

Wounds digest

In this section, we present brief synopses of a range of recently published articles that may be of interest to healthcare professionals working in the wound care setting. The aim of this round-up is to provide an overview, rather than a detailed summary and critique, of the research papers selected. Full references are provided should you wish to look at any of the papers in more detail.

1 Skin graft bolstered by negative pressure therapy in chronic wounds

Readability	✓	✓	✓	✓	
Relevance to daily practice	✓	✓	✓	✓	✓
Novelty factor	✓	✓	✓		

- Negative pressure wound therapy (NPWT) has been shown to enhance skin graft survival in acute wounds, but its effectiveness in chronic ulcers is underexplored.
- The authors performed a systematic review to evaluate the efficacy of NPWT in bolstering skin grafts for the treatment of chronic ulcers.
- A total of 21 articles (186 patients) were included in the review. The maximal graft uptake ($\geq 95\%$) was observed in 33% of patients, while 77% achieved a graft uptake of $\geq 90\%$. The mean graft take was 92%. Complete recovery was achieved in 79% of patients, with a mean recovery time of 73 days. Complete response without recurrence was noticed in 38% of the cases, with a mean time without recurrence of 197 days. Exploratory analyses indicated higher graft take rates in patients under 65 years old, males, people with diabetes and those without arterial disease. Venous and neurotrophic ulcers also showed superior graft uptake.
- The authors concluded that NPWT appears to significantly enhance graft survival in chronic ulcers, with an excellent safety and tolerance profile. They recommend short-term NPWT application for <1 week for optimal outcomes. These findings suggest that NPWT should be considered a preferred method for securing skin grafts in chronic ulcer management.

Gamel M, Gael M, Bursztejn AC (2025) Skin graft bolstered by negative pressure therapy in chronic wounds: a systematic review. *J Eur Acad Dermatol Venereol*. Epub ahead of print

2 Efficacy of tumor necrosis factor inhibitors for refractory leg ulcers in cutaneous polyarteritis nodosa

Readability	✓	✓	✓		
Relevance to daily practice	✓	✓			
Novelty factor	✓	✓	✓	✓	

- Cutaneous polyarteritis nodosa (cPAN) is a rare necrotising vasculitis that affects primarily small and medium arteries in subcutaneous tissue. It is often characterised by a chronic and relapsing disease that presents with skin ulcers and painful erythema.
- The authors evaluated the efficacy of tumour necrosis factor inhibitor (TNFi) treatment for cPAN-associated refractory leg ulcers in Japan.

- Ten patients with recurrent leg ulcers who were treated with TNFi were included in this retrospective study, with a mean age of 51 years, and 9 were female. ATNFi included adalimumab (5 cases), etanercept (4 cases), and infliximab (1 case). Complete epithelialisation of the ulcers was achieved in all patients. The glucocorticoid dose was successfully reduced, and five patients stopped glucocorticoids completely.
- The authors concluded that TNFi showed therapeutic efficacy for cPAN-associated refractory leg ulcers, but further large-scale studies are required.

Harama K, Sugiyama T, Ito C et al (2025) Efficacy of tumor necrosis factor inhibitors for refractory leg ulcers in cutaneous polyarteritis nodosa: a case series. *J Rheumatol* 52(9): 909–13

3 Efficacy of ultrasound-guided foam sclerotherapy in the healing of venous leg ulcers

Readability	✓	✓	✓	✓	
Relevance to daily practice	✓	✓	✓		
Novelty factor	✓	✓	✓	✓	

- The researchers aimed to assess the efficacy and safety of ultrasound-guided foam sclerotherapy (UGFS) for treating venous leg ulcers (VLUs) in a multicentre randomised controlled trial.
- Participants were randomised into two groups: one group received UGFS for the distal refluxing network of veins (eg, ulcer bed venous plexus), in addition to standard care, and the other group received standard care alone. Standard care included compression therapy, wound care, ablation of superficial reflux and recanalisation of proximal deep venous obstruction, where appropriate. The primary outcome was the time to ulcer healing. Secondary outcomes were the rate of ulcer healing, Venous Clinical Severity Score and patient-reported health-related quality of life.
- At baseline, both groups had similar demographic and risk factors, DVT history, previous venous interventions and ulcer size. The study was terminated early for efficacy when half the number of patients had completed follow-up. A total of 71 patients, 6 with bilateral VLUs, were recruited, with 65 VLUs were available for follow-up and analysis.
- The time to complete ulcer healing was significantly shorter in the group who received UGFS compared to control (median 35 days versus 56 days). More ulcers achieved complete healing within 3 months in the UGFS group (28/29 [97%] versus 27/36 [75%]). The UGFS group also had a significantly more rapid reduction in ulcer size

($P < 0.0001$).

- The authors noted that although both groups benefited from standard care for treating VLUs, the addition of UGFS improved treatment outcomes significantly. UGFS accelerated the healing process. They concluded that UGFS is a valuable adjunctive treatment for VLUs, enhancing the efficacy of standard care protocols.

Bishara RA, Gaweesh A, Hanna IN et al (2025) Efficacy of ultrasound-guided foam sclerotherapy in the healing of venous leg ulcers. *J Vasc Surg Venous Lymphat Disord* 13(4): 102244

4 The impact of a multidisciplinary patient education program on venous leg ulcer healing

Readability	✓	✓	✓		
Relevance to daily practice	✓	✓	✓	✓	
Novelty factor	✓	✓			

- The authors aim was to evaluate the impact of a nurse-led, multidisciplinary education programme on wound healing, patient knowledge and adherence to compression therapy, physical activity and nutrition in individuals with venous leg ulcers (VLU).
- In this randomised controlled trial, 87 patients with VLU from three outpatient clinics in Switzerland were allocated to an intervention group receiving structured education plus standard care or a control group receiving standard care alone. The 12-month intervention included in-person education, counselling and follow-ups. The primary outcome was complete wound closure at 12 months. Secondary outcomes included wound area reduction, patient knowledge, adherence behaviours and ulcer recurrence.
- The researchers found no significant difference in complete wound closure between groups ($P = 0.668$). However, wound area reduction was significantly greater in the intervention group at 1 month (54.0% versus 35.6%, $P = 0.041$). The intervention group showed earlier and greater improvements in knowledge, self-efficacy, and adherence to compression therapy and mobility. No significant differences in nutritional behaviour or body weight were observed.
- The authors concluded that nurse-led education improved early healing and patient engagement. The suggested that future research should explore adaptive education models and digital tools for long-term VLU management.

Probst S, Saini C, Bobbink P et al (2025) The impact of a multidisciplinary patient education program on venous leg ulcer healing: a randomised controlled trial. *Wound Repair Regen* 33(5): e70084

5 Sensor-assisted wound therapy in plantar diabetic foot ulcer treatment

Readability	✓	✓	✓		
Relevance to daily practice	✓	✓	✓		
Novelty factor	✓	✓			

- Offloading is key in the treatment of diabetic foot ulcers (DFUs). The researchers aimed to examine the impact of sensor-assisted wound therapy (SAWT) on the healing of DFUs.

- 2 The developed three non-removable techniques with inbuilt sensors — multilayer felt sole, felt-fibreglass sole and total contact casts with ventral windows. Smartwatch and web apps displayed pressure, temperature, humidity and steps, and these alerted patients, staff and a telemedicine centre when pressure limits were exceeded. They enrolled 20 ambulatory patients in a randomised clinical trial. The control group used the same offloading and monitoring system, but neither patients nor therapists received any information or warnings.
- The median time to ulcer healing was significantly shorter in the intervention group compared with control, 40.5 versus 266.0 days. The median time to 50% ulcer area reduction was shorter in the intervention group compared with controls (10.2 versus 19.1 days).
- The authors concluded that sensor-assisted wound therapy may allow rapid closure of patients' plantar foot ulcers while maintaining their mobility during ulcer therapy.

Readability	✓	✓	✓	✓	
Relevance to daily practice	✓	✓	✓	✓	✓
Novelty factor	✓	✓	✓		

Hochlenert D, Bogoclu C, Cremanns K et al (2025) Sensor-assisted wound therapy in plantar diabetic foot ulcer treatment: a randomized clinical trial. *J Diabetes Sci Technol* 19(3): 692–98

6 Negative pressure wound therapy promotes wound healing by down-regulating miR-155 expression in granulation tissue of diabetic foot ulcers

- This study investigated the effect of negative pressure wound therapy (NPWT) on microRNA-155 (miR-155) in the granulation tissue of patients with diabetic foot ulcers (DFUs).
- 2 Sixty patients with DFUs were randomly assigned in a 2:1 ratio to either the NPWT ($n = 40$) or non-NPWT ($n = 20$) in a 2:1 ratio. After debridement, the intervention group received NPWT treatment for 1 week, while the non-NPWT group had routine dressings. The expression of miR-155 in DFU granulation tissues was evaluated by qRT-PCR before and after treatment for 1 week.
- The NPWT group had a decrease in miR-155 expression in granulation tissue, but there was no difference in the non-NPWT group. There was a positive correlation between miR-155 and wound healing rate in the NPWT group.
- The authors concluded that NPWT promotes DFU healing by reducing the expression of miR-155 in granulation tissue and the efficacy of NPWT correlates with altered miR-155 expression in wound tissue.

Huang Y, Yu Z, Xu M et al (2025) Negative pressure wound therapy promotes wound healing by down-regulating miR-155 expression in granulation tissue of diabetic foot ulcers. *Sci Rep* 15(1): 6733