

SLP Use of KoreBalance Device for Cognitive Assessment and Treatment

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Day/Time: Friday 2-3:30pm

Goal: Introduce the KoreBalance device as a tool for cognitive assessment and rehabilitation.

- Learner Outcome 1: Participants will learn the operation of the KoreBalance Device.
- Learner Outcome 2: Participants will learn to use the KoreBalance device as part of cognitive assessment and treatment for older adults.
- Learner Outcome 3: Participants will identify which individuals will benefit from use of the KoreBalance device.

Introduction to Balance:

Balance depends on the effective use of three systems; vision, vestibular, and proprioception. The brain interrupts signals from each input system and sends the proper message to the muscles in order to cause a contraction. Balance is a constant process of position detection, feedback, and adjustment using communication through the central nervous system.

Operation of KoreBalance device:

Fully integrated computerized balance training system. Pre-installed software with assessments, exercises and games to improve balance. Balance related assessments and tasks range from static, dynamic and limits of stability with training protocols for balance related to limitations within the visual, vestibular and proprioception systems. Cognitive related assessments and tasks target limitations within attention, recognition, organization, sequencing, and recall. The KoreBalance device can also allow for the SLP to only focus on cognition and ignore resident's balance during exercises and training protocols. Designed with adjustable touch-screen, handlebars, support straps and capability to adjust the pneumatic pressure system from very firm to flexible depending on the user's abilities.

KoreBalance may help to improve:

- Biofeedback for the peripheral systems
- Re-maps & retrains neuropathways
- Returns vestibular functionality
- Improves body's ability to respond
- Increasing confidence & recovery from falls
- Improves agility, reaction time & motor control
- Neurosensory training

Who May Benefit:

- Post Orthopedic Surgery
- Post Acoustic Neuroma Resection
- Meniere's disease
- Vertiginous Migraines
- Vestibular Neuritis
- Presbycusis
- Closed Head Injuries
- Multiple Sclerosis
- Ataxia
- Parkinson's Disease
- Neuritis
- Stroke
- Peripheral Neuropathy
- Mild cognitive impairment
- Dementia

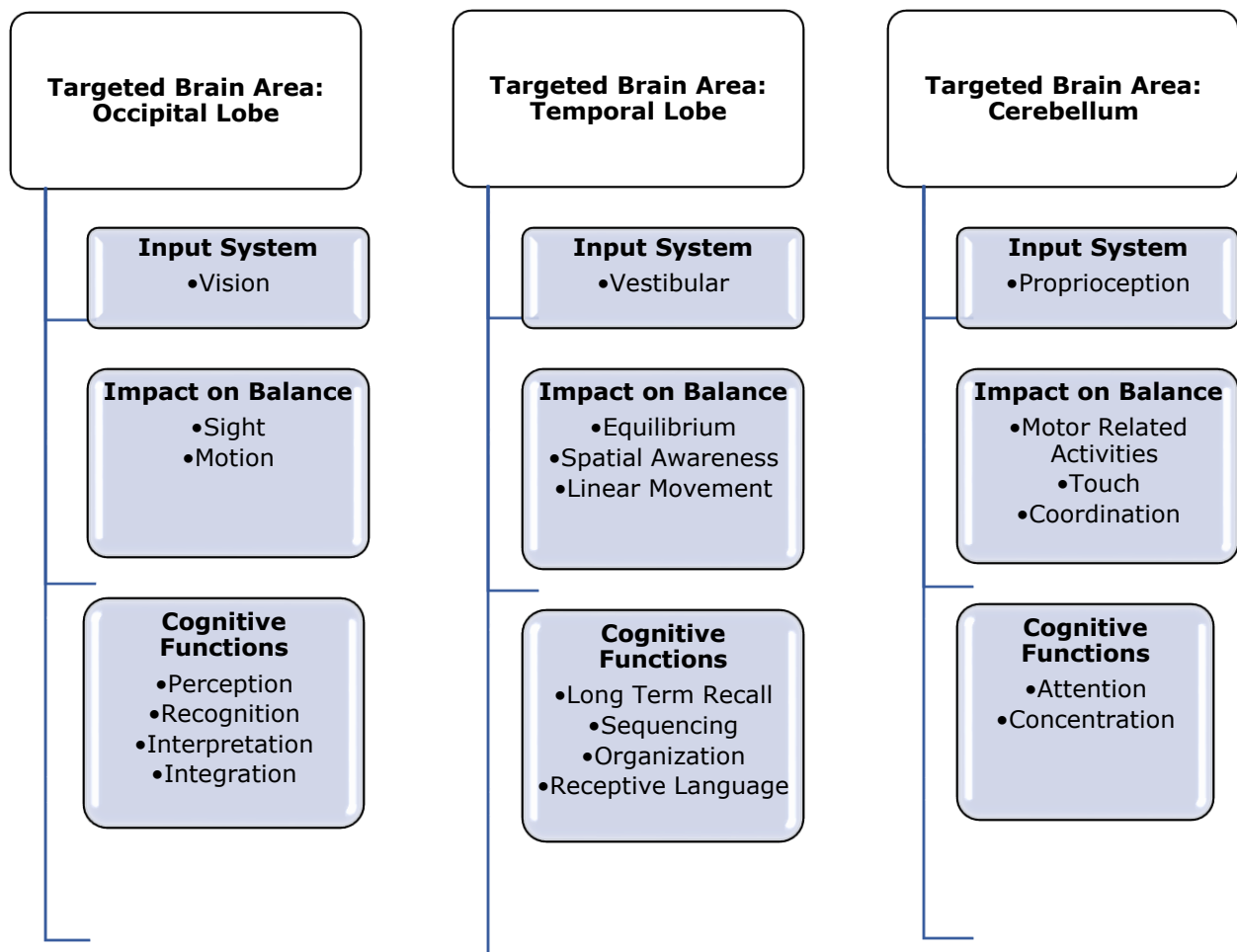
Why use KoreBalance as a clinician?

- Evaluate balance, stability and balance related cognitive functions using objective neuro-sensory assessment and neuro-cognitive testing tools.

- Provides patient with objective documentation for review along with collaboration with physicians when provided with well documented results.
- Provides accurate quantitative balance assessment for the patients receiving neuro-sensory rehabilitation.
- Personalized rehabilitation protocols. Designed to be modified as the patients' abilities change.
- Fast patient data storage: maintain records to track progress and issue up to 1 million reports.
- Improve patient's satisfaction by focusing on tasks to advance life functions and faster rehabilitation.

SLP connection to Balance

SLPs focus on cognitive functions such as perception, recognition, recall, sequencing, attention and concentration in daily treatment tasks with individuals with cognitive deficits. For example, goals may be written for improving attention to maximize the individual's abilities to return to prior level of function or complete a specific task with improved independence etc. Utilizing the KoreBalance assessments and treatment tasks target the same cognitive function as traditional speech therapy treatment. The KoreBalance allows the SLP to conduct assessment and treatment of cognitive skills in a functional way. This may, in turn, improve balance while focusing on the selected cognitive deficits, promote faster rehabilitation, improved quality of life, improved ability to react to falls, and improved overall safety awareness.



The Theories

- Balance and Cognition have an impact on one another
 - Reestablishing postural balance and eliminating dizziness greatly enhances concentration and attention which allows for improved cognition and problem solving
 - Improvement of individuals ability to maintain posture and re-correct when needed may assist in improving the ability to recognize, interpret, and integrate
 - Re-mapping specific neuropathways by focusing cognitive treatment on specific functions of the brain may promote improved balance and motor control
 - If specific neuropathways are enhanced due to continued stimulation of that cognitive function, the cognitive function may improve and therefore the individuals ability to successful complete the task related to balance

References

(2008). In R. K. Wanda G. Webb, *Neurology for the Speech-Language Pathologist* (pp. 195, 128-129, 106, 119). St. Louis : Mosby Inc. .

Hofer, S. M. (2003). Evaluating the interdependence of aging-related changes in visual and auditory acuity, balance, and cognitive functioning. *Psychology and Aging*, 18(2), 285-305.

Sandra G. Brauer, M. W.-C. (2001). The Interacting Effects of Cognitive Demand and Recovery of Postural Stability in Balance-Impaired Elderly Persons . *The Journals of Gerontology: Series A, Volume 56, Issue 8*, 489-496.