Computerized Dynamic Posturography (CDP)

a. Sensory Organization Test (SOT)

The SOT determines the ability to use the three sensory systems that contribute to postural control: somatosensory, visual and vestibular. During the SOT, useful information delivered to the subject's eyes, feet and joints is effectively eliminated through calibrated "sway referencing" of the support surface and/or visual surround, which tilt to directly follow the patient's anteroposterior body sway. By controlling the usefulness of the sensory (visual and proprioceptive) information through sway referencing and/or eyes open/closed conditions, the SOT protocol systematically eliminates useful visual and/or support surface information and creates sensory conflict situations. These conditions stress the adaptive responses of the central nervous system.

Target test population: Head-related injury, neurological disease, and visual, vestibular or somatosensory disorders.

Selected references
Computerized Dynamic Posturography (CDP)
b. Motor Control Test (MCT)

The MCT assesses the ability of the automatic motor system to quickly recover from a loss of balance following an unexpected external disturbance. Recovery is assessed by determining the ability to produce a response to match the magnitude of the disturbance.

**Target test population:** Head-related injury, neurological disease, and visual, vestibular or somatosensory disorders.

Selected references
**Movement Science Lab**

**Computerized Dynamic Posturography (CDP)**

c. Adaptation Test (ADT)

The ADT assesses the ability of the automatic motor system to adapt to an unexpected external disturbance. Adaptation is assessed by determining the ability to suppress inappropriate responses to the external disturbance.

**Target test population:** Head-related injury, neurological disease, and visual, vestibular or somatosensory disorders.

Selected references


Functional Limitations Test (FLT)

The test determines the ability to carry out everyday activities. A series of six activities are administered: (1) sit-to-stand, (2) walk across, (3) tandem walk, (4) step-and-turn, (5) step-up-and-over, and (6) forward lunge. Poor performance in any of the test item may be used to predict the functional consequences of daily living.

**Target test population:** Musculoskeletal or neurological disorders.

Selected references
Limit of Stability (LoS)

The Limits of Stability test is a center-out postural stability test which quantifies the maximum distance a person can intentionally displace their Center of Gravity (COG) without losing balance, stepping, or reaching for assistance. The outcome measures are reaction time, COG movement velocity, directional control, end point excursion, and maximum excursion. For each of eight directions, the subject leans as quickly and accurately as possible towards a target (□) and holds steady. The subject is allowed up to 8 seconds to complete each trial. The test is also useful for training a specific direction in which the subject is experiencing postural instability.

Target test population: Musculoskeletal or neurological disorders.

Selected references
Visual Acuity & Gaze Tests

Two tests are used to determine the circumstances and limit of head-movement speeds under which vision become inaccurate:

a. Dynamic Visual Acuity Test (DVA)

The DVA quantifies the impact of vestibular ocular reflex (VOR) system impairment on a patient's ability to perceive objects accurately while moving the head at a given velocity on a given axis.

b. Gaze Stabilization Test (GST)

The GST quantifies the range of head movement velocities on a given axis over which a patient is able to maintain an acceptable level of visual acuity. Effective image stabilization during head movement is a key factor in performing activities of daily living. This process can be severely impacted by vestibular deficits with the ability to stabilize gaze and maintain visual acuity decreasing as the severity of a vestibular deficit increases. The assessment of a patient's ability to perform visual tasks requiring image stabilization is considered complementary to physiological tests of the VOR system.

Target test population: Visual, vestibular or other neurological disorders.