

Basic Principles of Injury & First Aid

2 Categories of Soft Tissue Injuries

- **Acute injuries:** caused by a sudden trauma, such as a fall, twist, or blow to the body.
- **Overuse injuries:** occur gradually over time, when an athletic or other activity is repeated so often, areas of the body do not have enough time to heal between occurrences.
Myofascial trigger points may form in overused muscles.

Tendon Injuries

Tendinitis: inflammation of the tendon, due to small micro-tears that occur with acute overload or a tensile force that is too large or sudden. Inflammation present. Can be treated in several weeks. True, acute tendinitis is fairly rare, even though the diagnosis is often given.
*Common affected tendon in dancers is Flexor Hallucis Longus (FHL)



Tendinosis: degeneration of the collagen inside the tendon, due to chronic overuse. This results when overuse is continued without allowing time for the tendon to heal and rest. No inflammation present. Can take many months to heal. Tendinosis is more common than tendinitis.

*Common affected tendons in dancers include Patellar, and Achilles.

Tendinopathy: chronic overuse injury of the tendon, in which the tendon fails to heal properly.

Sprains vs. Strains

<u>Sprain</u>	<u>Strain</u>
<ul style="list-style-type: none">• Stretching or tearing of a Ligament (connecting bone to bone)• Pain & swelling• Bruising• May hear a “pop” at the time of injury	<ul style="list-style-type: none">• Stretching or tearing of a muscle or Tendon (connecting muscle to bone)• Pain & swelling, bruising if severe• Muscle spasms

Treatment: Non-steroidal Anti-inflammatory Drugs (NSAIDs)

Can reduce pain, inflammation, and swelling. Ask your doctor or pharmacist about the right dose for you. DO NOT use over-the-counter pain relievers for more than 2 weeks, as it may delay the healing process.



- Aspirin
- Naproxen (Aleve)
- Ibuprofen (Advil, Motrin)

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RICE Principle



1. **Rest**

- The first few days after the injury, a period of immobilization is recommended.
- 48 hours after the injury, it is ok to begin non-weight bearing exercises with the foot elevated.

2. **Ice**

- Apply ice for 10-20 minute periods, 3 or more times per day.
- Do not apply the ice directly to the skin, place a towel or cover over the ice before application.

3. **Compress**

- A combination of ice and compression (wrapping ankle in an ace wrap), in 20 minute periods is recommended, repeated at 60 minute intervals after the injury to help decrease swelling.
- Do not wrap the ankle too tightly, if you feel any numbness or tingling be sure to loosen it.

4. **Elevate**

- Raising the lower limb above the heart helps to fluid to drain towards the heart and thus decrease swelling.

When should I see the Doctor?

- Due to long term ill-effects of misdiagnosis, it is important to rule out potential fractures.
- Guidelines to determine if an x-ray is needed:

Ottawa Ankle & Foot Rules:

http://researchinperm.homestead.com/files/Ottawa_ankle_rules.pdf

- With minor sprains, and a more serious injury has been excluded, the dancer may continue limited work using ankle support and taping.

Early Post-Injury Exercises

- 3x10 ankle pumps, can have a tennis ball under calf
- 3x10 towel scrunches, keeping heel flat on the floor



Fig. 1



Fig. 2

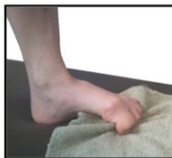
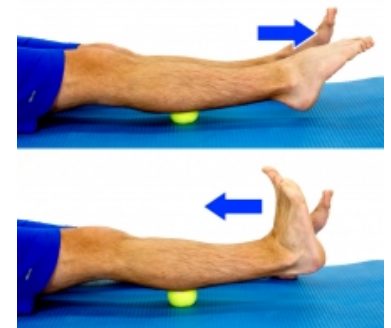


Fig. 3



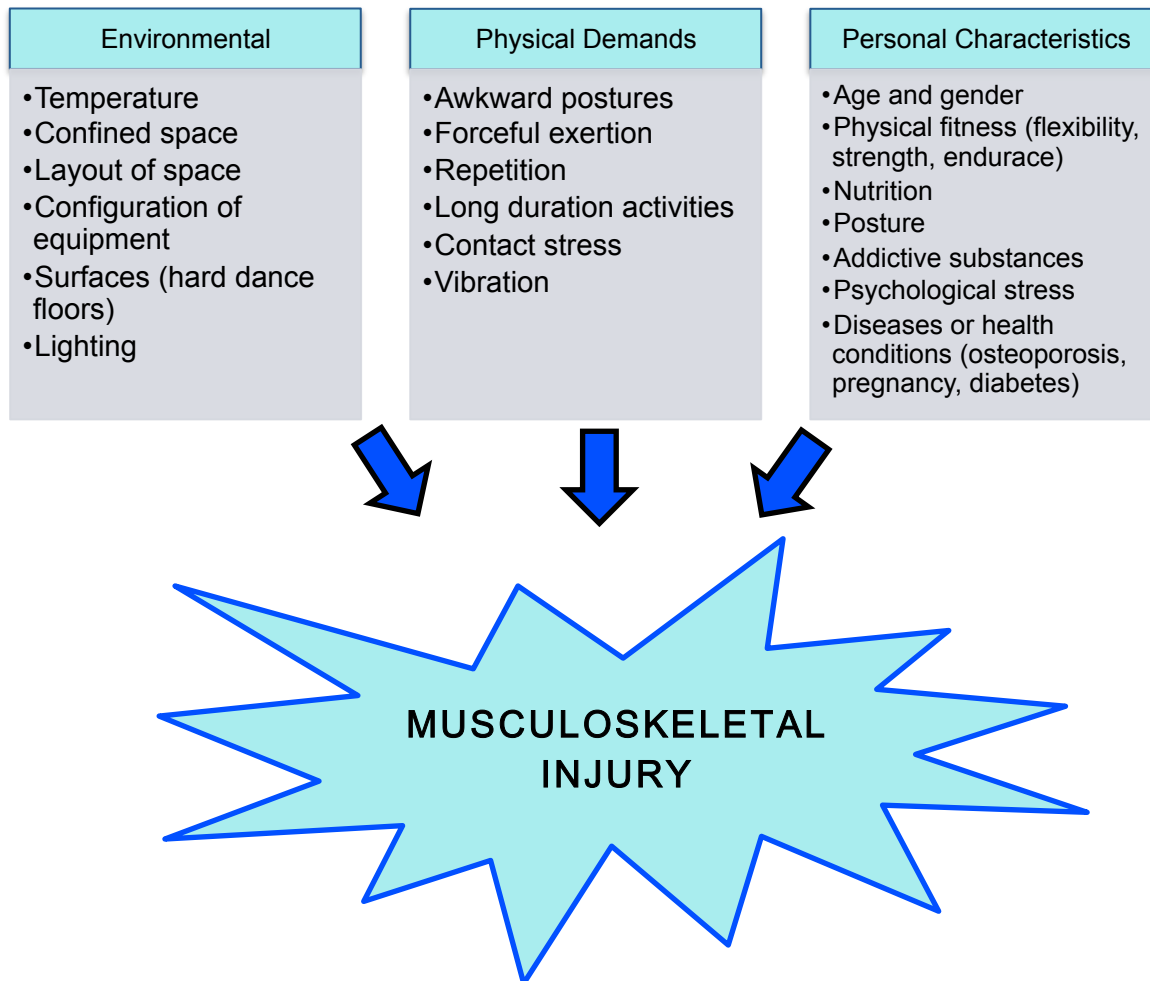
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What is a Musculoskeletal Injury (MSI)?

A musculoskeletal injury is classified as any disorder or condition of the muscles, bones, joint, tendons, ligaments, nerves, blood vessel, or related soft tissues. The increase in stress and activity on musculoskeletal structures may lead to a strain, sprain, or inflammation. The increased demands on the body contribute to the occurrence of MSI. The array of physical, professional, and artistic demands of performers can be very stressful on the body; thus, leading to possible MSI-related symptoms.

What puts me at **risk** for an MSI?



Progression of MSI signs & symptoms in performers

Level I

Pain occurs after class, practice, rehearsal or performance, but the dancer performs monthly

Level II

Pain occurs during class, practice, rehearsal or performance, but the dancer is not restricted in performing

Level III

Pain occurs during class, practice, rehearsal or performance, and begins to affect some aspects of daily life. The performer alters techniques, decreases duration

Level IV

Pain occurs as soon as the performer participates in class, practice, rehearsal, or performance, and is too severe to continue. Many aspects of daily life are affected.

Level V

Pain is continuous during all activities of daily life, and the performer is unable to participate in class, practice, rehearsal, or performance.

Take an active role in injury prevention



Controlling risk factors:

- Requires awareness that risk factors exist.
- Balance physical and psychological demands.
- Maintain high level of well-being, health, fitness, and nutrition.

Recognize and respond to early signs and symptoms:

- Early detection of symptoms allows for:
 - Seeking medical assistance
 - Referrals to appropriate specialist
 - Prevention of further injury and negative impact on daily life.

Resources:

1. <http://orthoinfo.aaos.org/topic.cfm?topic=a00111>
2. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3312643/>
3. http://researchinpm.homestead.com/files/Ottawa_ankle_rules.pdf
4. http://www.physio-pedia.com/RICE_Therapy
5. Safety and Health in Arts Production and Entertainment. Preventing Musculoskeletal Injury (MSI) for Musicians and Dancers: A Resource Guide. 2002. Available at <http://www.actsafe.ca/wp-content/uploads/resources/pdf/msi.pdf>

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