

# Transforming Powder Dressing in the Treatment of Diabetic Foot Ulcers

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## Introduction

The management of chronic diabetic foot ulcers (DFU) is a multifaceted dilemma that can lead to serious complications and death if not addressed in an effective manner. Clinicians must account for presence of infection, vascular sufficiency, neurosensory deficits, and patient compliance to treatment modalities. To meet such challenges, clinicians must have safe, effective, and efficient treatment options. The use of a transforming powder dressing (TPD) has been demonstrated to be such a tool in the treatment of DFUs as illustrated in this case series.

## Methods & Materials

Two elderly patients with multiple comorbidities and nonhealing DFUs being treated with standard of care (SOC) wound dressings were converted to treatment with TPD. TPD is an extended wear, novel powder dressing comprised primarily of biocompatible polymers similar to those used in contact lens. Upon hydration with saline, TPD granules aggregate to a form moist, oxygen-permeable matrix that protects the wound from contamination while helping to manage excess exudate through vapor transportation. Once applied, TPD may be left in place for up to 30 days and additional powder may be added (“topped off”) as needed. Simple secondary dressings may be used in areas of high exudation or friction. TPD dries and flakes off as the wound heals.

## Results



Case 1: 67-year-old Asian male with PMH of DM, CKD, CAD and HTN was undergoing treatment of a left sub-metatarsal wound after undergoing a left hallux amputation due to complications of a DFU. The subject's wound had remained stagnant for 4 weeks. At baseline, the wound measured 2.63cm<sup>2</sup>. The subject received 5 applications of TPD, and the wound reduced in size by 81% (0.49cm<sup>2</sup>).



Case 2: 86-year-old Hispanic male with PMH of DM, HTN, CKD, CAD, and HLD was being followed for a nonhealing right sub-metatarsal wound as a result of right hallux amputation, which was complicated by a post-surgical infection that required additional surgical debridement. The subject's wound had reduced in size significantly, but closure was difficult to achieve. The wound measured 0.92cm<sup>2</sup> at baseline. After a total of 4 applications of TPD, the wound healed completely within 8 weeks.

## Conclusion

Both wounds were successfully treated with TPD. Both subjects experienced a rapid increase in healing rates of previously stagnant wounds. Neither wound was affected by infection while undergoing treatment with TPD. Effective management of chronic DFUs is an immense challenge and the use of an extended wear, novel transforming powder dressing is a viable treatment option as demonstrated by this case series.