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# Leading Through Clinical Evidence to Face the Current & Rising Challenges of DFU Management, in Pandemic Times and After

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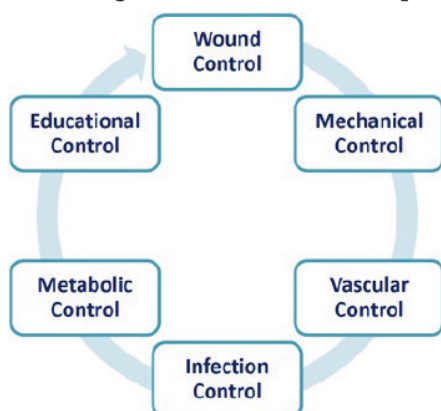
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## Current and Rising Challenges in DFU Management

Optimal diabetic foot ulcer management requires an understanding of the pathogenesis of ulceration (primary: neuropathy, ischemia; secondary: infection) and basic classification and staging of the foot (e.g., normal, high risk, ulcerated, infected, necrotic). It is important to achieve fast healing of uncomplicated ulcers. Patients with complicated ulcers should be referred to specialists as soon as possible. In order to optimize healing, control over several factors must be achieved (Figure 1).

**Figure 1.** Restoring Control to Avoid Amputation



## The Multidisciplinary Team

Multidisciplinary foot care teams have several key roles, including:

- Co-ordinating primary and secondary care
- Healing ulcers

- Accepting emergency referrals
- Providing outpatient antibiotic service
- Performing debridement and minor surgery
- Performing post-operative follow-up
- Providing education and participating in research

A multidisciplinary foot care team should include a podiatrist, nurse, surgeon (vascular, orthopedic, plastic), interventional radiologist, orthotist and diabetologist. Achieving control through a multidisciplinary diabetic foot care team requires co-ordination of therapy through integrated services, focused care at a diabetic foot clinic and rapid access to care through a patient-friendly care pathway.

Multidisciplinary foot care teams must link with the community to ensure smooth transition of care (Figure 2). Patients, community care providers and clinicians alike must be able to identify symptoms and signs that might lead to amputations and ACT quickly to treat them (see box, ACT NOW).

**Figure 2.** Diabetic Foot Clinic Links with Community





## Outcomes of TLC-NOSF (Sucrose-octasulfate) Dressings in the Management of Diabetic Foot

Standard care of DFUs includes pressure offloading and ulcer protection, restoration of tissue perfusion, treatment of infection, metabolic control, treatment of comorbidities and local ulcer care. The presence of ischemia not only reduces the probability of healing but also increases level and activity of MMPs (Matrix Metalloproteinases).

### TLC-NOSF Dressing: Mechanism of Action

TLC-NOSF dressings such as UrgoStart reduce MMP levels in non-healing wounds, thus limiting degradation of extra cellular matrix (ECM) components like collagen or growth factors. Clinical efficacy has been documented especially in wounds with vascular etiology, as reported in DFU patients with an ischemic component and venous or mixed leg ulcers.

### The EXPLORER RCT

The EXPLORER study was a large European randomized, double-blind, controlled trial comparing two groups of patients presenting with DFU with neuropathy and ischemia. Findings indicated that 60% more DFUs healed by 20 weeks in patients treated with TLC-NOSF (48% vs 30% of patients healed) when compared with the group that received an advanced neutral dressing. Furthermore, use of a TLC-NOSF dressing shortened the mean time to closure by 60 days. It is important to note that the earlier the TLC-NOSF dressing is initiated in DFU treatment, the greater the benefits (e.g., in DFUs lasting for less than two months, 71% wound closure rate was reached versus 41% in the control group).

### Further Research

A 2020 study by Lázaro-Martínez et al. aimed to evaluate the improvement in the microcirculatory status in patients with a neuroischemic DFU through the use of a TLC-NOSF dressing. TcPO<sub>2</sub> values after treatment with sucrose octasulfate dressing showed a significant increase between day 0 and wound closure

## A Canadian Experience: Love in the Time of COVID

The Mayer Institute, a specialized diabetic wound care clinic, created virtual foot care teams to treat patients during the COVID-19 pandemic. Teams included vascular surgeons, infectious disease specialists, endocrinologists, orthopedic surgeons, dermatologists and plastic surgeons combined with TMI's highly skilled wound nurses. The open-concept clinic had six treatment bays to ensure efficient workflow and to allow physicians to see all patients and give them the time required for optimal care.

Despite the numerous challenges brought about by the COVID-19 pandemic, the ability of the Mayer Institute to be nimble allowed for scaling of procedures that clinicians could not have envisioned prior to this time. The pandemic also allowed clinicians to tighten up protocols, ensure adherence to guidelines and become hyper efficient.

( $p < 0.016$ ), which occurred in all the treated patients after a median time of eight weeks. Results were concordant with those of the EXPLORER RCT and large observational studies performed in real life on thousands of patients (e.g., REALITY study and German Observational Study GOS 1 [Dissemond, 2020]).

### Recommendations for Use of TLC-NOSF

In 2019, the IWGDF guidelines recommended TLC-NOSF dressings for local treatment of neuroischemic diabetic foot ulcers; this was the first time that a specific dressing was recommended by the IWGDF for the local treatment of DFUs. Also, the National Institute for Health and Care Excellence (NICE) in the UK issued a recommendation supporting the use of UrgoStart dressings to treat patients with diabetic foot ulcers "because they are associated with increased wound healing compared with non-interactive dressings, in addition to an improvement of the quality of life of the treated patients."



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