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Title:

**Yarn Focused Compression Safely Enhances Wound Healing in
Arterial Ischemia**

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Introduction:

Yarn Focused Compression (YFC)* textile controls limb edema with fuzzy yarns that create “Cornrow Furrows” on the skin surface. Kozeny and Stott reported this edema reducing effect in 2006.(1) Kozeny Effect physiology results from non-compressed subcutaneous fat between each cornrow furrow. In Longitudinal Yarn Compression (LYC)** fuzzy yarn focuses elastic compression on one fifth of the skin surface directly beneath the yarn in a furrow. The adjacent four fifths of the skin remain uncompressed between yarns. Non-compressed skin and subcutaneous fat is a physiologic low pressure “sink.” Lymphatic and venule effluent drains away from zones of compression. Jobst type elastic compression garments act as circumferential lymphatic tourniquet. Edema is a significant co-morbidity preventing healing of ischemic ulcers. Jobst type elastic compression acts as a subdermal tourniquet for lymphatic and capillary perfusion.

Rooke boots, made of fake sheep skin, are widely used for ischemic feet. Something about the “fuzzy interface” between human skin and nylon faux sheepskin is salutary for ulcer healing. YFC delivers elastic compression via fuzzy yarns. The physiologic mechanism of “fuzzy nexus”, beyond insulation, is not understood at the cellular level. YFC is comfortable to wear.

This study answers two questions. Is LYC safe to use in patients with end stage arterial occlusive disease? Does fuzzy yarn compression speed healing of ischemic wounds?

Methods:

Five limbs with ischemic ulcers were treated with LYC elastic compression. Ankle Brachial Index (ABI) is reported. Two patients had no Doppler signal present below the femoral artery. Photos document healing.

Results:

Compliance with YFC compression is high. All wounds healed. No complications occurred.

Conclusions:

LYC appears to be safe to use in patients with end stage arterial occlusive disease. Fuzzy yarn compression appears to speed healing of ischemic wounds even when substantial edema is not present.

References:

- 1 Kozeny, D., Stott, K., "Longitudinal yarn compression textile: An innovative treatment for leg swelling." Journal of Vascular Nursing, Volume 25, Issue 3, Pages 62-62, September 2007
- 2 Hopf, Harriet W., et al, "Guidelines for the prevention of lower extremity arterial ulcers." Wound Repair & Regeneration. Volume16, Issue 2, Pages 175-188, March/April 2008.

*, ** EdemaWear®, Compression Dynamics, LLC, Omaha, Nebraska