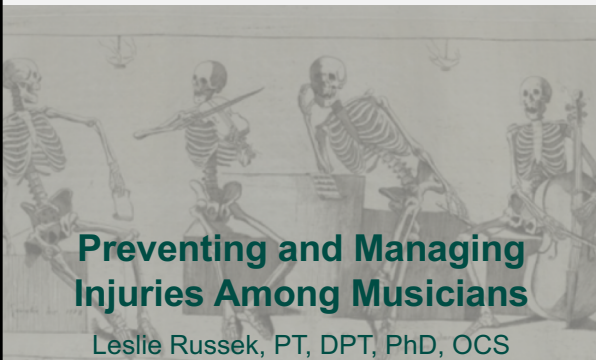


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Preventing and Managing Injuries Among Musicians

Leslie Russek, PT, DPT, PhD, OCS
March 29, 2019

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Objectives

- Identify risk factors for common injuries
- Describe ways to avoid musculoskeletal injuries
- Give examples of ways to manage pain
- Identify when to get professional help
- Physical Therapy students Musician Injury Preventions workshops, Bishop C101
 - Today, 1-3 pm
 - Tomorrow, 10 am to noon
- Handouts on Crane's Wellness Moodle page and <https://webspace.clarkson.edu/~lrussek/musicianip.html>

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Musicians Are Athletes

Marathon ~ 55,334 steps



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2-Hour Concert ~
up to 57,600 movements



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Types of Musician Injuries

- **Musculoskeletal**
 - Neck or back pain; tendinitis, muscle pain, trigger points, TMJ pain, etc.
- Nerve entrapments
 - Carpal tunnel, cubital tunnel, etc.
- Focal dystonias

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Risk Factors for Pain

- Poor posture (abnormal or sustained)
- Instruments that do not fit the musician
- Not pacing yourself
- Not relaxing muscles between demands
- Hypermobility joints that are unstable
- Poor overall health and fitness
- Lack of sleep
- Emotional stress

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Avoiding Injuries

- Good posture and body mechanics
- Good technique
- Pacing, take breaks
- Warm up
- Stretch muscles before and after you play
- Manage stress so you can relax
- Stay healthy (sleep, exercise, nutrition, H₂O)

Caution!

- These are general guidelines
- Your situation might be different
 - These suggestions might not work for you
- If any of these suggestions make your pain worse, stop!
- Consider consulting a professional to give you personalized advice & exercises

Posture

Playing Technique

- Keep joints in mid-range if possible
- Use the largest joints and muscles for the movement
- Use body mechanics rather than force
- Fit your instrument properly to you
- Relax muscles when not in use

celloonline.com

Pacing

- Your body needs to take breaks
 - Macro-breaks, 10 minutes every hour
 - Micro-breaks, just moments between notes
- If able, move around, change position
- Make sure you relax your muscles during those breaks

Warm-Up & Stretching

- Warm up muscles & joints
- Frequently used muscles get tight
 - They may need to be stretched
- Reverse movements you most often do
- Stretch before and after playing

Stretching Often-Used Muscles

Finger Flexors, Wrist Extensors

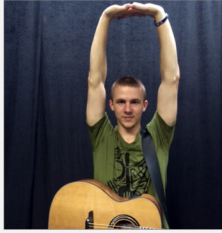
Posterior Shoulder

© Healthline, Incorporated


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Stretches: Reverse Postures

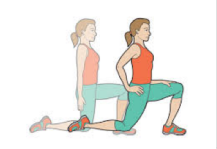
Shoulder, wrist, elbow, back



Back stretch




Hip stretch





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Joint Hypermobility



- Many musicians are hypermobile
- Stretch carefully, so you stretch the tight muscle and not the loose joint
- Avoid stretching hypermobile joints
- Fingers may benefit from ring splints
- www.hypermobility.org

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Stay Healthy





- Get enough sleep
 - Sleep is when your body repairs itself
 - People who do not get enough sleep have 50% more pain than people who do
- Exercise:
 - Aerobic, stretching, strengthening, core
- Eat nutritiously
- Stay hydrated
- Manage stress



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Relaxation

- Overall relaxation helps muscles relax
- Mental relaxation also decreases pain
- Short rest breaks allow muscles and tendons to get better blood supply

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Manage Pain You Have

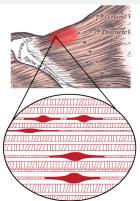
- First, figure out what is causing it and try to prevent it
 - Don't just treat the symptom
- Ice for acute or severe pain
- Heat for chronic or mild pain
- "Electric massage" (TENS)
- Topical analgesics
 - Cooling: Biofreeze, Icy Hot...
 - Heating: Tiger Balm, Capsaicin, Bengay
 - Anti-inflammatory: Arnica, Aspercreme, Bengay...




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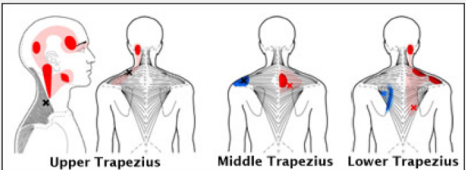
Manage Trigger Points

- Trigger points (TrP) are irritable spots in muscle that refer pain to another location
- They are frequently caused by overuse and poor posture
- They cause weakness of the muscle
 - Overuse of TrP (i.e., 'strengthening' exercise) makes them weaker



Neck: Trapezius


- Caused by:
 - Poor posture: slouching, forward head, tight shoulders
 - Overuse of the arms – e.g. holding/playing instruments
 - Straps from bags, instruments, purses on shoulder
 - Tension in the shoulders
 - Not fully relaxing muscles when not in use



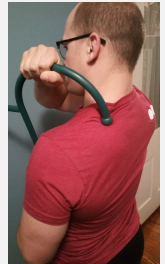
Upper Trapezius Middle Trapezius Lower Trapezius

Trigger Point Techniques

TrP Pressure with Ball




Theracane TrP Pressure




Other Treatments

Stretching

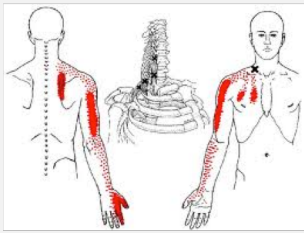


Kinesiotape (KT)



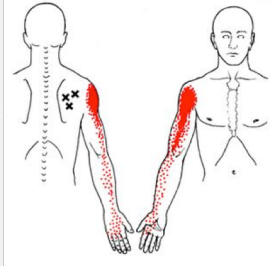
Neck: Scalenes

- Causes:
 - Breathing against resistance
 - Improper breathing
 - Poor body mechanics
 - Other trigger points
 - Stress and tension




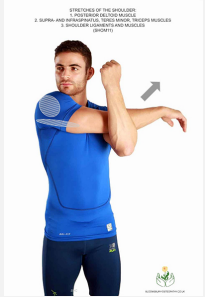
Shoulder: External Rotators

- Causes
 - Activities with the arm held out in front of you
 - Repeated pulling
 - Holding the arm rotated outward
 - Not fully relaxing muscles when not in use



Pressure and/or Stretch





Wrist and Finger Extensors

- Causes:
 - Repetitive finger movements
 - Forceful or prolonged gripping
 - Referred pain from the shoulder
 - Not fully relaxing muscles when not in use

Wrist & Finger Extensors

Wrist & Finger Flexors

- Causes:
 - Forceful or prolonged gripping or wrist flexion
 - Prolonged fingering of musical instrument or computer

Hand Intrinsic Muscles

- Causes:
 - Forceful or prolonged precision finger movements
 - Incorrect technique
 - Not fully relaxing muscles when not in use

Temporomandibular (TMJ) Joint

Masseter Muscle

Temporalis Muscle

Temporomandibular Joint

TMJ Pain Management

- Fix the cause of the problem
 - Excessive tension in jaw, poor posture
- Treat trigger points (heat, ice, massage)
- Treat the joint/disc if involved (it can be treated like any other joint in the body)
- Exercises for range, stability, coordination, depending on the problem

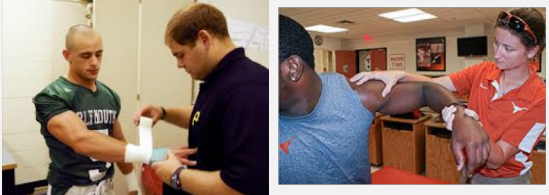
Now Do You Believe That Musicians Are Athletes?

Marathon ~ 55,334 steps 2-Hour Concert ~ up to 57,600 movements





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You probably don't have 'athletic trainers'



But, you can take care of your body!



If Your Pain Does Not Get Better...

- Get medical help if it becomes serious
 - Physical therapists are movement experts
 - They can teach you exercises and self-care specific to your issues
 - Occupational therapists are hand experts
 - Can select or fabricate hand splints
 - Orthopedic surgeons can do surgery
- Your teachers are your "coaches"

Injury Prevention Workshops

- Musician Injury Prevention Workshops
 - Today, 1-3 pm, Bishop Hall C101
 - Tomorrow, 10 am-noon, Bishop Hall C101
 - Five 20-minute modules:
 - Posture and core strengthening
 - Trigger Points (arm/hand)
 - Trigger Points (neck/low back)
 - Relaxation
 - Kinesiotaping (KT)
- Handouts on Crane's Wellness Moodle page and <https://webspace.clarkson.edu/~lrussek/musicianip.html>