

PERISTALTIC OR NON-PERISTALTIC? THE EVIDENCE BEHIND THE ACTUAL SCIENCE

The evidence obtained within this document was obtained from:

Waldemar L Olszewski, M.D., Ph.D., Surgical Research and Transplantation, Medical Research Center, Warsaw, Poland. Dr. Olszewski is known for his dedication to the study of lymphology and has numerous accomplishments that include a large number of publications and awards in the field.

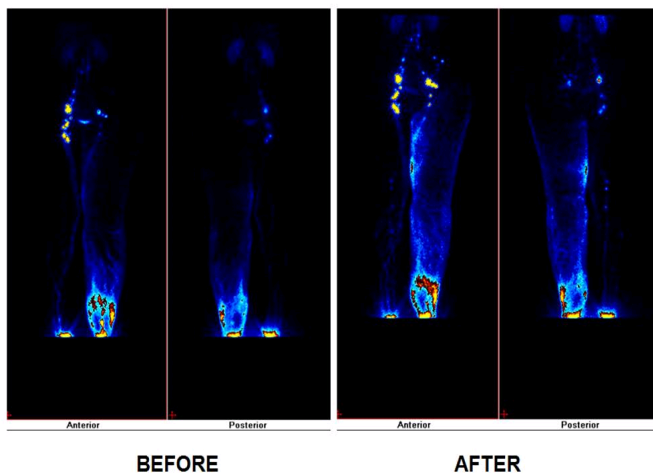
THE MEASURED EFFECTS OF NON-PERISTALTIC ACTION ON LYMPHATICS

Evidence proves that there is a hydraulic problem with the distribution of tissue fluid during non-peristaltic actions. Pressure was measured subcutaneously while performing pressure, evidence collected demonstrated that pressure moving distally does not hold a pressure below the area of the pressure being applied and eventually encompassing the entire limb once the proximal target has been reached. This action does not build up fluid pressures high enough to start flow in the proximal direction. In addition, data shows that this type of manipulation creates backflow.

EFFECTIVENESS OF PNEUMATIC COMPRESSION DEVICES

Demonstrated with Lymphoscintigrams and Protein Measurements

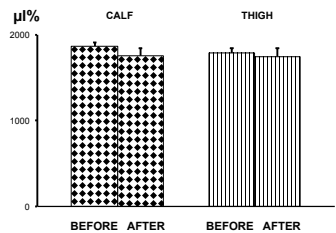
Fig. 3



Lymphoscintigraphy demonstrates new channels after the use of the Bio Compression Pneumatic Compression Device (non-peristaltic). Isotope is seen all the way up through the femoral passage bypassing the inguinal divide. Collateral Channels are formed for tissue fluid flow; once the lymphatics are damaged they are nonfunctional and non-repairable, thus it is important to achieve collateral channels

(lymphangiogenesis). Evidence of lymphangiogenesis is clear in the above lymphoscintigraphy of a patient studied after 60 minutes of use of the BioCompression system.

**EDEMA (TISSUE) FLUID PROTEIN CONCENTRATION AFTER
60' OF PNEUMATIC MASSAGE
(n=8, $\bar{x} \pm SD$)**



Tissue fluid was measured to provide evidence of protein movement with tissue movement. Wool was inserted through tissue tubes in the calf and thigh during Pneumatic Compression and then removed after 60 minutes of treatment. The tissue was analyzed and as demonstrated above. The same percentage of protein remains equal to the amount of tissue fluid moved, if protein were not moved with the water content within the tissue the level of protein remaining after Pneumatic Massage would increase not remain equal. Evidence shows protein moves in equal distribution by percentage content of all tissue fluid movement.

MYTH VS. FACT

MYTH: Pneumatic Compression pools fluid in the groin.

FACT: Evidence shows movement of fluid through the femoral passage when the correct garment and pressures are applied.

MYTH: Pneumatic Compression does not move protein just water.

FACT: Evidence clearly shows the movement of protein.

CONCLUSION

It is evident that the applied pressure of a peristaltic action only last for the short period of time it is applied. Pressures are erratic, and any results are lost as soon as the pressure is released without some sort of pressure distal to the applied pressure. Consistency is found with non-peristaltic Pneumatic Compression; tissue pressures are maintained distally preventing any backflow and maintaining achieved results all the way to the target for drainage. 90% of fluid is subcutaneously. It requires a minimum of 25mmHG (measured subcutaneously) to move fluid, requiring at least 60-80 mmHG surface pressure distally. Once the lymphatics are compromised, they remain compromised; the only solution is to create collateral movement through additional channels created with Pneumatic Compression Therapy.