Dance Injuries and Prevention

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Dance Medicine Umbrella

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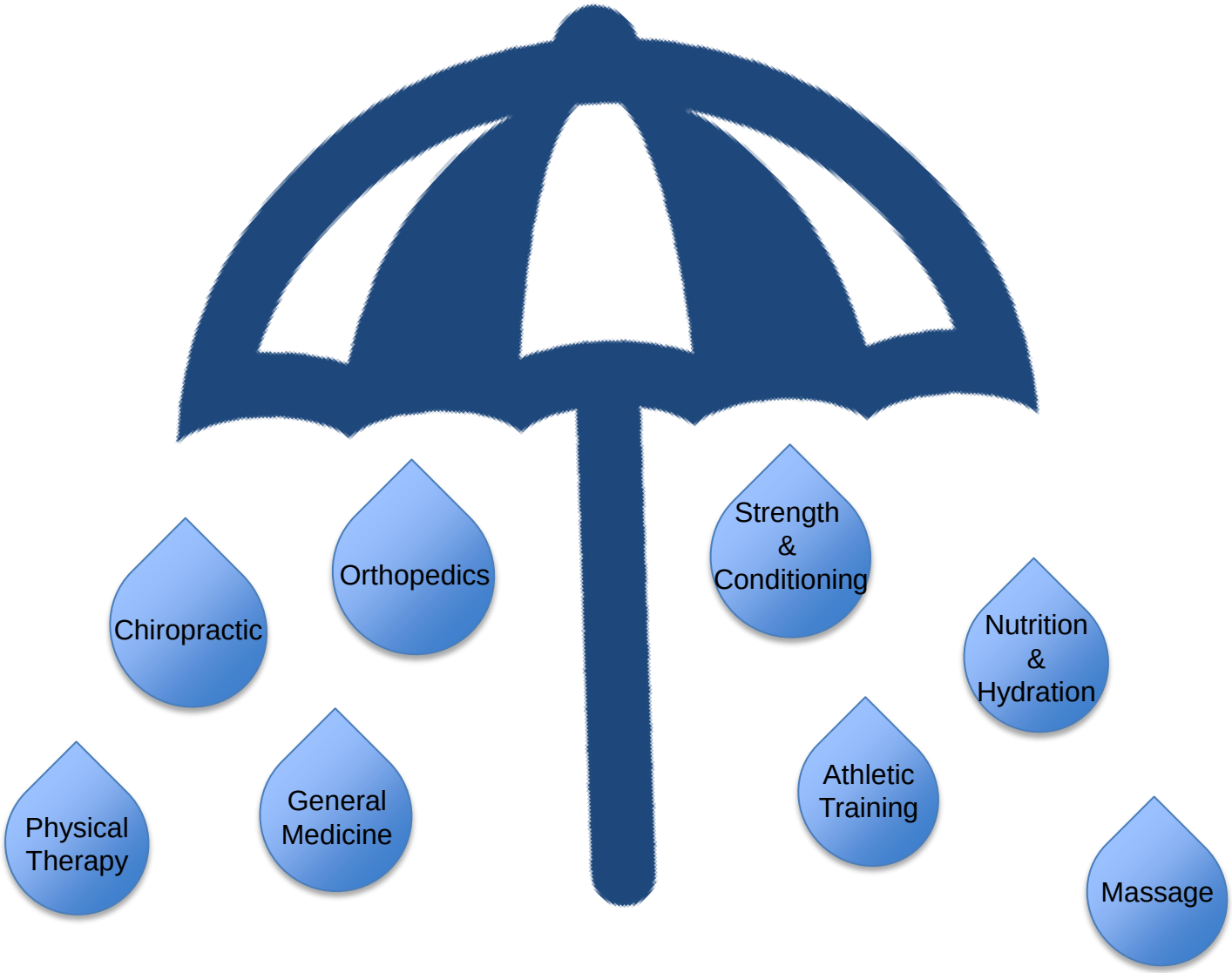

Objectives

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1. Overview of HMH & HB relationship
2. Identify common injuries in dance
3. Identify risk factors of injury
4. Discuss components of prevention for the whole dancer
5. Provide additional resources for dance communities

HMH & Houston Ballet

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DANCE MED. Services:

1 - Full Time Athletic Trainer

1 - Part Time Athletic Trainer

1 - Part Time Physical Therapist

2 - Team Orthopedic MDs

WELLNESS Services:

Nutrition Services

Massage Services

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Common Dance Injuries

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Lower Limb Injuries at a Glance[1]

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- 34-62% of all dance related injuries occur in the lower limb

- Higher occurrence in females

- Most common injuries:
  - Ankle sprains
  - Posterior impingement
  - FHL tendonitis
  - Stress fractures

Ankle Sprains[1,2]

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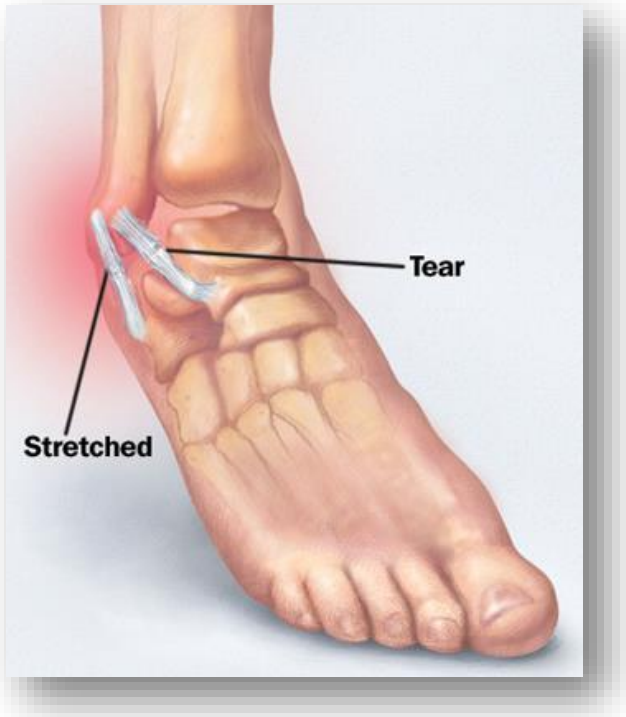
- Causes:
  - Improper landing of a jump
  - “Rolling” ankle while on demi-pointe
  - Increased levels of foot pronation (rolling in)

- Symptoms:
  - Swelling/bruising
  - Lateral ankle pain



Posterior Impingement[1]

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- Causes:
  - Compression of the bones/soft tissue of the ankle in extreme plantarflexion (pointe)

- Symptoms:
  - Pain and tenderness of posterior lateral ankle
  - Recurrent pain
  - Ankle stiffness
  - Symptoms worsen en pointe or relevé
  - May have the presence of an os trigonum

Posterior Ankle Impingement

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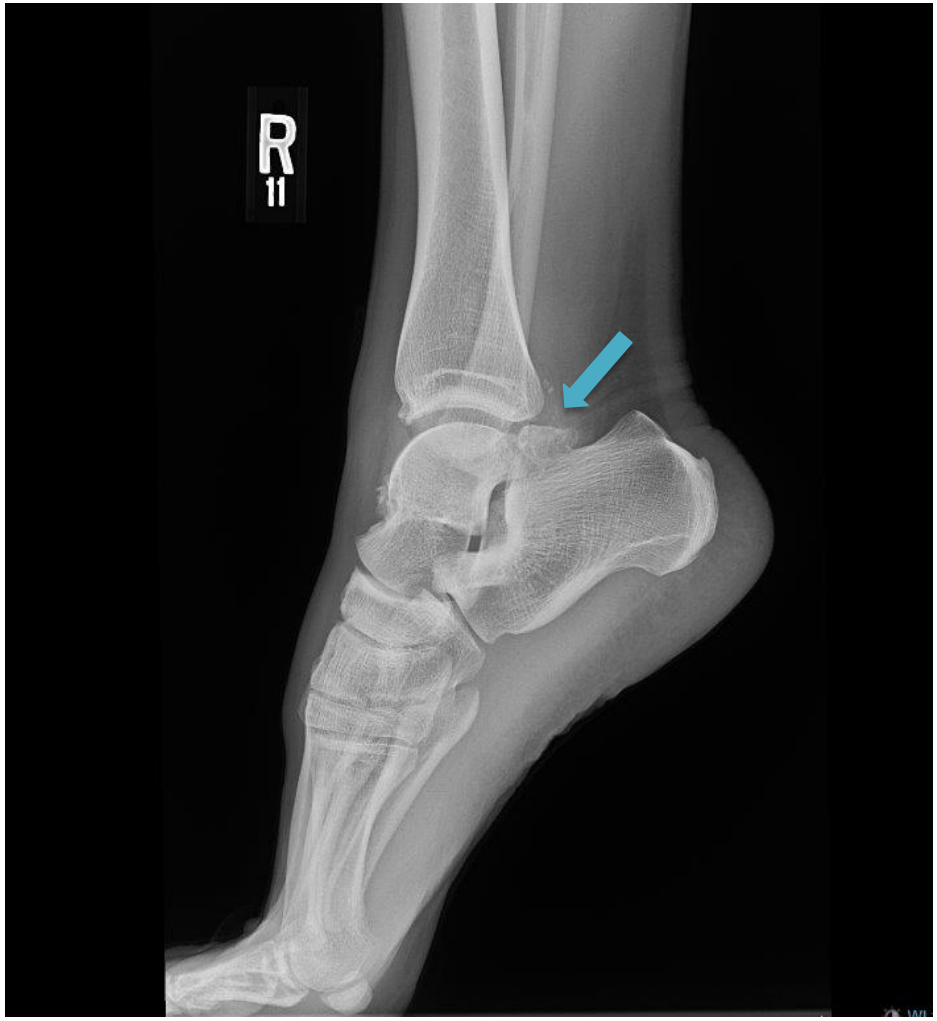

Dancer's Tendonitis[1]

FHL Tendonopathy

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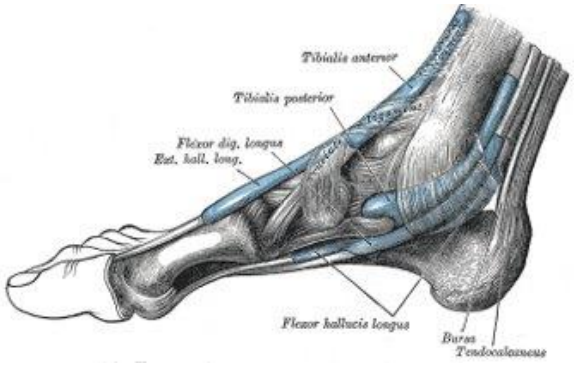
- Causes:
  - Compression of muscle tendon while rising on demi-pointe
  - Poor control of intrinsic foot muscles



- Symptoms:
  - Posterior medial ankle pain
  - Swelling, "popping" / "clicking" of tendon
  - Pain while working in to demi-pointe
  - Pain when extending the big toe

Stress Fractures[1]

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- Caused by:
  - Repetitive stress *(volume or improper technique)*
  - Low bone mineral density
- Symptoms:
  - Dull, achy pain towards the end of the day
  - Tender with pressure on the bone
  - Pain with walking
  - Does not get better with rest

Stress Fractures

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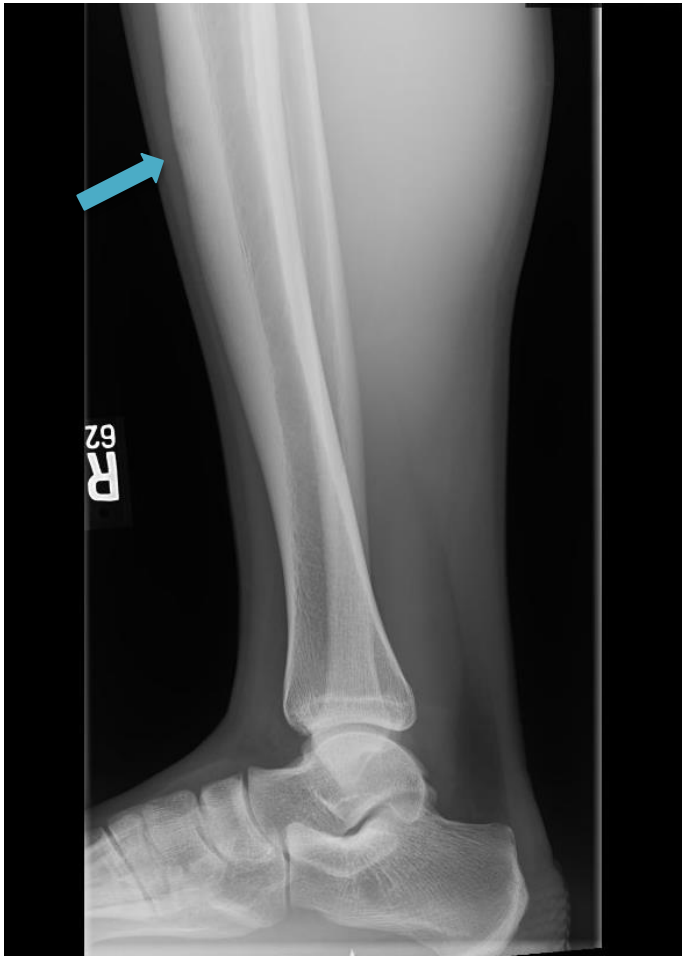

Hips Don't Lie[3]

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- 10% of dance related injuries occur at the hip
- Dance requires:
  - 60% of your turnout should come from the hip
  - Power in jumps
- Most common injuries:
  - Strains
  - Labral Tears
  - Impingement

Muscle Strains[3]

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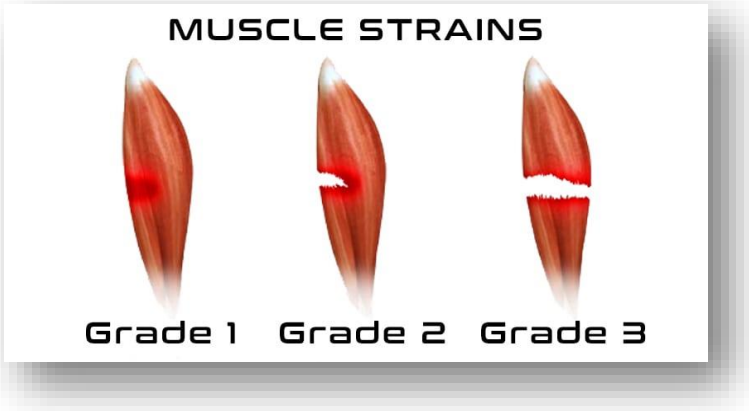
- Causes:
  - Over stretching the muscle
  - Over utilizing the muscle
- Symptoms:
  - Pain in movements that activate or stretch the muscle
  - Decreased length of muscle
  - Feels "tight"



Labrum Tears[3,4]

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- 40% of hip pathology in dancers

- Causes:
  - Traumatic tears from hip subluxations
  - Repetitive movement in extreme ranges
  - Structural abnormalities

- Symptoms:
  - Pain in end ranges of the hip
  - Presence of “clicking” or “catching” deep inside the joint

Hip Impingement (FAI)[11]

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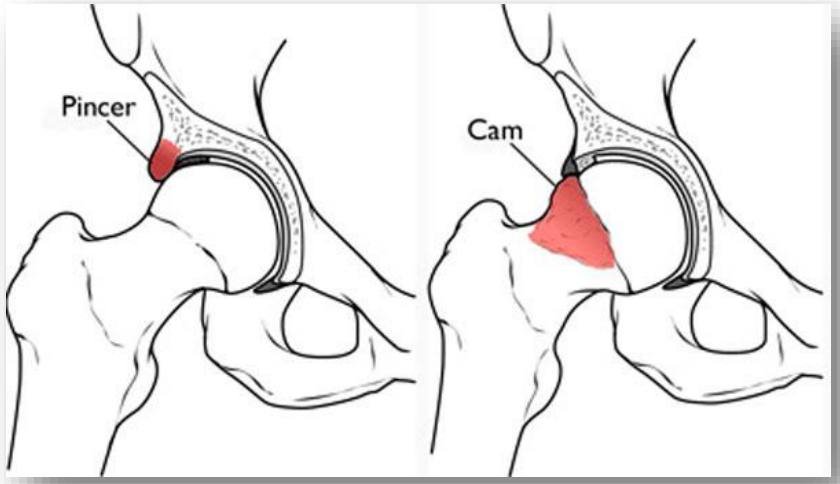
- Common diagnosis among athletes including dancers
  - Cam predominant in males
  - Pincer predominant in females
  - High prevalence of dysplasia



Kneed to Know[5]

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- Common Injuries:
  - Patellofemoral Pain Syndrome
  - Meniscus Injuries

Patellofemoral Pain Syndrome[5]

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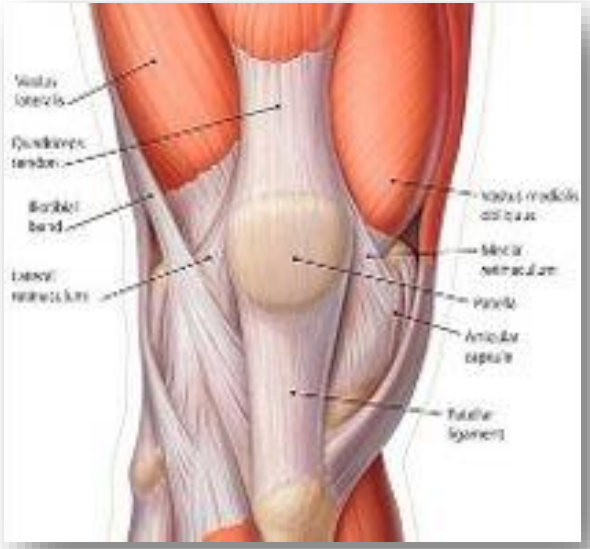
- Causes:
  - Tracking of knee cap
  - Improper mechanics & technique
  - Poor hip stability and core control



- Symptoms
  - Pain with jumping
  - Pain with demi-plié
  - Pain with flexion to extension gestures of leg

*<u>Note:</u> Younger dancers at greater risk due to **developing** musculoskeletal system & technique!*

Meniscal Tear[5]

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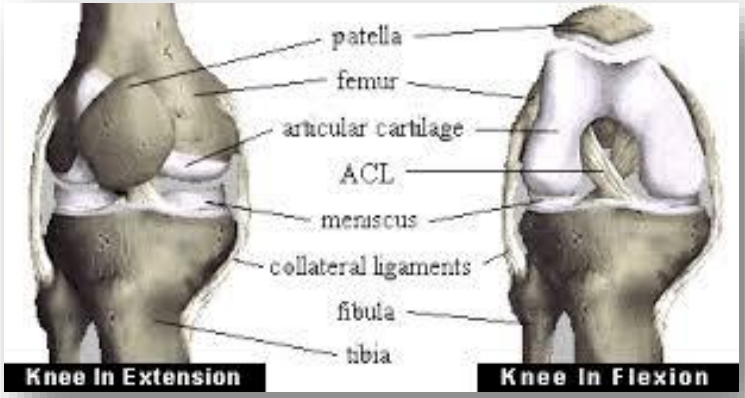
- Men at greater risk than females

- Causes:
  - Malalignment of the knee
  - Improper landing of a jump



- Symptoms:
  - Pain with twisting the knee
  - Presence of clicking, popping, or locking
  - Inability to fully extend knee
  - Pain with walking

Risk Factors[1-6]

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- Muscle imbalances
- Poor Body Alignment
- Technique Errors
- Fatigue
- Overtraining
- Unfamiliar choreography

Prevention of Injuries

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Recommendations

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Prevention is a LIFESTYLE…

1. Identify Individual Nutrition & Hydration Needs
2. Adequate Sleep & Proper Sleep Hygiene
3. Cross Training
4. Active Recovery
5. Apply Proper Mechanics to Technique

Strike a balance…

A Mental Time-out[9]

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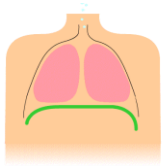
Complete rest is essential for developing ensuring physiological recovery

Hobbies



Deep Breathing Techniques

Imagery

Active Recovery

Cross Training[3-6,8]

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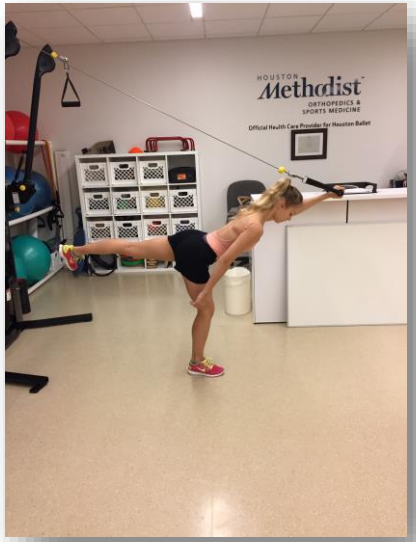

- Address muscular imbalances
  - Strengthen core and hip
  - Strengthen feet
- Balance, Balance, Balance
  - Proprioceptive training protects your body
- Lift Weights
  - High repetitions with low weight is the best way to build endurance without bulking
  - Decrease risk of developing stress fractures

Nutrition: Need to Know[8]

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- Ballet dancers need to intake more calories than the average individual
  - Your body needs calories to perform basic functions
  - Ballet burns an extra 1,200-2,000 calories/day
- Every dancer has individual needs
- 16% of ballet dancers will develop an eating disorder[11]

Nutrition 101[7-8]

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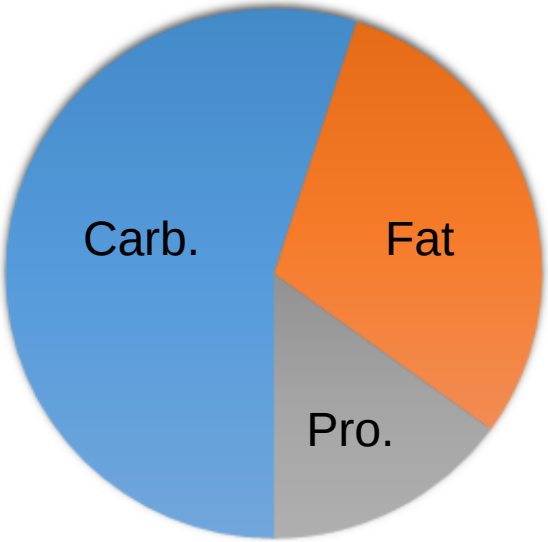

Carbohydrates: 55%-60%

Fats: 20%-30%

Protein: 12%-15%

TIPS:

- Eat small meals every 2-4 hours to promote adequate fueling throughout the day.
- Eat within 40min of ending activity for optimal recovery *(4:1 Carb to Protein)*
- Adjust/Increase Protein levels if engaging in other activities *(strengthening)*

Hydration 101

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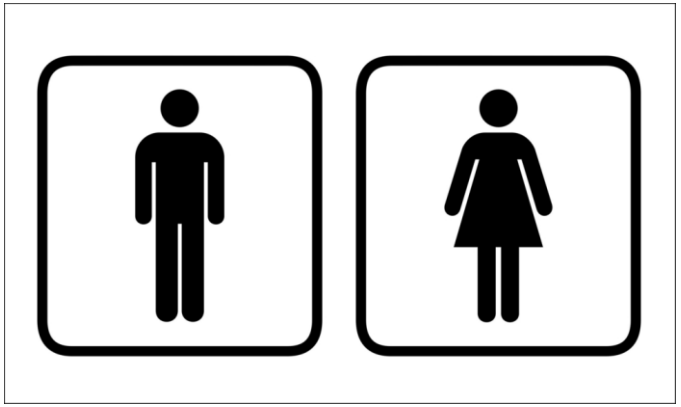
- Keep caffeine qty limited & in the mornings
- 8-16oz fluid at every meal
- Sips of water every 15-20min during activity as tolerated
- 16oz-20oz post activity for rehydration



Benefits of ZZZs[9,10]

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Improved Cognition & Decision Making

Improve Reaction Time

Short Term → Long Term Memory Consolidation

Increased Speeds of Fast Twitch Activity

Physiological & Mental Recovery

Improved Accuracy of Movements

Get Some ZZZs[9,10]

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- 8-10 hours recommended for teens
- Consistent sleep & wake schedule
- Limit screen time 1-2hours before bed
- Pre-bed regimen for mental & physical shut down
  - Warm bath
  - Reading
  - Stretch session
  - Some herbal teas *(non-caffeine)*

Rest, Rest, Rest![7,8]

I'm sorry, you want me to do what?!

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Rest is essential for:

- Tissue growth & repair
- Allows nutrients time to be replenished
- Allows neurological adaptations to occur
- Prevent mental, emotional, and physical burn out

Lack of R&R[7]

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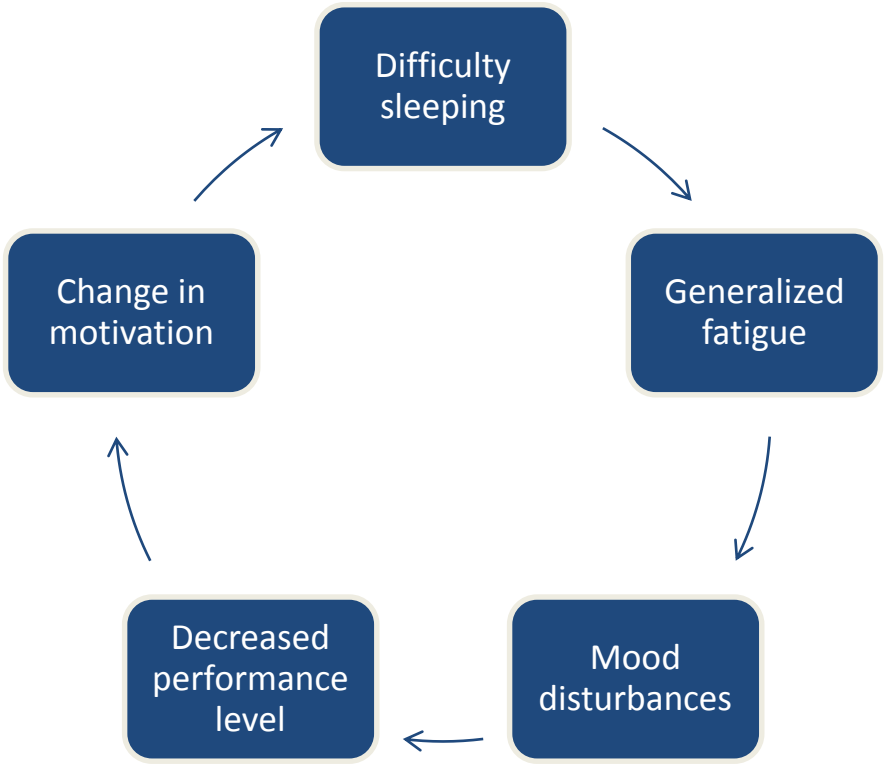
Significant evidence shows that failing to recover properly can lead to:



Resources for YOU

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- Dance/USA Task Force on Dancer Health *(https://www.danceusa.org/dancerhealth)*
  - Dancer screenings for company's
  - Med resources for dancers
  - Informational papers on various topics

- International Association of Dance Medicine & Science (IADMS) (*https://www.iadms.org/)*
  - Research
  - Resource papers

Conclusion

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Prevention is a lifestyle that revolves around planning.

Ballet is a form that does not lean towards balance – dancers must adapt and prioritize achieving balance in all aspects

Not all injuries are preventable, however, with proper planning, adjustments, and application of knowledge many injury rates can be reduced

Resources

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Resources

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