

# Balance and Hearing Center Update

## Focusing on Balance:

The Balance and Hearing Center at UTMC has treated over 1000 patients with dizziness or imbalance since it opened in March of 2003. Progress is measured by asking patients to complete a pre- and post-treatment Dizziness Handicap Inventory (Jacobson et al, 1990). The Dizziness Handicap Inventory contains twenty-five questions that the patients answer about how

dizziness is impacting the physical, functional and emotional aspects of their lives. There are 100 possible points and a score of 0 indicates the patient is not impacted by the dizziness at all. The table shows the pre- and post-treatment

| BPPV<br>N=164 |         | Non BPPV<br>N=24 |         |
|---------------|---------|------------------|---------|
| Pre-Rx        | Post-Rx | Pre-Rx           | Post-Rx |
| Range: 0-100  | 0-64    | Range:2-84       | 0-18    |
| Mean: 43.35   | 2.27    | Mean: 37.33      | 3.08    |
| Median: 42    | 0       | Median: 34       | 0       |
| SD: 22.79     | 6.84    | SD: 22.69        | 5.11    |

scores for two groups of patients, one group with benign paroxysmal positional vertigo and one group diagnosed with other types of vestibular dysfunction. Vestibular rehabilitation therapy has significantly decreased the perceived handicap for a majority of patients who received treatment at the Balance and Hearing Center. Much of the success is attributable to the multi-disciplinary approach that thoroughly evaluates each patient and develops a specific treatment plan based on diagnostic results.

Falls are a leading cause of injury to patients over the age of 65 and result in numerous non-fatal injuries resulting in a variety of medical complications. Recent Medicare guidelines call for annually screening all seniors over age 55 to assess them for fall risk. In a study by Ganz, et al. (2007), the gait and balance evaluation was the only evaluation that consistently predicted an increased risk of falls. At the Balance and Hearing Center, patients are evaluated for dysfunction in the vestibular, visual and somatosensory systems that contribute to an increased fall risk, as well as gait testing and other functional evaluations. By treating both the secondary problems, as well as the patient's primary complaint, a patient's risk for falling is reduced.

Benign Paroxysmal Positional Vertigo (BPPV) is the most common cause of labyrinthine dysfunction and vertigo. BPPV presents as brief spurts of dizziness that occur as a result of displaced otoconial crystals in the inner ear. Although posterior canal BPPV is commonly assessed and treated with the widely used Epley maneuver, lateral canal BPPV requires different evaluation and treatment techniques and is often undiagnosed, misdiagnosed or mistreated. The Balance and Hearing Center utilizes several different treatment techniques based on specific canal involvement and the physical abilities of the patients. Treatment techniques commonly used include the Epley maneuver, the Semont maneuver, and the Appiani maneuver.

## Focusing on Hearing:

For decades audiologists have wondered why some people benefit greatly from hearing aids and others simply cannot tolerate the devices. Recent studies have discovered that a listener's ability to use hearing aids is closely linked to their ability to accept background noise. An audiological measure (Acceptable Noise Level) is now available that can predict a patient's likelihood to reject hearing aids with 85% accuracy (Nabelek et al, 2006). Fortunately, the hearing aid industry has long been aware of the problems associated with background noise tolerance. Certain features available in today's hearing aids may prove beneficial for those patients who are more likely to reject hearing aids due to noise tolerance problems. The Balance and Hearing Center measures Acceptable Noise Levels frequently on patients, giving us insight into which patients may need more counseling and specific features on hearing aids in order to be successful.



Caption for picture: Medical Director: William D. Horton, II, MD, Physical therapists: Bradley Moore, Paula Kyser and Jeanne Hartsell, Doctors of Audiology: Steven Doettl and Susan Lytle.

Ganz, DA, Bao Y, Shekelle PG, Rubenstein LZ (2007) "Will my patient fall?" *The Journal of the American Medical Association*; 297: 77-86.

Jacobson, GP, Newman, CW (1990) "The development of the Dizziness Handicap Inventory" *Archives of Otolaryngology Head and Neck Surgery*; 166 (4): 424-7.

Nabelek AK, Freyaldenhoven MC, Tampas JW, Burchfield SB, Muenchen RA (2006) "Acceptable noise level as a predictor of hearing aid use" *Journal of the American Academy of Audiology*; 17: 626-639.

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