



TACTILE SYSTEMS TECHNOLOGY INC. uses XSENSOR pressure imaging systems to understand the pressures that their product, The Flexitouch® Lymphedema System, imparts on the body and how it can be improved to achieve optimal results for patients diagnosed with lymphedema and venous insufficiencies.

TACTILE SYSTEMS

Tactile Systems Technology Inc. was founded in 1995 to develop and market a medical device for the treatment of lymphedema and venous insufficiencies. The Flexitouch® Lymphedema System, Tactile Systems' patented 2-Phase Lymph Preparation & Drainage™ therapy system, is the result of over six years of research and development.

The Flexitouch® system helps relieve the symptoms of post-mastectomy lymphedema, primary lymphedema, edema following sports injuries, post-immobilization edema, and venous insufficiencies. The company received FDA marketing clearance for this device in 2002.

The Flexitouch® system consists of an electronic controller unit and patented garments, which are worn on the patient's trunk and upper and lower affected extremities. Tubing harnesses connect the patented garments to the controller unit. The Flexitouch® system utilizes a therapeutic, sequential action to gently prepare the trunk and extremities for lymph evacuation and to assist in draining excess fluid from the limb.

TREATING LYMPHEDEMA

Patients suffering from lymphedema symptoms typically undergo several weeks of in-clinic, manual lymphatic drainage (MLD) therapy, delivered by a trained therapist, followed by an at-home, patient-administered treatment phase.

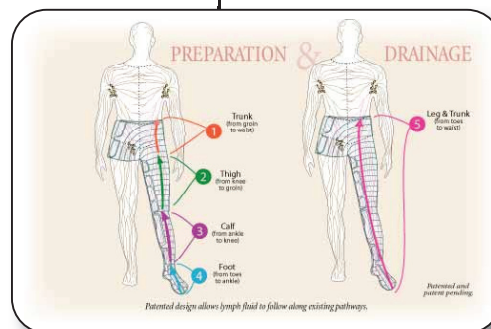
Manual lymphatic drainage consists of a series of light, therapeutic work and release-hand techniques against the skin. These specialized hand techniques employ a light, stretching pressure that helps direct and move accumulated lymphatic fluid up and out of the limb. This light pressure has two purposes: facilitates the movement of fluid in the soft tissues and stimulates lymph vessels underneath the skin to absorb more fluid. MLD treatment initially focuses on the lymph nodes and vessels of the trunk: priming them for the healthy regions of the lymphatic system. Then, treatment focuses on redirecting the lymphatic fluid from the impaired limb to the healthy and intact regions in the trunk.

The challenge comes when the patient returns home and begins self-treatment: bandaging, self-MLD, skin care, exercise, and wearing compression garments to prevent the re-accumulation of lymphatic fluid. Unfortunately, due to the difficulty of effectively administering self-MLD therapy, patients often need to return to the clinic for follow-up MLD sessions from a therapist. The benefit of the Flexitouch® system is that it allows patients to effectively self-administer ongoing MLD treatments at home.



"XSENSOR's pressure imaging technology allows us to understand how our product compares to those of our competitors. It gives us the technical tools to help develop a superior product and enables us to demonstrate to clinicians and their patients how our product functions."

John Paquette
Operations Manager
Tactile Systems



TACTILE SYSTEMS' PRESSURE IMAGING NEEDS

Prior to using XSENSOR pressure imaging technology, Tactile was forced to rely on more rudimentary methods to test its product. A series of trial-and-error tests were conducted to evaluate the product and compare it against competing alternatives. However, many of the test results remained highly subjective.

To provide patients with superior treatment methodologies, Tactile Systems has to understand the pressures that the Flexitouch® system imparts on the body. XSENSOR's pressure imaging technology provides quantifiable information that Tactile Systems can use to improve its product and yield optimal patient results. According to John Paquette, Operations Manager for Tactile Systems, "XSENSOR's pressure imaging technology allows us to understand how our product compares to those of our competitors. It gives us the technical tools to help develop a superior product and enables us to demonstrate to clinicians and their patients how our product functions."

PRESSURE IMAGING IN ACTION: THE RESULTS

Tactile Systems has been working with an XSENSOR pressure imaging system for the past year. Its efforts have mainly been focused on enhancing the performance of its own existing product.

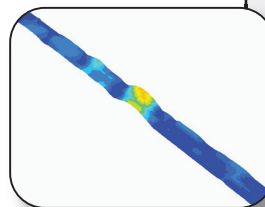
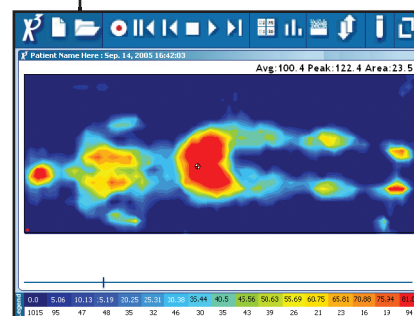
Specific advantages to using pressure imaging include:

- Ability to graphically measure and present patient pressure profiles
- Ability to view 3D pressure images (refer to image on right)
- Ability to compare pressure profiles between products

Tactile Systems foresees **additional benefits in using pressure imaging as part of its ongoing sales and marketing efforts.** "The ability to visually explain our products to therapists and patients is a great advantage," states Paquette. "Our product mimics, in many ways, the manual massage techniques employed in Manual Lymph Drainage (MLD) therapy, the standard of care in lymphedema treatment. These techniques include the momentary (1 to 3 second) application of light, dynamic pressure over a narrow area. By comparison, most compression pumps apply pressure for longer durations, and over progressively larger areas, with the entire limb being compressed at the end of the compression cycle. These are attributes that can be measured and easily depicted using the XSENSOR system. Our belief is that by emulating MLD therapy, the patient can get the benefits of this standard of care in the privacy and convenience of their home. A recently conducted research article concludes that the Flexitouch system yields superior results when compared to self-administered MLD therapy." (O. Wilburn, P. Wilburn, S.G. Rockson: A pilot, prospective evaluation of a novel alternative for maintenance therapy of breast cancer associated lymphedema, *BMC Cancer* 2006, 6:84).

"XSENSOR's system was reasonably priced and is certainly easy to use," adds Paquette. "It has been a valuable addition to our product development efforts and we see future value in using pressure images as part of product demonstrations to clinicians and patients."

For more information on the Flexitouch® lymphedema system and Tactile Systems Technology, Inc. visit www.flexitouch.com.



Pressure image using XSENSOR bandage strip to demonstrate inflation/deflation sequence of the Flexitouch® system as it moves up the arm and into the chest and trunk regions to drain fluid from the arm.

