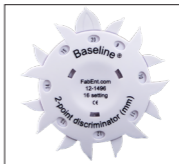


Multi-Setting Two-Point Discriminator



The Baseline[®] Multi-Setting Two-Point Discriminator

Now all 2-point test distances are combined in one multi-setting two-point discriminator. Plastic tips are spaced between 2 to 15 mm apart at 1 mm intervals, as well as 20 and 25 mm spaced points for a total of 16 different settings.

Simply separate or push together the plastic tips to switch between the two spacing ranges. The range in one position is 2-8 mm and 25 mm. The range of the second position is 9-15 mm and 20 mm.

Any of the two-pronged rods at the larger intervals can be used as the one-point tester.



Diagnostic Uses of the Multi-Setting Two-Point Discriminator

The Multi-Setting Two-Point Discriminator will be useful for measuring the innervation density of any surface area, not just the fingertip. It is useful for determining sensation after a nerve injury and nerve repair; following the progress of the repair; in the diagnostic evaluation of a person with a possible nerve injury, such as nerve division or nerve compression; and for testing areas of skin before and after transfer to resurface or reconstruct other areas of the body.

Therapeutic Uses of the Multi-Setting Two-Point Discriminator

The Multi-Setting Two-Point Discriminator may be given to a patient to take home to use as a sensory re-education tool, just as therapeutic putty, clay or play dough, are used in motor rehabilitation. As such, it can be used in the patient's sensory re-education program and for a patient's assistant, family member, or friend to check their progress at home.

The patient is instructed to use the discriminator frequently during the day. In late-phase re-education, beginning with the disk set to the larger intervals, the patient can attempt to distinguish a difference between one or two points moving along their finger. They may not initially recognize the two prongs as two separate stimuli but may be able to perceive that the two points feel "different" than one point. They are encouraged to work with the discriminator until they can distinguish this "difference" with the prongs spaced at increasingly narrowed intervals.

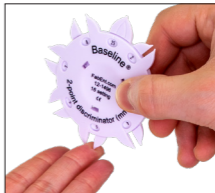
Moving vs. Static Two-Point Discrimination Testing

The moving two-point discrimination test will evaluate the innervation density of the quickly-adapting fiber/receptor system (just as vibration tests would assess the threshold of this fiber system).

The static two-point discrimination test will evaluate the innervation density of the slowly-adapting fiber/receptor system (just as Semmes-Weinstein monofilaments will evaluate the threshold of this fiber system). Thus, the moving two-point will assess hand function requiring moving touch, e.g., object identification, buttoning a button, fine discriminative or manipulative tasks. Static two-point discrimination will assess hand function requiring precision sensory grip and constant touch, e.g., holding a pencil to write, a needle to sew or a key to put into a lock. In order to adequately evaluate hand function, both fiber/receptor systems should be evaluated with moving and static two-point discrimination.

Moving Two-Point Discrimination Testing

For testing moving two-point discrimination the discriminator prongs are placed at the level of the distal interphalangeal joint and moved slowly toward the tip of the finger, i.e., from proximal to distal. The prongs are placed exactly perpendicular to the long portion of the finger. The purpose of the test is to determine the innervation density of the quickly adapting fiber/receptor system in the area tested.



This can only be done when the two points stimulate different areas adjacent to each other. As most fingers are not wider than twelve to fourteen mms., if a person cannot distinguish moving two points at these distances, the test is completed and no larger values are recorded (unless a larger surface, such as the pulp of the toe or the dorsalradial aspect of the hand is being tested).

Static Two-Point Discrimination Testing

The static two-point discrimination test will evaluate the innervation density of the slowly-adapting fiber/receptor system (just as Semmes-Weinstein monofilaments will evaluate the threshold of this fiber system). Thus, the moving two-point will assess hand function requiring moving touch, e.g., object identification, buttoning a button, fine discriminative or manipulative tasks. Static two-point discrimination will assess hand function requiring precision sensory grip and constant touch, e.g., holding a pencil to write, a needle to sew or a key to put into a lock. In order to adequately evaluate hand function, both fiber/receptor systems should be evaluated with moving and static two-point discrimination.



For the static two-point discrimination test, the discriminator prongs are also held perpendicular to the long axis of the finger. When measuring static two-point discrimination, if values exceed the width of the finger, the two prongs can be placed so that they are parallel to the long axis of the finger. If distances of greater than 15mms. are obtained, the tester is essential: testing the tip of the finger against the middle proximal phalanx of the finger. This type of information is useful for determining the ability of the finger, not the fingertip, to perform gross sensory grips, or grasping functions.

The Multi-Setting Two-Point Discriminator is placed upon the skin only with sufficient pressure for a patient to determine that he/she is being stimulated, not to cause pain. With some nerve problems, such as early in the course of neural regeneration or with advanced nerve compression, when the threshold for sensory stimuli is greatly increased, the discriminator must be pressed onto the surface of the finger with greater force so that the stimulus is perceived. If the stimulus is not pressed sufficiently in proportion to the increased threshold, then a false-negative result or an underestimation of the patient's true innervation density will be obtained.

The examiner will know that he/she is near the patient's discrimination level when the patient begins to move his/her finger up toward the prongs or asks the examiner to "push a little harder", or says he/she feels "one wide point". The examiner should try to determine the patient's discrimination value with as few trials as possible so as not to fatigue the patient's attention span. The stimuli are also given slowly with a short pause between tests so as not to fatigue the patient's attention span, and alternating between a one and two-point stimulus. When we have determined what we think is the patient's two-point value, we use two correct answers out of three empirically as the test's endpoint.

Two-Point Discrimination Static Norms

Normal:	< (less than) 6 mm
Fair:	6-10 mm
Poor:	11-15mm
Protective:	Only one point is perceived
Anesthetic:	Points are not perceived

References: Logreer@dellon.com Mackinnon SE, Dellon AL: Two-point discrimination tester. J. Hand Surg IOA:906-907, 1985. Dellon AL: Moving two-point discrimination test: Clinical evaluation of the quickly-adapting fiberreceptor system. J. Hand Surg 3:478-481, 1978. Dellon AL: Evaluation of Sensibility and Re-Education of Sensation in the Hand. Willams and Wilkins, Baltimore, 1981



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