

# IMPROVING QUALITY OF LIFE FOR PATIENTS WITH COMPLEX COLORECTAL WOUNDS: AN INNOVATIVE APPROACH USING A TRANSFORMING POWDER DRESSING

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## INTRODUCTION

Colorectal surgery is performed for many indications, including bowel obstruction, diverticulitis, cancer, inflammatory bowel disease, and more.<sup>1</sup> Colorectal wounds are amongst the most challenging to manage, considering surgical site infection (SSI) ranges from 5-30% and is linked to significant increases in postoperative morbidity.<sup>2</sup> These wounds are often left open to reduce SSI risk, adversely impacting patient quality of life (QoL) with delayed healing, pain, bleeding, frequent dressing changes, and increased nursing care demands.<sup>2</sup>

## OBJECTIVE

The objective was to evaluate the impact of a transforming powder dressing (TPD\*) on patient QoL in complicated colorectal wounds. TPD is comprised of polymers similar to those used in contact lenses, is an extended wear (up to 30 days) powder dressing that when hydrated, transforms into a moist, oxygen permeable matrix that covers and protects the wound.

## METHODOLOGY

Ten patients with a variety of colorectal surgical wounds were included. TPD was sprinkled over open wounds (including tunnels), transformed with sterile saline, and left to protect the wound from exposure to contamination. TPD was “topped off” (additional powder added to existing TPD matrix) or reapplied as needed. Patients were followed until healed. Demographics, challenges with standard of care (SOC) dressings, wound measurements, dressing change frequency, and pain levels were recorded.

## RESULTS (N=10)

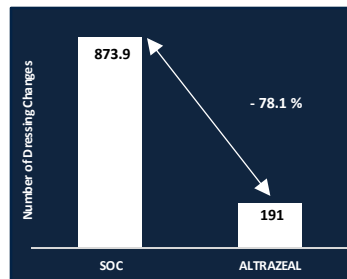
### PATIENT POPULATION (N=10) :

- 60% female
- Mean age: 42 years (2 months - 62 years)
- Average wound volume: 693cm<sup>3</sup> (0.7 – 2,159)
- **Wound types:**
  - 7 abdominal wounds
    - 4 with fistulas and 2 w/ 9-10 cm tunnels
  - 2 peristomal complications
  - 1 omphalocele

### SUMMARY RESULTS:

- **All patients reported pain reduction**
- **Observed improved healing trajectories:** average healing time of 18.8 weeks (range: 2.3 - 42 weeks)
- **78.1% reduction in dressing changes:** 191 TPD changes vs. equivalent of 874 with SOC

### Dressing Change Reduction



### ILLUSTRATIVE CASES:

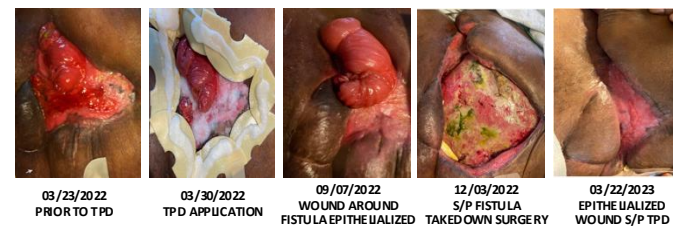
**PATIENT 1:** 60 y/o female with PG and Crohn’s disease  
**Challenge:** Appliance required daily changes; irritant dermatitis from leaking stool (Pain Score: 10/10)  
**Outcomes:**

- **Reduced pain (0/10) and stopped pain medication**
- **Extended appliance changes** to once every 4 days
- **Avoided readmission** for complications



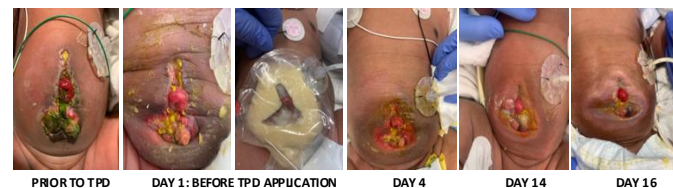
**PATIENT 2:** 37 y/o female with chest trauma and abdominal wound (13x11x3.5cm) s/p motorcycle accident  
**Challenge:** NPWT discontinued after 76 days due to fistula formation. Time consuming pouch changes 2x daily  
**Outcomes:**

- **Reduced dressing changes:** 2x/week versus 2x/day
- **Facilitated wound epithelialization**
- **Enhanced patient comfort:** Patient transitioned to smaller pouch and resumed ADL within 10 days



**PATIENT 3:** 2-month-old male with surgical wound dehiscence and MASD following omphalocele repair  
**Challenge:** Effluent repeatedly undermined the barrier ring several times a day with SOC and pouch dressings  
**Outcomes:**

- **Facilitated epithelialization & faster colostomy reversal**
- **Reduced touch time:** 2 applications over 16 days
- **Improved patient comfort:** Baby slept through changes



## DISCUSSION

All patients healed, except for one patient that died due to unrelated complications. Weekly dressing change frequency was reduced significantly in comparison to conventional SOC dressings. All patients reported less pain associated with dressing changes when converted to TPD. No wound related adverse events (including any surgical site infections) were identified.

## REFERENCES & ACKNOWLEDGEMENTS

(1) Kirchoff P, Clavien P, Hahnloser D. Complications in colorectal surgery: risk factors and preventive strategies. Patient Saf Surg. 2010;4:5. doi:10.1186/1754-9493-4-5 (2) Mullen MG, Hawkins RB, Johnston LE, Shah PM, Turrentine FE, Hedrick TL, Friel CM. Open surgical incisions after colorectal surgery improve quality metrics, but do patients benefit? Dis Colon Rectum. 2018;61(5):622-628. doi:10.1097/DCR.0000000000001049 | **ACKNOWLEDGEMENTS:** This poster was presented in collaboration with Altrazeal Life Sciences Inc. For application instructions and risks of this device please refer to Altrazeal Instructions for Use. | EDU-1113