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## The Role of Occupational Therapy in the Prevention of Playing-Related Musculoskeletal Disorders Among Musicians

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# The Role of Occupational Therapy in the Prevention of Playing-Related Musculoskeletal Disorders Among Musicians

Cristina Torres, OTD-S

Dr. Beverly Murphy, Ed.D., MS, OTR/L & Michigan City Municipal Band



Image from Microsoft PowerPoint 2023

## Introduction

- Athletic trainers provide treatment, wellness promotion and education, and injury prevention for athletes in sports like football and basketball. They ensure the well-being and health of athletes due to the physical burdens they may face. However, musicians do not have access to this type of support.
- Without proper maintenance, posture, warm-up routines, and rest, musicians can experience physical strain, discomfort, or develop playing-related musculoskeletal disorders (PRMDs) that can impact their ability to play effectively.

## Site Description

### Michigan City Municipal Band (MCMB)

- Summer community band located in Michigan City, Indiana
- 30 musicians
- 19 – 85 years old
- Consisted of wind instruments, percussion, and one string bass

### Portage High School Marching Band

- Located in Portage, Indiana
- 35 musicians
- Freshman – Seniors
- Consisted of wind instruments and percussion

## Summary of Needs Assessment

- Research reports that up to 90% of musicians experience musculoskeletal injuries in their lifetime.
- While injuries are treatable, most could be avoided if musicians were educated about injury prevention strategies sooner. Hence, it is necessary to adopt a preventive approach when collaborating with musicians.
- Occupational therapy can provide a unique role in supporting musicians' health and reducing the likelihood of PRMDs.

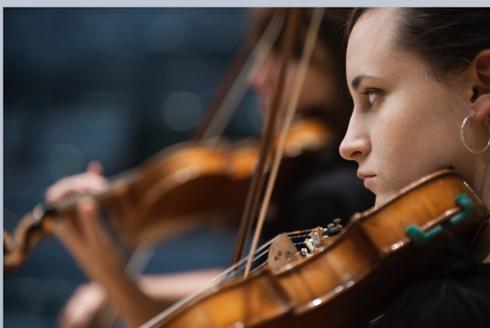


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## Literature Review Summary

- Playing-related musculoskeletal disorders (PRMDs) defined by Zaza et al. (1998), can be associated with pain, weakness, lack of control, numbness, tingling, or other symptoms that can hinder a musician's ability to play at their usual level.
- Types of PRMDs can include:
  - Musicians' dystonia (Ray & Pal, 2021)
  - Thoracic outlet syndrome (Adam et al., 2018)
  - Overuse syndrome (Betzl et al., 2020)
- Assessment and treatment of musicians should consist of:
  - Evaluating the musician's history
  - Underlying conditions
  - Practice schedule
  - Warm-up routine
  - Posture
- Wolff et al. 2021, implemented an injury and pain prevention program with musicians from a music festival program. After the study, participants reported a 32% decrease in pain interference and incidence.

Table 1

### Role of occupational therapy in enabling occupation for musicians

Analysis of the occupation, including physical, mental and emotional demands
Ergonomic modification – e.g., posture, seating, adaptive equipment
Work rehabilitation – e.g., return-to-work planning, coordination and support
Upper extremity rehabilitation
Mental health care and rehabilitation, including psychotherapy
Chronic pain intervention
Primary care - being the first point of contact in the health system, and referring to other practitioners when needed
Complementary and alternative approaches – e.g., acupuncture, myofascial release
Education on injury prevention and health promotion
Support to access appropriate benefits/social services
Advocacy for better, more affordable care and working conditions for musicians
Public policy development to support musicians' health
Research, e.g., analyzing census data on musicians, interviewing musicians about their health experiences
Capacity building in occupational therapy by mentoring and training students in this field of practice through fieldwork placements and academic curricula

Figure 1. The various ways in which occupational therapy can assist musicians (Guptill, 2014)

## Capstone Project Description

Provide a webinar along with informational resources and 1:1 consultations based on the needs assessment survey of the MCMB musicians. Also provide a presentation to the Portage High School Band to teach ways to prevent injuries among new musicians.

### Program goals:

- Inform musicians on the unique role that occupational therapy can play in musicians health.
- Educate young and experienced musicians about injury prevention strategies to reduce the likelihood of new or reoccurring injuries.

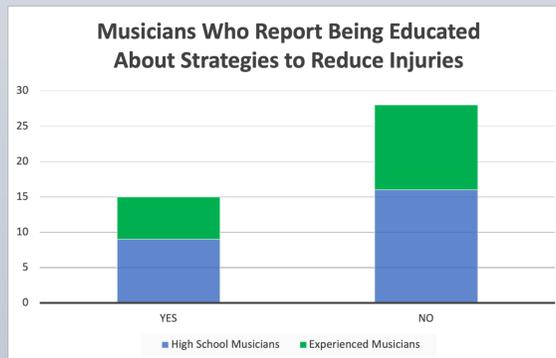


Figure 2. MCMB and high school survey results

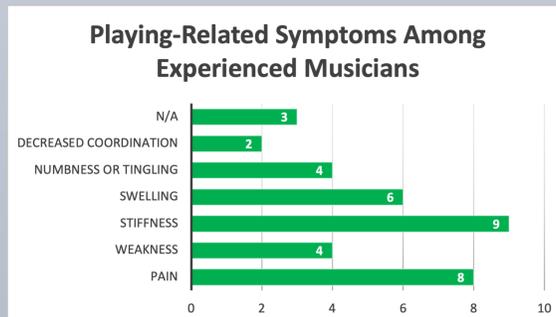


Figure 3. MCMB survey results

### Program Outcomes:

- Needs assessment survey
- Informational resources
- Educational opportunities
- Program implementation

### Limitations

- The MCMB requested that I implement my project outside of their rehearsals and concerts.
- Low participation in program

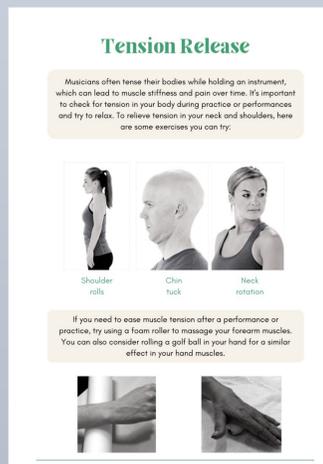


Figure 4. Informational handout

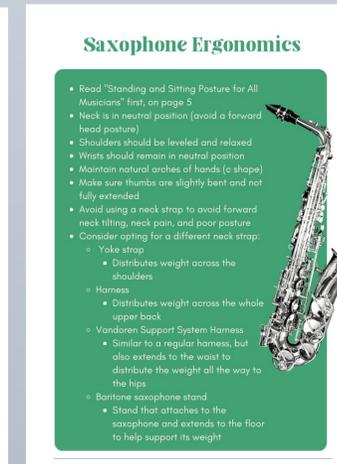


Figure 5. Informational handout

## Learning Objectives Achieved

- Distributed a needs assessment to the MCMB to determine the group's needs.
- Provided a pre-recorded injury prevention webinar tailored to the specific needs identified from the needs assessment.
- Created an informational brochure based on current literature that provides specific injury prevention recommendations for each instrument.
- Presented an injury prevention presentation for the high school marching band during their band camp to reach a younger population of musicians.

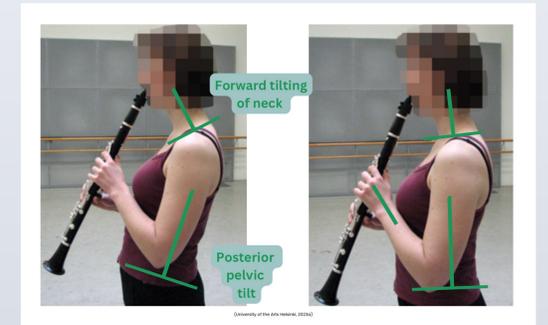


Figure 6. Webinar PowerPoint Slide

## Implications for OT Practice

- Implementation of an injury prevention program for high school musicians to increase awareness about the risks of playing-related injuries.
  - The earlier musicians are educated about injury prevention, the more likely they will utilize the information throughout their musical careers and share the information with others.
- Occupational therapists can develop a new role working alongside musicians and music teachers ensuring safety and proper ergonomics/biomechanics to reduce the likelihood of injuries.
- Occupational therapists who have extensive experience working with musicians should share their knowledge with other therapists on effective interventions and strategies for this specific population.
- Further research should be focused on implementing injury prevention programs to educate musicians and reduce the occurrence of injuries.

## REFERENCES & ACKNOWLEDGMENTS

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References Available Upon Request