MUSICISTI come ATLETI

Analogie e differenze

Piero Benelli

Medico sportivo
Medico VL Basket Pesaro
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Direttore Sanitario Fisioclinics Pesaro
Abstract
Performing artists are athletes. Like athletes, performing artists practice and perform most days with little off season, play through pain, "compete" in challenging environments, and risk career-threatening injury. Artists and the Arts is a multidisciplinary, care-coordinating, and musculoskeletal pain medicine/performing arts community. Performing artists of all ages and genres are an underserved population, with unique risk factors for injury prevention, performance enhancement, and wellness. Sports medicine physicians are a valuable resource for filling this gap by applying existing knowledge of treating sport athlete injuries, injury prevention, and the unique needs and challenges of the performing arts population. By better understanding the needs of the performing arts population and applying existing concepts and knowledge, sports medicine professionals can expand their impact on a new patient base that desperately needs support.

Introduction
Performing artists are athletes, just like sport athletes, they:
- practice or perform almost every day.
- play through pain.
- compete in challenging environments.
- experience little "off season."
- face extreme competition.
- risk the compression of substance abuse, and
- face real risk of career-threatening injury.

Comparing the work schedules of a professional performing artist and a professional baseball player highlights some of the similarities. Both professions have 162 games a year, and their lives are completely consumed by their sport. Just like baseball players, performing artists suffer from overuse injuries, careers ending due to inactivity, and long hours of training and preparation. Both fields require travel, both require dedicated study, and both require a unique blend of physical, mental, and emotional resilience. Both fields also require a unique blend of physical, mental, and emotional resilience.
### Questionario Conservatorio Rossini (1992?) – 46 risposte

- + del 60% ca. soffriva di disturbi muscoloscheletrici da sovraccarico
- l’80% ca. non faceva esercizi di riscaldamento e/o di prevenzione
- il 35% ca. si affidava a medici e/o fisioterapisti per la cura
- In generale, tutti continuavano l’attività senza modificare la routine quotidiana di studio

**Sottovalutazione del problema?**
"Il violinista è come un atleta se smetti di esercitarti perdi colpi"
Francesco Degio: "Crepacini" di Paganini a 25 anni

Se non suono per un giorno me ne accorgo solo io, se non suono per due giorni se ne accorge il pubblico
N. Paganini (?)

Musicisti come atleti
come prevenire e curare le patologie da sovra caricamento funzionale collegate alla pratica strumentale

Pesaro, Conservatorio Rossini, 27/11/2015
Musicisti come atleti – Analogie e differenze

- Allenamento e performance
- Preparazione fisica
- Epidemiologia e injury profile
- Discipline e ruoli / Strumenti
- Fattori di rischio
- Sovraccarico funzionale
- Gesti tecnici e posture obbligate
- Gestione del trauma
- Return to play
- Utilizzo di tutori
- Utilizzo di farmaci
- **Tipo di approccio!**

La squadra
Differenza – Cultura e ricerca

71863 citazioni

319 citazioni

Epidemiologia

• PRMD
  • Playng
  • Related
  • Musculoskeletal
  • Disorders
The occurrence of musculoskeletal complaints among professional musicians: a systematic review

Laura M. Rik1,2,3, Ronka M.A. Holsteeuw1,3,4, Veronique M.A. Voore1,2, Jan M. Schuurs5, Bob G.H. B.N. Nell2,3

Abstract

Purpose: This study gives a systematic overview of the literature on the occurrence of musculoskeletal complaints in professional instrumental musicians.

Methods: A systematic review. New literature databases were searched without time limits on June 25, 2015, also the complete index of the journal Musical Problems of Performing Artists (MPPA) until June 2015 (26:2) was searched, and citation tracking and reference checking of the selected articles were performed. The search consisted of the combination of three groups of keywords: musician (e.g., musician, violin, musician, instrument player) AND musculoskeletal (e.g., musculoskeletal, tendon, shoulder, arthritis) AND epidemiology (e.g., prevalence, incidence, occurrence).

Results: The initial literature search strategy resulted in 1288 potentially relevant articles. Finally, 21 articles describing 5424 musicians were included in this review. Point prevalence of musculoskeletal complaints in professional musicians range between 9 and 60 %; 12-month prevalence range between 41 and 93 %; and lifetime prevalence range between 62 and 95 %.

Conclusion

66-78% arto superiore

*spalla sin violinisti
*spalla dx violoncellisti
*piu colpi l polistrumentisti
*più colpito il sesso femminile
*meno colpiti i flutti

PRMDs/non-PRMDs

The term 'PRMDs' was introduced to evaluate musculoskeletal symptoms which interfere with the ability to play the instrument (Zaza et al. 1998). Since then, many studies evaluated these playing-related symptoms instead of Musculoskeletal symptoms are highly prevalent among evaluating all musculoskeletal symptoms, thereby excluding musicians, especially among women. In contrast to the literature on musculoskeletal complaints in the general population and Mangion 2002; O’Neill et al. 2001; Ackermann et al. 2012). The use of this term has an important advantage; symptoms without impact on the musician (and therefore irrelevant symptoms) are excluded. However, the comparison of musicians with non-musicians is difficult with this definition. Besides, although Zaza et al. (1998) made a clear definition of the term PRMD, studies using other descriptions of the term are published (Davies and Mangion 2002; Abreu-Ramos and Miehe 2007). The current definition of PRMD does not include a causality of the complaints (i.e., is the complaint the result of playing of the instrument, or is it the result of a trauma and influences the complaint the ability to play the instrument).
Pathologies de l’appareil locomoteur du musicien : étude épidémiologique

I. Joubrel\textsuperscript{1}, S. Robineau\textsuperscript{2}, S. Péturill\textsuperscript{3}, P. Gallien\textsuperscript{2}

Tableau I. Caractéristiques des cas selon l’indication de l’étude épidémiologique.

<table>
<thead>
<tr>
<th>Instrument\textsuperscript{1}</th>
<th>Nombre de musiciens</th>
<th>Sexe</th>
<th>% hommes</th>
<th>Sexe</th>
<th>% femmes</th>
<th>% poly-arthrite</th>
<th>% arthrite physique</th>
</tr>
</thead>
<tbody>
<tr>
<td>Épaule</td>
<td>15</td>
<td></td>
<td>100%</td>
<td></td>
<td></td>
<td>53,3%</td>
<td>33,3%</td>
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<tr>
<td>Coude</td>
<td>15</td>
<td></td>
<td>100%</td>
<td></td>
<td></td>
<td>33,3%</td>
<td>66,7%</td>
</tr>
<tr>
<td>Science du poignet</td>
<td>3</td>
<td></td>
<td>100%</td>
<td></td>
<td></td>
<td>33,3%</td>
<td>66,7%</td>
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<tr>
<td>Ankl droit</td>
<td>2</td>
<td></td>
<td>100%</td>
<td></td>
<td></td>
<td>50%</td>
<td>50%</td>
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<tr>
<td>Ankl gauche</td>
<td>4</td>
<td></td>
<td>100%</td>
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<td>0%</td>
<td>0%</td>
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<tr>
<td>Doigts de la main dextre</td>
<td>1</td>
<td></td>
<td>100%</td>
<td></td>
<td></td>
<td>66,7%</td>
<td>33,3%</td>
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<tr>
<td>Doigts de la main gauche</td>
<td>1</td>
<td></td>
<td>100%</td>
<td></td>
<td></td>
<td>66,7%</td>
<td>33,3%</td>
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<td>Pouces</td>
<td>1</td>
<td></td>
<td>100%</td>
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<td>66,7%</td>
<td>33,3%</td>
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<tr>
<td>Ventes</td>
<td>4</td>
<td></td>
<td>100%</td>
<td></td>
<td></td>
<td>0%</td>
<td>0%</td>
</tr>
<tr>
<td>Épaule gauche</td>
<td>1</td>
<td></td>
<td>100%</td>
<td></td>
<td></td>
<td>66,7%</td>
<td>33,3%</td>
</tr>
<tr>
<td>Épaule droite</td>
<td>4</td>
<td></td>
<td>100%</td>
<td></td>
<td></td>
<td>0%</td>
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</tr>
</tbody>
</table>

\textsuperscript{1} Chiffres non rigoureux : Coude = le doigt du pouce, Science du poignet = deuxième et troisième, ankl = ankylose, lombaire = lombaire

Tableau IV. Topographies des douleurs en fonction de l'instrument joué.

<table>
<thead>
<tr>
<th>Instrument</th>
<th>Membrane supérieure</th>
<th>Basale</th>
</tr>
</thead>
<tbody>
<tr>
<td>Épaule</td>
<td>22,2%</td>
<td>44,4%</td>
</tr>
<tr>
<td>Coude</td>
<td>11,1%</td>
<td>44,4%</td>
</tr>
<tr>
<td>Science du poignet</td>
<td>22,2%</td>
<td>22,2%</td>
</tr>
<tr>
<td>Ankl droit</td>
<td>0%</td>
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</tr>
<tr>
<td>Ankl gauche</td>
<td>0%</td>
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<tr>
<td>Doigts de la main dextre</td>
<td>0%</td>
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<td>Doigts de la main gauche</td>
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<td>Pouces</td>
<td>0%</td>
<td>0%</td>
</tr>
<tr>
<td>Ventes</td>
<td>0%</td>
<td>0%</td>
</tr>
<tr>
<td>Épaule gauche</td>
<td>0%</td>
<td>0%</td>
</tr>
<tr>
<td>Épaule droite</td>
<td>0%</td>
<td>0%</td>
</tr>
</tbody>
</table>

Tableau V. Répartition des pathologies des musiciens selon la littérature.

<table>
<thead>
<tr>
<th>Étude</th>
<th>Nombre de musiciens</th>
<th>Syndrome de surmenage</th>
<th>Syndromes canaux</th>
<th>Dystonies de fonction</th>
<th>Autres</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tétard (1)</td>
<td>141</td>
<td>58,1%</td>
<td>17%</td>
<td>5,6%</td>
<td>15%</td>
</tr>
<tr>
<td>Chabrier (18)</td>
<td>250 sans vents</td>
<td>48%</td>
<td>13%</td>
<td>18%</td>
<td>15%</td>
</tr>
<tr>
<td>Kääkö (19)</td>
<td>100 (72 pianos)</td>
<td>51%</td>
<td>15%</td>
<td>27%</td>
<td>17%</td>
</tr>
<tr>
<td>Smith (2)</td>
<td>2</td>
<td>41%</td>
<td>30%</td>
<td>8%</td>
<td>7%</td>
</tr>
<tr>
<td>Touliitis (5)</td>
<td>200</td>
<td>29%</td>
<td>15%</td>
<td>48%</td>
<td>16%</td>
</tr>
<tr>
<td>Nielson (17)</td>
<td>179</td>
<td>62%</td>
<td>18%</td>
<td>10%</td>
<td>16%</td>
</tr>
<tr>
<td>Manchester (28)</td>
<td>144</td>
<td>66%</td>
<td>8%</td>
<td>7%</td>
<td>21%</td>
</tr>
<tr>
<td>Lebécourt (23)</td>
<td>672</td>
<td>64%</td>
<td>22,5%</td>
<td>7%</td>
<td>1%</td>
</tr>
</tbody>
</table>

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5010605-000006555/FLA
21/11/19
Prevalence of Playing-related Musculoskeletal Disorders in String Players: A Systematic Review

Frederico Barreto Kochem, PT, MSc, and Julio Guilherme Silva, PT, PhD

Results: Of 1910 retrieved articles, 34 cross-sectional studies were selected for methodological assessment. However, only 8 studies reached satisfactory methodological quality scores. The prevalence rate of PRMD was alarmingly high, ranging from 64.1% to 90%. Women and older musicians were more affected in comparison to other instrumentalists. There seems to be a predominance of symptoms in the left upper limb in violinists and violists, whereas cellists and bassists report injuries in the right upper limb.

Practical Applications

- String players are workers who are subject to development of playing-related musculoskeletal disorders.
- The prevalence of these disorders is high among musicians.
- There is a lack of high-methodological-quality studies about performing arts medicine.

PRMD - 64-90%

Playing-related musculoskeletal disorders in musicians: a systematic review of incidence and prevalence

Christine Zaza, PhD

Abstract

Background: Work-related musculoskeletal disorders cause pain, disability, and loss of employment for many workers, including musicians. Although performing arts medicine is a growing field, the health problems of musicians remain under-recognized and under-researched. Therefore, the author undertook a systematic review of published information on the incidence and prevalence of playing-related musculoskeletal disorders (PRMD) in clinical musicians.

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Eve.
### Most common physical disorders in musical instruments or activities.

<table>
<thead>
<tr>
<th>Instrument Type/Musical Activity</th>
<th>Common Disorders</th>
</tr>
</thead>
<tbody>
<tr>
<td>Keyboards (9)</td>
<td>Hand/forearm muscle strain, RT &gt; LT</td>
</tr>
<tr>
<td>Upper strings (violin, viola) (36,37)</td>
<td>Hand/forearm muscle strain, LT &gt; RT</td>
</tr>
<tr>
<td>Lower strings (cello, bass) (36,37)</td>
<td>Hand and spinal muscular strains</td>
</tr>
<tr>
<td>Guitars (27)</td>
<td>Hand/forearm muscle strain, LT &gt; RT</td>
</tr>
<tr>
<td>Clarinet, oboe, flute (21,54)</td>
<td>Thumb strain from supporting instrument</td>
</tr>
<tr>
<td>Bassoon (22)</td>
<td>LT thumb strain and basal joint arthritis</td>
</tr>
<tr>
<td>Brasses (17,54)</td>
<td>Embouchure problems including dystonia</td>
</tr>
<tr>
<td>Percussion (55)</td>
<td>Wrist strain, shoulder disorders</td>
</tr>
<tr>
<td>Drum corps (7)</td>
<td>Multiple issues ranging from heat illness to stress fractures</td>
</tr>
<tr>
<td>Conductors</td>
<td>Shoulder disorders</td>
</tr>
</tbody>
</table>

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### Injury profile (della disciplina e del ruolo // della strumento)

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### Unique Aspects of Swimming

- ~100 million Americans, of all ages, swim annually.
- Non-contact, Non-WB sport.
- 90% of propulsion from the UE.
- Competitive swimmers:
  - 10-12 months per year.
  - 5-6 days a week (4-5x-a-day).
  - 0-600 20-3000 yards/day.
  - Lots of intensity periods.

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Distonia focale dei musicisti

**Dystonia**

(from Greek, δύσ + τόνος, "abnormal tone"

"a syndrome of sustained muscle contractions frequently causing twisting and repetitive movements or abnormal postures"

- Ad Hoc Committee, Dystonia Medical Research Foundation, 1984

---

**PAPER**

Secondary motor disturbances in 101 patients with musician's dystonia

Jaume Rosset-Llobet, Victor Candia, Silvia Fàbregas, William Ray, Álvaro Pascual-Leone

---

Figure 2: A professional musician with constant tendency to flexion in the ring and little finger while playing (A) his first instrument, the flûte (B) the clarinet and (C) the piano. Also note the similarity of symptoms between the patient displayed in this figure and the patient in Fig 1. Informed consent was obtained for publication of this figure.

Musicians who played more than one instrument, 25 (42.5%) fingers and the type of symptoms (flexion, extension, tension,
Table 2. Number of musicians per instrumental family and their association with the three different forms of musician's cramps: simple, complex, and progressive.

<table>
<thead>
<tr>
<th>Instrumental family</th>
<th>Simple</th>
<th>Complex</th>
<th>Progressive</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Plucked strings</td>
<td>23</td>
<td>9</td>
<td>16</td>
<td>48</td>
</tr>
<tr>
<td>Keyboard</td>
<td>7</td>
<td>4</td>
<td>12</td>
<td>23</td>
</tr>
<tr>
<td>Wind instruments</td>
<td>6</td>
<td>2</td>
<td>3</td>
<td>11</td>
</tr>
<tr>
<td>Brass</td>
<td>8</td>
<td>1</td>
<td>0</td>
<td>9</td>
</tr>
<tr>
<td>Strings</td>
<td>3</td>
<td>2</td>
<td>3</td>
<td>8</td>
</tr>
<tr>
<td>Percussion</td>
<td>0</td>
<td>2</td>
<td>0</td>
<td>2</td>
</tr>
<tr>
<td>Total</td>
<td>47</td>
<td>20</td>
<td>34</td>
<td>101</td>
</tr>
</tbody>
</table>

A systematic review of prevalence and risk factors associated with playing-related musculoskeletal disorders in pianists

Pianista / Organista /Clavicembalista (Tastiere)

- Rachialgie
- Patologie articolari e tendiniti dita, polso, gomito, spalla (arto superiore)
- Gonalgie

A systematic review of prevalence and risk factors associated with playing-related musculoskeletal disorders in pianists
Violinista /Violista

- Rachialgie diffuse (Cervicalgie, dorsalgie, lombalgie etc.)
- Tendiniti dita mano, polso, gomito
- Patologie di spalla
- Disturbi all’articolazione temporo-mandibolare

MUSCULOSKELETAL DISORDERS IN PROFESSIONAL VIOLINISTS AND VIOLISTS. SYSTEMATIC REVIEW

Musicians’ Medicine: Musculoskeletal Problems in String Players

Hay-Song Lee, Ho Youn Park, MD, Jun O Yoon, MD, I-an Sam Kim, MD, Iae Myeong Chun, MD, Imran W. Amin, MD, * Won-Joon Cho, MD, In Ho Joon, MD

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There is increasing attention to medical problems of musicians. Many studies find a high prevalence of work-related musculoskeletal disorders in musicians, ranging from 73.4% to 97.7%, and string players have the highest prevalence of musculoskeletal problems. This paper examines the current views and movements of the upper extremities in string players. Given postures for holding instruments, the movements of left upper extremity including bowing, fingerboards, and right hand playing are analyzed. Recommendations for ergonomic movements can lead to musculoskeletal problems in musicians. We reviewed orthopedic disorders that are specific to string players: cervical syndrome, muscle-tendon syndrome, radial dysphoria, hypermobility syndrome, and compressive neuropathy. Symptoms, interrelationships with musical performances, diagnoses and treatment of these problems were then discussed.

Keywords: Upper extremities, String players, Musculoskeletal problems

Notes:
1. In this article, the authors discuss the prevalence and types of musculoskeletal disorders in string players, focusing on the upper extremities. The study examines current postures and movements, providing recommendations for ergonomic practices to prevent musculoskeletal problems.
2. The authors highlight the high prevalence of musculoskeletal disorders in string players, with a focus on the cervical, muscle-tendon, and radial dysphoria syndromes. They emphasize the importance of ergonomic adjustments to reduce symptoms and maintain performance.
3. The article includes analyses of the effects of different playing postures on the upper extremities, offering insights into how musicians can mitigate potential injury risks.

References:
Chitarrista e strumenti a pizzico

- Tendiniti e patologie della mano
- Sindromi neurologiche da compressione
- Lombalgie

Case Report

Multiple Trigger Fingers in a Musician: A Case Report

Masoud Yavari MD1, Seyed Esmail Hassanpour MD1, Seyed Mehdi Mosavizadeh MD1

Abstract:

Trigger finger is a common disease which particularly occurs in middle-aged women. We present a rare case of a male musician with six trigger fingers (five in the left hand and one in the right hand). Mostly these fingers had been used for playing the guitar.

The patient had previously been treated with local steroid injections in his fingers, however no response was seen. Therefore, we performed a surgical procedure. Four weeks after surgery, the patient could play the guitar without discomfort in his hands.

Figure 1. He cannot extend involved fingers due to pain and entrapment of flexor tendons at A1 pulley.
Strumenti a fiato

- Patologie di spalla
- Rachialgie
- Disturbi articolazione temporo-mandibolare

PREVALENCE OF TEMPOROMANDIBULAR DISORDERS AMONG JUNIOR HIGH SCHOOL STUDENTS WHO PLAY WIND INSTRUMENTS

Enrico Yuzawa, Chikako Honda, Takao Harada, Kazuaki Mochizuki, Manabu Fujimoto, Masato Sashihara, Hirofumi Kinoshita

Abstract

Objectives: This study investigated whether playing wind instruments has adverse effects on mandibular function among junior high school students who play in music clubs. Material and Methods: The study included 233 junior high school students (129 males, 104 females) who belonged to 1 of 4 different school clubs that practiced playing wind instruments over a period of 3 years. The survey was performed using a questionnaire and included: the self-report of temporomandibular disorders (TMD) among the students playing woodwind (WW) or brass wind (BW) instruments; the self-report of temporomandibular disorders (TMD) among the students playing WW with a wind instrument; the self-report of temporomandibular disorders (TMD) among the students playing BW with a wind instrument. The prevalence of TMD was assessed using the American Academy of Orofacial Pain (AAOP) criteria. Results: The prevalence of TMD was higher in the WW group than in the BW group (p < 0.05). The prevalence of TMD among students playing WW with a wind instrument was significantly higher than in the WW group (p < 0.05). The prevalence of TMD among students playing BW with a wind instrument was higher than in the BW group (p < 0.05). Conclusion: Playing wind instruments may have adverse effects on mandibular function among junior high school students playing in music clubs as compared with playing BW instruments. The prevalence of TMD among students playing WW instruments was higher than in those playing other instruments. Long duration of playing these instruments affects mandibular function, and this effect is more marked in girls than in boys, irrespective of height or weight.

<table>
<thead>
<tr>
<th>Archi Visivo-Veicolo</th>
<th>Archi Viscoselastici-Centrabasso</th>
<th>Strumenti a fiato</th>
<th>Percussioni</th>
<th>Arpa</th>
<th>Chitarra</th>
<th>Pianoforte</th>
</tr>
</thead>
<tbody>
<tr>
<td>Arto Superiore (Spalla-Gamba-Mano)</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Arto Inferiore (Coniglio)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>Rachide (Cervico-Lumbar)</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Neuropatia (Sindrome da compressione nervosa)</td>
<td>X</td>
<td>X</td>
<td></td>
<td></td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Dintensione Fiscale</td>
<td>X</td>
<td></td>
<td>X</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ATM</td>
<td>X</td>
<td></td>
<td>X</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Fattori di rischio

AMERICAN JOURNAL OF INDUSTRIAL MEDICINE 32:293-300 (1997)

Musicians’ Playing-Related Musculoskeletal Disorders: An Examination of Risk Factors

Several studies have shown that playing-related musculoskeletal disorders (PRMDs) present a significant health problem for musicians. To examine physiological, psychological, and behavioral risk factors of musicians’ PRMDs, data for a case-control analysis were collected from classically-trained professional and university students musicians in the Canadian province of Ontario in 1994. Two hundred and forty-one subjects completed a self-report questionnaire and underwent hand-arm electromyography. Cases were identified according to an operational PRMD definition developed by musicians and health care professionals in a qualitative study. Logistic regression was used to compare data from 44 prevalent PRMD cases who had no previous history of a PRMD to 96 controls who had never experienced a PRMD. Data from all subjects were analyzed to examine the role of a prior PRMD on the risk of a current PRMD. This study suggests that female and string players were at a higher PRMD risk. A number of other individual characteristics were also important determinants of the development of a PRMD. Warning up before and taking breaks during practice sessions protected the subject from a PRMD. Given the high proportion of musicians who experience PRMDs, prevention programs are warranted. Am. J. Ind. Med. 32:292–300, 1997. © 1997 Wiley-Liss, Inc.

KEY WORDS: epidemiology; musculoskeletal system; musician; occupational health; case-control study.

Carico meccanico e tecnico
Quantità di allenamento e di attività
Sollecitazioni continue (sedute quotidiane)
Peso e caratteristiche degli strumenti
Posture forzate
Asimmetria dei movimenti
Gesti tecnici obbligati
Età / Genere (femminile)
Stress / Ansietà

Training volume and body composition as risk factors for developing jumper’s knee among young elite volleyball players

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Week. We did not detect any significant differences between the groups in body composition at the time of inclusion or in the change of body composition during the study period. Conclusion, male gender, a high volume of volleyball training and match exposure were risk factors for developing jumper’s knee.
Correlation between risk factors and musculoskeletal disorders among classical musicians

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Table 1. Descriptive statistics reporting the occupational factors and observations needed of the studied classical musicians

<table>
<thead>
<tr>
<th>Variable</th>
<th>N</th>
<th>SD</th>
<th>Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of years in the profession (x = 31)</td>
<td>21</td>
<td>10</td>
<td>6-55</td>
</tr>
<tr>
<td>Number of weekly playing hours in the orchestra (x = 64)</td>
<td>15</td>
<td>2</td>
<td>4-90</td>
</tr>
<tr>
<td>Total daily playing hours (x = 75)</td>
<td>4.5</td>
<td>2.5</td>
<td>2-2.5</td>
</tr>
<tr>
<td>Number of classical music compositions (x = 63)</td>
<td>19.5</td>
<td>3.1</td>
<td>10-35</td>
</tr>
<tr>
<td>Number of performances before going to playing (x = 23)</td>
<td>19.5</td>
<td>3.1</td>
<td>10-35</td>
</tr>
<tr>
<td>Number of performances during interval (x = 64)</td>
<td>18.5</td>
<td>3.1</td>
<td>10-35</td>
</tr>
<tr>
<td>Number of orchestra playing hours per week (x = 59)</td>
<td>4.5</td>
<td>2.5</td>
<td>2-2.5</td>
</tr>
</tbody>
</table>

Key points

- Playing related musculoskeletal disorders are a significant health problem associated mainly with the upper extremities within a sample of orchestral string and wind musicians from three orchestras.
- The biomechanical risk factors (assessed by the Rapid Upper Limb Assessment tool for estimating extreme body positions, repetitive movements and load bearing) and the perceived physical environment were the two strongest statistical predictors for playing related musculoskeletal disorder among orchestral classical musicians.
- There is a need for orchestral clinicians to investigate the risk factors and to implement preventive measures for musical routines and patterns as used by orchestral classical musicians.
Analogie - Utilizzo di tutori e supporti
Allenamento e performance

Return to play

Table 9.1 Duration of post-operative recovery of 130 professional musicians following surgery: time to return to playing (Ruster and Winweez 2009)

<table>
<thead>
<tr>
<th>Medical condition</th>
<th>No.</th>
<th>Weeks off the instrument</th>
<th>Weeks to full performance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Trauma to great eminence</td>
<td>16</td>
<td>5.2</td>
<td>12.3</td>
</tr>
<tr>
<td>Adhesions</td>
<td>5</td>
<td>1.2</td>
<td>1.5</td>
</tr>
<tr>
<td>Arthroscopy (thrips)</td>
<td>3</td>
<td>1.0</td>
<td>1.0</td>
</tr>
<tr>
<td>Cartilage injury</td>
<td>26</td>
<td>1.8</td>
<td>4.6</td>
</tr>
<tr>
<td>Capsulitis</td>
<td>12</td>
<td>1.0</td>
<td>1.5</td>
</tr>
<tr>
<td>Acute pain</td>
<td>1</td>
<td>1.0</td>
<td>1.0</td>
</tr>
<tr>
<td>Chronic pain</td>
<td>1</td>
<td>1.0</td>
<td>1.0</td>
</tr>
<tr>
<td>Coronary stenosis</td>
<td>2</td>
<td>1.0</td>
<td>1.0</td>
</tr>
<tr>
<td>Sclerotherapy</td>
<td>2</td>
<td>1.0</td>
<td>1.0</td>
</tr>
<tr>
<td>Appendectomy</td>
<td>3</td>
<td>1.0</td>
<td>2.6</td>
</tr>
<tr>
<td>Bursitis</td>
<td>2</td>
<td>1.0</td>
<td>2.6</td>
</tr>
</tbody>
</table>

Note: This table is a partial representation. For a complete schedule, practice daily in accordance with the schedule. Record the date you finish working at one level and move on to the next one.

Date: 21/11/19
1. Return to participation. The athlete may be participating in rehabilitation, training (modified or unrestricted), or in sport, but at a level lower than his or her RTS goal. The athlete is physically active, but not yet 'ready' (medically, physically and/or psychologically) to RTS. It is possible to train to perform, but this does not automatically mean RTS.

2. Return to sport (RTS). The athlete has returned to his or her defined sport, but is not performing at his or her desired performance level. Some athletes may be satisfied with reaching this stage, and this can represent successful RTS for that individual.

3. Return to performance. This extends the RTS element. The athlete has gradually returned to his or her defined sport and is performing at or above his or her preinjury level. For some athletes this stage may be characterized by personal best performance or expected personal growth as it relates to performance.

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Posture e strumenti

REVIEW ARTICLE

Musculoskeletal and Neuromuscular Conditions of Instrumental Musicians

Fadi Joseph Beljani, MD, PhD, Glenn M. Kaye, MD, Melody Benham, BS

ERGONOMIC AND BIOMECHANIC CONSIDERATIONS

The authors believe that further advances in this exciting new field will result primarily from studying the occupational biomechanics and ergonomic aspects of the professional musician.
Farmaci e Doping

THE WORLD ANTI-DOPING CODE
INTERNATIONAL STANDARD

PROHIBITED LIST
JANUARY 2019
Integrazione e coordinazione degli interventi e delle attività

Conclusioni

- E' auspicabile codificare linee-guida e raccomandazioni specifiche per la prevenzione, la gestione e la cura delle patologie da sovraccarico dei musicisti
- Fondamentale è l'aspetto educazionale
- Le patologie da sovraccarico non vanno sottovalutate ma gestite con un'adeguata prevenzione e con trattamenti mirati
- Un aspetto fondamentale è costituito dalla costruzione e codificazione di programmi e protocolli preventivi e riabilitativi mirati
Obiettivi

- Riduzione e prevenzione delle patologia da sovraccarico funzionale
- Miglioramento della performance
- Tutela della salute

Prospettive (per una cultura della prevenzione)

- Sviluppo di ricerche e studi scientifici applicativi
- Educazione e formazione
- Utilizzo appropriato del corpo e dello strumento
- Programmi e protocolli di prevenzione codificati e validati
- Riduzione ragionata e razionale del tempo di pratica/allenamento
- Sviluppo di una cultura della prevenzione
11+

Parte 1: Forza - Piommetria - Equilibrio - 10 Minuti

1. Estensioni laterali
2. Ginocchi laterali
3. Hip adduzioni
4. Ginnastica
5. Salti laterali
6. Salti verticali

Parte 2: Allenamento

1. Allenamento delle gambe
2. Allenamento del core
3. Allenamento delle spalle
4. Allenamento delle braccia

Parte 3: Recupero

1. Stretture
2. Rigenerazione
3. R fierce

Original Contribution

The prevention of musculoskeletal injuries in volleyball: the systematic development of an intervention and its feasibility

Yvonne Gaetke-Ley (1,2), Maria van Stralen (1,2), Ben Verhagen (1,2,3), and Johannes Zwenk (1,2)

Face 1 - Week 1

Fims van deze week offline beschikbaar

Opwarmen
Bekkencentrale, lig.
Half squats
Lunge, voorwaarts
Rek actief aan het net
Perché non per i musicisti?

Development of a specific exercise programme for professional orchestral musicians
Clifton Chan, Tim Driscoll, Bronwen Ackermann

Original article
Ambulatorio dedicato / Centro Studi e Ricerche

GRAZIE!

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