



- No statics before
- Dynamic warm-up ~~before~~

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ACL Injury Prevention

Michael Erickson, PT, DPT, MS, LAT
mike.erickson@hshs.org
St. Joseph's Hospital Rehabilitation Department


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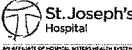
ACL Injury Mechanism

- Non-contact (80% of ACL tears)
 - *Many of these injuries may be able to be avoided
 - Pivot/Lateral cutting
 - Jump landing
 - Hyperextension
- Contact
 - Direct blow to the knee


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Outline

- ACL Injury
 - Mechanism
 - Surgery and recovery
- Off-Season
 - Technique
 - Fundamentals
- In-Season
 - Fundamentals
 - Performance


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ACL Injury Symptoms

- Many will hear or feel a pop (80%)
- Knee will give out
- Immediate swelling in first 2-24 hours
- Pain is variable due to nerves being torn as well


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Predisposing Factors

- Females are 3-8 times more likely to sustain injury
- Decreased notch width
- Increase Q angle
- Flat footed (excessive pronation)
- Altered mechanics (Jump landing and lateral cutting)


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ACL Repair

- Current tx is allograft/autograft
- Recovery 6mo-1 year
- Long term effects
 - 41-75% of repaired ACL still develop OA 14 years post-op
 - High graft failure resulting in instability and OA
 - 20-25% in adolescent patients

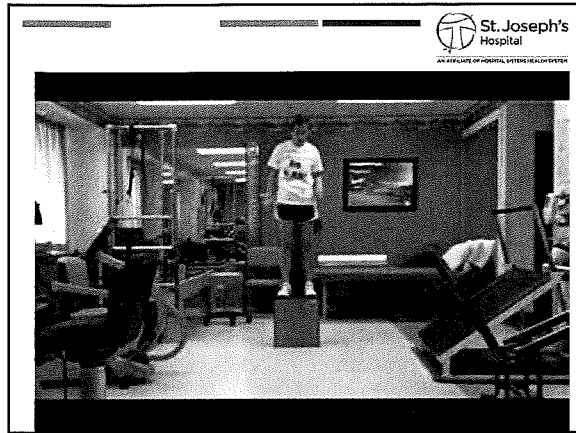



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PREVENTION

OFF-SEASON AND IN-SEASON PROGRAMS






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Off-Season Program

- 3 days a week
- 6-8 weeks before season
- Technique
 - Jumping and lateral movement
- Fundamentals
 - Flexibility, Strength, Agility, Power



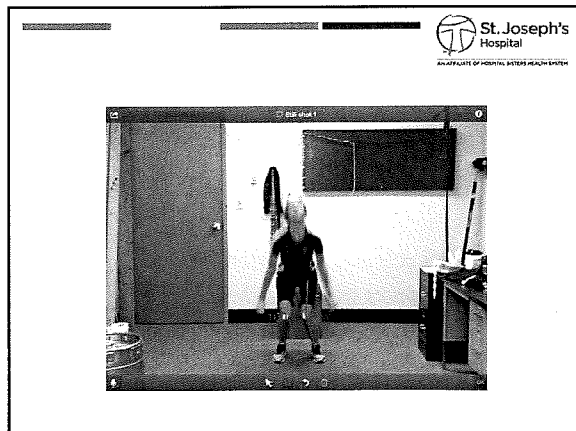


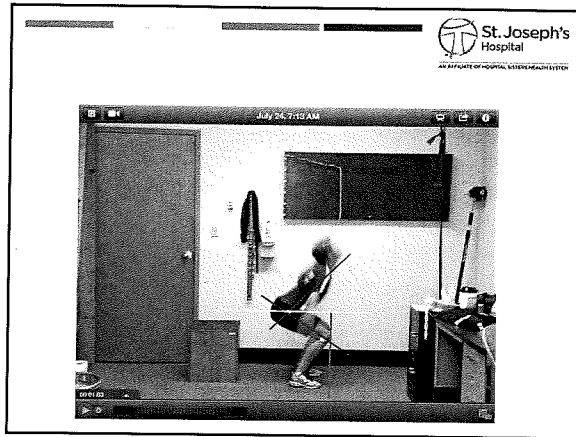
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Technique

- Video Analysis!!
 - Immediate visual and verbal feedback
- Drop Jump Landing with Vertical Jump
 - Landing
 - Land with butt back (hamstring dominance)
 - Knees not beyond your toes when looking from the side
 - Knees straight ahead and chest up
 - Toes make contact first then the heels
 - Absorb shock (soft landing)
 - Vertical Jump
 - Arms swing back forcefully with thumbs facing up during shock absorption
 - Extend fully through your hips, knees and ankles






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Fundamentals

- Flexibility
 - Dynamic Stretching
 - Warm-up
 - Static Stretching
 - 3-5 times a day to increase tissue length
 - 3x30 sec each stretch
 - Do not perform before activity as it decreases power and strength

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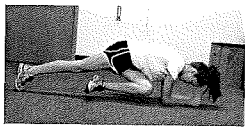


Technique

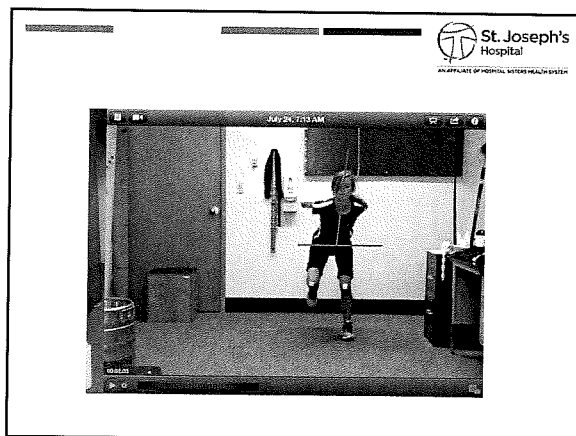
- Lateral Bounding
 - Stick landing
 - Butt back (hamstring dominance)
 - Knees not beyond the toes in a side view
 - Control trunk movement
 - Not letting it travel past midline
 - Don't allow pelvis to drop
 - Recoil and explode


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Fundamentals

- Strengthening:
 - Core
 - Gluteus Medius
 - Hamstrings












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Fundamentals


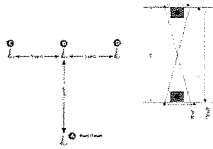

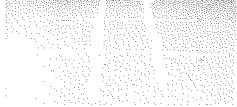
- Power: Plyometrics
 - Bounding
 - Tuck Jump
 - Long Jump
 - Box Jump
 - Lateral Bounding
 - Vertical Jump
 - Step ups







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Fundamentals

- Agility: The culmination of nearly all physical abilities
 - Hexagon Drill
 - Toe Taps
 - T-drill
 - Nebraska
 - Line Jumping

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Performance

- Sport specific drills
 - Football
 - Linemen:
 - Exploding off of the line
 - Back pedaling
 - Side stepping
 - Combo (LB, Safety, TE, FB):
 - Deceleration
 - Cuts
 - Spins
 - Cross over steps
 - Skilled Positions (WR):
 - Backpedaling
 - Crossovers
 - Deceleration
 - Jumping/cutting

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In-Season Program

- 2-3 days a week
- Dynamic warm-up
- Fundamentals
 - Maintenance
- Performance
 - Performance Warm Up
 - Sport Specific Activities

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Performance

- Sport specific drills
 - Basketball
 - Acceleration/deceleration
 - Jumping
 - Spinning
 - Lateral Cutting
 - Volleyball
 - Lateral Shuffle to jumping
 - Crossover steps
 - Acceleration/deceleration
 - Soccer
 - Crossovers to jumping (goalie)
 - Acceleration/deceleration
 - S-style runs

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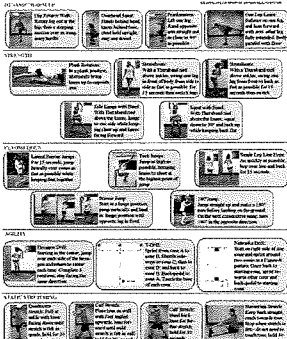
Performance Warm Up


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PERFORMANCE WARM UP

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QUESTIONS??

