

PASIG PERFORMING ARTS
SPECIAL INTEREST GROUP



ORTHOPAEDIC SECTION
AMERICAN PHYSICAL THERAPY ASSOCIATION



PASIG MONTHLY CITATION BLAST: No.99

November 2014

Dear Performing Arts SIG members:

CSM 2015 is just around the corner!



CSM 2015 will be in Indianapolis, IN, at the Indiana Convention Center. The dates are February 4-7, 2015. Registration has been open since September, and housing is now available. <http://www.apta.org/csm/>

The Orthopaedic Section Performing Arts SIG is pleased to announce this year's PASIG speaker is Dr. Clare Frank, PT, DPT, OCS, FAAOMPT. Dr. Frank serves as a clinical instructor for both Spine & Sports Rehabilitation Fellowship programs at Kaiser Permanente, Los Angeles. She served on the injury prevention & rehab team for the National Training Center in Beijing, China (2010-2013) and the medical team for the 2009 World Figure Skating Championships held in Los Angeles. Dr. Frank is a certified instructor for Janda's Approach to Musculoskeletal Pain Syndromes, and Kolar's Approach to Dynamic Neuromuscular Stabilization.

Dr. Frank will speak on and demonstrate *Dynamic Neuromuscular Stabilization in Spinal Rehabilitation & Performance*. It will be an informative and helpful session, as Dr. Frank will teach clinically applicable use of Dynamic Neuromuscular Stabilization in evaluating and treating performing artists.

When will this be? PASIG programming will be **Saturday, Feb 7, from 8-10 AM, in the Indiana Convention Center, Wabash Ballroom 1.**

Important note: our Performing Arts SIG business meeting will be the same day, ***before the PASIG speaker, from 7-8 AM, in the Indiana Convention Center, Wabash Ballroom 1.*** While this is early, all APTA members are welcome. This is a great opportunity to connect, meet others, investigate how you might become involved, and voice your ideas.

The PASIG website has been updated. Please check out our page:

http://www.orthopt.org/content/special_interest_groups/performing_arts

If you are thinking about a clinical question related to performing artists, you might find your answer in our monthly citation blasts, which is emailed to all PASIG members. 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

If you are interested in contributing writing a citation blast, contact Brooke Winder: BrookeRwinder@gmail.com

PASIG Membership is free! All Orthopaedic Section members are welcome:

http://www.orthopt.org/sig_pa_join.php

Current PASIG members: update your profile here:

https://www.orthopt.org/login.php?forward_url=/surveys/membership_directory.php

CSM 2015 students who have been accepted to present a performing arts poster or platform, we have \$400.00 of scholarship money you can apply for:

https://www.orthopt.org/uploads/content_files/PASIG/PASIG_scholarship_criteria_flier_2015.pdf

Applications must be in by November 15, 2014. Award notification will be sent in December 2014 for CSM 2015.

Performing Arts resources are available to members for free:

https://www.orthopt.org/content/special_interest_groups/performing_arts/pasig_resources

The resource pages full of art-specific information on

- Artist-specific Terminology (i.e., jumps, spins, instruments, turns)
- Genre Specific Terminology and Definitions
- Common Injuries
- Artist-specific Evaluations
- Performing Arts-specific Interventions
- Patterns of Regional Interdependence Association with Specific Injuries/Pathologies

- Return to Arts Progressions

Other helpful information on the PASIG website: Performing arts affiliations and PT schools, PASIG officer listing, performing arts practice analysis, bulletin board.

Tweet Tweet! We have a Twitter page!

<https://twitter.com/PT4Performers>

Post your articles, info on your site, let's get connected!

Check out the Orthopaedic section Facebook page, where you can find and post PASIG info: <https://www.facebook.com/pages/APTA-Orthopaedic-Section/121020534595362>

If you are currently using a dancer screen, please contact Sarah Wenger, as she is seeking input on a single screen that she will make available to our members: Sbw28@drexel.edu

If you are seeking a more formal method of continuing education on performing artists, there is an independent study courses available through the APTA website: https://www.orthopt.org/content/c/20_3_physical_therapy_for_the_performing_artist

Last, the quarterly publication of Orthopaedic Practice Magazine is a fun and useful source of clinically-relevant information in the form of case reports, case series, clinical pearls, and original research. Please consider submitting your case report or research on performing artists to the PASIG pages. If you are interested in submitting your writing, please contact Annette Karim: neoluvsonlyme@aol.com

Best regards,

Brooke

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PERFORMING ARTS CONTINUING EDUCATION, CONFERENCES, AND RESOURCES

Musician Health Series, Janice Ying, PT, DPT, OCS
Glendale Adventist Therapy and Wellness Center, Los Angeles area (Eagle Rock), CA
<http://www.musicianshealthcorner.com/>
Healthy Musician Series - Overuse

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

Orthopaedic Section-American Physical Therapy Association,
Performing Arts SIG

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

ADAM Center

<http://www.adamcenter.net/>

Publications:

<http://www.adamcenter.net/#!vstc0=publications>

Conference abstracts:

<http://www.adamcenter.net/#!vstc0=conferences>

Dance USA

<http://www.danceusa.org/>

Research resources:

<http://www.danceusa.org/researchresources>

Professional Dancer Annual Post-Hire Health Screen:

<http://www.danceusa.org/dancerhealth>

Dancer Wellness Project

<http://www.dancerwellnessproject.com/>

Becoming an affiliate:

<http://www.dancerwellnessproject.com/Information/BecomeAffiliate.aspx>

Harkness Center for Dance Injuries, Hospital for Joint Diseases

<http://hjd.med.nyu.edu/harkness/>

Continuing education:

<http://hjd.med.nyu.edu/harkness/education/healthcare-professionals/continuing-education-courses-cme-and-ceu>

Resource papers:

<http://hjd.med.nyu.edu/harkness/dance-medicine-resources/resource-papers-and-forms>

Links:

<http://hjd.med.nyu.edu/harkness/dance-medicine-resources/links>

Informative list of common dance injuries:

<http://hjd.med.nyu.edu/harkness/patients/common-dance-injuries>

Research publications:

<http://hjd.med.nyu.edu/harkness/research/research-publications>

International Association for Dance Medicine and Science (IADMS)

<http://www.iadms.org/>

Resource papers:

<http://www.iadms.org/displaycommon.cfm?an=1&subarticlenbr=186>

Links:

<http://www.iadms.org/displaycommon.cfm?an=5>

Medicine, arts medicine, and arts education organization links:

<http://www.iadms.org/displaycommon.cfm?an=1&subarticlenbr=5>

Publications:

<http://www.iadms.org/displaycommon.cfm?an=3>

Performing Arts Medicine Association (PAMA)

<http://www.artsmed.org/>

<http://www.artsmed.org/symposium.html>

Interactive bibliography site:

<http://www.artsmed.org/bibliography.html>

Related links:

<http://www.artsmed.org/relatedlinks.html>

Member publications:

<http://artsmed.org/publications.html>

(Educators, researchers, and clinicians, please continue to email your conference and continuing education information to include in future blasts)

Temporomandiubular Dysfunction in Musicians

Due to the specific postures and muscle requirements of the head, neck, jaw and face involved in playing many types of musical instruments, it is important for clinicians to consider the incidence and prevalence of TMD in musicians. Musicians are at risk for increased injury or pain in this region, and more research is needed to understand specifics of how to prevent and optimally treat this issue when it occurs.

I hope this small collection of abstracts helps to demonstrate the research still needed in this area.

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Attallah MM, Visscher CM, van Selms MK, Lobbezoo F. Is there an association between temporomandibular disorders and playing a musical instrument? A review of literature. *J Oral Rehabil.* Jul 2014;41(7):532-541.

Temporomandibular disorders (TMDs) have a multifactorial etiology. Among others, parafunctions and oral habits have been suggested as important initiating and perpetuating factors. Playing a musical instrument that loads the masticatory system, like wind instruments and the violin or viola, has been suggested to be part of this group of etiological factors. However, the evidence base for this suggestion is lacking. Therefore, the aim of this study was to review the literature on the possible association between playing a musical instrument and developing and/or having a TMD. A PubMed search, using the query ['Music'(Mesh) AND 'Cranio-mandibular Disorders'(Mesh)], yielded 19 articles, 14 of which were included in this review. Six of 14 papers had a case-control or pre-test-post-test design; the remaining eight papers were case reports of expert opinions. The former papers were analysed and tabulated according to the PICO (Patient/population-Intervention-Control/comparison-Outcome/results) system; the latter ones were only summarised and tabulated. All articles with a case-control or pre-test-post-test design suggested a possible association between TMD and playing a musical instrument, especially the violin and viola. However, no clear-cut conclusion could be drawn as to whether playing a musical instrument is directly associated with TMD, or only in combination with other factors. More and better research on this topic is needed, as to enable a better counselling and possibly even a better treatment of the suffering musician.

Clemente M, Lourenco S, Coimbra D, Silva A, Gabriel J, Pinho J. Three-dimensional analysis of the crania-cervico-mandibular complex during piano performance. *Med Probl Perform Art.* Sep 2014;29(3):150-154.

Abstract: Piano players, as well as other musicians, spend a long time training to achieve the best results, sometimes adopting unnatural body positions that may cause musculoskeletal pain. This paper presents the preliminary results of a study targeting the analysis of the head and cervical postures of 17 piano players during musical performance. It was found, as a common feature, that the players tilt the head to the right and forward towards the score and keyboard. Players who know the score by heart tend to move their heads more compared to the ones who have to keep their eyes on the score.

de Queiroz JR, Mollica FB, Benetti P, de Araujo MA, Valera MC. Degree of chronic orofacial pain associated to the practice of musical instruments in orchestra's participants. *Indian J Dent Res.* Jan-Feb 2014;25(1):28-31.

Objective: The practice of playing musical instruments can affect structures of the head, neck, mouth, and the masticatory system. The aim of this study was to obtain information regarding the prevalence of orofacial pain in musicians according to the type of instrument they play, by applying a specific questionnaire.

Materials and Methods: One hundred and seventeen musicians of Sao Paulo state's orchestras participated in this study. They answered an anamnesis questionnaire with 20 questions regarding their personal data, type of instrument played, hours of daily practice, and presence or absence of orofacial pain according to the Chronic Pain Grade Classification (CPGC). Musicians were divided into two groups in accordance with the risk of affecting TMJ: RG (risk group, including violin, viola, vocalist, trombone, tuba, clarinet and saxophone); CG (control group, other instruments). They received an informative brochure about the subject. Data obtained from the questionnaire were submitted to descriptive statistics, Pearson's correlation analysis and Z-test for difference between two proportions.

Results: The participants were from 15 to 62 years old. Pain degree showed positive correlation for reported symptoms ($P = 0.002$) and hour/day practice ($P = 0.030$). Regarding the prevalence of pain degree, data were, for RG: Grade 0 (54.5%), Grade 1 (30.3%), and Grade ≥ 2 (15.1%). For CG, Grade 0 (84.4%), Grade 1 (8.9%), and Grade ≥ 2 (6.6%). Z-test showed positive difference between groups ($P = 0.0001$).

Conclusion: It was concluded that the musicians of risk group presented higher prevalence of orofacial pain than control (non-risk) group.

Glowacka A, Matthews-Kozanecka M, Kawala M, Kawala B. The impact of the long-term playing of musical instruments on the stomatognathic system - review. *Adv Clin Exp Med.* Jan-Feb 2014;23(1):143-146.

In this article, we have made a review of the influence of playing musical instruments on the formation of malocclusion and TMJ disorders in musicians. Primary attention was paid to the effects of wind and stringed instruments. The aim of the article was the presentation of research and opinions about this problem in the last 25 years. It is reported that long-term and repetitive playing of musical instruments, particularly stringed (violin and viola) and wind instruments can cause dysfunctions of the stomatognathic system. The impact of wind instruments was assessed in terms of the type of mouthpiece. We studied the possibility of repositioning the front teeth and reducing the width of the upper dental arch and overbite. There were also reports on the use of a specific instrument to improve the child's occlusion. Studies have also been performed on the usefulness of relaxation plates in order to improve, and even prevent, dysfunction caused by the constant stress on the same parts of the stomatognathic system. The experiments were mainly based on interviews, dental cast analyses and

cephalometric analyses. Additional methods were dynamometer tests and muscle tension palpation.

Heikkilä J, Hamberg L, Meurman J. Temporomandibular Disorders: Symptoms and Facial Pain in Orchestra Musicians in Finland. *Music and Medicine*. First published on May 21, 2012 2012;4:171-176.

The aim of this study was to investigate temporomandibular disorders (TMDs) and the symptoms and facial pain of professional symphony orchestra musicians. Results of questionnaires from musicians in Sinfonia Lahti and in The Finnish Radio Symphony Orchestra (n = 73) showed that facial pain was common among orchestral musicians (30% of the musicians). The overall prevalence of the symptoms did not vary between the instrumentalist groups but indicated that the musicians playing different instruments had mixed susceptibilities to symptoms. In particular, night bruxism and sleep disturbances seemed to increase the number of symptoms of TMDs in wind players, whereas among string players sleep disturbances increased the occurrence of the symptoms. We conclude that unpleasant facial symptoms were prevalent in many of the professional musicians studied and, as such, may deserve attention as part of an occupational focus on health and wellness.

Hunter EK. Integration of rehabilitation and acupuncture in the treatment of a professional musician with temporomandibular joint dysfunction. *Acupunct Med*. Dec 2011;29(4):298-301.

This case study describes the use of acupuncture in a professional musician with myogenic temporomandibular dysfunction. The 3-year history of symptoms was associated with persistent episodic tension-type headaches. Acupuncture was used for trigger point release, primarily of the masticatory muscles, in conjunction with exercise therapy. After 8 weekly acupuncture sessions, the patient's pain had completely resolved, headaches had resolved and the Patient-Specific Functional Scale showed significant improvements.

Pampel M, Jakstat HA, Ahlers OM. Impact of sound production by wind instruments on the temporomandibular system of male instrumentalists. *Work*. 2014;48(1):27-35.

BACKGROUND: Playing a wind instrument can be either a reason for overuse or a protecting factor against certain diseases. Some individuals have many findings but low morbidity while others have few findings but high morbidity. This contradictory phenomenon should be researched.

OBJECTIVE: The temporomandibular system (TMS) is a functional unit which comprises the mandible, associated muscles and bilateral joints with the temporal bone. The TMS is responsible for the generation of sound when wind instruments are played. Over the long-term and with intensive usage, this causes changes in the musculature

and in the temporomandibular joint (TMJ) of wind musicians, often resulting in temporomandibular disorders (TMD). The aim of this study is to examine evidence that TMD constitute an occupational disease in wind musicians.

PARTICIPANTS: TMD patients and wind musicians were examined by dental clinical functional analysis. 102 male subjects were divided into three groups: "healthy" individuals, wind musicians, and patients with TMD.

METHODS: Dental Examination was carried out based on focused inclusion of the research diagnostic criteria – TMD [1,7]. Findings were evaluated for statistical significance by first transferring data into a digital database [2,15], then generating T-Test und Wilcoxon-Test when non-Gaussian distribution appears and applying the Mann-Whitney rank sum test using Sigmaplot Version 1.1 software (Systat Software Inc, Washington, USA).

RESULTS: The evaluation revealed that wind instrument musicians show a high incidence of developing TMD as the researchers found almost 100% morbidity regarding parafunctional habits and preauricular muscle pain of each adult and highly active musician. The result is highly significant ($p < 0.001$) for protrusion distance of the mandible.

CONCLUSIONS: A higher prevalence of functional disorders of the musculoskeletal system has previously been demonstrated in wind musicians. New research results and the typical functions of various wind instruments provide evidence that playing a wind instrument generates occupational risks to the TMS.

Rodriguez-Lozano FJ, Saez-Yuguero MR, Bermejo-Fenoll A. Prevalence of temporomandibular disorder-related findings in violinists compared with control subjects. *Oral Surg Oral Med Oral Pathol Oral Radiol Endod.* Jan 2010;109(1):e15-19.

Objective The aim of this study was to determine if there is an association between violin playing and the presence of signs and symptoms of temporomandibular disorder (TMD).

Study design We studied a group of violinists in the Murcia region of Spain, who were examined for TMD. The results were compared with those from a random control group who did not play any musical instrument. The groups were matched by age and gender. Statistical analysis was carried out using SPSS 15.0 statistical software.

Results Compared with the control subjects, the violinists as a group had significantly more pain in maximum mouth opening ($P < .005$), parafunctional habits ($P = .001$), and occurrence of temporomandibular joint sounds ($P < .005$) as determined by chi-squared.

Conclusions Violin playing appears to be a factor associated with TMD-related findings.

Rodriguez-Lozano FJ, Saez-Yuguero MR, Bermejo-Fenoll A. Orofacial problems in musicians: a review of the literature. *Med Probl Perform Art.* Sep 2011;26(3):150-156.

Abstract: Objectives: The objective of our study was to review the different pathologies of the stomatognathic system that can present in musicians as a result of playing their instruments. Design: The National Library of Medicine's PubMed database was searched to identify all peer-reviewed articles in the English literature dealing with orofacial problems in musicians, using both subject headings such as MeSH terms (PubMed) and free text words in combination (oral, musician, violin, wind instruments, vocalists, orthodontic, tooth, temporomandibular disorders [TMD]). The identified studies were assessed independently by two authors. We included any instruments that involved the orofacial area: i.e., wind and brass instruments, vocalists, and violins and violas. Results: Thirty-two articles were selected that were of many different types (clinical reviews, longitudinal and transverse studies of therapeutic procedures, case-control studies). Among orofacial problems, the most common disorders that affect musicians are TMDs, herpes simplex virus infections, orthodontic problems, and problems with perioral musculature. Conclusions: Musicians may suffer from pathological conditions that are worsened by their occupation due to excessive practice and stress. These conditions can cause permanent injuries that subsequently prevent the musicians from playing. Depending on the characteristics of the musical instrument and the way it is played, professional musicians generally show a propensity for buccodental problems.

Steinmetz A, Zeh A, Delank KS, Peroz I. Symptoms of craniomandibular dysfunction in professional orchestra musicians. *Occup Med (Lond)*. Jan 2014;64(1):17-22.

Background Up to 80% of professional musicians are affected by playing-related musculoskeletal disorders, but data regarding the frequency of craniomandibular dysfunction (CMD) in professional orchestra musicians is scarce.

Aims To evaluate the frequency of CMD and its relation to musculoskeletal pain in various body regions.

Methods A questionnaire-based survey approach assessing CMD symptoms and musculoskeletal pain in professional orchestra players was adopted. Relative prevalence rates and prevalence ratios for different instrument groups were estimated.

Results A total of 408 musicians completed the questionnaire (response rate 57%). Playing-related pain in the teeth or jaw was reported by 19–47% of musicians and TMJ pain by 15–34%, depending on the instrument group. Current pain in the face indicating a painful CMD was reported in 6–10% and related symptoms such as teeth grinding in 25–34%, jaw clenching in 33–42% and jaw locking in 11–18% of musicians. Females were 2.4 times (95% confidence intervals (CI) 1.49–3.84) more likely to report having had orofacial pain within the last month. Musicians reporting orofacial pain within the last month were 4.8 times (95% CI: 2.83–8.02) more likely to report pain in the neck and 2.5–3.8 times ($P < 0.05$) more likely to report pain in other body regions, including shoulders, right wrist, left fingers and the thoracic and lumbar spine.

Conclusions Symptoms suggesting CMD were common in this study of professional orchestra musicians and were associated with pain in the neck, shoulder and hands. There is a need to enhance awareness of CMD to optimize early medical diagnosis and treatment.

