



Bibliography

Author	Year	Title	Study Type	Number of patients	Abstract	Reference	Link
Tati	2018	Biological wound matrices with native dermis-like collagen efficiently modulate protease activity	In vitro	-	<p>Objective: When the delicate balance between catabolic and anabolic processes is disturbed for any reason, the healing process can stall, resulting in chronic wounds. In chronic wound pathophysiology, proteolytic imbalance is implicated due to elevated protease levels mediating tissue damage. Hence, it is important to design appropriate wound treatments able to control and modulate protease activity directly at the host/biomaterial interface. Here, we investigate collagen-based wound dressings with the focus on their potential to adsorb and inactivate tissue proteases.</p> <p>Method: We examined the effect of six collagen-based dressings on their ability to adsorb and inactivate different granulocyte proteases, plasmin, human neutrophil elastase (HLE), and matrix metalloproteases (MMP)-1, -2, -8, and -9, by an integrated approach including immunoelectron microscopy.</p> <p>Results: We observed a reduction of the proteolytic activities of plasmin, HLE, and MMP-1, -2, -8, and -9, both on the biomaterial surface and in human chronic wound fluid. The most pronounced effect was observed in collagen-based dressings, with the highest content of native collagen networks resembling dermis structures.</p> <p>Conclusion: Our data suggest that this treatment strategy might be beneficial for the chronic wound environment, with the potential to promote improved wound healing.</p>	Tati R et al., J Wound Care. 2018 2;27(4):199-209.	https://pubmed.ncbi.nlm.nih.gov/29637827/

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Böhm	2017	Impact of Source and Manufacturing of Collagen Matrices on Fibroblast Cell Growth and Platelet Aggregation	In vitro	-	Collagen is a main component of the extracellular matrix. It is often used in medical applications to support tissue regeneration, hemostasis, or wound healing. Due to different sources of collagen, the properties and performance of available products can vary significantly. In this in vitro study, a comparison of seven different collagen matrices derived from bovine, equine, and porcine sources was performed. As performance indicators, the scaffold function for fibroblasts and platelet aggregation were used. We found strong variation in platelet aggregation and fibroblast growth on the different collagen materials. The observed variations could not be attributed to species differences alone, but were highly dependent on differences in the manufacturing process.	Böhm S et al., Materials (Basel). 2017 Sep 15;10(9):1086.	https://pubmed.ncbi.nlm.nih.gov/28914792/

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Haycocks	2013	Collagen matrix wound dressings and the treatment of DFUs.	Case Study	6	<p>Objective: To obtain clinical evidence on the use of a collagen wound dressing in patients with diabetic foot ulcers (DFUs).</p> <p>Method: A convenience sample of patients managed in the podiatry outpatient clinic over an 8-month period were included in the evaluation, if their DFUs were not progressing. All participants received traditional adjunctive wound care as part of their treatment. Wound surface-area measurements and imaging of patients was carried out on a regular basis to allow the tracking of wound healing.</p> <p>Results: Six patients, with seven wounds were included in this study. There was an overall decrease in wound surface area over time. Three patients showed a relatively swift reduction in wound area, while one patient showed a slight increase in wound area. The percentage decrease in wound area levelled out quite quickly in three patients, with a mean wound duration of 14 months compared with 7.3 months in the remaining four wounds. One patient died of an unrelated cause.</p> <p>Conclusion: This case series evaluation provides a snapshot of experience at one clinical centre and the treatment of DFUs, and suggests that an active biological collagen dressing may support progression to healing by modulating the wound environment.</p>	Haycocks S, Chadwick P, Cutting KF. J Wound Care. 2013; 22(7):369-70, 372-5.	https://pubmed.ncbi.nlm.nih.gov/24159659/

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Ricci	2016	Evaluating a native collagen matrix dressing in the treatment of chronic wounds of different aetiologies: a case series.	Case Study	20	<p>Objective: To collate clinical evidence on the use of a native collagen matrix dressing, consisting of a fibrillary collagen network, in patients with a variety of chronic wounds.</p> <p>Method: Patients whose wounds had not improved in the eight weeks before the beginning of the evaluation were recruited. All participants had their dressings changed twice weekly and received standard adjunctive wound care as part of their treatment. Data, collected over a 4-week period, included: patient demographics, wound surface area measurements, Bates-Jensen score, level of wound pain, wound infection status, wound bed preparation staging score, depth of wound according to tissue type, and photographic imaging of patients' wounds.</p> <p>Results: We recruited 19 patients with 20 wounds and a mean wound duration of 66.6 months (range: 4-480 months). There was a mean decrease in wound surface area of 29% (median reduction: 47%). A reduction in the Bates-Jensen score was demonstrated in 85% of cases. Wound pain reduced by 66.66% and the wound bed preparation score reduced in 16 wounds with four remaining static. No adverse events arose.</p> <p>Conclusion: This case series provides clinical evidence on the use of a native collagen matrix dressing in the management of hard-to-heal wounds that have previously received local standard therapy. The decrease in wound surface area together with other data indicating improved wound status suggests that a native collagen matrix dressing supports healing and improves quality of life through reduction in wound pain.</p>	Ricci E, Cutting KF. J Wound Care. 2016; 25(11):670-678.	https://pubmed.ncbi.nlm.nih.gov/27827280/

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Romanelli	2015	The use of a collagen matrix in hard-to-heal venous leg ulcers.	Case Study	20	<p>Objective: The effects of a collagen dressing on hard-to-heal venous leg ulcers (vLUs) were evaluated in this prospective, randomised, controlled study.</p> <p>Method: Patients with hard-to-heal vLU were included and divided into two groups using the block randomisation method. The first group was treated with a collagen and an alginate dressing (group A), and the second group with an alginate dressing alone (group b). both groups also had a short-stretch compression system applied at every dressing change. The dressings were changed twice a week for 12 weeks or until the ulcer was healed. Granulation tissue improvement, wound size, overall dressing performance and dressing comfort were evaluated and recorded.</p> <p>Results: A total of 40 patients completed the study evaluation period. Group A had a 65 % increase in granulation tissue compared to 38 % in group b. The mean ulcer area was reduced to 45 % in group A compared to 20% in group b at 12 weeks. no significant side effects were detected in either group. Patients of both groups were satisfied with their treatment and healing progress.</p> <p>Conclusion: The results of this study showed the effectiveness and safety of a collagen dressing in hard-to-heal vLUs as an adjunctive therapy with compression bandaging. These encouraging results may positively affect the quality of life of patients with chronic wounds.</p>	Romanelli M, Mulder G, Paggi B, Macchia M, Panduri S, Dini V. J Wound Care. 2015 Nov;24(11):543-4, 546-7	https://pubmed.ncbi.nlm.nih.gov/26551647/