PRESSURES PRODUCED BY TWO TYPES OF LYMPHEDEMA TREATMENT DEVICES

**Purpose:** Sequential compression devices provide benefit in lymphedema treatment by assisting lymphatic drainage [1-4]. However, differences in pattern, timing and magnitude of pressure [5] may impact device efficacy, safety and patient compliance. Here we report on pressures produced by a traditional sequential pump (LP*) in comparison to a new device (FT**) that simulates manual lymphatic drainage actions [6-7].

**Methods:** In 10 subjects, average (Pavg) and maximum pressures (Pmax) within five standardized regions along the forearm were measured during full inflation-deflation cycling of each device using a 256 pressure-sensor array¶. With FT, no two chambers simultaneously inflated, so pressure rose and fell quickly resulting in a short-duration pressure-pulse that traveled from wrist toward axilla. With LP, each chamber pressure was maintained for the inflation-cycle duration and pressure was further increased as other chambers inflated. Overall forearm pressures produced by LP were higher than for FT for Pmax (52.5±6.8 vs. 28.6±8.7 mmHg, p<0.001) and for Pavg (32.6±6.5 vs. 9.0±4.2 mmHg, p<0.001).

**Conclusions:** Major differences in pattern, timing and magnitude of pressures experienced by treated limbs can be expected depending on the device used. It would seem prudent to consider these factors prior to selecting a given device for any specific patient.

*Lympha Press®, Global Medical Imports, New Hampshire, model 103-M set at 45 mmHg
**Flexitouch® Lymphedema System, Tactile Systems, Minnesota, model PD32-120 set at standard
¶ Xsensor Pressure Mapping System, Model X2. Xsensor Technology Corporation, Alberta Canada

**References**