



MID ATLANTIC BRAIN & NEUROLOGICAL REHABILITATION

DIZZINESS / BALANCE / VESTIBULAR DEFICITS

An estimated 90 million Americans (42% of the current population) experience dizziness at least once in their lifetime.

The full spectrum of people from children through to the elderly can be affected by dizziness and balance problems. Some patients develop permanent balance deficits with subsequent functional limitations. For patients over 75 years of age, dizziness is the number one reason for visiting a physician, and dizziness is a significant risk factor for falls in elderly individuals. Falls have been estimated to be the leading cause of serious injury and death in persons older than 65 years. Some estimates state that as many as half of all cases of dizziness are due to vestibular disorders. Data from the National Health and Nutrition Examination Survey found that those with symptomatic vestibular dysfunction have a 12-fold increase in the odds of falling.

Vertigo can be caused by both peripheral and central vestibular deficits. About three fourths of vestibular disorders are peripheral (inner ear and vestibular nerve). The most common peripheral vestibular disorder is benign paroxysmal positional vertigo, followed by uncompensated Ménière disease, vestibular neuritis, labyrinthitis, perilymphatic fistula, and acoustic neuroma. Central vestibular deficits cause about one-fourth of dizziness. The most common central causes of dizziness and vertigo are concussion/traumatic brain injury (TBI), cerebrovascular disorders, cerebellar disease, migraine, multiple sclerosis, tumors of the posterior fossa, neurodegenerative disorders, medications, and psychiatric disorders.

Vestibular rehabilitation therapy (VRT) is a form of therapy that uses specialized exercises that result in gaze and gait stabilization. Most VRT exercises involve head movement, and head movements are essential in stimulating and retraining the vestibular system. Vestibular rehabilitation therapy has been a highly effective modality for most adults



and children with disorders of the vestibular or central balance system. In a number of studies, customized VRT programs were significantly more effective than generic exercises in resolving symptoms.

At MABNR (Mid-Atlantic Brain & Neurological Rehabilitation), VRT exercises are specifically prescribed based on specific functional neurological deficits as identified by a board certified neurologist, rather than those of standardized exercise programs employed by a physical therapist used for all patients, regardless of condition.

The basis for the success of VRT is the use of existing neural mechanisms in the human brain for adaptation, plasticity, and compensation. The extent of vestibular compensation and adaptation is closely related to the direction, duration, frequency, magnitude, and nature of the retraining stimulus. Specifically designed VRT exercise protocols take advantage of this plasticity of the brain to increase sensitivity and restore symmetry.

This results in an improvement in vestibuloocular control, an increase in the gain of the vestibuloocular reflex (VOR), better postural strategies, and increased levels of motor control for movement. Other factors that affect the degree of individual compensation include overall physical status, the functional status of remaining sensory systems, integrity of central brain mechanisms, age, and higher sensory functions such as memory, motor coordination, and cognitive ability.

GOALS

By improving vestibular function and promoting mechanisms of central adaptation and compensation, VRT aims to do the following:

- Improve balance
- Minimize falls
- Decrease subjective sensations of dizziness
- Improve stability during locomotion
- Reduce over dependency on visual and somatosensory inputs
- Improve neuromuscular coordination
- Decrease anxiety and somatization due to vestibular disorientation



At MABNR (Mid-Atlantic Brain & Neuro-logical Rehabilitation) we employ advanced neurological and vestibular examinations, with in-office diagnostic testing to most accurately identify brain impairments, dysfunction, and vestibular deficits. We then design an individualized care program that addresses each patient's specific challenges and deficiencies, while continuously measuring their progress, and refining their treatment regimens based on recovery of their dizziness, balance, coordination and other such symptoms.

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