

# Aesthesio®

Precision Tactile Sensory Evaluator



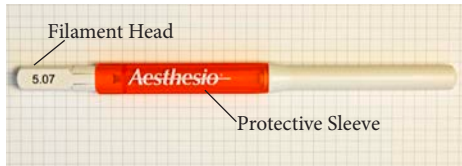
## Aesthesio® User Manual

Made in USA

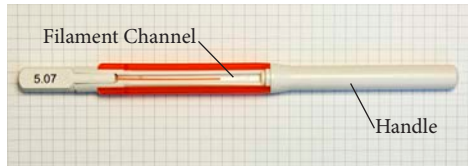
© DanMic Global, LLC

Revised December 2018

## Aesthesio® Precision Tactile Sensory Evaluators are Easy-to-Open



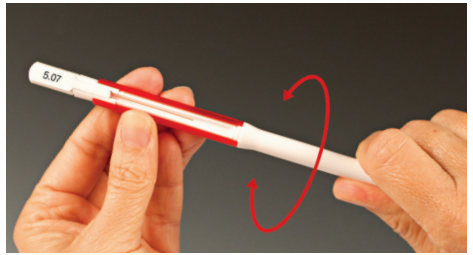
*Aesthesio® Evaluator protective sleeve in closed/protected position.*



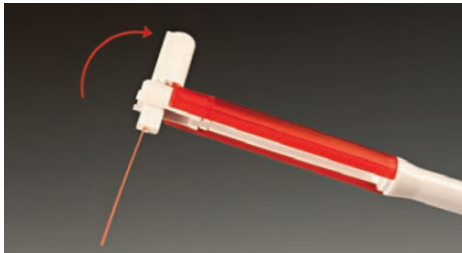
*Aesthesio® Evaluator protective sleeve in open position. Ready to pivot filament head.*



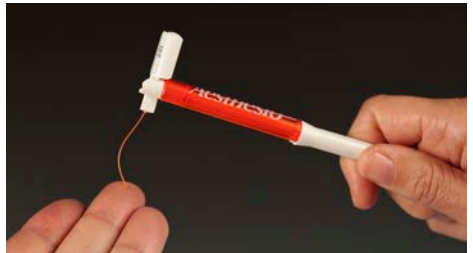
*Grip Aesthesio® Evaluator protective sleeve with one hand and rotate the handle with the other.*



*Rotate Aesthesio® Evaluator protective sleeve until the filament in the channel is visible.*



*Flip the filament head into the open position. Filament should be 90° to the handle.*



*Ready for testing. Return filament to channel and rotate sleeve closed when complete.*

## Aesthesio<sup>®</sup> Precision Tactile Sensory Evaluator

Touch pressure threshold testing involves the use of nylon monofilaments of different lengths and increasing diameters. These monofilaments provide controlled gradients of force to the mechanoreceptors in the skin and can thus be used to determine pressure detection thresholds. The advantage of monofilament testing is that it provides quantified and repeatable information about a patient's detection of touch. The pattern of sensibility loss reflected by the monofilament testing helps to identify pathology.

Aesthesio<sup>®</sup> Precision Tactile Sensory Evaluators (Semmes-Weinstein Monofilaments) provide a noninvasive evaluation of cutaneous sensation levels throughout the body with results that are objective and repeatable. Using Aesthesio<sup>®</sup> Precision Tactile Sensory Evaluators is indicated in diagnoses including nerve compression syndromes, peripheral neuropathy, thermal injuries and postoperative nerve repair.

The Aesthesio<sup>®</sup> Precision Tactile Sensory Evaluator consists of a standardized set of nylon filaments, all of varying length and diameter. The force at which a monofilament bends is proportional to its diameter, and inversely proportional to its length. Aesthesio<sup>®</sup> Precision Tactile Sensory Evaluators are selected and labeled so as to give a linear scale of perceived intensity (a logarithmic scale is applied.)

### Instructions for Threshold Testing in Humans

Sensibility testing should be conducted in a quiet environment, where the patient is comfortable and relaxed. Common test points are outlined in the illustrations on the following page. For detailed and comprehensive test protocols, please reference the following sources:

Bell-Krotoski JA: "Sensibility Testing: History, Instrumentation and Clinical Procedures", Rehabilitation of the Hand and Upper Extremity, Volume 1, Elsevier Mosby 2011, Chapter 11, Pages 132-145.

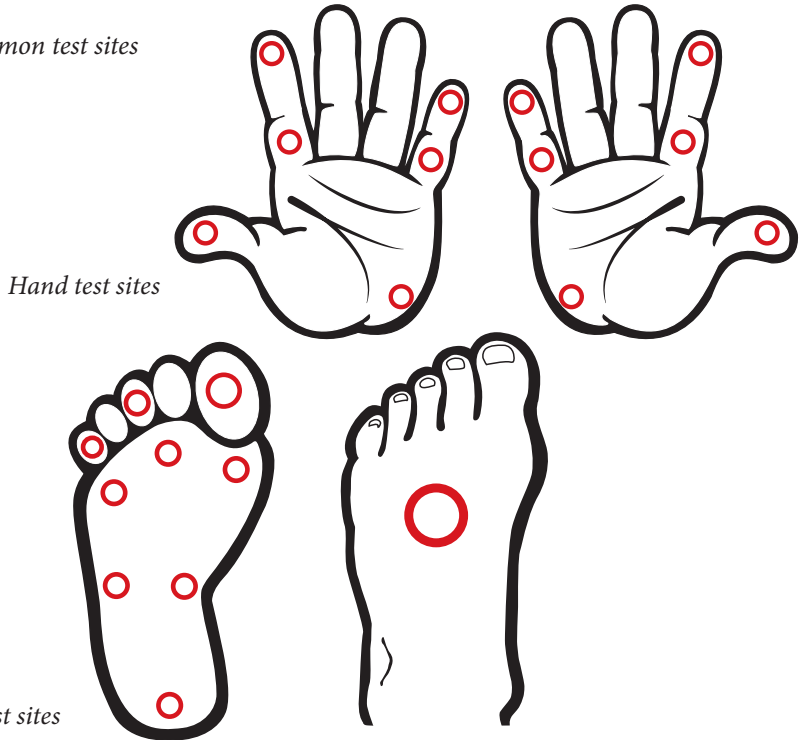
[www.hrsa.gov/hansensdisease/leap/](http://www.hrsa.gov/hansensdisease/leap/)



---

## Common Test Sites with the Aesthesio® Precision Tactile Sensory Evaluator

○ *Common test sites*



## Use of Aesthesio® Precision Tactile Sensory Evaluator Kit with Animals

The standard procedure for the Aesthesio® Precision Tactile Sensory Evaluator when used with humans is to ask the subject to report if they have been touched. Since animals cannot verbalize whether they have been lightly touched, reflex reactions can be used in place of a verbal report of sensation. The “Paw Withdrawal Reflex” is a useful one. When a filament of detectable presence is applied, the paw will immediately withdraw, and inflammation will increase the withdrawal reflex.



## Proper Storage and Handling:

Aesthesio® Precision Tactile Sensory Evaluators are precision instruments. Care should be taken at all times to protect the integrity of the nylon filament.

The filament may be cleaned with a mild instrument disinfectant (e.g. Isopropyl Alcohol or similar. Avoid chlorine-based disinfectants.) Make sure the monofilaments are thoroughly dry before reusing.

Substantially bent or kinked monofilaments must not be used for testing and should be discarded and replaced. DanMic Global, LLC item numbers can be found in 3rd column in the chart on the following page and refers to the individual evaluators.

Store the evaluators at room temperature and humidity. Do not store in or expose to direct sunlight.

*Complete 20-Piece Kit*



*Six-Piece Foot Kit*



## Aesthesio® Precision Tactile Sensory Evaluator Evaluator Kits

- **20 Piece Kit with Carrying Case - (Item# 514000-20C)**  
Includes all 20 individual sensory evaluators plus convenient carrying case.
- **6 Piece Foot Kit with Carrying Case- (Item# 514000-6C)**  
Includes sizes: 2.83, 3.61, 4.31, 4.56, 5.07 and 6.65 individual sensory evaluators plus convenient carrying case.
- **5 Piece Hand Kit with Carrying Case- (Item# 514000-5C)**  
Includes sizes: 2.83, 3.61, 4.31, 4.56 and 6.65 individual sensory evaluators plus convenient carrying case.

*Five-Piece Hand Kit*



## Aesthesio® Precision Tactile Sensory Evaluator Data Chart

Color	Evaluator Size	Catalog Item Number	Target Force (grams)	Target Force* (milliNewtons)	Theoretical Pressure LBS/Sq. Inch	Theoretical Pressure Grams/Sq. mm
Green	1.65	514001	0.008	0.08	3.59	2.53
	2.36	514002	0.02	0.20	6.23	4.39
	2.44	514003	0.04	0.40	7.01	4.93
	2.83	514004	0.07	0.70	7.85	5.53
Blue	3.22	514005	0.16	1.6	12.5	8.77
	3.61	514006	0.40	3.9	22.9	16.1
Purple	3.84	514007	0.60	5.9	26.1	18.4
	4.08	514008	1.0	9.8	34.6	24.4
	4.17	514009	1.4	13.7	39.6	27.9
	4.31	514010	2.0	19.6	39.0	27.4
Red	4.56	514011	4.0	39.2	57.2	40.3
	4.74	514012	6.0	58.8	74.8	52.6
	4.93	514013	8.0	78.4	87.6	61.7
	5.07	514014	10	98.0	97.0	68.3
	5.18	514015	15	147	117	82.0
	5.46	514016	26	255	151	106
	5.88	514017	60	588	200	141
	6.10	514018	100	980	274	193
	6.45	514019	180	1760	316	222
Orng	6.65	514020	300	2940	416	292

\*Calculated rounded numbers. (Conversion factor 9.80665)

## **Select Clinical References of Interest:**

- Bell JA, Tomancik E: "Repeatability of testing with Semmes-Weinstein monofilaments." *Journal of Hand Surgery* 1987; 12A:155-161.
- Bell-Krotoski JA: "Sensibility Testing: History, Instrumentation and Clinical Procedures", *Rehabilitation of the Hand and Upper Extremity, Volume 1, Elsevier Mosby* 2011, Chapter 11, Pages 132-145.
- Bell-Krotoski JA, Fess EE, Hiltz D, Figarola J: "Threshold Detection and Semmes Weinstein Monofilaments: A Comparative Study", *J Hand Therapy*, 8:155-162, 1995.
- Bell-Krotoski JA, Tomancik E: "Repeatability of Testing With the Semmes-Weinstein Monofilaments", *J Hand Surgery* 2A:15, 1987.
- Gregory M. Caputo, Peter R. Cavanagh, Jan S. Ulbrecht, Gary W. Gibbons, and Adolf W. Karchmer, "Assessment and Management of Foot Disease in Patients with Diabetes", *New England Journal of Medicine*, Volume 331:854-860, September 29, 1994 Number 13
- King PM: "Sensory function assessment: a pilot comparison study of touch pressure threshold with texture and tactile discrimination." *J Hand Therapy* 1997; 10:24-28.
- Levin S, Pearsall G, Ruderman RJ: "Von Frey's method of measuring pressure sensibility in the hand: an engineering analysis of the Weinstein-Semmes pressure aesthesiometer." *J Hand Surg* 1978; 3:211-216.
- MacDermid JC, Kramer JF, Roth JH: "Decision making in detecting abnormal Semmes-Weinstein monofilament thresholds in carpal tunnel syndrome." *J Hand Therapy* 1994; 7:158-162.
- Max H. Haloua, MSc, Inger Sierevelt, MSc, Willem J. Theuvenet, MD, PhD, Semmes-Weinstein Monofilaments: "Influence of Temperature, Humidity, and Age", *Journal of Hand Surgery, Volume 36, Issue 7*, Pages 1191-1196, July 2011.
- Rosen BL: "Recovery of Sensory and Motor Function After Nerve Repair: A Rational for Evaluation." *Journal of Hand Therapy* 1996; 9:315-327
- Rosen BL, Dahlin LB, Lundborg G: "Assessment of functional outcome after nerve repair in a longitudinal cohort." *Scand J Plast Reconst Surg Hand Surg* 2000; 43:71-78.
- Semmes J, Weinstein S, Ghent I, Teuber HL: "Somatosensory Changes After Penetrating Brain Wounds in Man", Cambridge, Mass, 1960, Harvard University Press.
- Von Frey M: *Zur Physiologie der Juckempfindung. Arch Neurol Physiol* 1922; 7:142-145.
- Weinstein S: Fifty years of somatosensory research from the Semmes-Weinstein monofilaments to the Weinstein enhanced sensory test. *J Hand Ther* 1993; 6(1):11-22.
- Weinstein S: "Tactile sensitivity of the phalanges. Percept Motor Skills" 1962; 14:351-354.

## Warranty and Quality Guarantee:

Aesthesio® Precision Tactile Sensory Evaluators are designed and manufactured to the quality standards expected for Clinical and Research use. All Aesthesio® Precision Tactile Sensory Evaluators meet stated target force and cosmetic specification. Statistical sampling techniques are used to determine mean and standard deviation. Their standard deviation is less than 5% of the target force at room temperature and humidity. Batch quality certificates are available upon request. Also available are Premium versions of the Aesthesio® Precision Tactile Sensory Evaluators. These come with individual quality certificates.

DanMic Global, LLC warrants its products against defects in materials and workmanship for a period of 6 months.

DanMic Global, LLC will, at its option, repair or replace defective items within the specified warranty period. Modifying or tampering with the instrument or non-factory authorized service during the warranty period will invalidate the warranty.

This warranty is in lieu of all other warranties, expressed or implied. DanMic Global, LLC shall not in any event be liable for incidental or consequential damages, resulting from the intended use or misuse of its products.



MDSS GmbH  
Schiffgraben 41  
30175 Hannover, Germany



**DanMic Global, LLC**

2059 Camden Avenue #281 • San Jose, CA 95124 • USA

[www.danmicglobal.com](http://www.danmicglobal.com)