

Wounds digest

In this section, a brief synopsis is presented 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 Healing rates of venous leg ulcers managed with compression therapy: a secondary analysis of data

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

- The authors set out to analyse the average healing time for patients receiving standard of care with venous leg ulcers (VLUs). This care included compression and advanced wound dressings. This exploration involved the secondary analysis of the Wound Studies electronic database. The Wound Studies database consisted of data from six studies conducted prospectively between 1999 and 2009.
- Of these 777 patients, the proportion of patients who achieved closure at 3 and 6 months was 42.2% and 48.6%, respectively. The monthly mean healing rate of the individuals who achieved wound closure was 33.4% (0.56 cm, SD 1.4 [median 0.15 cm]) at month 3, and 31.0% (0.70 cm, SD 1.6 [median 0.08 cm]) at month 6. total of 1,323 patients were earmarked for analysis in the study, all with VLUs from various community care sectors, including homecare and clinics, across Canada. Of these, 777 patients met the study's inclusion criteria.
- A monthly surface area reduction of 30% was concluded to be the baseline healing rate for VLUs managed with compression therapy and advanced dressings. It was found that standard of care is not sufficient for healing in more than half of the population.

Rajhathy EM, Murray HD, Roberge VA, Woo KY (2020) Healing rates of venous leg ulcers managed with compression therapy: a secondary analysis of data. *J Wound Ostomy Continence Nurs* 47(5): 477–83

2 General practitioners' knowledge of leg ulcer treatment in primary healthcare: an interview study

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

- The aim of this study was to examine the knowledge of general practitioners (GPs) regarding leg ulcer treatment when treating patients with leg ulceration at primary healthcare centres, as well as the development of their knowledge.
- Semi-structured interviews were conducted by the authors with 16 individual GPs who worked at both private and county council-run healthcare centres. Data were analysed inductively using a thematic analysis. From the interviews, four key themes emerged. These were: Education and training, Experience, Prioritisation and Time constraints.

- In conclusion, the study discovered that GPs working in primary healthcare are well aware of the necessity for ongoing competence development concerning leg ulceration. GPs also described their current knowledge of leg ulcer treatment as insufficient, while bringing up the lack of relevant courses that are adapted for their level of knowledge and the limited opportunities for clinical training.

Friman A, Wiegleb Edström D, Ebbeskog B, Edelbring S (2020) General practitioners' knowledge of leg ulcer treatment in primary healthcare: an interview study. *Prim Health Care Res Dev* 21:e34. doi: 10.1017/S1463423620000274.

3 Statins-related peripheral neuropathy among diabetic patients

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

- The authors set out to examine the association between peripheral neuropathy and statins therapy among people with type 2 diabetes. Statins have been identified as being potentially one of the reasons behind peripheral neuropathy.
- A total of 757 cases seen at Penang General Hospital in Malaysia were placed into two groups (564 in the statins therapy group and 193 without statins) and the diagnosis of peripheral neuropathy was examined retrospectively for 10 years (2006–2016).
- Of the 564 individuals who underwent statins therapy, 22.9% ($n=129$) had PN, while 15.5% ($n=30$) of the non-statins group had peripheral neuropathy. A significant variance was found between the groups; Spearman's investigation presented a positive correlation ($r: 0.078$, p -value: 0.031) among statins use and peripheral neuropathy prevalence.
- In conclusion, there was a positive association between peripheral neuropathy and the use of statins. Peripheral neuropathy was higher among the statins users than the non-statins group.

Hammad MA, Sulaiman SAS, Alghamdi S et al (2020) Statins-related peripheral neuropathy among diabetic patients. *Diabetes Metab Syndr* 14(4): 341–6

4 Negative pressure wound therapy compared with standard moist wound care on diabetic foot ulcers in real-life clinical practice: results of the German DiaFu-RCT

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

- The authors assessed the efficacy and safety of negative pressure

wound therapy (NPWT) in people with diabetic foot ulcers (DFUs) using the DiaFu study. The DiaFu study was a controlled clinical superiority trial with blinded outcome assessment; patients were randomised in a 1:1 ratio.

- The study involved 368 randomised patients and 345 participants were included in the modified intention-to treat (ITT) population. Patients having a DFU for at least 4 weeks and without contraindication for NPWT were included.
- The primary outcome was wound closure in a 16-week period. Secondary outcomes included quality of life, pain, wound size and wound tissue composition among others.
- Neither the wound closure rate ($P=0.53$) nor the time to wound closure ($P=0.244$) in the ITT population was significantly different between the treatment arms. NPWT was not found to be superior to standard moist wound care. Wound closure rate was low and documentation deficits, as well as deviations from treatment guidelines, adversely affected wound closure.

Seidel D, Storck M, Lawall H et al (2020) Negative pressure wound therapy compared with standard moist wound care on diabetic foot ulcers in real-life clinical practice: results of the German DiaFu-RCT. *BMJ Open* 10(3): e026345

5 Wound assessment, imaging and monitoring systems in diabetic foot ulcers: A systematic review

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

- This study reviewed the existing literature on the available wound assessment and monitoring systems for diabetic foot ulceration (DFU). Articles between 1974 and March 2020 on PubMed and Embase were reviewed with all studies related to wound assessment or monitoring systems in DFUs included.
- A total of 531 suitable articles were found with papers on other types of wounds, review articles and non-English texts excluded. It was decided that 17 studies were eligible for the final analysis and five modalities were identified: 1) hand-held devices or computer applications ($n=5$); 2) mobile applications ($n=2$); 3) optical imaging ($n=2$); 4) spectroscopy or hyperspectral imaging ($n=4$); and 5) artificial intelligence ($n=4$).
- While 16 studies focused on wound assessment or monitoring, just one reported on data capturing. The two reporting on

the use of computer applications found low inter-observer variability in wound measurement. High accuracy was found in hand-held commercial devices and the use of spectroscopy or hyperspectral imaging in prediction of wound healing had a sensitivity and specificity of 80% to 90% and 74% to 86%, respectively.

- The authors concluded that the majority of wound imaging systems are superior to traditional wound assessment and, therefore, should be used as adjuncts in DFU monitoring.

Chan KS, Joseph Lo Z (2020) Wound assessment, imaging and monitoring systems in diabetic foot ulcers: A systematic review. *Int Wound J* doi: 10.1111/iwj.13481. [Online ahead of print]. *BMJ Open* 10(3): e026345

6 High-dose vitamin D supplementation improves microcirculation and reduces inflammation in diabetic neuropathy patients

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

- Different doses of vitamin D supplementation were analysed on microcirculation, signs and symptoms of peripheral neuropathy and inflammatory markers in type 2 diabetes (T2DM) patients and those with peripheral neuropathy (PN).
- A total of 67 patients with T2DM and 34 with PN were earmarked for this study. They were randomised into two treatment groups whereby one was treated with cholecalciferol 5,000 IU and 40,000 IU once per week orally for 24 weeks.
- After a number of signs (severity of neuropathy, cutaneous microcirculation parameters and inflammatory markers) were measured before and after treatment, vitamin D deficiency/insufficiency was found in 78% of the 62 completed subjects.
- Treatment with the higher dose of cholecalciferol resulted in a significant decrease in neuropathy severity, as well as an improvement of cutaneous MC and an increase in IL-10 level. No changes were detected in the lower dose cholecalciferol group.
- It was deduced that high-dose cholecalciferol supplementation was linked to improvement in clinical manifestation, cutaneous microcirculation and inflammatory markers in T2DM patients and PN.

Karonova T, Stepanova A, Bystrova A, Jude EB (2020) High-dose vitamin D supplementation improves microcirculation and reduces inflammation in diabetic neuropathy patients. *Nutrients* 12(9): E2518. *Int Wound J* doi: 10.1111/iwj.13353 [Online ahead of print]