PASIG MONTHLY CITATION BLAST: No. 123 January 2017

Dear Performing Arts SIG members:

The PASIG has been busy! We have a lot of updates, please see below. Wishing everyone a wonderful holiday season and Happy New Year!

Upcoming Conferences! CSM is right around the corner! CSM 2017 will be February 15-17 in San Antonio, TX. At CSM 2017, the PASIG will provide main session programming “A Guide to Upper Extremity Nerve Entrapment Syndromes in Musicians,” by Janice Ying, DPT, OCS, Adriaan Louw, PhD, PT, CSMT, and Erin M. Hayden, PT, DPT, OCS. It is scheduled for Thursday, February 16th from 3:00pm to 5:00pm in room 301B at the Henry B Gonzalez Convention Center. Here is a link for more information: https://apta.expoplanner.com/index.cfm?do=expomap.sess&event_id=23&session_id=12125
**PASIG Business Meeting:** Please join us at our PASIG business meeting on the same day, but *much earlier* Thursday, February 16th from 7:00 AM - 7:45 AM in the Stars at Night Ballroom 4 at the Henry B Gonzalez Convention Center. You do not have to be a member to sit in our meeting.

The 2017 Orthopaedic Section Annual Conference will be San Diego Hyatt Regency Mission Bay April 20-22.

**Fellowship Taskforce Update!** The practice analysis re-validation project team is working on final revisions for the upcoming publication of the Description of Fellowship Practice (DFP) for Performing Arts Physical Therapy. The Description of Advanced Specialized Practice (DASP) in Performing Arts Physical Therapy was approved by the ABPTRFE in January 2016. The DFP will go up to review by ABPTRFE in January of 2017. This is the final phase for laying the groundwork for providing current practice guidelines in the sub-specialty area as well as curriculum requirements for Performing Arts PT fellowships.

The Fellowship Taskforce Chair and various project team members will be hosting a Performing Arts Fellowship Development Q&A Session at CSM from 12:00pm – 1:30pm on Saturday February 18th in Convention Center, Room 224. This session is for anyone interested in learning more about starting performing arts fellowships or learning about the practice analysis process. We hope to see you there!

**Dancer Screening Update!** PASIG is attempting to collect relevant information and resources to share with our membership regarding screening the young dancer (adolescent, pre-pro, collegiate). If you are currently participating in research and/or utilizing young dancer screening tools, please contact our Dancer Screening Chair, Mandy Blackmon, at mandydancePT@gmail.com. We will be meeting at CSM 2017 in San Antonio, TX to discuss and collaborate on current resources. Please let Mandy know if you will be at CSM and are interested in attending that committee meeting. Place: Convention Center, Room 224. Time: 1:00 PM, Thursday, February 16th

**Interested in a Performing Arts Fellowship?** The American Board of Physical Therapy Residency and Fellowship Education (ABPTFRE) has approved the PASIG Description of Specialist Practice (DSP) for the Performing arts as an area of study. We are now working with the ABPTFRE to turn the DSP into a Description of Fellowship Practice (DFP). We anticipate the DFP will be available online by June 2016. This means that sites can begin forming fellowships in dance medicine, music medicine, theater medicine, etc. The PASIG will provide the fellowship criteria for accreditation. We may have a meeting on creating a performing arts fellowship at CSM 2017 on Saturday, February 18th, from 12:00pm to 1:30 PM. Please contact Mariah Nierman Mariah.Nierman@osumc.edu or Laurel Abbruzzese La110@cumc.columbia.edu if interested.
Membership: Current PASIG members, please remember to update your membership:

PASIG Leadership

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<tr>
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Social Media: For fun PT info and related performing artists info...
1) Facebook page: (closed) so, if you would like to be a part of the group, email me on Facebook: Dawn Doran and let me know you’d like to join.
2) follow PASIG on Twitter: @PT4PERFORMERS

Call for case reports: If you have a brief, clinically-focused case report on a performing arts PT patient, or a clinical commentary, please contact Annette Karim to submit your writing for the next Orthopaedic Physical Therapy Practice Magazine: neoluvsonlyme@aol.com

WE NEED MORE CONTRIBUTORS TO OUR MONTHLY CITATION BLASTS!!!!
Past Monthly citation blasts are available, with citations and EndNote file, listed on the website:
http://www.orthopt.org/content/special_interest_groups/performing_arts/citations_endnotes

TOPICS THAT HAVE BEEN COVERED RECENTLY INCLUDE:
Gyrotonics ® and Gyrokinesis ® for the Performing Artist (current)
Medial Tibial Stress Syndrome
2nd Tarsometatarsal Joint Injuries in Dancers
Screening Tools for the Young Dancer
Thoracic Outlet Syndrome and Nerve Entrapment in Instrumental Musicians
Plyometric Training in Dancers
HVLAT for Lower Extremity Conditions
Inguinal Disruption
Femoroacetabular Impingement
Hand and Wrist Conditions in Gymnasts
Factors in Optimal Turnout
Achilles Tendinopathy
Biomechanics and Posture in Musicians
Pilates
ACL Injuries in Dancers
Patellofemoral Pain and Dance
Neural Entrapments Found Among Musicians
Stress Fractures of the Foot and Ankle
Dry Needling
Dynamic Warm Up and Stretching
Platelet Rich Plasma Injections
Back Pain in Dancers

If you are interested in contributing by writing a citation blast or joining the research committee, contact me at lbreising@gmail.com.

Sincerely,

Laura

Laura Reising, PT, DPT, MS, OCS
Research Chair, PASIG Research Committee
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PERFORMING ARTS CONTINUING EDUCATION, CONFERENCES, AND RESOURCES

Orthopaedic Section Independent Study Course. *20.3 Physical Therapy for the Performing Artist.*

Monographs are available for:
- Figure Skating (J. Flug, J. Schneider, E. Greenberg),
- Artistic Gymnastics (A. Hunter-Giordano, Pongetti-Angeletti, S. Voelker, TJ Manal), and
- Instrumentalist Musicians (J. Dommerholt, B. Collier).

Contact: Orthopaedic Section at: [www.orthopt.org](http://www.orthopt.org)

Orthopaedic Section-American Physical Therapy Association, Performing Arts SIG
[http://www.orthopt.org/content/special_interest_groups/performing_arts](http://www.orthopt.org/content/special_interest_groups/performing_arts)
Performing Arts Citations and Endnotes
[http://www.orthopt.org/content/special_interest_groups/performing_arts/citations_endnotes](http://www.orthopt.org/content/special_interest_groups/performing_arts/citations_endnotes)

Musician Health Series, Janice Ying, PT, DPT, OCS
Glendale Adventist Therapy and Wellness Center, Los Angeles area (Eagle Rock), CA
Healthy Musician Series - Overuse

ADAM Center
[http://www.adamcenter.net/](http://www.adamcenter.net/)
Publications:
[http://www.adamcenter.net/#!vstc0=publications](http://www.adamcenter.net/#!vstc0=publications)
Conference abstracts:
[http://www.adamcenter.net/#!vstc0=conferences](http://www.adamcenter.net/#!vstc0=conferences)

Dance USA
Research resources:
[http://www.danceusa.org/researchresources](http://www.danceusa.org/researchresources)
Professional Dancer Annual Post-Hire Health Screen:
[http://www.danceusa.org/dancerhealth](http://www.danceusa.org/dancerhealth)

Dancer Wellness Project
Becoming an affiliate:

Harkness Center for Dance Injuries, Hospital for Joint Diseases
[http://hjd.med.nyu.edu/harkness/](http://hjd.med.nyu.edu/harkness/)
Continuing education:
Gyrotonics® and Gyrokinesis® for the Performing Artist

This is a topic that I’ve been intrigued about and wanting to cover for some time. My first introduction to Gyrotonics® was talking to a gentleman on a barge that was to be our stage on the Hudson River about 15 years ago. The room we were in was filled with beautiful machines that I had never seen before. Over the years, I have met and spoken to several performing artists who have utilized
Gyrotonics® or Gyrokinesis® as part of their cross-training or rehabilitation process.

My initial search for research articles on this topic was extremely sparse outside of magazine articles and websites. Enclosed are the results of my search for academic journals, thesis and abstracts from conferences. To date, the research tells us that Gyrotonics® and Gyrokinesis® can promote mindfulness, improve core stability, improve gymnastics performance, decrease pain levels in those with chronic low back pain, improve gait mechanics and affect posture in scoliosis patients. However, research does not show a cause/effect with regards to hip range of motion or lumbar ROM. Included is an article by Air and Rietveld that, while not Gyrotonics® specific, discusses some general guidelines for dance rehabilitation that may be beneficial in returning the dancer back to performance. More research is needed on benefits of Gyrotonics® and Gyrokinesis® and how it can be used to rehabilitate the performing artists.

Laura Reising, PT, DPT, MS, OCS
Physical Therapist
Allegheny Health Network, Pittsburgh, PA


ABSTRACT: Dancers frequently experience lower-extremity injuries which require dance activity restriction, if not full "time off" and/or surgery. Recovering dancers are frequently over-eager to return to dance, but engaging in too high an activity level too soon can be detrimental. Currently, there are no formal guidelines for general physicians about advising injured or postoperative dancer-patients about when or how to return to dance activity. Socioeconomic hurdles further prohibit many dancers from seeking rehabilitative services from a dance physical therapist. Therefore, there is a need for physician education about general dance-rehabilitation principles, as well as access to a dance-specific structured rehabilitation program. We present here rehabilitation advice from an expert in dance orthopedic surgery and an example of a "preventive rehabilitation program" for injured or postoperative dancer-patients with lower-extremity injury.


OBJECTIVE: This study examined whether mindfulness increased through participation in movement based courses and whether changes in self-
regulatory self-efficacy, mood, and perceived stress mediated the relationship between increased mindfulness and better sleep.

PARTICIPANTS: 166 college students enrolled in the 2007-2008 academic year in 15 week classes in Pilates, Taiji quan, or GYROKINESIS®.

METHODS: At beginning, middle, and end of the semester, participants completed measures of mindfulness, self-regulatory self-efficacy, mood, perceived stress and sleep quality.

RESULTS: Total mindfulness scores and mindfulness subscales increased overall. Greater changes in mindfulness were directly related to better sleep quality at the end of the semester after adjusting for sleep disturbance at the beginning. Tired Mood, Negative Arousal, Relaxed Mood, and Perceived Stress mediated the effect of increased mindfulness on improved sleep.

CONCLUSIONS: Movement based courses can increase mindfulness. Increased mindfulness accounts for changes in mood and perceived stress that explain, in part, improved sleep quality.


ABSTRACT: This article examines a foundational movement in the Gyrotonic Expansion System® known as arch and curl. The Gyrotonic Expansion System, created by Juliu Horvath beginning in the 1980s, is a relatively new approach to movement based on three-dimensional spiraling and circular patterns, with applications in exercise, therapy and rehabilitation. Beginning with an overview of the Gyrotonic Expansion System, this article will explore the basic principles of Gyrotonic movement, and define key concepts, before looking at the specific biomechanics of arch and curl. We highlight common problems clients encounter with arch and curl, and consider applications to movement and bodywork.

Corbett C, Quin E. The effects of a four week GYROTONIC® exercise program on dancers’ hip joint active range of motion and performance quality. In R. Solomon, & J. Solomon (Eds.), The 23rd Annual Meeting of the International Association for Dance Medicine & Science; October 17-19, 2013; Seattle, WA.

ABSTRACT: Gyrotonic® exercise is a methodology created by a professional dancer, Juliu Horvath, involving movements that are three-dimensional and circular combined with breathing patterns and imagery. The exercises are performed on the Pulley Tower with varying resistance, and are intended to promote benefits such as increases in flexibility, joint range of motion, muscle strength, vitality, balance, and coordination. This study investigated the effectiveness of a Gyrotonic exercise program on hip joint active range of motion (AROM) and overall performance quality in dancers. Participants were six dancers (F = 5, M = 1) recruited from a dance conservatory. They took part in one-hour exercise sessions twice per week for four consecutive weeks, and in pre- and post-testing for hip joint AROM and performance quality. Hip joint AROM was measured through the performance of a grand battement using two-dimensional imaging, and analyzed using leg
displacement angles with Dartfish software. Performance quality was measured through the performance of a brief contemporary dance sequence assessed by a panel of judges using the Performance Competence Evaluation Measure (PCEM). Paired-Samples T-tests were conducted to analyze differences between pre- and post-test measurements. Significance was accepted at $p < 0.05$. From observable trends of data, four participants showed increases in leg displacement angles ranging from 1.5 to 7.1 degrees. Three participants showed increases in PCEM composite scores ranging from 3.65 to 9.83 points. However, no statistical significance was found for hip joint AROM or overall performance quality. With no statistical improvements in participants’ measurements, it remains unclear whether Gyrotonic exercise can serve as supplemental conditioning for dancers to augment hip joint AROM and aesthetic components of performance. Due to limitations in sample size and experimental design, additional research is needed in order to establish the effectiveness of Gyrotonic exercise on dancers’ technical and aesthetic capacities, or as a supplementary training activity for dance.


OBJECTIVE: To evaluate evidence for the effectiveness of the Pilates method of exercise (PME) in healthy people.

DATA SOURCES: Published research was identified by searching Science Direct, MEDLINE, PubMed, SPORTDiscus, PEDro, Cochrane Central Register of Controlled Trials, CINAHL, and Web of Science.

STUDY SELECTION: Research studies published from inception to May 7, 2011 were selected for evaluation. Two reviewers independently applied the inclusion criteria to selected potential studies. Studies were included if they were published in a peer-reviewed journal, written in the English language, conducted as a randomized controlled trial (RCT) or quasi-RCT in healthy people, had an inactive and/or exercise control group(s), included key study outcomes, and used the PME as the study intervention in at least 1 study arm.

DATA EXTRACTION: Two reviewers independently extracted data (study, design, subjects, intervention, key outcomes results), applied the Physiotherapy Evidence Database (PEDro) scale to assess the method quality of selected studies, and determined the strength of the evidence using the best evidence synthesis grading system.

DATA SYNTHESIS: Sixteen studies met the inclusion criteria. PEDro scale values ranged from 3 to 7 (mean, 4.1), indicating a low level of scientific rigor. The outcomes studied most often were flexibility, muscular endurance, strength, and postural alignment. The PME appears to be effective in improving flexibility (strong evidence), dynamic balance (strong evidence), and muscular endurance (moderate evidence) in healthy people.

CONCLUSIONS: There was strong evidence to support the use of the PME at least to the end of training to improve flexibility and dynamic balance and moderate evidence to enhance muscular endurance. Future RCTs should focus
on the components of blinding, concealed allocation, subject adherence, intention-to-treat analysis, and follow-up designs.


SUMMARY: In this forth and final portion of my bachelor's thesis, the three movement concepts are analyzed. The results of the analysis show that all three concepts include all the aspects considered in the analysis (see part 3), albeit with differing emphases. Additionally, the analysis revealed that despite differences in how they are carried out, these concepts share commonalities, which can be used in prevention, cure, and rehabilitation when providing physiotherapy for ballet dancers. Based on this foundation, together with the necessary professional knowledge, which already exists in dance medicine, physiotherapists could gain access to a new and interesting field of work. This bachelor's thesis can and should offer inspiration to pay particular consideration to this area, especially with regard to prevention.


PURPOSE: This study, therefore, examines how training using a Gyrotonic Expansion System® (with a Pulley Tower and Leg Extension Unit) which was developed for dancers' rehabilitation, affects the way gymnasts use their legs and body trunk during exercise.

METHOD: 1) Subjects were five athletes; Average age: 19 years. 2) Duration of training 90 minutes, 3 times a week. 3) Measurement items - Body circumference, Lower limbs, Circumference of thigh and other 3 parts. 4) To process the statistics, we used a 4-steps statistics software to examine by Wilcoxon two associated groups with a 5% hazard ratio considered to be the significance level

RESULTS AND CONSIDERATION: 1. A difference in circumference could be seen between the left and right ankles before training, it disappeared after training. 2. For plantarflexion of the ankle (pointing) in a sitting position on a table, the distance from the surface of the table to the toes decreased significantly after the training. That means it is possible that the topside of the foot extended and increased the curve along the extended line of the lower limbs, which made the legs look longer. On the other hand, the degree of dorsiflexion decreased but no significant difference was seen. 3. The plantarflexion of the ankle (pointing) during the motion of swinging up a leg had significantly decreased after the training. The small degree seen here could mean that the topside of the foot extended along the extended line of the lower limbs during the motion of swinging up a leg, and a beautiful extension of the toe was now able to be conducted during the movement. 4. The degree of the gap of the body trunk from the vertical axis at the standing
motion of swinging up a leg and the degree of rising up the leg became narrower after the training when elevating only the right leg, which was the dominant side for raising the leg up. This means that the raised leg was lifted up higher and the axis of the body came closer to the vertical axis.


**PURPOSE:** To conduct an eight week intervention on the Gyrotonic Expansion System® to observe changes in spinal mobility, core stability, and pain measurements in patients with low back pain (LBP).

**METHODS:** Low back pain participants (n=13) were randomized to the exercise and control group. The exercise group participated in 8 weeks of Gyrotonic training. Through pre and post-testing, participants were examined for spinal mobility through the Modified-Modified Schober Technique (MMST) which measures forward flexion and hyperextension. A goniometer determined the participant’s right and left lateral flexion and right and left rotation. Core stability was measured through the Sahrmann Core Stability Test (SCST). Oswestry Low Back Pain Disability Questionnaires (ODQ) measured pain scores. Separate 2 x 2 (Time by Groups) Mixed-Design ANOVA was used to determine with-in subject and between-subject effects.

**RESULTS:** Ten participants completed the post-testing. Seven participants were chronic (CLBP) and three were acute LBP sufferers. No significant differences were found in the range of motion (ROM) assessments (p > .05), except for Left rotation (p < .05). Significant differences were found between groups in the SCST (p < .05). No significant differences were found in ODQ scores between groups (p > .05).

**CONCLUSIONS:** Even though there were no differences between groups in their pain scores and ROM measures, the present study provides evidence that eight weeks of Gyrotonic training elicits improvements in trunk stability in patients with LBP. Also, a decrease in pain scores was present in participants who were CLBP sufferers.


**ABSTRACT:** The purpose of the present study was to use kinematic variables to identify the effects of 8/ weeks’ performance of a gyrokinetics exercise on the gait pattern of females with chronic low back pain.

**SUBJECTS:** The subjects of the present study were females in their late 20s to mid 30s who were chronic back pain patients.

**METHODS:** A 3-D motion analysis system was used to measure the changes in their gait patterns between pre and post-gyrokinetics exercise. The SPSS 21.0 statistics program was used to perform the paired t-test, to compare the gait patterns of pre-post-gyrokinetics exercise.
RESULTS: In the gait analysis, pre-post-gyrokinetics exercise gait patterns showed statistically significant differences in right and left step length, stride length, right-left step widths, and stride speed.

CONCLUSION: Gait pattern analysis revealed increases in step length, stride length, and stride speed along with a decrease in step width after 8 weeks of gyrokinetics exercise, demonstrating it improved gait pattern.


ABSTRACT: As much emphasis is placed on the early detection of scoliosis and its early treatment, the treatment of scoliosis is carried out in a variety of fashions. Gyrotonic Expansion System capable of developing muscles, ligaments and joints has proved to be more effective than other physical therapies in terms of ergonomics. This system proves to work like a charm not only for people, young and old, to professional athletes including dancers. In this context, this program is capable of strengthening their muscles and muscular skeletons. This study is aimed at presenting clinically effective cases by working with those who suffer from scoliosis with the help of Gyrotonic Expansion System that is evaluated as ergonomically better than other physical therapies and to recommend the system as a rehabilitative exercise program. With this in mind, the researcher worked with five subjects who had visited hospital W and had been diagnosed as scoliosis, conducting the primary curve Cobb (T6-T12) and secondary curve Cobb (T12-L4) before and after being exposed to the posture corrections of the Gyrotonic Expansion System. The survey reveals that the Gyrotonic Expansion System was effective in improving the subjects’ scoliosis. Gyrotonic Expansion System, showing that the primary curve Cobb angle (T6-T12) was more improved than the secondary curve Cobb angle (T12-L4). The researcher thinks that future research should focus on the standardization of the Gyrotonic Expansion System on a continuous basis.