages

Hyalomatrix delivers a unique esterified form of hyaluronic acid.

Helps you facilitate each stage of the healing process.^{1,3,4}

It provides the foundation for skin grafting and re-epithelialization.

Acts as a scaffold for cellular infiltration and capillary growth during tissue regeneration—without cross-linking.¹⁸

This innovative solution may help reduce the risk of infection.

Rebuilds a well-vascularized neodermis as fast as possible, which may help protect your patients from infection.^{1,19,20}

Hyalomatrix promotes quality healing.

Provides a healthy wound bed for healing by successful grafting or secondary intention, which may help reduce patient discomfort and hospital stay.^{1,20}

Practical advantages

Ease of application

Hyalomatrix is extremely flexible around difficult-to-cover sites.

Versatile configuration

The silicone layer attached helps regulate moisture loss and prevent contamination, but the silicone layer can be easily fenestrated prior to application and can even be removed for tunneling/undermining areas.

Protocol friendly

Hyalomatrix is not contraindicated for use with silver dressings or PHMB/HOCl solutions and can be used in conjunction with negative pressure wound therapy (NPWT).

HOW

Mechanisms of action of hyaluronic acid

Rebuild well-vascularized tissue:

Scaffolding effect

Open, non cross-linked scaffold immediately provides place for native cells to live, thrive and rebuild tissue.

Hydrodynamic effect

HA's unique water-binding improves cellular migration and organization of collagen fibers (spacing) within neodermis.

Biological effect:

HA facilitates an increase in pro-inflammatory cytokines, activating and recruiting native cells- including endothelial cells and fibroblasts.^{13,14}