Neural Plasticity

Hindawi

Special Issue on

Effects of Manipulation of Sensory Input on Plasticity and Recovery

CALL FOR PAPERS

Strategies to enhance motor function by augmenting afferent information are based on the key role of sensory input on motor performance and on findings of worse recovery of motor deficits in subjects with sensory impairment. Specific interventions include sensory stimulation in the form of visual, auditory, cutaneous, thermal, and peripheral nerve or muscle stimulation, as well as afferent feedback provided during motor training. Multisensory stimulation can also be delivered in an attempt to upregulate adaptive plasticity mechanisms and enhance recovery in a number of neurological disorders.

Despite the rising interest in manipulation of sensory input, there are still critical questions to be answered in the field. Understanding of mechanisms underlying effects of this type of intervention by translating knowledge gained in animal studies into research performed in humans represents a great challenge. There is a myriad of gaps about the "best" paradigms of sensory stimulation for particular conditions, durations and doses of treatment, evaluation of long-term effects, and performance of appropriately powered clinical trials to determine the evidence base of this approach.

We invite investigators to contribute original research articles as well as reviewarticles that focus on investigation of mechanisms underlying effects of manipulation of sensory input in health and in neurological disorders, as well on evaluation of these effects, current knowledge, and gaps that must be addressed. Articles related to animal or human studies are welcome.

We are particularly interested in studies that describe the use of preclinical, clinical, and imaging and neurophysiology tools, as well as studies that integrate different approaches to address effects of sensory stimulation in modulation of plasticity and recovery.

Potential topics include but are not limited to the following:

- Use of sensory inputs such as sensory stimulation induced by electrical stimulation of varying paradigms or tactile or vibratory stimulation
- Effects on cortical excitability as measured by transcranial magnetic stimulation, functional magnetic resonance imagery, electroencephalography, or central reflex excitability
- Effects of dosage, frequency, and other parameters of stimulation as well as longevity of effects on both neurophysiological and clinical measures
- Clinical trials exploring the impact of sensory manipulations on measures of impairments, activity, and participation
- Evaluation of changes in parameters such as strength, muscular voluntary activation, neuromuscular plasticity, coordination, motor control, balance, gait parameters, postural control, movement strategies, and planning

Authors can submit their manuscripts through the Manuscript Tracking System at https://mts.hindawi.com/submit/journals/np/emsi/.

Papers are published upon acceptance, regardless of the Special Issue publication date.

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