

# LevaFiber Skin Contact Layer, Fuzzy Wale Elastic Textile & Short Stretch Cohesive Wrap Enhances Venous Leg Ulcer Healing; healing stasis dermatitis decreases skin pain and enables delivery of robust compression

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## PROBLEM

- Painful refractory stasis dermatitis behind the knee.



Rx day #7 and #21. This patient had a square of LevaFiber dressing (Drawtex®) placed behind knee as part of 3 layer compression dressing to help treat painful wet stasis dermatitis. This patient had stasis dermatitis in the popliteal fossa behind the knee that did not respond to weeks of layered compression. Motion at the knee and concave skin surface make the popliteal fossa difficult to effectively to compress with Profore-type dressings. Results of one week of LevaFiber\* were dramatic.

Photos show one of a handful of VLU patients with painful refractory stasis dermatitis that responded to Drawtex LevaFiber therapy. Success with this small patient group lead us to try LevaFiber instead of cast padding as the first layer in a 3 layer VLU compression dressing for VLU patients with painful stasis dermatitis that precludes the tight wrapping required for adequate compression.

## OUTCOME

- Dermatitis responded to LevaFiber wrap at 1 week.

## PROBLEM

- Painful refractory necrotic venous leg ulcers with painful stasis dermatitis and edema.
- Comorbid recent onset diabetes with hyperglycemia.



Clinic Day #0. This is a 55 y/o male auto parts manager with massively swollen painful stasis dermatitis and five 5mm patches of skin on medial ankle with full thickness necrosis. He had recent onset of diabetes, uncontrolled hyperglycemia, first controlled by oral agents and then at time we saw him, just diet. He continued full-time work in spite of discomfort.



Clinic Day #0. Observe massive swelling and weeping present along skin crack lines. This dermatitis was exquisitely tender; thus we did not debride at first clinic visit.

## CONCLUSION

- LevaFiber wrap as a skin contact layer appears to efficiently heal venous stasis dermatitis.
- Resolution of painful dermatitis allows for higher levels of elastic compression to heal ulcers.

**PROBLEMS** Improvements in elastic compression dressing therapy for venous leg ulcers (VLUs) follow advances in textile engineering. Christine Moffatt utilized soft polyester batting, like the cotton batting of Robert Jones dressings, in contact with painful dermatitis in peri-wound skin to decrease pain and improve patient comfort of 4 layer elastic compression dressing kits.1 We observed that LevaFiber\*, as a replacement for batting, appears to have a direct salutary effect on painful peri wound stasis dermatitis, that often presented with troublesome maceration and bacterial colonization.

In 2006, Kozeny observed longitudinal fuzzy wale elastic compression stockinet\*\*, the second layer in this dressing, to be effective for moving water out of subcutaneous fat, reversing the pathophysiology of venous insufficiency and healing refractory VLUs.2,3 Treadwell observed ulcer healing benefits of short stretch therapy to increase dressing working pressure during ambulation and to reduce resting pressure.4 The third layer of this dressing is a short stretch random open weave cohesive wrap that facilitates water evaporation and heat disbursement to improve patient comfort.

## METHODS

LevaFiber skin contact layer\* was used to wrap the calf, and a tapered fuzzy wale stockinet\*\* were used to treat one patient with refractory VLUs over a 4 week period. Photos document details of therapy, improvement of stasis dermatitis, and ulcer healing.

## RESULTS

Levels of skin pain, clearing of peri-wound stasis dermatitis, and wound bed preparation was documented in photographs.5 Results are compared to standard of care controls.

## CONCLUSIONS

A thin LevaFiber\* skin contact layer appears to: 1. improve peri-wound stasis dermatitis decreasing pain in the limb 2. control skin maceration by wound exudate, perhaps by evaporation, and 3. speed wound bed preparation in compression dressings in place for 3 to 7 days.

\* Drawtex®, SteadMed Medical, Fort Worth, Texas 76107

\*\* EdemaWear® SHAPED™ Stockinet, Compression Dynamics LLC, Omaha, Nebraska 68102

## OUTCOME

- Poor response to standard therapy over 2 weeks.
- LevaFiber wrap used in place of cast padding for first layer of Profore-type dressing. Dermatitis response is dramatic at 1 week.
- Complete healing of ulcers over 3 weeks.



Rx Day #0, Wrapping R calf in Drawtex roll as a comfortable contact dressing, a stand-in for the traditional cast padding of Profore and foam wrap type compression layered dressings.



Rx Day #0. R calf dressing of LevaFiber contact layer\*, fuzzy wale elastic compression textile\*\* and a loosely applied crepe elastic wrap.



Rx Day #7. Observe in these two photos: 1. decreased swelling of R ankle, 2. the thick layer of dry skin scales and inspissated serous exudate looks scary, but is the clinical sign of healing of severe stasis disease, dry skin scales a great sign of healing. The result of 7 days of LevaFiber, as a replacement for the skin contact layer instead of cast padding, in the 3 layer elastic compression dressing is impressive. Note the dry exudate on Drawtex® skin contact dressing in the background. Observe that Drawtex® appears to deliver effective LevaFiber hydroconductive therapy that rapidly resolves stasis dermatitis - a significant therapeutic advance in the treatment of refractory VLUs.



Observe that the Drawtex® roll contact dressing is stained with dry exudate and exfoliated skin scales after being in place for 7 days under a compression dressing of EdemaWear® SHAPED™ and crepe bandage. Drawtex® as a contact layer in layered elastic compression dressings appears to deliver effective LevaFiber hydroconductive therapy to rapidly resolve stasis dermatitis, a new observation for us, and a significant therapeutic advance.

## References

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