



Newsletter Fall 2018

DIZZINESS

Dizziness and vertigo are among the most common symptoms causing patients to visit a physician (as common as back pain and headaches). Studies documenting patient presentations in emergency rooms indicate that there is a 5-10% incidence that increases to 40% in those 40 years of age and older. According to data that was compiled through a survey by the National Health and Nutrition Examination Survey, 69 million Americans have problems with dizziness and balance.

Why should we be concerned?

The presence of dizziness, imbalance and/or vertigo can be a sign of a serious condition that needs to be evaluated.

When there is a presence of dizziness, imbalance and/or vertigo there is an increase for the chance for falling. This becomes more prevalent as we age and other medical factors compound the issue. Also, with the chance of falling, there is an increase in the chance for broken bones.

Who do I see to evaluate the condition?

Primary care physicians should be the first medical professional to evaluate most cases of dizziness and related symptoms. Their role as initial diagnostician has increased over the past decade. The primary care physician will review your medical history, medications and discuss your symptoms. They may order some testing or may refer you to a specialist.

The neurologist and otolaryngologist are included, if the primary care physician is unable to identify the problem. They have the best chance to differentiate inner ear versus central nervous system involvement.

If you experience accompanying symptoms that include double vision, arm or leg weakness, and/or difficulty speaking, call 911. You should be evaluated immediately in the Emergency Department.

DIZZINESS AND IMBALANCE VERSUS VERTIGO

When a patient arrives at the physician's office suffering from a balance issue, they will often use the term "dizziness" to describe their symptom. The evaluator will begin to ask questions to pinpoint the patient's definition of dizziness. The reason for this is to begin a differential diagnosis of the cause of the symptom. The following describes each of the three different symptoms associated with balance disorders for the "dizzy" patient.

DIZZINESS is a sensation of lightheadedness, faintness, or unsteadiness. Dizziness can be a primary sign of a vestibular disorder in addition to a broad array of cardiovascular, neurological, metabolic, vision, and psychological problems.

VERTIGO is the perception of movement, either of the self or surrounding objects and has a rotational, spinning component. Frequent episodes of vertigo—whether lasting only for a few seconds or days on end—are a primary sign of a vestibular dysfunction, especially when linked to changes in head position.

DISEQUILIBRIUM simply means unsteadiness, imbalance, or loss of equilibrium that is often accompanied by spatial disorientation. This has nothing to do with dizziness, or vertigo. They are unsteady walking.

(It should be noted that all three of these symptoms can be exasperated by the presence of vision and neurological disorders.)

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INTERVENTIONS

The first step in dealing with any of these three conditions is to have the condition accurately diagnosed by medical personnel. Interventions should not be initiated without the medical supervision of your physician. The success of the treatment also depends on appropriate follow up with your physician and consistent follow through by the patient. The course of treatment for the patient is dependent upon the diagnosis and severity of dizziness, imbalance or vertigo. Here is a list of some of the options your physician may choose. This is not a complete list.

VERTIGO:

1. Medication: antihistamines, diuretics(water pills); anti-anxiety, steroids, anti-viral
2. Self Care: avoid salt, tobacco, alcohol, anxiety, caffeine
3. Vestibular Rehabilitation: work with a physical therapist to use exercises to reduce or alleviate the occurrence and severity of the episodes of vertigo.
4. Medical Procedures: injections of steroids, labyrinthectomy (destruction of the inner ear)

DIZZINESS:

1. Medications: anti-anxiety, migraine preventing; migraine aborting
2. Psychotherapy

IMBALANCE:

1. Physical therapy to improve balance ability.
2. Treatment for the underlying condition causing the imbalance, including medication

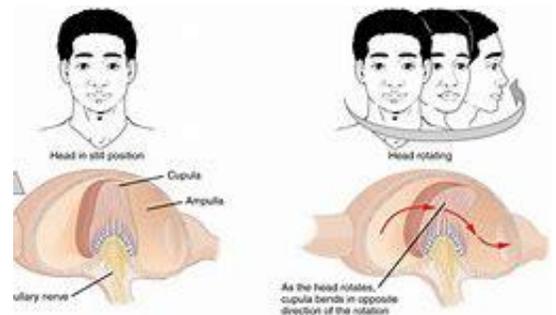
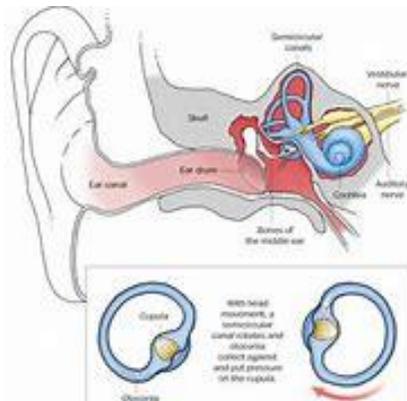
ANATOMY INVOLVED IN BALANCE: A Condensed Summary

PERIPHERAL VESTIBULAR SYSTEM:

It is believed that 90% of dizziness and vertigo is caused by a peripheral disorder. The cupula in the semicircular canals and the otolith in the utricle and saccule are the structures used by the inner ear to assist us in maintaining balance.

Semicircular Canals (SCC)

These three canals that are almost parallel counterparts for left versus right ear. So, when one canal is stimulated by head movement, its partner on the opposite side of the head is inhibited. They are indicators to the brain of rotational movement. When the head movement occurs, the cupula (gelatinous membrane) bends causing the hair cells to bend and stimulate the cranial nerve VIII.



Otolith Organs:

These organs are a set of hair cells that is bathed in fluid with a layer of crystals on top. These primarily respond to linear movement. When the fluid moves in response to linear movement, the crystals may lag behind and cause the hair cells to bend. The bending of the hair cells causes the stimulation of the cranial nerve VIII.

Anatomy and Function of the Otoliths

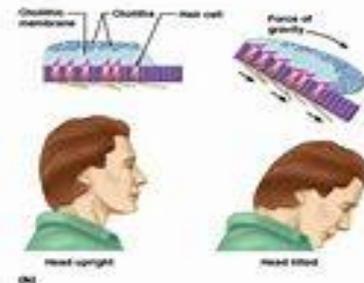
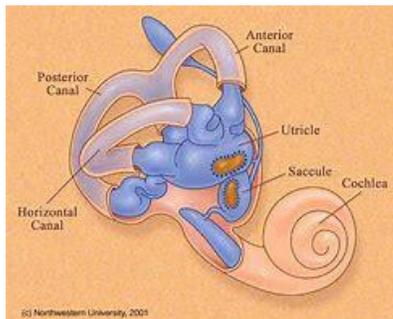


Figure 14.20b

CENTRAL VESTIBULAR SYSTEM:

Vestibular Nuclei:

Found in the brainstem and processes the balance related information received from the peripheral vestibular system, visual information from the ocular system and somatosensory information from the muscles. It then sends information back to the ocular and somatosensory systems to stabilize the eyes and muscles during head movements.

Vestibular Reflexes:

- Vestibulo-ocular reflex: stabilizes the eyes.
- Vestibulo-spinal reflex: stabilizes the body

Cerebellum:

The cerebellum is best known for its influence on *motor* systems; balancing the body, coordinating its movements, and integrating them into unified behavior patterns