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 UNIVERSITY  
 SHAPE Clinic  
 Science and Health in  
 Artistic Performance

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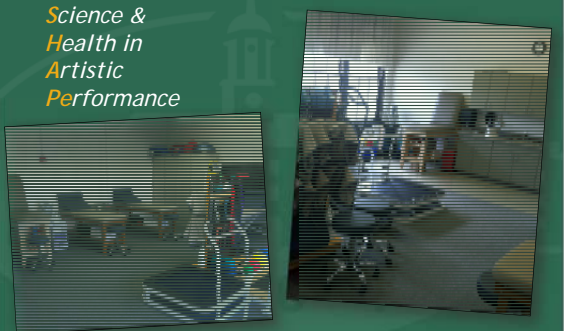
## PHYSICAL FUNCTION AS A GATEWAY TO OPTIMUM MUSICIAN WELLNESS

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## Ohio University SHAPE Clinic

*Science & Health in Artistic Performance*




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## Performing Arts Served (~700 performer-athletes)

Four licensed athletic trainers and a physician serve these students and faculty...


- ✦ Music
- ✦ Marching band (mostly students who are not music majors)
- ✦ Dance
- ✦ Theatre performers
- ✦ Theatre production students
- ✦ Occasional film or visual art students




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## Some Differences vs. Athletic Training/Therapy Rooms





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## Objectives: After this session you will be able to...

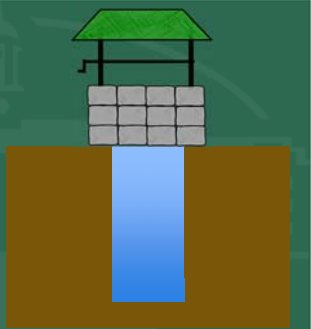
- ✦ Outline Hettler's Six Dimensions of Wellness
- ✦ Describe the importance of the physical dimension as a component of musician wellness
- ✦ Identify common ways that the physical component breaks down in musicians
- ✦ Instruct musicians about physical factors that affect their physical wellness and, therefore, their overall wellness

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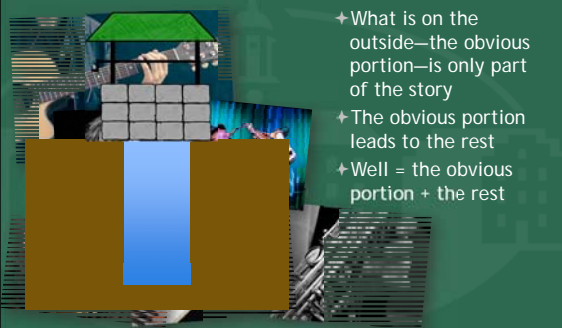

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## Consider a Well

- ✦ What is on the outside—the obvious portion—is only part of the story
- ✦ The obvious portion leads to the rest
- ✦ Well = the obvious portion + the rest

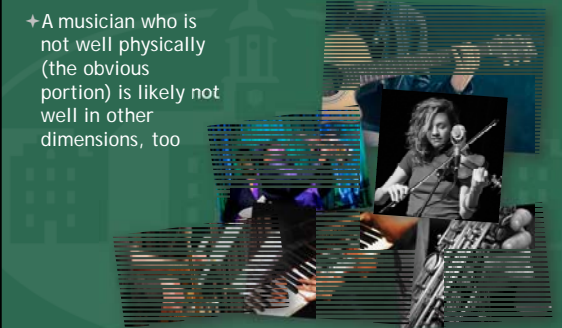


## Consider a Musician



- ✦ What is on the outside—the obvious portion—is only part of the story
- ✦ The obvious portion leads to the rest
- ✦ Well = the obvious portion + the rest

## Therefore...



- ✦ A musician who is not well physically (the obvious portion) is likely not well in other dimensions, too

A "WELL" MUSICIAN STARTS (BUT DOES NOT END) WITH THE OBVIOUS PORTION

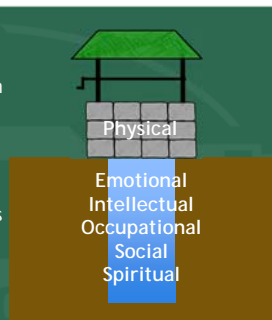
## The Multi-Dimensional Concept of Wellness

- ✦ Six inter-related dimensions (Hettler, [www.nationalwellness.org](http://www.nationalwellness.org), 1976)
  - ✦ Physical
  - ✦ Emotional
  - ✦ Intellectual
  - ✦ Occupational
  - ✦ Social
  - ✦ Spiritual
- ✦ A true holistic approach requires attention to all six (otherwise you have a hole in your whole!)



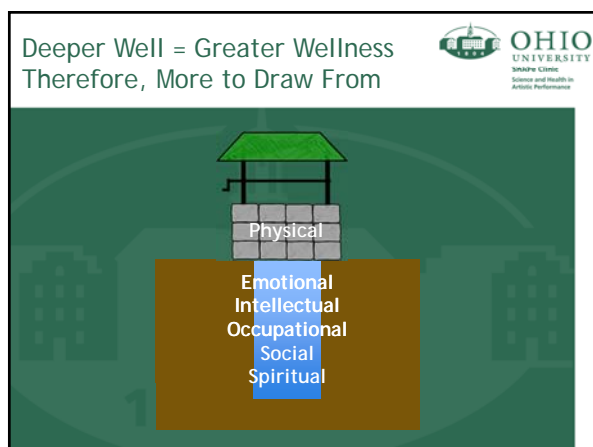
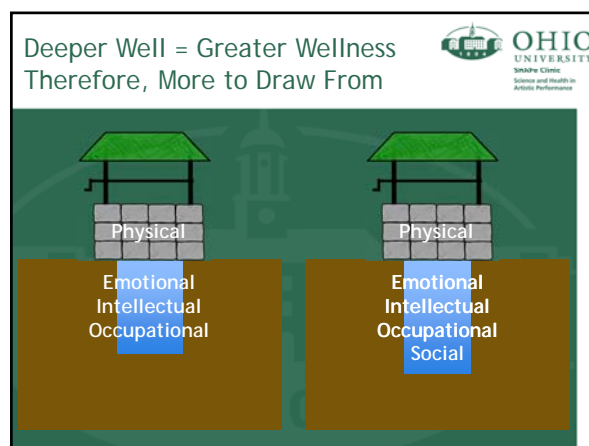
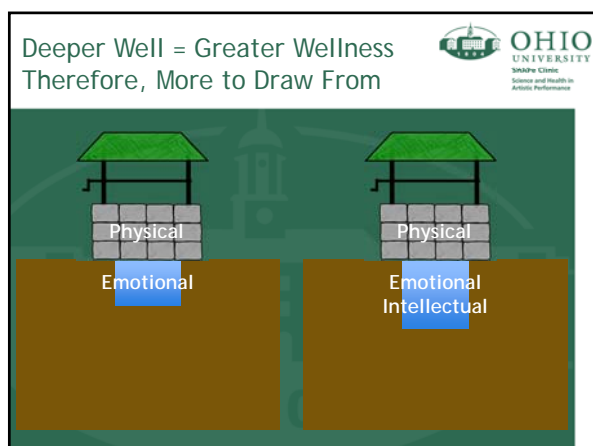
## The Physical is a Gateway to the Rest

- ✦ The musician is a physical extension of the instrument
- ✦ Music achieves its goal when the **ENTIRE** instrument is well
- ✦ When physical wellness is neglected, dysfunction spills over into the other dimensions...



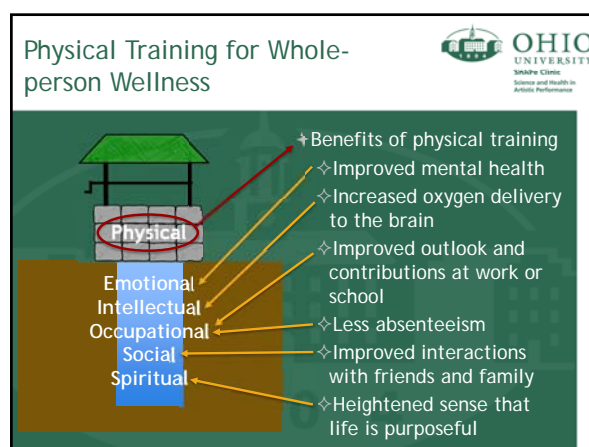
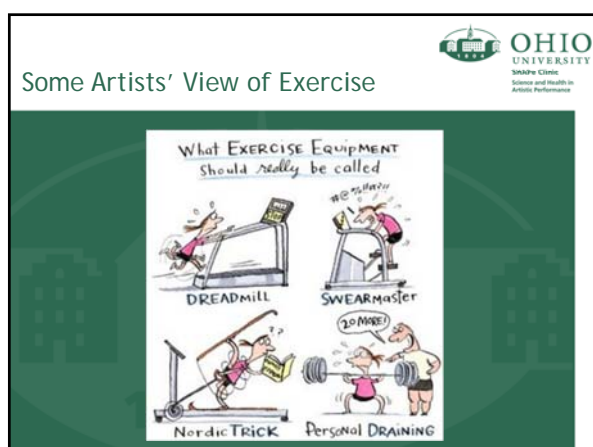
## And Then You've Got a Sinkhole





Main Components of the Physical Dimension

- + Muscular strength
- + Muscular endurance
- + Cardiorespiratory endurance
- + Flexibility
- + Nutritional status
- + Rest



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## THE THREE MOST COMMON MUSICIAN INJURIES WE SEE IN OUR CLINIC

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## By Far the Most Common: Myofascial Pain Syndrome

- ✦ 85% of musician patients have myofascial pain syndrome
- ✦ Poor strength and endurance in postural muscles
- ✦ Lengthy playing time with inadequate breaks
- ✦ Incorrect instrumental technique
- ✦ Inadequate (or no) understanding of physical exercise and its relationship to overall musician wellness

Muscle      Fascia  
**myofascial**



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## Myofascial Pain Syndrome Mechanism

- ✦ Attempting to maintain back posture and playing position for hours per day
- ✦ Neck, upper back, and shoulder muscles cannot maintain support
- ✦ Involuntary tightening/spasm tries to accommodate for suboptimal endurance in postural muscles



thejazztrumpeter.com

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## Musicians Always Have to Support Their Upper Extremities



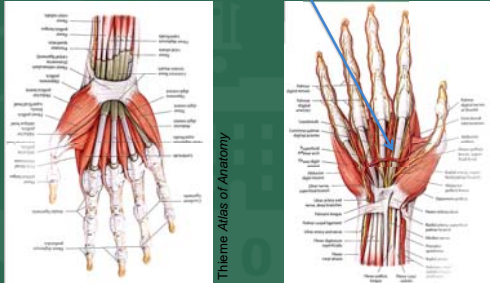
croatia.org      sbharp.com      interlude.tk  
asiasociety.org      rollingstone.com      rockguitardaily.com

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## Carpal Tunnel Syndrome

Synovial Sheaths      Median Nerve (yellow)



Thieme Atlas of Anatomy

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## Carpal Tunnel Syndrome Mechanisms



graphicriver.net      uamshealth.com      jeanninecook.com      smartbassguitar.com

themusicworkshop.com

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## Core Musculature: Foundation for Movement



## Where to Build?



## Why Are Apples So Good?



- ✦ Attractive color
- ✦ Crispy
- ✦ Juicy
- ✦ Yummy flavor



But, what is an apple without a core?

## Applesauce!



So, what are musicians without a core?

## That's Right...



Musiciansauce!



## Core Strength and Injury



### Journal of Occupational Medicine and Toxicology

Journal of Occupational Medicine and Toxicology 2007, 2:3

Research

Open Access

**Core strength: A new model for injury prediction and prevention**  
WF Peate<sup>\*1</sup>, Gerry Bates<sup>2</sup>, Karen Lunda<sup>3</sup>, Smitha Francis<sup>1</sup> and Kristen Bellamy<sup>1</sup>

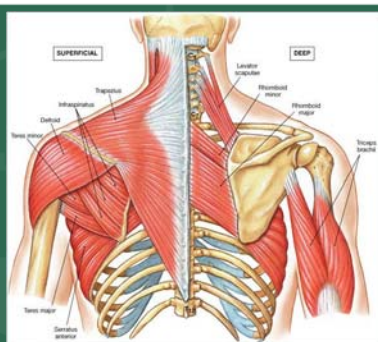
“These findings suggest that core strength and functional movement enhancement programs to prevent injuries in workers whose work involves awkward positions is warranted.”

## Musicians in Awkward Positions? No Way!



THE SCAPULA (SHOULDER BLADE) IS  
THE CORE OF THE UPPER EXTREMITY

## Scapulothoracic Anatomy



Cardiorespiratory Endurance

THE MULTIPLE BENEFIT SOLUTION  
THAT IMPACTS THE ENTIRE PHYSICAL  
SPECTRUM

## Benefits of Cardiorespiratory Training



- ✦ Increased lifespan
- ✦ Greater work capacity
- ✦ Decreased resting heart rate
- ✦ Lowered resting blood pressure
- ✦ Increased resting metabolic rate
- ✦ Increased tissue and brain oxygenation
- ✦ Better mental health
- ✦ Less stress



## Recommended Physical Activity for Healthy Adults



- ✦ Provided by the US Office of Disease Prevention and Health Promotion\*
- ✦ All adults should avoid inactivity
- ✦ Some physical activity is better than none
- ✦ Adults who participate in any amount of physical activity gain some health benefits
- ✦ Aerobic exercise should be done in periods of at least 10 minutes per session

\*<http://www.health.gov/paguidelines/guidelines/summary.aspx>

## Aerobic Exercise For Substantial Health Benefits



- ✦ 2 hours and 30 minutes (150 minutes) of moderate-intensity aerobic activity (e.g., brisk walking, swimming) every week, OR
- ✦ 1 hour and 15 minutes (75 minutes) of vigorous-intensity aerobic activity (e.g., running, cycling) every week, OR
- ✦ An equivalent combination of these

\*<http://www.health.gov/paguidelines/guidelines/summary.aspx>

## Physical Fitness in Music: *Medical Problems of Performing Artists*, 2010



### Quantifying the Physical Demands of a Musical Performance and Their Effects on Performance Quality

Eric J. Drinkwater, PhD, Christopher J. Klapper, DMA

- ✦ Musicians tested on three trials of a 10 minute repertoire
- ✦ Performance significantly decreased between the second and third trial, likely because of fatigue
- ✦ Markers of physical stress, and heart rate, respirations, and musicians' perceived exertion all increased while performing

## CONCLUSIONS AND PRACTICAL RELEVANCE



## Takeaways

- ✦ Physical wellness is the gateway to overall musician wellness
- ✦ A musician's physical self is part of the overall instrument



## Probing Questions to Ponder



- ✦ Could it be that a more physically fit musician will also be a more technically fit musician?
- ✦ What are some ways you explore introducing physical training to accompany technical training?
- ✦ How would your musicians respond if your studio became a place that fosters wholeness, i.e., where musicians are fully well?

## Be Well!



Professional Resources By Jeffrey A. Russell, PhD, AT, PT/ADMS

**Empowering Musicians: Teaching, Performing, Living Well Musicians Perform Music Well!**

*American Music Teacher, Feb/Mar 2017*



Questions and Discussion

  
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THANK YOU!

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