

# Vestibular Rehabilitation SIG

American Physical Therapy Association/Neurology Section

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## Message from the Chair

**Anne K. Galgon, PT, PhD, NCS**

**Vestibular Rehab SIG Chair**

The Vestibular Rehabilitation Special Interest Group continues working on our primary objective to advance the practice of vestibular rehabilitation. As always, I want to thank the volunteers that keep supporting the ongoing work and the Academy of Neurologic Physical Therapy that has provided the approval and funds to make the work possible. Here is a look back at some noteworthy 2017 accomplishments and upcoming actions and events for 2018.

### **Podcasts are back and more popular than ever!**

If you have not listened in recently, the podcast committee under the leadership of **Maureen Clancy** has a new platform for the delivery of our podcasts. Podcasts can be downloaded from our webpage, iTunes at APTA Vestibular SIG Podcast or our new platform [blogtalkradio.com/aptavestibularsig](http://blogtalkradio.com/aptavestibularsig). The committee produced two new podcasts since August and have been able to track the number of downloads. In November there were over 1500 downloads of both new and older podcasts. Look for notifications of a podcast on the Vestibular Hypofunction Clinical Practice Guidelines which will be coming out shortly.

### Vestibular Rehabilitation SIG Officers:

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For more information go to:  
<http://www.neuropt.org/go/special-interest-groups/vestibular-rehabilitation>



## Message from the Chair (cont.)

Thanks to everyone who completed the survey on the description of advanced practice in Vestibular Rehabilitation last year. This data has been vital. The taskforce on advanced practice and specialization compiled the data, wrote a description of advanced practice and submitted a petition to the ABPTS for specialization last spring. Unfortunately, the ABPTS decided that Vestibular Rehabilitation was not an area of specialization. Their opinion was that vestibular rehabilitation is more likely a sub-specialization. Although this was a disappointing decision, **the taskforce persists**. They have taken the comments and feedback from the ABPTS and have been working diligently to gather more information and are writing a rebuttal for reconsideration. **Many thanks to the committee members who have worked diligently for several years on this process including, Dennis Fell, Rob Landel, Michael Schubert, Janet Helminski, Joe Krazak, Susan Herdman, Janene Holmberg, Rebecca English, Becky Olson-Kellogg, and Kim Gottschall.**

### **The VR SIG and the ANPT still supports specialization**

Here are some considerations as to why, I feel specialization is important. Vestibular Rehabilitation has been recognized as an effective management approach for individuals with vestibular and balance disorders for over 20 years. The American Academy of Otolaryngology recognized vestibular rehabilitation as a valid method to treat individuals with vestibular disorders first in 1997 and reaffirmed its validity in 2007(1). Several clinical practice guidelines have been published which demonstrate validity of vestibular rehabilitation (2,3,4).

There is a demand for certified specialists in vestibular rehabilitation. Physical therapy practices, other healthcare providers, patients, and third party payers are requesting that therapists have specialty knowledge and skills in Vestibular Rehabilitation. As the chair of the VRSIG, I get weekly requests on how to obtain certification and or how to find a certified therapist. This demand has also stimulated the creation of continuing education and certification courses. However, there is no regulation of and high variability in content taught in these courses. Vestibular therapists who participated in survey studies on vestibular rehabilitation training (1, 5), have noted that they were educated through continuing education after graduating from entry-level professional programs. The authors of these surveys and studies concluded that there was high variability in education among practicing clinicians and recommended implementation of standards for education. Standards for entry-level and advance practice in vestibular rehabilitation have not been applied to the education and training of therapists who manage individuals with vestibular disorders. The VR SIG continues to look forward to the outcome of the taskforce's work. A description of advance practice and recognition by the ABPTS should dramatically affect our practice and pave the way for improved avenues for training vestibular rehabilitation therapists.

## Message from the Chair (cont.)

### What is upcoming in 2018 for Vestibular Rehabilitation?

The *most exciting upcoming event* will be the inaugural **International Conference for Vestibular Rehabilitation (ICVR)** to be held in Chicago on Aug 17-19, 2018, at the Hilton Palmer Hotel. The goal of the conference is to bring international and national clinical experts and scientists working in vestibular disorders together, in one forum, in order to inform and advance the practice of vestibular rehabilitation. By the end of 2017 we have had high enthusiasm and many have already registered for the conference. The conference still has opportunities for poster presenters, exhibitors, and sponsors. A full list of speakers, schedule and registration information can be found on our web page at: <http://www.neuropt.org/special-interest-groups/vestibular-rehabilitation/international-vestibular-rehabilitation-conference>.

We are planning to expand our online educational offerings through the ANPT Synapse Education Center, as our educational committee will be receiving training on the design and building of interactive online education courses and will be proposing courses to develop in 2018. If you cannot attend our ICVR we plan to have podcasts with some of our premier speakers and topics available as well. We are looking to offer them as continuing education courses through Synapse.

We hope to see you at CSM in New Orleans in February. There is some great vestibular rehabilitation programming, our Vertigo-go Dinner, and Business Meeting to attend. This issue has a preview of some of the educational programs that may be of interest to our group. I am always happy to meet and discuss issues with our members who are passionate about Vestibular Rehabilitation.

1. Cohen, HS, Gottshall KR, Graziano M, Malmstrom E-M, Sharpe MH. International survey of vestibular rehabilitation therapists by the Barany Society Ad Hoc Committee on Vestibular Rehabilitation Therapy, *Journal of Vestibular Research*. 2009; 19: 15–20.
2. Bhattacharyya N, Gubbels SP, Schwartz SR, Edlow JA, El-Kashlan H, Fife T, Holmberg JM, Mahoney K, Hollingsworth DB, Roberts R, Seidman MD, Steiner RW, Do BT, Voelker CC, Waguespack RW, Corrigan MD. Clinical Practice Guideline: Benign Paroxysmal Positional Vertigo (Update). *Otolaryngol Head Neck Surg*. 2017; 156(3\_suppl):S1-S47.
3. Hall CD, Herdman SJ, Whitney SL, Cass SP, Clendaniel RA, Fife TD, Furman JM, Getchius TS, Goebel JA, Shepard NT, Woodhouse SN. Vestibular Rehabilitation for Peripheral Vestibular Hypofunction: An Evidence-Based Clinical Practice Guideline: FROM THE AMERICAN PHYSICAL THERAPY ASSOCIATION NEUROLOGY SECTION. *J Neurol Phys Ther*. 2016 Apr; 40(2):124-55.
4. McCrory P, Meeuwisse W, Dvořák J, Aubry M, Bailes J, Broglio J, Cantu RC, et al. Consensus statement on concussion in sport—the 5<sup>th</sup> international conference on concussion in sport held in Berlin, October 2016. *Br J Sports Med*. 2017; 51:838–847.
5. Bush ML, Dougherty W. Assessment of vestibular rehabilitation therapy training and practice patterns, *J Community Health*. 2015; 40(4): 802–807.

**See you in New Orleans!**



# CSM NEW ORLEANS PROGRAMMING PREVIEW

In 2018, CSM will be held in New Orleans. Here is a list of exciting courses and presentations dealing with vestibular topics that are being offered this year. Please confirm times and locations with your programming guide. Don't forget to attend the VRSIG Business Meeting on Saturday morning at 6:45am. There will be door prizes and this is a great opportunity for networking. We look forward to seeing you there!

**Wednesday, February 21, 8:00 am - 5:30 pm**

**Precon Course:**

**My Patient's Dizzy, Now What? An Acute Care Approach to Vestibular Dysfunction**

**Location:** Hilton Riverside

**Room:** Camp

**Speakers:** Kerry Lammers, PT, DPT and Gabrielle Steinhorn, DPT, NCS

**Thursday, February 22, 8:00 am – 10:00am**

**Multimodal Physical Therapy for Youth Concussion**

**Location:** Hilton Riverside

**Room:** St. Charles Ballroom

**Speakers:** Megan Beam PT, DPT, PCS and Michael Karl, PT, DPT, OCS, FAAOMPT

**Friday, February 23, 8:00 am -10:00 am**

**Pitfalls of Post-Concussion Syndrome**

**Location:** Hilton Riverside

**Room:** Grand Ballroom B

**Speakers:** Carrie Hoppes, PT, DPT, NCS, OCS; Karen Lambert PT, DPT, NCS; and Anne Mucha, PT, DPT, MS, NCS

**Friday, February 23, 11:00 am-1:00 pm**

**Delayed Recovery and Medical Interventions for Recalcitrant Vestibular Disorders.**

**Location:** Hilton Riverside

**Room:** Grand Ballroom C

**Speakers:** Joseph Furman, MD, PhD; Patrick Sparto, PT, PhD and Susan Whitney DPT, PhD, NCS, ATC, FAPTA



## CSM PROGRAMMING PREVIEW (CONT.)

**Friday, February 23, 3:00 pm – 5:00 pm**

**BPPV Best Practice: Examining the 2017 Revised Clinical Practice Guideline**

**Location:** Hilton Riverside

**Room:** Grand Ballroom C

**Speakers:** Janene Holmberg PT, DPT, NCS and Susan Whitney DPT, PhD, NCS, ATC, FAPTA

**Friday, February 23, 3:00 pm – 5:00 pm**

**A Multisensory Approach to mTBI Vestibular Dysfunction.**

**Location:** New Orleans Ernest N. Morial Convention Center

**Room:** 225

**Speakers:** Paula Kodoski, DPT and Marcy Pape, MPT, CLT, CBIS

**Saturday, February 24, 6:45 am -7:45 am**

**Vestibular SIG Business Meeting**

Come hear about what the SIG has been up to for the past year and what we plan to accomplish next year. All who attend will receive tickets to be entered into a drawing for a number of fabulous prizes including vestibular text book, video frenzel goggles and more. We hope to see you there!

**Saturday, February 24, 8:00 am-10:00 am**

**Rest versus Activity: Debating the Current Evidence in Concussion Management**

**Location:** Hilton Riverside

**Room:** Grand Ballroom C

**Speakers:** Anne Galgon, PT, PhD, NCS; Anne Mucha, PT, DPT, MS, NCS; Karen Skop, PT, DPT and Paul Vidal, PT, MHSc, DPT, OCS, FAAOMPT

**Saturday, February 24, 3:00 pm – 5:00 pm**

**Concussion: A revealing Look at Mild Traumatic Brain Injury Across the Lifespan.**

**Location:** New Orleans Ernest N. Morial Convention Center

**Room:** 208

**Speakers:** Jennifer Fernandez, PT, DPT, NCS, PCS; Jacqueline Osborne, PT, DPT, GCS, CEEAA and Renata Salvatori, DPT, OCS, SCS, FAAOMPT

**Saturday, February 24, 3:00 pm – 5:00 pm**

**Understanding the Causes of Vertical Diplopia: Red Flag or Muscle Weakness?**

**Location:** Hilton Riverside

**Room:** Grand Ballroom CD

**Speakers:** Janet Helminski, PT, PhD; Michael Schubert, PT, PhD and Melissa Suckow, OD

**Saturday, February 24, 3:00 pm – 5:00 pm**

**Neural and Vestibular Contributions to Patients With Postconcussive Symptoms**

**Location:** New Orleans Ernest N. Morial Convention Center

**Room:** The Great Hall A

**Speakers:** Jacqueline Del Giorno, DPT, OCS; Thomas Denninger, PT, DPT, OCS, FAAOMPT and Ellen Shanley, PhD, PT, OCS



## **International Conference for Vestibular Rehabilitation**

### ***Translating Research to Advance Practice***

Plans are underway for the International Conference for Vestibular Rehabilitation to take place in Chicago, Illinois August 17-19, 2018. There is an excellent group of faculty assembled that will be presenting the latest research in Vestibular Rehabilitation and its application in practice. There will be 5 unique sessions with a panel discussion at the end of each session, opportunity for written question submission, and evening poster presentations. At the nightly poster sessions, participants will have an opportunity to dialogue directly with the presenters. Physical therapists, occupational therapists, vestibular basic scientists, audiologists, and physicians are encouraged to attend. The level of content will contain advanced level information intended for clinicians with a working knowledge of the vestibular system and experience treating individuals with vestibular disorders.

The Conference is sponsored by the Academy of Neurologic Physical Therapy as well as sponsorship from various companies and exhibitors. The call for poster submission is still open and posters can address research report, case study, special interest, and theory report. If you would like to attend or participate in sponsorship, information is available on the Academy website for Vestibular Rehabilitation Special Interest Group. You can find all the information you need for registration and housing, as well as a detailed description of the conference objectives.

### **Topics Include:**

- **Differentiating Causes of Vestibular Dysfunction**
- **Motor Learning in the Vestibular System**
- **Benign Paroxysmal Positional Vertigo**
- **Vestibular Rehabilitation Does Not Fix Everything**
- **Future Directions.**

***We look forward to seeing you in Chicago!***

### **CALL FOR NEWSLETTER CONTRIBUTORS!!!**

Do you want to get involved with your SIG?  
Consider contributing to the newsletter!!

There are many ways to contribute and get involved. You can write an article on a topic of your choosing or an appropriate topic could be assigned to you. If you are interested in getting involved with the newsletter, please contact Jasmine Jackson, PT, DPT, NCS at [jjacksondpt@gmail.com](mailto:jjacksondpt@gmail.com) or Debbie Struiksma PT, NCS at [dstruiksma77@aol.com](mailto:dstruiksma77@aol.com).

## CSM Poster Highlight

The Poster sessions at CSM are always a highlight of the conference and should not be missed. It is an opportunity to ask questions of presenters about their research and discuss new ideas for further study. Throughout the year, the VRSIG would like to highlight various posters that have been presented to further support the important contributions that the authors have provided in the advancement of Physical Therapy and disseminate information to members. If you have authored a poster for the section during a recent Combined Sections Meeting that you would like to share for the VRSIG Newsletter, please contact Jasmine Jackson at [jasminej0902@gmail.com](mailto:jasminej0902@gmail.com) or Debbie Struiksma at [dstruiksma77@aol.com](mailto:dstruiksma77@aol.com).

### THE VALIDATION OF SMOOTH PURSUIT NECK TORSION AND SEATED CERVICAL TORSION TESTS FOR THE DIAGNOSIS OF CERVICOGENIC DIZZINESS: A SYSTEMATIC REVIEW OF THE LITERATURE

Authors: Janet Callahan, DPT, NCS; Marianne Beninato, DPT, PhD; Olufisayo Makinde, PT, MS; Meta Urvashi, PT, MS  
Department of Physical Therapy, MGH Institute of Health Professions, Boston, MA

#### **Introduction**

Due to the lack of a gold standard diagnostic test, cervicogenic dizziness (CGD) remains a controversial entity. Nevertheless, use of certain clinical tests are recommended in the literature for determining a clinical diagnosis of CGD. Two of these tests are the smooth pursuit neck torsion test (SPNTT) and the seated cervical torsion test (SCTT). The quality of the evidence for the diagnostic validity of these clinical tests has not been systematically analyzed.

#### **Purpose**

The purpose of this study was to evaluate the quality of literature on the diagnostic psychometric properties of the SPNTT and SCTT to diagnose CGD.

#### **Methods**

**Search Engines:** PubMed, CINAHL and Google Scholar was conducted.

**Inclusion Criteria:** (1) Clinical or laboratory validation studies on the diagnostic test properties of the SPNTT and SCTT; (2) Studies including patients with dizziness or vertigo of cervical origin with whiplash associated disorders, cervical dysfunction, chronic neck syndromes or cervical degenerative disorder with or without pain; (3) published in English from June 1992 to April 2015

**Exclusion criteria:** Validation studies where the primary diagnostic group was patients with headaches, vertigo of known origin, benign paroxysmal positional vertigo or cerebral vascular disease.

**Systematic Assessment of Quality:** The quality of the identified diagnostic studies was assessed using version 2 of the Quality Assessment of Diagnostic Accuracy Studies (**QUADAS-2**) scale. The tool comprises 4 domains:

- (1) Patient Selection: Patient selection methods and included patients
- (2) Index Test: Description of SPNTT/SCTT and how test was conducted and interpreted
- (3) Reference Test: Description of the “gold standard” test and how test was conducted and interpreted
- (4) Flow & Timing: interval between index and reference test administration and patient management/retention

**Risk of Bias** refers to areas of study design that potentially limit the interpretability of the results (internal validity)

**Applicability Concerns** refers to areas of study design that potentially limit the generalizability of the results to all patients with CGD (external validity)

## *CSM Poster Highlight (Continued)*

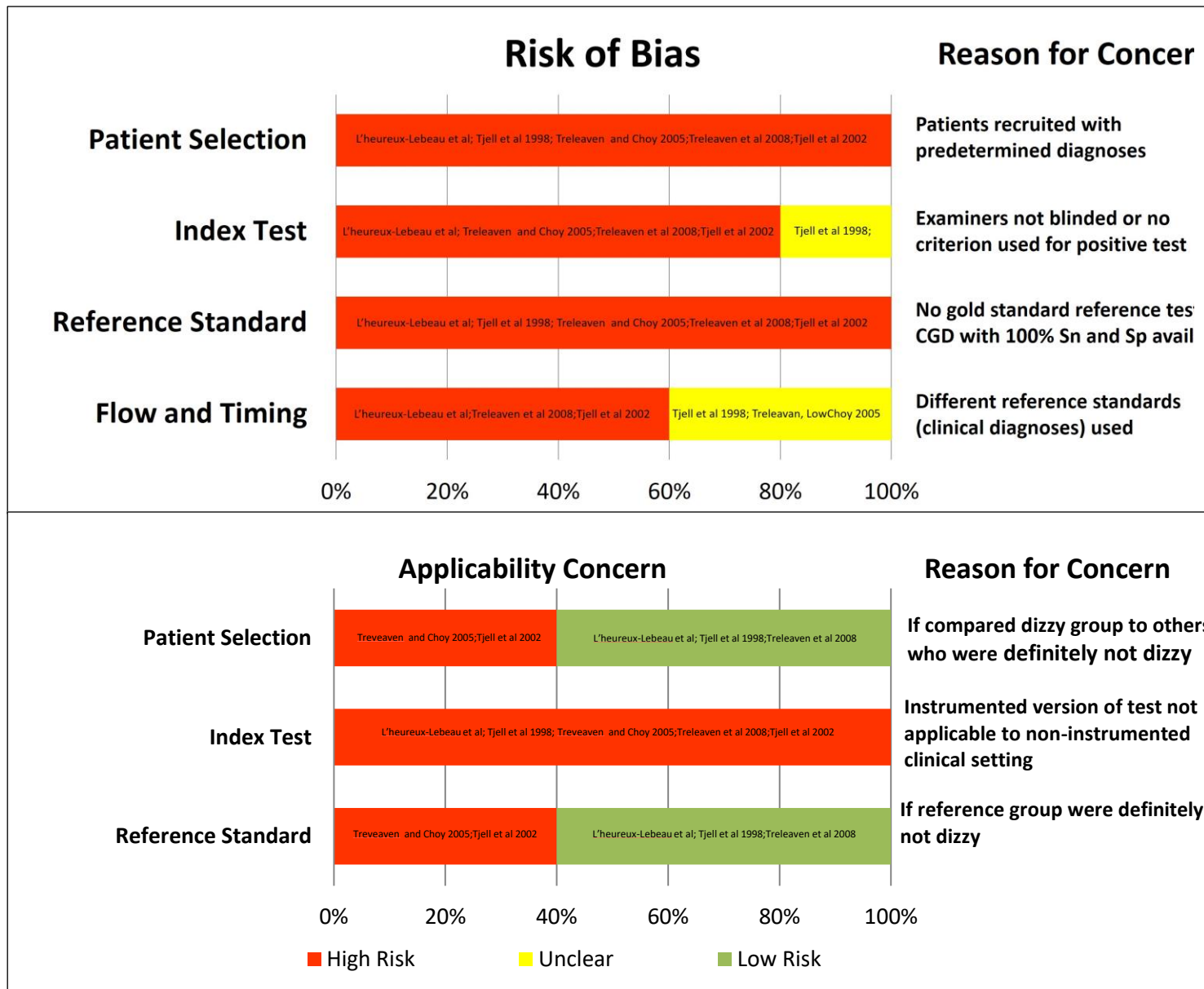
### Results

**SPNT/SCT Test:** Trunk neutral, rotated right and rotated left with head neutral

Study	Case Group	Reference Group	Index Test/Criterion	Results
L'heureux-Lebeau et al 2014 SPNTT and SCTT (Instrumented)	N=25 with CGD	N=25 with BPPV	<p>Procedure: SPNT test : Rotation <math>\geq 45^\circ</math>, target speed 0.1, 0.2, 0.4Hz SCT Test: Rotation <math>90^\circ</math></p> <p>Criteria: SPNT: • Gain diff threshold <math>\geq 0.102</math> • <math>2^\circ</math>/sec nystagmus in L or R neck torsion SCT • <math>2^\circ</math>/sec nystagmus in L or R neck torsion</p>	<p>SPNT Gain diff P= 0.9010 Sn=33%, Sp= 57%*</p> <p>SPNT- nystagmus P= 0.001 Sn=56%, SP=88%</p> <p>SCT- nystagmus P= 0.001 Sn=72%, SP=92%*</p>
Tjell & Rosenhall, 1998 SPNTT (Instrumented)	N=50 with WAD II w/ dizziness (WAD D)	<p>N= 25 with WAD II and no dizziness (WAD ND)</p> <p>OR combined control of: N=20 w/ Meniere's N=20 w/ CNS vertigo N=30 Healthy</p>	<p>Procedure: SPNT: Rotation <math>\leq 45^\circ</math>, target speed 0.2 Hz</p> <p>Criterion: Diff in smooth pursuit gain in torsion vs neutral position of the healthy control +2 S.D</p>	<p>WAD D vs WAD ND P &lt; 0.001 Sn=90%, Sp= 78%*</p> <p>WAD D vs Combined Control P &lt; 0.001 Sn=90% Sp= 91%</p>
Treleaven and Choy, 2005 SPNTT (Instrumented)	N=50 WAD II w/ dizziness (WAD D)	<p>N= 50 with WAD II and no dizziness (WAD ND)</p> <p>OR N=50 Healthy</p>	<p>Procedure: SPNT: Rotation <math>30-45^\circ</math>, target speed 0.2 Hz</p> <p>Criterion: No criterion established</p>	<p>WAD D vs WAD ND P &lt; 0.004</p> <p>WAD ND vs Healthy P &lt; 0.002</p>
Treleaven et al, 2008 SPNTT (Instrumented)	N=20 WAD w/dizziness (WAD D)	<p>N=20 Acoustic neuroma N=20 Healthy</p>	<p>Procedure: SPNT: Rotation <math>45^\circ</math>, target speed 0.2 Hz</p> <p>Criterion: No criterion established</p>	<p>WAD D vs Combined Control P &lt; 0.01</p> <p>ROC AUC .98 to distinguish between WAD D and Acoustic Neuroma</p>
Tjell et al, 2002 SPNTT (Instrumented)	N=46 Cervical dizziness (CGD)	<p>N=52 Cervical spondylosis (CS) N=24 Fibromyalgia (FM)</p>	<p>Procedure: SPNT: Neck neutral, R and L <math>45^\circ</math> target speed 0.2 Hz</p> <p>Criterion: No criterion established</p>	<p>CGD vs FM &amp; CS P &lt; 0.05</p> <p>CGD vs CS P = 0.07</p>



## *CSM Poster Highlight (Continued)*



### Summary of Study Findings

- 5 papers examined the SPNTT; 1 paper examined the SCTT
- All papers measured smooth pursuit gain with instrumentation; 1 paper also measured nystagmus
- All papers used clinical diagnoses to determine patient groups
- 2 papers compared dizzy, cervical-impaired patients to known non-dizzy reference groups, thereby likely inflating test accuracy
- 2 papers reported diagnostic test statistics of Sn and Sp to determine accuracy; 3 paper did not conduct diagnostic analysis

## CSM Poster Highlight *(Continued)*

### Conclusions/Recommendations

- Inherent and unavoidable limitation is that there is no gold standard test for diagnosis of CGD
- A lack of robust validity of these tests, even as instrumented in the laboratory setting, renders these tests of questionable value as diagnostic tools for CGD
- Results from studies of instrumented versions of these tests should not be generalized for non-instrumented clinical use
- Non-instrumented versions of these tests have never been validated thus, their clinical use for the diagnosis of CGD is not recommended
- Reproduction or alleviation of a patients' dizzy symptoms through the clinical examination of the cervical spine is recommended for diagnosis of CGD

### References

- (1) Tjell C, Rosenhall U. Smooth pursuit neck torsion test: A specific test for cervical dizziness. *Am J Otol.* 1998;19(1):76-81.
- (2) Tjell C, Tenenbaum A, Sandström S. Smooth pursuit neck torsion test -- a specific test for whiplash associated disorders? *J whiplash related disord.* 2002;1(2):9-24.
- (3) Treleaven J, Jull G, LowChoy N. Smooth pursuit neck torsion test in whiplash-associated disorders: Relationship to self-reports of neck pain and disability, dizziness and anxiety. *J Rehabil Med.* 2005;37(4):219-223
- (4) Treleaven J, LowChoy N, Darnell R, Panizza B, Brown-Rothwell D, Jull G. Comparison of sensorimotor disturbance between subjects with persistent whiplash-associated disorder and subjects with vestibular pathology associated with acoustic neuroma. *Arch Phys Med Rehabil.* 2008;89(3):522-530.
- (5) L'Heureux-Lebeau B, Godbout A, Berbiche D, Saliba I. Evaluation of paraclinical tests in the diagnosis of cervicogenic dizziness. *Otol Neurotol.* 2014;35(10):1858-1865. [www.quadas.org](http://www.quadas.org)
- (6) Whiting PF et al. QUADAS-2: A revised tool for the quality assessment of diagnostic accuracy studies. *Ann Int Med.* 2011;155:529-536

The VRSIG Nominating committee is currently looking for individuals to fill the slate for Nominating Committee member and Secretary. If you are interested in volunteering, please visit the Academy of Neurologic Physical Therapy website and contact the Nominating Committee Chair, Karen Skop PT, DPT, MS, at [skpannull@gmail.com](mailto:skpannull@gmail.com). The VRSIG is a great way to get involved!

