Technoleg Iechyd Cymru
Health Technology Wales

Topic Exploration Report [1]

Multicomponent compression systems in a single bandage for lower limb ulcers and oedema

What is a Topic Exploration Report?

Topic Exploration Reports are not health technology assessments. These reports provide a high-level briefing on new topics submitted to Health Technology Wales and are not based on exhaustive or systematic literature searches. Instead, they rely on a focussed scan of key resources.

What evidence is used in a Topic Exploration Report?

Priority is given to summarising the most relevant or useful evidence, rather than covering all possible evidence. Information reported is typically based on abstracts and study authors' own conclusions, rather than detailed scrutiny of full texts.

What are the aims of a Topic Exploration Report?

Topic Exploration Reports offer an overview of the available evidence on a topic and aim to highlight any uncertainties or gaps in the evidence. These reports outline the quantity and type of evidence found, but no critical appraisal or formal evidence synthesis is conducted.

How should a Topic Exploration Report be used?

Topic Exploration Reports can be used to indicate what evidence may be available for a topic, and do not provide definitive guidance on how a technology should be used. The evidence presented within the reports should be interpreted with caution.

[1] Cyfieithu dogfennau HTW wedi'u cyhoeddi o'r Saesneg i'r Gymraeg
Translation of published technical HTW documents from English into Welsh

Topic exploration report number	TER661
Topic	Multicomponent compression systems in a single bandage for lower limb ulcers and oedema
Summary of findings	Compression therapy is an important part in the treatment of venous leg ulcers and lower limb oedema. Various products are available to provide compression therapy, including multi-layered compression bandages, compression hosiery and compression wraps. However, the ease of application of these compression systems, consistency of pressure applied, and patient acceptability can affect patient compliance and the effectiveness of treatment. Multicomponent compression systems in a single bandage are a newly developed, simplified format to deliver compression therapy. UrgoKOne (Urgo Ltd) is an example of a class I UKCA- and CE-marked multicomponent compression system in a single bandage. We searched for evidence on the clinical and cost effectiveness of multicomponent compression systems in a single bandage for lower limb ulcers and oedema. Three non-comparative, observational studies were identified. All investigated the use of UrgoKOne and found improvements in wound healing with few adverse events. The system was generally well accepted by patients and was quick to apply. Uncertainties in the evidence include the lack of comparative evidence to standard of care available and also a lack of economic evidence.

Introduction and aims

Venous leg ulcers and lower limb oedema are often caused by chronic venous disease and can lead to slow progressing, hard-to-heal wounds. They cause significant morbidity and detriment to people's quality of life, whilst also creating significant burden for health services. Compression therapy is an important part in the treatment of venous leg ulcers and lower limb oedema; they squeeze the lower limb to reduce swelling and improve blood flow back to the heart. At least 40 mmHg of pressure at the ankle is recommended for venous leg ulcers and various products are available to provide compression therapy, including multi-layered compression bandages, compression hosiery and compression wraps. However, the ease of application of these compression systems, consistency of pressure applied, and patient acceptability can affect patient compliance and the effectiveness of treatment.

Multicomponent compression systems in a single bandage are a newly developed, simplified format to deliver compression therapy. By combining elastic and inelastic properties in the material, sustained pressure can be maintained with just one bandage, making application simpler with the aim of improving patient comfort and adherence. UrgoKOne (Urgo Ltd) is a class I UKCA- and CE-marked multicomponent compression system in a single bandage. It can deliver 40 mmHg of compression and be worn continuously day and night. The manufacturer also intends to add washable functionality in late 2026, which will allow for washing the bandage up to three times and re-use, without a reduction in performance.

Health Technology Wales researchers searched for evidence on the clinical and cost effectiveness of multicomponent compression systems in a single bandage for lower limb ulcers and oedema.

Evidence overview

Guidelines

A late-stage assessment of compression products for venous leg ulcers (HTG758) by NICE was identified (NICE 2025). However, this does not appear to have included any multicomponent systems in a single bandage.

Primary evidence

Three non-comparative, observational studies were identified. A prospective clinical study, conducted in France and Germany, investigated use of UrgoKOne to treat venous leg ulcers with a wound area of 2 to 20 cm^2, lasting for a maximum of 24 months (Senet et al. 2022). In a cohort of 52 patients (52% female, mean age 75.4 ± 13.0 years), the bandage was worn day and night over six weeks. At six weeks follow-up, the median relative wound area reduction was 91% (interquartile range 39.4 to 100%) and 35% of patients achieved wound closure. Oedema was also resolved in 57% of patients and there were substantial improvements in health-related quality of life. Patient satisfaction and adherence were both high. Nine non-serious adverse events related to the bandage occurred in seven patients.

A second study, reported in German with an English summary, investigated use of UrgoKOne for 20 patients with leg ulcers and oedema (Moelleken et al. 2023). The total time required for preparation, clean up and application of both legs was four minutes and nine seconds. By four weeks of treatment, there was an average wound reduction of 26.07% and no side effects were reported.

The third study in Germany reported on 343 patients treated with UrgoKOne for a mean of 48 ± 30 days for venous leg ulcers and/or lower limb oedema (Dissemond et al. 2025). By the final visit, 49% of ulcers had healed and oedema was resolved or significantly reduced in 87% of

Evidence overview

patients. The median length of time to apply the bandage was 108 seconds and it was generally well accepted by patients. Three cases of local intolerance to the bandage were reported.

Areas of uncertainty

- No comparative evidence was identified.
- No studies undertaken in Wales or the wider UK.
- No economic evidence was identified.

Literature search results

Health technology assessments and guidance
NICE. (2025). Compression products for treating venous leg ulcers: late-stage assessment. HealthTech guidance HTG758. National Institute for Health and Care Excellence. Available at: https://www.nice.org.uk/guidance/htg758 [Accessed 05 May 2026].
Individual studies
Dissemond J, Schicker C, Breitfeld T, et al. (2025). An innovative multicomponent compression system in a single bandage for venous leg ulcer and/or oedema treatment: a real-life study in 343 patients. J Wound Care. 34(1): 31-46. doi: https://doi.org/10.12968/jowc.2024.0375 Senet P, Addala A, Léger P, et al. (2022). A new compression system for treatment of venous leg ulcers: a prospective, single-arm, clinical trial (FREEDOM). J Wound Care. 31(9): 734-47. doi: https://doi.org/10.12968/jowc.2022.31.9.734
Provided by topic proposer
Moelleken M, Krefting F, Kleinhans M, et al. (2023). Kompressionstherapie mit einem neuen mehrkomponentensystem mit nur einer binde bei patienten mit ulcus cruris und ödemen. WUND-management. 17(1): 24-30. [In German with an English summary]

Date of search	May 2026
Concepts used	UrgoKOne, UrgoK1, multicomponent compression system/bandage, compression therapy, venous leg ulcer, chronic venous insufficiency, lower limb oedema

Proposed research question and evidence selection criteria (if selected)

Proposed Research question	**What is the clinical and cost effectiveness of multicomponent compression system in a single bandage for lower limb ulcers and oedema?**

	Inclusion criteria	Exclusion criteria
Population	People with lower limb ulcers and oedema, including venous leg ulcers	People with ulcers without a venous element
Intervention	Multicomponent compression systems in a single bandage, such as UrgoKOne	
Comparison/ Comparators	Compression therapy with multi-layered compression bandages, compression hosiery or compression wraps	
Outcome measures	Wound healing Reduction in wound area Reduction in oedema Wound recurrence or exacerbation Need for further treatment Patient-reported pain Patient acceptability Patient adherence/concordance Adverse events Health related QoL Resource use Economic outcomes	

Proposed speciality	**Injuries, accidents and wounds**