

Sensory receptor stimulation: A non-pharmaceutical way to help the Parkinson's patient - Ben Weinstock - Weinstock Physical Therapy, USA

Ben Weinstock

Abstract

The skin, with its numerous types of sensory receptors, is often overlooked in the treatment of people with Parkinson's disease (PD). These receptors provide critical feedback to the brain in terms of proprioception, pressure, pain, stretch, and temperature. Various methods of sensory stimulation, such as via manual pressure, acupuncture, electrical stimulation, and massage, have been shown to trigger changes in levels of brain connectivity in people with PD. This has been objectively demonstrated with functional Magnetic Resonance Imaging. Moreover, levels of Brain-Derived Neurotrophic Factor also increase after sensory stimulation. Sensory stimulation often results in immediate and observable improvements in posture, gait, and functional abilities which can last up to several days. Mechanical stimulation applied to points on the feet (corresponding to the head of the first metatarsal and the tip of the great toe) have repeatedly been demonstrated to not only improve freezing of gait but also to normalize gait parameters (such as stride length). Electrical stimulation applied to acupuncture points on the body and to the ear improve motor as well as non-motor disturbances (presumably through modulation of the vagus nerve).

Skin taping, commonly used to treat athletes, has been shown to improve posture and gait when applied to key areas of the spine, neck, and lower extremities. It is theorized that taping improves proprioceptive input which is almost always disturbed in PD. Sensory stimulations are especially important for patients who exhibit exercise intolerance and are unable to stimulate their receptors via exercise.

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Ben Weinstock
Weinstock Physical Therapy, USA, E-mail: Benweinstock@gmail.com