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Titolo	Information-processing channels in the tactile sensory system : a psychophysical and physiological analysis / / George A. Gescheider, John H. Wright, Ronald T. Verrillo
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Descrizione fisica	1 online resource (146 p.)
Collana	Scientific psychology series
Altri autori (Persone)	WrightJohn H. <1938-> VerrilloRonald T
Disciplina	612.8/8
Soggetti	Touch
Lingua di pubblicazione	Inglese
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Livello bibliografico	Monografia
Note generali	Description based upon print version of record.
Nota di bibliografia	Includes bibliographical references (p. 113-124) and indexes.
Nota di contenuto	Channels in touch -- Identification of specific neural systems responsible for mechanoreception -- Duplex model of mechanoreception -- Spatial and temporal summation in the P system -- The neural bases of the tactile systems -- Anatomy of tactile receptors -- Neurophysiology of tactile receptors and their nerve fibers -- Neural bases of the P and NP systems -- Four neural systems mediate the detection of vibratory stimuli -- Frequency selectivity of a neural system is determined by its receptors -- From neural systems to information-processing channels -- Sensation-magnitude enhancement occurs within but not across channels -- Multichannel model of tactile sensitivity -- The psychophysical tuning curve -- Testing the multichannel model through experiments on adaptation and masking -- Adaptation reveals the existence of tactile channels -- Masking occurs within but not across channels -- Testing the multichannel model through experiments on sensory learning -- Properties of tactile channels -- The frequency selectivity of channels -- Temporal summation and temporal acuity -- Spatial acuity -- Edge detection -- Spatial summation -- Effects of observer characteristics --

Effects of aging on the sensitivity of tactile channels -- Effects of the menstrual cycle -- The functional roles of channels -- Channels enhance the detectability of stimuli -- Channels enhance the discriminability of stimuli -- The functional roles of the individual tactile channels -- The decibel scale -- The functional role of the PC channel -- The functional role of the RA channel -- The functional role of the SA I channel -- The functional role of the SA II channel -- Specialization of channels -- Channel interactions -- Summation of sensation magnitude across channels -- The perception of texture -- Role of attention in the enhancement and summation of sensation magnitude -- Interactions between tactile channels and other somatosensory submodalities.

Sommario/riassunto

Information-Processing Channels in the Tactile Sensory System addresses the fundamental question of whether sensory channels, similar to those known to operate in vision and audition, also operate in the sense of touch. Based on the results of psychophysical and neurophysiological experimentation the authors make a powerful case that channels operate in the processing of mechanical stimulation of the highly sensitive glabrous skin of the hand. According to the multichannel model presented in this monograph, each channel, with its specific type of mechanoreceptor and afferent nerve fiber, responds optiimally to particular aspects of the tactile stimulus. It is further proposed that the tactile perception of objects results from the combined activity of the individual tactile channels. This work is important because it provides researchers and students in the field of sensory neuroscience with a comprehensive model that enhances our understanding of tactile perception.