# Functions of Tactile Mechanoreceptive Afferents Innervating the Human Hand

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Four types of mechanoreceptive afferents innervate the glabrous skin of the human hand. Evidence from human neurophysiological research supports the idea that the four types provide complementary information both for perception and for control of action. Traditionally, the understanding of peripheral tactile sensory mechanisms is based on studies that examine correlations between afferent signals and perceptual (declarative) phenomena evoked by gently touching passive digits. This applies especially to studies addressing fine-form spatial discrimination issues, detection of vibratory stimuli and relation between stimulus magnitude and perceived intensity. For several reasons, this experimental approach, however, provide limited information both about the peripheral encoding of tactile information and about how the CNS uses tactile information in many natural situations: the control processes in natural object manipulation and haptic tasks operate largely subconsciously and very rapidly; the use of tactile signals differs across tasks and task phases; and the tissue deformations that drives the afferents typically differ significantly from the those present during experiments based on gentle touch.