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DOWN SYNDROME, AUTISM, BRAIN DISORDERS & THERAPEUTICS

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Human balance control system using galvanic vestibular

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One of the diseases that many people are suffering from is ataxia or disability to maintain balance. A lot of elderly and weak people are suffering from disability to maintain balance, due to decreased sensory and motor ability caused by degeneration. It may cause them to fall down and lead to more serious damages, even death. Moreover, falling down, increases the medical expenses incurred on the health system, due to the serious consequences. So it seems necessary to prevent these consequences. For this purpose, a system was designed and built that by controlling the middle ear, which plays a special role in balance, helps to prevent falls and allows the patients to maintain balance. Required feedbacks to control static and motor balance include sense of vision, vestibular system, inner ear and somatosensory system. Different studies and different solutions have been performed to maintain balance. Such as foot arch supporters, textured or bumpy surfaces, special shoes, etc. But this system's process, designed to maintain body balance in people with balance control disabilities, is done by affecting the middle ear. After detecting the patient's head position by this system, it will send messages to the brain. By detecting the messages by the brain, the patient will be able to control his or her balance. Previously used balance control equipment and methods can be replaced by this system.

Biography

Tahoura Nedae is an Iranian inventor. Her first invention "human balance control system for middle ear disease" earned her Gold Medal of ITE International Invention Show, London, August, 2019, Gold Medal of 43th International Invention Show, Croatia, November, 2018 and Outstanding Innovation Award by the Commission of Higher Education, Thailand, November, 2018.

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