

# RMS - Pressure Test System™ (PTS)

*Manual Lymph Drainage and other light pressure techniques may be rapidly learned using this affordable new tool. The RMS-PTS shows the practitioner exactly how much pressure is being exerted on sensitive tissues for maximum therapeutic benefit, including garments or bandaging.*

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RMS - PTS Patent Pending © 2010 Gay Lee Gulbrandson

*The amount of pressure is sometimes described as the pressure applied while stroking a newborn's head.*

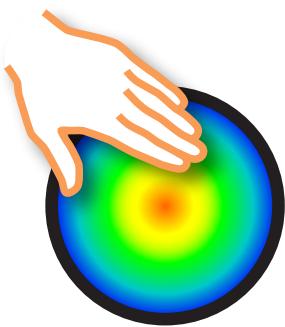
"Manual lymphatic drainage (MLD) is a gentle massage technique that is recognised as a key component of decongestive therapy. MLD aims to encourage fluid away from congested areas by increasing activity of normal lymphatics and bypassing ineffective or obliterated lymph vessels. MLD remains a specialist skill that needs regular practice in order to maintain competence. Deep, heavy-handed massage . . . may damage tissues and exacerbate edema by increasing capillary filtration." *Best Practice For The Management Of Lymphedema (UK) ISBN 0-9547669-4-6*

"What does MLD do? . . . causes a decrease of the sympathetic activity which leads to a dilation of the lymph collectors. Consequently the pressure in the lymph collectors rises and this leads to

an increase in contractions. A further increase in contractions is achieved by passive stretching of the smooth muscle cell. . . is a force increasing lymph flow." *The research of Prof. Dr. P. Hutzschenreuter By Prof. H. Wittlinger.*

"The most superficial lymphatic vessels are very small and very fragile. These are easily damaged and are certainly broken when a pressure of more than 60 mm Hg is applied. . . The slightly deeper vessels, very small collecting lymphatics, may also be damaged. Some of these will regenerate, given time, but meanwhile fibrotic (scar) tissue forms and blocks the drainage in the adjacent tissue channels." *How Can Lymphedema be Treated? Judith R. Casley-Smith & J.R. Casley-Smith 2001*

"The first phase consists of skin care, a specific light manual massage (manual lymph drainage- MLD)..." *The Diagnosis & Treatment of Peripheral Lymphedema, 2009 Consensus Document of the International Society of Lymphology.*



# Resistive Measurement System™ Pressure Test System™ (RMS - PTS)

## The only affordable pressure feedback system.

**What Is this Amazing New Device?** A new measurement tool that promises to revolutionize the teaching of correct pressure for Manual Lymph Drainage (MLD).

**To Start:** The sensor is placed on the limb, held by a wide strap that sticks to itself. Easy to do, even one-handed.

**Action:** Place finger-tip, finger pad, or palm over the flexible sensor end, and perform an MLD stroke. You may test your own hands, or other people's hands. You may use different fingers or whole hand and may place the sensor anywhere over various parts of the body.

**Result:** The on-screen trace shows both time and pressure.

**Time:** The duration of the stroke can be seen across the horizontal axis of the display. GOAL: approx 1 second per stroke.

**Pressure:** The pressure applied is viewed on the vertical axis of the display. The higher the trace, the greater the pressure applied. GOAL: approx 30 mmHg peak, returning to Zero (near bottom of screen) between strokes.

**Measurement of Pressure:** International standards for pressure measurement are millimeters of mercury (mmHg) units. [On the surface of the pressure sensor pad.]

Conversion:  $30\text{g} \approx 30.9\text{ mmHg}$  on the sensing disc tip.

**Standards of Practice for MLD:** The peak pressure for effective MLD is between 30 and 35 mmHg. (Millimeters of mercury) Greater pressure may cause micro-trauma, causing a decrease in lymphatic transport. Maximum reduction in limb volume is dependent upon the exceptionally light pressure of MLD, sufficient time of treatment, appropriate pressure, and the type of edema.

**Other Applications and Research:** Any digital (finger) palpation or measurement (pitting test, etc.) may be standardized, measured, and learned rapidly with the PTS sensor system. For compression bandaging pressure verification, for case studies, including pain response to palpation, the PTS performs much the same as full glove pressure measurement systems costing up to \$25,000 or more, and makes accuracy and repeatability possible on a low budget. (Macintosh required)

**Health Care and User Warning:** Some edemas are not treated with MLD. There are absolute contraindications to MLD, so medical supervision is required before treating any pathology. Injury to patients is possible if treatment is attempted without proper training. Only LANA-qualified graduates i.e. Certified Lymphedema Therapists, should attempt to treat any lymph system pathology, including lymphedema. Not sold as a medical or treatment device. The PTS is a teaching/learning aid.

**Warranty:** The written warranty against defects in the Software is 1 year, the wire harness is 30 days (the pressure sensor is a consumable, and is not covered by a warranty)

**Patent Pending**

**CONTROL PANELS:** May be used without adjustment after initial CALIBRATION. All basic adjustments are set at the factory and are re-initialized by selecting reset.



### Metrics

Displays raw signal strength, calibration numbers, time and pressure settings, and more. Two more panels to change units and set sample rate are also here. Any value may be reset by the user.

### Calibration

Allows system calibration at any time to validate the sensor accuracy. The interface to the Macintosh is set here to make the basic connections.



### Freeze

The display is frozen by clicking this button. View, measure, project or discuss the frozen image.

### Appearance

You may set the image color, thickness, gradient, or graph style you prefer. The trace may be modified in almost unlimited ways.

### Trace

The trace may be measured at any point along the frozen graph, and a digital display of pressure and time are viewed according to the position of the cursor.

### Print

The graph image may be printed or saved on command, with date, time, name, and detailed notes added, in color or grayscale, etc.

### Preferences

The on-screen Preferences pull-down menu under the PTS provides automatic error recovery, program choices, and more.

**Online User Manual & Help File:** Accessed from the [VodderMLD.com](http://VodderMLD.com) web site, or download PDF. Installation, functions, controls, calibration, conversion values, full user information, are explained in detail.

### Included in Kit:

Pressure Sensor, Sensor Cable, Cleaning pads, Mounting Strap, Calibration Weights, Storage Box, Spec. Sheet, Software Disc

For MAC OSX 10.5 + Windows Version soon

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