

Commentary

Commentary: TWO2 Therapy Demonstrates Clinically Meaningful Long-Term Outcomes Compared to Other Advanced Wound Care Modalities: Real-World Evidence Supported by Mechanistic and RCT Clinical Data

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About the study

Chronic Diabetic Foot Ulcers (DFUs) and Venous Leg Ulcers (VLUs) remain a major source of morbidity, healthcare utilization, and limb loss, despite adherence to established standards of care protocols and the widespread availability of advanced wound technologies. Many advanced modalities only target isolated aspects of wound healing and fail to address the complex, interdependent pathophysiology of chronic wounds, particularly tissue hypoxia, edema, impaired microcirculation, and persistent inflammation.

Cyclical Pressurized Topical Wound Oxygen (TWO2) therapy is a home-based, multimodal intervention that combines humidified topical oxygen delivery with cyclical non-contact compression to address these core drivers simultaneously. It is unique in that it can address all the drivers of wound healing simultaneously.

This review synthesizes mechanistic rationale and evidence from randomized controlled trials, long-term venous ulcer studies, and real-world comparative effectiveness analyses. The emphasis is placed on the large cohort study by Yellin et al., which directly compared TWO2 with other advanced modalities including Negative Pressure Wound Therapy (NPWT), skin substitutes, and growth factor therapies. Across these studies, TWO2 therapy is consistently associated with improved healing durability, reduced recurrence, and substantial reductions in hospitalization and amputation rates compared with both standard care and advanced wound therapies.

The convergence of randomized and real-world evidence supports TWO2 therapy as a clinically meaningful and mechanism-driven adjunctive treatment option for patients with chronic, high-risk lower-extremity wounds. It is one of the few advanced modalities that can be used on a wound during all phases of wound healing and all the to complete closure.

TWO2 therapy is supported by a converging body of evidence demonstrating improved healing durability and substantial reductions in hospitalization and amputation in patients with multimorbid chronic lower-extremity wounds. The randomized TWO2 Study establishes efficacy, while the real-world analysis by Yellin and colleagues demonstrates generalizability in far broader comorbid patient populations, as well as comparative effectiveness against other advanced wound modalities. The large cohort retrospective study by Lohr and colleagues further supports the generalizability of healing outcomes across varied lower extremity wound types, and in populations refractory to standard care and advanced therapies. By addressing hypoxia, edema, and impaired microcirculation simultaneously, TWO2 therapy offers a mechanism-driven approach that translates into meaningful patient-centered outcomes.

These findings support the earlier and broader adoption of TWO2 therapy in the management of chronic lower extremity wounds, with the potential to reduce wound recurrence, lower amputation risk, and decrease the economic burden and social toll of chronic wounds on patients, caregivers, and the healthcare system