

# Neurosensory Testing with the Pressure-Specified Sensory Device

## NEUROSENSORY TESTING WITH THE PRESSURE-SPECIFIED SENSORY DEVICE™

There needed to be a *painless* method for a doctor to determine if a person's complaints of numbness or pain were due to compression (entrapment or pressure) of a nerve, injury to a nerve, or due to a neuropathy.

There needed to be a *painless* method for a doctor to determine if a person's nerve was dying or coming back to life (regenerating).

In 1989, A. Lee Dellon, MD, a Plastic Surgeon, Hand Surgeon, and Peripheral Nerve Surgeon, worked with an Aerospace Engineer to develop a computer-based device to measure how hard the skin had to be pressed to decide if one or two rounded objects were moving or in constant contact on that skin's surface.

NO NEEDLES OR ELECTRIC SHOCKS ARE USED.  
NEUROSENSORY TESTING IS PAINLESS.

The device is now called the Pressure-Specified Sensory Device™ (PSSD). The PSSD can be used to test any piece of skin.

## WHY SHOULD I HAVE PSSD TESTING?

The PSSD can identify nerves that are causing:

- Numbness, tingling, or pain in the fingers or toes.
- Night time awakening from hand or foot problems.
- Clumsiness, weakness, or dropping things.
- Heel pain or pain in the ball of the foot.

Following surgery, the PSSD can identify painful nerves that are:

- Failing to heal (continued degeneration)
- Healing properly (regenerating)

## IS THE PSSD CLEARED BY THE FDA?

Yes!

The PSSD is cleared for use by the Food and Drug Administration of the United States Government, and furthermore, it is approved by the National Institute for Standards and Testing.

## HOW AM I TESTED WITH THE PSSD?

You are seated comfortably in a reclining chair. The small, blue PSSD is hand-held by the person doing the testing, and the two small metal probes are touched gently to the skin area being tested.

### Testing a foot with the PSSD



### Testing a hand with the PSSD



## DOES PSSD TESTING HAVE RISKS?

Published outcomes of neurosensory testing with the Pressure-Specified Sensory Device™ document that the PSSD offers the best hope to identify the source of your symptoms, to document the stage or degree of nerve compression or neuropathy, and to determine if your nerves are regenerating. There are risks, including identifying a problem which is not actually present, or failing to identify a problem that is present. Every neurosensory test relies upon the cooperation of the patient during the testing procedure, the ability of the person doing the testing, and the interpretation of the PSSD results by the doctor in terms of the entire context of your clinical history and physical examination.

Please be aware that A. Lee Dellon, MD, invented the PSSD, and keep this conflict of interest in mind when having the testing done, and when reading the published scientific articles listed below. There are, through the end of 2005, 78 published scientific articles.

## WHO SHOULD DO NEUROSENSORY TESTING WITH THE PSSD?

Only people certified by a two-day formal training program in neurosensory testing with the Pressure-Specified Sensory Device™ should do this testing.

## WHAT DOES A PSSD REPORT SAY?

Computer reports of neurosensory testing with the PSSD for *Diabetic Neuropathy* are shown to the right.

The report shows the left side of the measured area in BLUE and the right side of the same area in RED.



**Tucson Neuropathy Institute**  
Specializing in Pain Relief for the Legs & Feet

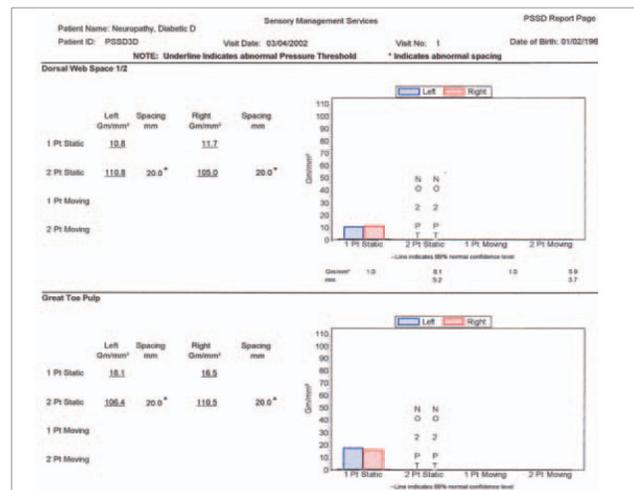
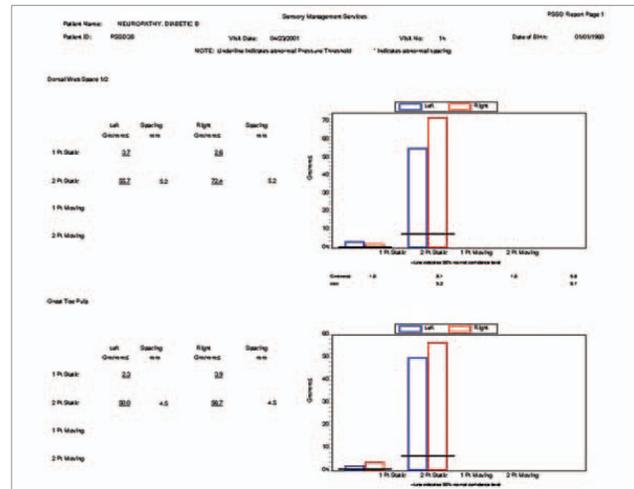
**7406 N. La Cholla Blvd.**  
**Tucson, Arizona 85741**  
**520-545-0202**  
**www.headtothehealthcare.org**

**Dr. Alan T. Shih**

*Fellow, American Association of Lower  
Extremity Peripheral Nerve Surgeons*

In the top report, both blue and red bars are elevated for a nerve on the top of the foot (peroneal nerve) and bottom of the foot (tibial nerve), which is the pattern for a neuropathy. Two points can still be discriminated from one point touching the skin, but the distance at which this is determined is abnormal, which is the pattern for degeneration. This person is now at risk for an ulceration. Recovery after nerve decompression can occur within three months.

In the bottom report, two points can no longer be distinguished. Only one point touch can be felt. This degree of neuropathy is severe. Recovery after nerve compression may take one year.



## BEING ACADEMIC IN PRIVATE PRACTICE <sup>SM</sup>

*Dellon ES, Keller KM, Moratz V, Dellon AL.*: Validation of cutaneous pressure threshold measurements for the evaluation of hand function. *Ann Plast Surg* 38: 485-492, 1997.

*Dellon AL, Keller KM*: Computer-assisted quantitative sensory testing in carpal and cubital tunnel syndromes. *Ann Plast Surg* 38: 492-502, 1997.

*Tassler PL, Dellon AL*: Pressure perception in the normal lower extremity and in tarsal tunnel syndrome. *Muscle Nerve* 19:285-289, 1996.

*Dellon AL*: Deciding when heel pain is of neural origin. *J Foot and Ankle Surgery*, 40: 341-345, 2001.

*Dellon AL*: Clinical grading of peripheral nerve problems. *Neurosurg Clinics N. Amer*, 12: 229-240, 2001.

*Howard M, Lee C, Dellon AL*: Documentation of Brachial Plexus Compression in the thoracic inlet utilizing provocation with Neurosensory and Motor Testing. *J Reconstr Microsurg*, 19: 303-312, 2003.

*Fogaç W, Ferreira MC, Dellon AL*: Neurosensory testing in evaluation of infraorbital nerve injuries associated with zygoma fracture. *Plast Reconstr Surg*, 113: 834-838, 2004.

*Ducuc I, Dellon AL, Short KW*: Relationship between loss of pedal sensibility, balance and falls in patients with peripheral neuropathy. *Annals Plast Surg*, 52: 525-540, 2004.

*Radoiu H, Rosson GD, Andonian G, Senatore J, Dellon AL*: Comparison of measures of large-fiber nerve function in patients with chronic nerve compression and neuropathy. *J Amer Pod Med Assocn*, 95: 438-445, 2005.

*Seiler DK, Wilton JP, Dellon AL*: Detection of Neuropathy due to *Mycobacterium leprae* using non-invasive Neurosensory Testing of Peripheral Nerves. *Ann Plast Surg*, 55: 12, 2005.

*Dellon AL*: Measuring Peripheral Nerve Function: Neurosensory Testing versus Electrodiagnostic Testing, in *Atlas of the Hand Clinics: Nerve Repair and Reconstruction*, D. Slutsky, ed., Elsevier, Philadelphia, Chapter 1, pp 1-31, 2005.