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Two-Point Discrimination

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Definition

Measure of fine tactual perception that assesses the minimal distance between two stimuli that can be perceived as separate.

Current Knowledge

When the surface of the skin is touched simultaneously by two relatively fine points (such as a compass or the two ends of a paper clip), the sensation may be perceived as either a single or two separate sites being stimulated. Whether felt as a "single" or "two-point" stimulation will depend on the distance between the points, the area of the body being stimulated, age of the patient, and the integrity of the nervous system. Some parts of the body (such as the tip of the tongue, the lips, and the fingertips) are more sensitive than others (e.g., the hand or arm, which in turn are much more sensitive than the back). Distances of just 2–3 mm can usually be discerned on the tongue and lips and just slightly more on the fingertips (3–5 mm). Separations of approximately 1 cm may be discriminated on the palm of the hand, whereas it may take separations of 5 or more cm to be perceived as two separate stimuli on the trunk. In the neurological exam, one looks for clear discrepancies between the right and left sides of the body when comparable areas are being stimulated. Two-point discrimination is a form of stereognosis or fine sensory discrimination mediated by the lemniscal system. Thus, deficits on this task could reflect neurological impairment anywhere from the peripheral nerves (in which case motor and other sensory deficits might also be present) to the posterior columns and medial lemniscus, to the posterior central gyrus. Two-point discrimination is also used to measure tactual sensitivity following reconstructive and peripheral nerve surgeries.

Cross-References

▶ Medial Lemniscus
▶ Posterior Columns
▶ Somatosensory Cortex

References and Readings

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