

Collagen Dressings

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Overview

Collagen dressings primarily originate from animal sources (bovine, equine, porcine, and avian) and come in many formations including gel, sheets, and powder.^{1,2} Collagen dressings stimulate new tissue development and cellular migration and invigorate macrophages and fibroblasts to assist in wound healing.²

Actions for Consideration

Partner: Identify wound care physicians, nurses, plastic surgeons, trauma/burn physicians as well as the appropriate clinical and non-clinical value analysis team members. Reimbursement specialists may be particularly helpful within this category. Reimbursement may be challenging for these types of products and pre-approvals may be needed.

Connect: Given the limited evidence available and high cost of products in this category, a careful review of use and outcomes in your facility is important. Collecting and reviewing physician data including usage, cost, and outcomes will inform management of these products and help guide discussions. Reimbursement information should be attained. Identify evidence related to specific products. Access the [Clinical Knowledge Insights Library](#) to find checklists and toolkits with actionable information. Examples for this category include resources on product conversion, value analysis, and communication plans.³

Communicate: Share evidence with physicians who use collagen dressings to develop a common goal. Discuss pricing, reimbursement, and potential patients who could benefit, and develop strategies to manage use. Robust data sharing will not only enhance discussions, but may lead to actionable conversations between peers. Send a notice to clinical staff with clear timeline letters, announcements, and meetings. Conduct in-services, table-top demos, and/or utilize posters, to help with education. Network on the [HealthTrust Huddle](#), our member community that shares ideas and seeks guidance from colleagues.⁴

Professional Society Statements and Clinical Practice Guidelines

The International Working Group on the Diabetic Foot in the *Practical guidelines on the prevention and management of diabetes-related foot disease IWGDF 2023 update* noted that biologically active dressings/tissues including collagen are not well-supported for routine neuropathic ulcer management.⁵ In addition, the International Working Group on the Diabetic Foot noted in the *Guidelines on interventions to enhance healing of foot ulcers in people with diabetes IWGDF 2023 update*, with a grade strong with low certainty of evidence, to not use collagen or alginate dressings for healing diabetes-related foot ulcers.⁶

Physician Advisor Insight

A panel of wound care, podiatrists, plastic surgeons, and trauma/burn physicians within our HealthTrust Physician Advisor Network offered the following insight with regard to the use of collagen dressings for wound healing⁷:

- Patient populations include: those with necrotizing soft tissue injury, deep burn wounds, chronic wounds, soft tissue defects, pressure ulcers, diabetic foot ulcers, venous ulcers, any slow healing wounds, and wounds that need to have granulation tissue encouraged.
- Collagen dressing advantages include: good shelf life, easy use, and ease of application.

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- Disadvantages include: cost concerns and need for insurance approval.
- Physician advisors note that maceration can occur with collagen dressings.
- When using collagen dressing, wounds need to be adequately excised prior to application.
- Collagen can act as a scaffold for engraftment over non-vascular structures to avoid a costlier free-flap.
- Clinical evidence showing superiority over other dressings is lacking, and dressing types don't allow for 1 to 1 comparison.

Clinical Evidence

There are a number of studies specific to the use of collagen dressings. Summaries of some of the studies available are described below:

- A 2022 meta-analysis reviewed 11 studies containing 961 patients with at least one chronic wound, comparing standard treatment to treatment with collagen dressings.⁸ Patients were either treated with a collagen dressing or standard treatment such as saline moistened dressings and other conventional dressings. Results showed that 53.4% of the collagen group and 34.50% in the conventional dressing group attained complete healing, however more studies would be needed to validate these findings. Limitations of the analysis included 2 of the 11 studies were noted to be high risk for bias, along with inconsistency of types of collagen dressings used.⁸
- A 2022 prospective study included 50 patients with diabetic foot ulcers, to determine the effectiveness of collagen dressings compared to conventional saline dressings.⁹ The study found that when compared to saline dressings, collagen dressings were superior in early formation of granulation tissue. The authors stated that additional random controlled trials are needed to further validate findings and viability of collagen dressing treatment alternative.⁹
- An industry sponsored, 2019 prospective, 30-patient randomized, placebo-controlled, single-center study described the effectiveness of collagen dressings to treat diabetic foot ulcers.¹⁰ Patients were divided into two groups, the control being treated with a foam dressing, with the others treated with collagen dressings. Those treated with the collagen dressings showed a complete healing rate of 82.4% vs. control group 38.5% (P = .022). Authors noted that further studies with larger populations and longer duration are needed.¹⁰
- In 2017, a 15-person, multidisciplinary panel met on the use of oxidized, regenerated cellulose (ORC)/collagen dressing and their role in wound care treatment.¹¹ Panel members analyzed 58 peer reviewed articles, which they noted consisted of 69.3% low level of evidence. The panel concluded that while the use of ORC/collagen has shown some positive outcomes, more studies and further validation is needed as limited evidence currently exists.¹¹

Summary/Considerations

The wound care category is vast, with multiple treatment options from surgical interventions to dressings. There is limited evidence that describes the effectiveness of collagen dressings being superior to those currently on the market. Due to the cost of these products, usage information should be attained, and outcome evidence identified as it relates to specific products.

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