



Validity, Inter-rater and Intra-rater reliability of an adjustable compression device* application

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Rationale

- Short stretch Adjustable Compression Wrap* with VELCRO®. Wide central reinforced spine with short front fastening straps Figure 1 that overlap and attach to themselves by VELCRO® strips to form the tubular system Figure 2.
- Application and placement of the straps using the 'Lock and Secure'™ technique has been shown to achieve the required pressures on healthy volunteers (data on file).
- **Clinical Evidence:** Oedema reduction and an aid to venous leg ulcer healing when applied by health care professionals and patients of varying skill levels in several different locations internationally Figure 3 (Ehmann et al 2016, Hampton S 2016)

1. Ehmann S, Whitaker J, Hampton S, Collarte A (2016) Multinational, pilot audit of a Velcro adjustable compression wrap system for venous and lymphatic conditions Journal of Wound Care, Vol 25, No.9 September 2016
2. Hampton S (2016) The difficulty and the solution of compression therapy in a healed venous leg ulcer, British Journal of Community Nursing, Community Wound Care September 2016: 34-38

* ReadyWrap® Compression Wrap with VELCRO® brand fasteners

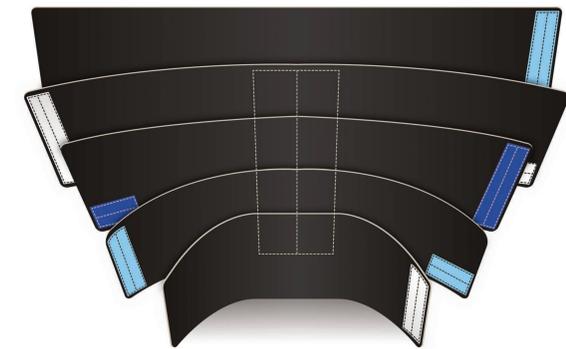


Figure 1



Figure 2



Figure 3

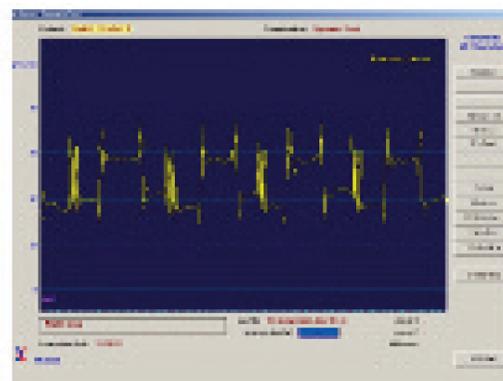
Sub Garment pressures showed short stretch properties

- Excellent standing and supine pressures at 0hr, 4hr, 8hr, 24hr
- Excellent SSI of between 16 and 23. Good amplitudes on movement
- Similar results by experts in 4 countries

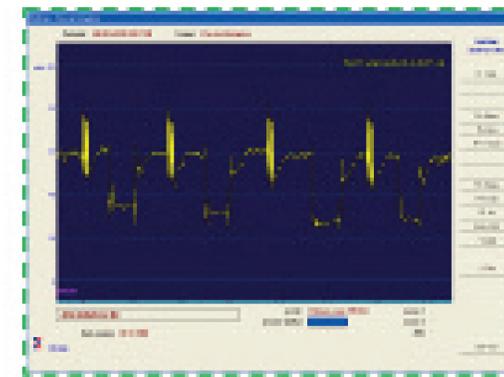
The garments can be termed “short stretch” and perform well even after 24 hours. Demonstrating validity as compression for venous and oedematous conditions



Velcro Wrap* 0hr



Velcro Wrap 24 hr



SSB** 0hr, 15 min. Note pressure drops

The reproducibility of the data gives reassurance about the technique.

The aim of the small exercise in this poster was to test application reproducibility (reliability) of the Velcro Wrap by different appliers with different skill levels.

Method

Validity shown to nurses who manage patients with leg ulcers and oedema using compression devices such as bandages, hosiery and wraps.

Inter-rater reliability validated test for measuring results achieved by different testers on the same subject. Of the 6 applicators, 2 were specialist nurses familiar with wrap systems, 3 healthcare assistants from a nursing home and 1 non-healthcare professional who had never applied compression.

1. Explanation and training for the 4 novices. Application to leg A (small). Timed. Pressures measured using the validated PicoPress* monitor.
2. Application on new leg B (large) by 5 applicators (timed and observed) Pressure measurements.

Intra-rater reliability tested results of 3 repeated applications by the same applicator to the same limb (B). Pressure measurements.



* PicoPress®

Results & Discussion

- Following one training session applicators found the devices easy to apply within 1-3 minutes no readjustment of the straps needed
- On the small leg (training session) pressure deviations were 0-5 for 5/6 applicators and 10 for one applicator.
- Deviations on large leg were 3-5 from the average.
- Minimal intra-rater deviation.
- Wearers reported comfort with the devices.



Conclusion

the 'Lock and Secure'[™] application method achieved good consistent results in these non-clinical tests after a single training session.

This indicates safe, appropriate clinical use and supports the clinical results of the device to date.