



Vestibular Rehabilitation SIG

Summer 2008

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Vestibular Rehabilitation SIG Officers:

Chair:

Susan L. Whitney,
PhD, PT, NCS, ATC, FAPTA
whitney@pitt.edu

Vice Chair:

Julie Tilson,
PT, DPT, NCS
jktilson@earthlink.net

Secretary:

Michelle Lea Gutierrez, PT
mlgutierrez@zianet.com

Nominating Committee:

Debbie Struiksma, PT, NCS
DStruiksma77@aol.com

Patricia A. Farr Winkler,
PT, D.Sc., NCS
pwinkler@regis.edu

Kenda S Fuller, PT, NCS
kendafuller@hotmail.com

Newsletter Editors:

Sharan Zirges, PT, CWS
SZirges@odu.edu

Elizabeth Grace, PT, NCS
elizabeth.grace@uphs.upenn.edu

SIG Practice Liaison:

Col. Kim Gottshall, PT, Ph.D
kim.gottshall@med.navy.mil

Message from the Chair

The SIG's chair discusses the future of vestibular rehabilitation.

**By Susan L. Whitney,
PT, PhD, NCS, ATC, FAPTA
VR SIG Chair**

I am very pleased and honored to have been elected your new Vestibular Rehabilitation SIG Chair.

As new Chair, I would like to recognize Dr. Denise Goberts contribution to the SIG. She has led the group through some interesting times and has been a thought leader for vestibular physical therapy practice. She will remain active and will help make sure that the path of the SIG continues to move forward.

Thanks again Denise for all of your time, efforts, good humor, and patience. You will be missed in your leadership role.

I have a great group of talented physical therapists working with me as we try to advance our profession. My hope is that we can make inroads with evidence-based practice over the next three years and also provide support for reimbursement issues that all of us must address on a daily basis.

The SIG officers and I will attempt to keep you abreast of new advances in the science of vestibular physical therapy.

You will see eight references later in the newsletter that relate to vestibular rehabilitation from 2008. I will also attempt to highlight new findings that can affect our practice.

For example, a recent paper by Perry SD, McLroy WE, Fernie GF, and Make BE suggests that a special shoe insert can potentially decrease falls that may be related to age related declines in distal somatosensation.

The paper was published in the Journal of Gerontology, Medical Sciences, Vol 63A(6):595-602, 2008. The insoles resemble Birkenstock shoes with the borders on the sides. Dr. Maki has suggested for the last 5 years or more that medial/lateral postural

sway is very important for postural control.

Their work suggests that a simple insert may be helpful in decreasing the risk of falls in older people. How much easier can it get!

We still have a lot of other work to do with our patients but anything that can decrease risk of falling can be highly significant. Since some people with vestibular disorders are at risk for falling, this is a simple way to change your practice that might enhance your patients safety.

Another exciting advance is in the area of BPPV. The American Academy of Neurology has just recently published a position statement related to BPPV. Our own Susan Herdman, PT, PhD, FAPTA was a member of the panel that established the guidelines.

It is exciting to see physical therapists involved in the development of the guidelines that are used by not only physical therapists but also by physicians. The URL for the guidelines is: www.neurology.org/cgi/content/full/70/22/2067. Dr. Fife has also provided some movies that you could use to assist you in your teaching of the techniques.

Also be on the lookout for a mammoth guideline that I participated in related to BPPV. The American Academy of Otolaryngology, Head and Neck Surgery will be publishing another set of BPPV guidelines.

They are scheduled to be published in October of 2008. The guidelines will most likely be about 30 pages long. They should provide a good source of the most recent evidence related to BPPV and I hope will help you in your practice.

There will be links to videos also. It will be published in the Journal of Otolaryngology, Head and Neck Surgery.

The newsletter will try to keep you up-to-date with new and exciting findings. Please keep you eye out for our next edition.

Thanks go to Sharan Zirges for her hard work in putting together the newsletter.

See **CHAIR**, page 3

Brief summary of Rose Marie Rine's talk at CSM 2008

By Jennifer Braswell Christy, PT, Ph.D
JBraswel@uab.edu

Dr. Rine presented research related to the diagnosis and intervention for children with vestibular related impairments.

Recently there are increasing reports of vestibular deficits in children with otitis media with effusion, head trauma, migraine, and neuritis. Furthermore, there are increasing reports of Meniere's and BPPV in children.

Many children with severe or profound sensorineural hearing loss (deaf due to loss of function of CNVIII) since birth, which reportedly occurs in an estimated 120,000 children per year in the United States, also have vestibular hypofunction as determined by abnormal rotary chair testing.

The consequence of vestibular hypofunction in children differs from the adult due to developmental delays of gaze stabilization, motor abilities and balance and secondary deficits due to multi-modal interdependence.

These children also demonstrate:

- Progressive gross motor delays
 - Tested with the Peabody Developmental Motor Scales
- Abnormal dynamic visual acuity (inability to see with the head moving at >100 deg/sec)
 - Tested using the clinical test and an Lea Symbols chart
- Falling on conditions five and six (vestibular) of the Sensory Organization Test & below age norms on condition three, vision ratio (condition 4/1), and somatosensory ratio (condition 3/1) demonstrating abnormal efficiency of vision and somatosensation for postural control.
 - Tested with computerized dynamic posturography
 - clinical test: Modified CTSIB (eyes closed on foam)
- Falling and abnormal EMG response to toes up tip
 - Tested with computerized dynamic posturography
 - Response of the soleus was normal (spinal) but response of the tibialis anterior was very delayed (vestibulospinal), causing stumbling or falling.
- Abnormal reading acuity (possible)
 - Tested with a modified version of the MNRead chart on five subjects with bilateral hypofunction. Found a significant difference between typically developing peers and kids with bilateral hypofunction. However, the children with hypofunction were able to read small print.

Interventions known to work in adults with vestibular related impairments (X1; X2; substitution; balance exercises) were adapted for children.

The exercises incorporated eye hand coordination (e.g. batting a balloon with a racket; throwing bean bags into various holes); general coordination (e.g. dancing; tapping small targets with finger; bouncing and catching small balls); balance (e.g. balance beam; walking with smaller base of support; tall kneel on scooter board), visual motor (e.g. swinging in net swing and finding small pictures visually).

21 kids with BVL were randomly assigned to intervention

or placebo (cross over design):

- Following 12 weeks of exercise in the school setting (3X/week for 20 minute sessions), found significant improvement in Peabody scores (gross motor development) and reversed the progressive nature of the delay.
- Vision and somatosensory effectiveness improved to age appropriate which means they can better use these senses to substitute for no vestibular function.
- No longer fell on toes up tip – activated hamstrings to keep from falling – new strategy! Another intervention was done to focus on gaze stability exercises for kids with BVL.

We reported on two children with BVL, one since birth and one acquired BVL at 18 months of age. Exercises were done 3X/week for six weeks (20 min sessions). Exercises focused on yaw and pitch head movements (active assisted) as the children visually focused and identified optotypes of various sizes.

Optotypes were presented on a computer screen and on posters with "busy" backgrounds (e.g. checker board; wrapping paper with pictures).

We found improvement in DVA (of three lines!) in the child who acquired BVL.

The child who had BVL from birth did not improve DVA. Reading acuity was slightly improved in both subjects.

Future topics to watch:

- Identification of and Intervention for Vestibular Related Impairments in Children, sponsored by the Section on Pediatrics of the APTA at the Combined Sections Meeting in Las Vegas, Monday, Febr. 9 from 8 a.m. to 5 p.m. by Dr. Rine and Dr. Braswell Christy.

Braswell, J. and Rine, R. M. Preliminary evidence of improved gaze stability following exercise in two children with vestibular hypofunction. *Int.J.Pediatr.Otorhinolaryngol.* 2006;70:1967-1973.

Rine, R. M., Braswell, J., Fisher, D., Joyce, K., Kalar, K., and Shaffer, M. Improvement of motor development and postural control following intervention in children with sensorineural hearing loss and vestibular impairment. *Int.J.Pediatr.Otorhinolaryngol.* 2004;68:1141-1148.

Many children with severe or profound sensorineural hearing loss since birth, which reportedly occurs in an estimated 120,000 children per year in the United States, also have vestibular hypofunction.

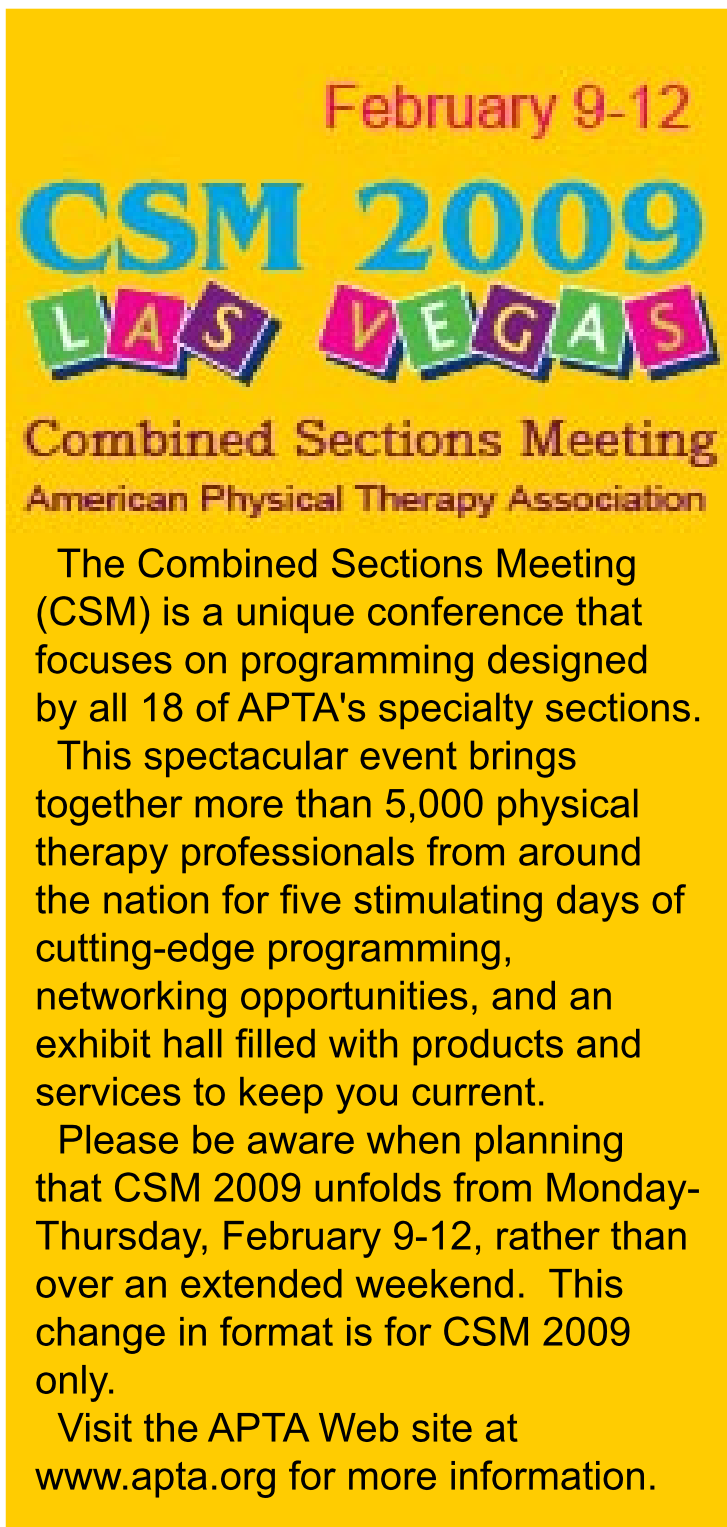
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I invite your comments and concerns.

Please contact me at whitney@pitt.edu with questions, suggestions, or ideas. If you do not hear back from me, try again.

Sometimes my messages get placed in the SPAM mailbox and I miss them. I try to respond to all comments.

I am looking forward to a rewarding three years as SIG Chair.



February 9-12

CSM 2009

LAS VEGAS

Combined Sections Meeting
American Physical Therapy Association

The Combined Sections Meeting (CSM) is a unique conference that focuses on programming designed by all 18 of APTA's specialty sections.

This spectacular event brings together more than 5,000 physical therapy professionals from around the nation for five stimulating days of cutting-edge programming, networking opportunities, and an exhibit hall filled with products and services to keep you current.

Please be aware when planning that CSM 2009 unfolds from Monday-Thursday, February 9-12, rather than over an extended weekend. This change in format is for CSM 2009 only.

Visit the APTA Web site at www.apta.org for more information.

What's New for 2008

By Denise Gobert, PT, Ph.D
d.gobert@alumni.texas.net

After such an exciting 2008 Combined Sections Meeting in Nashville, the VR SIG's officers have been busy with many interesting projects.

Have you been on the VR SIG Web site lately? If so, you'll notice there's a new look with more up-to-date news to keep you aware of current practice issues.

We're constantly trying to keep abreast of the education, research and practice needs of VR specialists. Therefore, we've developed and posted a new online survey, which runs through 2008, to help describe the current billing and practice trends of VR specialists across various clinical settings.

The survey was posted in March, but more than 90 therapists have already responded. A quick overview of the responses indicates that more than 62 percent are practicing in an outpatient setting, while around 17 percent are in private practice.

Do most physical therapists bill for the Dix-Hallpike maneuver with Frenzels using the CPT code 97001 or 97750? You'll be able to find out because we're planning to present the results during the 2009 CSM in Las Vegas.

The primary goal of this project is to promote more consistency within our specialty as we better define our scope of practice making progress toward Vision 2020. If you'd like to participate please go to our SIG's website: www.neuropt.org. It won't take long to complete and will help identify important billing issues.

Another exciting venture is the addition of new faces to our group of officers.

With mixed feelings, I will finally step down from the Chair's position to allow a new person to take over the role of promoting and supporting the interests of our SIG. I have enjoyed being a part of the action for these six years, however, I look forward to hearing new ideas and strategies on how we might best support our practice.

There will also be a new nominating committee member joining the group to help encourage others to step up to the plate and share their talents and ideas. Please welcome them as they assume their new roles.