

# The Weekend Warrior Syndrome

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## Presenter Disclosure Information Mark J. Lemos, MD

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# Mass. Medical Society

- Weekend Warrior Syndrome
- Benefits of Exercise
- Prevention
- Diagnosis
- Treatment



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## Mass Med Society 2011

- THE WEEKEND WARRIOR
- The Aging Athlete
- Executive Athlete
- Poor conditioning Habits
- Unreasonable Expectations
- Most of Us !



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# BENEFITS OF EXERCISE

- Weight Control
- Stress Control
- >> Physical fitness & well being
- Maintain bone strength & muscle tone
- Control of disease (HTN, DM, CAD)
- Endorphins



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# The Weekend Warrior

- Acute or Chronic Injuries
- Most Injuries related to Overuse or Error in:
  - Training
  - Technique
  - Equipment



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# CAUSES OF INJURY

- Lack of proper conditioning
- Lack of warm-up & stretching
- Improper technique
- Improper equipment
- Improper training regimen
- Anatomic abnormalities
- Poor nutrition
- Lack of “Cross-Training”

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## Factors Contributing to Overuse Injuries

### INTRINSIC

Malalignment  
Muscle Imbalance  
Inflexibility  
Muscle Weakness  
Instability

### EXTRINSIC

Training Errors  
Equipment  
Environment  
Technique  
Sports Imposed Deficiencies

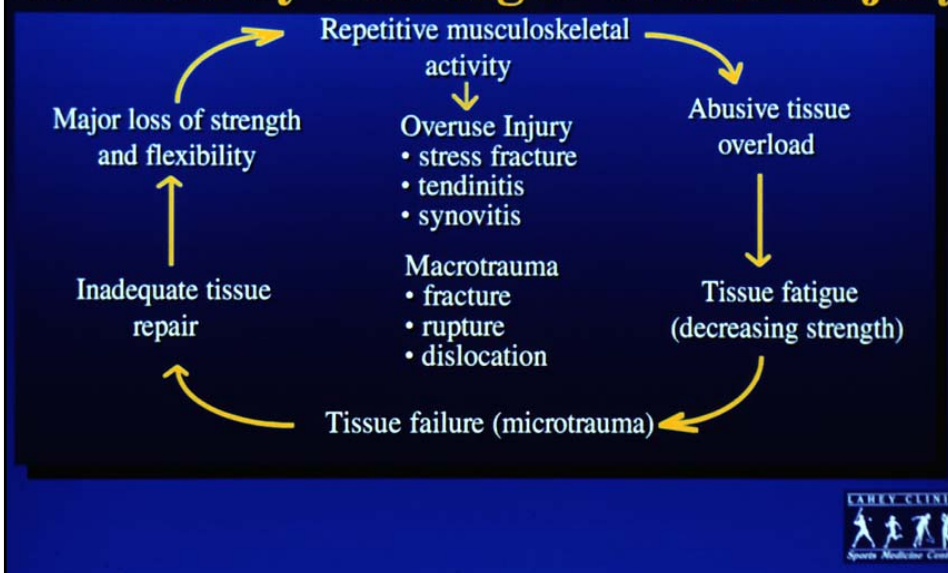
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# HOW TO AVOID INJURIES

- Proper conditioning
- Adequate warm-up & stretching
- Proper technique
- Proper equipment
- Proper training regimen
- Correct anatomic abnormalities
- Cross-training
- Weight control
- Proper nutrition
- Control medical problems
- Doctor's "OK"
- Rest
- Common sense

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## Cycle of Repetitive Overload, Abuse, and Activity Leading to Overuse Injury



## Management Pyramid for Overuse Injuries



## OVERUSE INJURIES

- Bursitis, tendinitis
  - Ice
  - NSAID
  - Rest
  - Rehab exercises
  - Formal physical therapy
  - “Cross - training”
  - Change exercise routine or equipment

# ACUTE INJURIES

- Musculoskeletal

- Fractures / dislocations
- Contusions
- Muscle pulls / tears
- Ligament sprains / tears



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## Articular Cartilage Injuries

- Treatment

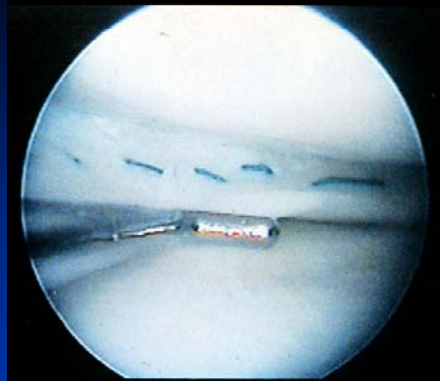
- Debridement
  - Mechanical
  - Thermal
- Microfracture
- ACI (Autologous Chondrocyte Transplantation)
- OATS (Osteochondral Autologous Transplant)
- Allograft
- Repair



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## Meniscus Tears

- Incidence 60/100,000
- 2.5-4:1 M:F
- Rotation and compression
- ACL deficient knees
- Non-op, Meniscal resection vs repair



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## The ACL and Women

Increase 3-10x all sports

Skiing 2 x increase

Factors:

Anatomy

Notch, Alignment

Hormonal

Neuromuscular (NM)  
Control

PREVENTION

NM training showed  
decrease up to 10x



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# Rotator Cuff Repair

- Rotator Cuff Repair:  
From Open  
to Arthroscopy



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## Rotator Cuff Repair: Results

### Arthroscopic

Gartsman 73 cases

84% Good-Excellent

Snyder 47 cases

87% Good-Excellent

Tauro 53 cases

90% Good-Excellent

### Mini-Open

Levy 25 cases

80% Good-Excellent

Blevins 64 cases

83% Good-Excellent

Paulos 18 cases

89% Good-Excellent

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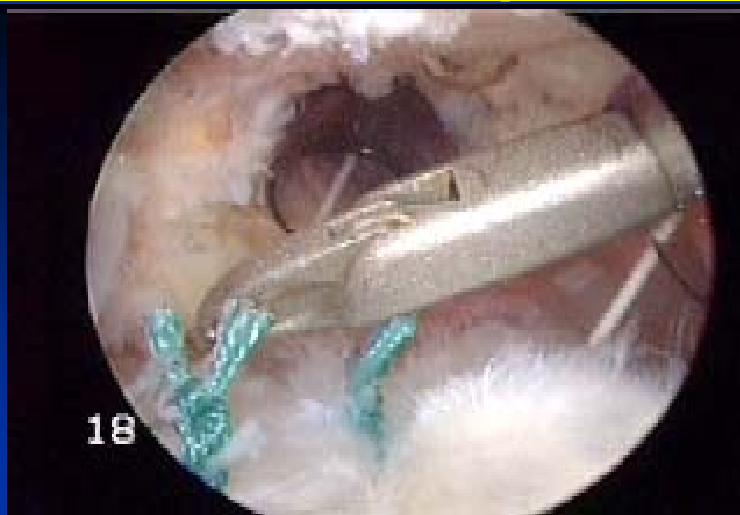
## Rotator Cuff Repair: Arthroscopic

- Advantages
- Deltoid Preservation, decrease “insult”
- Evaluation of Shoulder Joint
- Decreased Post Op Pain
- Decreased Post Op Stiffness



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## Rotator Cuff Repair: Arthroscopic



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# CONDITIONING

- Cardiovascular conditioning
- Weight training
- Joint flexibility
- Nutrition



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## CARDIOVASCULAR CONDITIONING

- Increase ability of the heart & lungs to deliver oxygen to body tissues
- Get medical clearance
- Workout at least 20-30 minutes @ target heart rate
  - 80-85% max. heart rate
  - max. heart rate =  $220 - \text{age}$
- 2 - 3 workouts /week

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# CARDIOVASCULAR CONDITIONING

- Walking
- Bicycling
- Elliptical cross-trainer
- Stair machine
- Treadmill
- Rowing machine
- Nordic track
- Swimming
- Jogging
- Aerobics
- Roller blade
- Spinning

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# STRENGTH CONDITIONING

- Isometric - good for injured joints
- Isotonic - good for strength gains
- Isokinetic - good for endurance & maximizing performance
- Workout 2 - 3 times/week
- Augment cardiac conditioning
- Proper technique with instructor



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# FLEXIBILITY

- With aging, muscles & tendons lose their strength & flexibility>> chance of injury
- Stretch before exercise as part of warm-up (may be most beneficial in rehab)
- Stretch to maintain joint flexibility and prevent muscle pulls & tendon ruptures
- Static stretch - stretch & hold
- Ballistic stretch - bouncing - no good

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# NUTRITION

- Body fat
  - Avg. male = 15%
  - Avg. female = 26%
- Recommended diet
  - Fat - 30 - 35%
  - Carbohydrates - 50 - 60%
  - Protein - 10 - 15%
- Weight loss requires calorie reduction & exercise

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# NUTRITION FOR EXERCISE

- High carbohydrate , low fat diet
- Fluids
  - Water OK
  - Sport drinks for prolonged exercise (> 1 hr)
  - 8 oz for every 20 minutes exercise
  - Beer after exercise only after drinking 2-3 glasses of water
- Replenish carbohydrates for prolonged exercise

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# Calcium Recommendations

- Children 4-8 years      800 mg calcium
- 9-18 years              1,300 mg calcium
- Adults 19-50 years      1,000 mg calcium
- Adults Over 50 years 1,200 mg calcium
- Pregnant or nursing women  
1,000 mg calcium

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# ACUTE INJURIES

- Life threatening
  - Heat stroke/  
exhaustion
  - Heart attack
  - Cardiac arrhythmia



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# SUDDEN DEATH DURING EXERCISE

- 1 death / 887,526 hours of exercise
- 1 death / 7,620 joggers / year
  - age 30 - 64
- 1 - 2 deaths / 25,000 marathoners / year
- Almost always results from cardiac arrhythmia

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# SUDDEN DEATH DURING EXERCISE

- Causes

- Younger athletes : very rare
  - Cardiomyopathy
  - Congenital defects
  - Idiopathic LV hypertrophy
- Older athletes
  - Coronary artery disease



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# SUDDEN DEATH DURING EXERCISE

- How to avoid it

- Screening treadmill test
  - > 40 yo “couch potato”
  - Major medical problems - HTN, DM, CAD
  - Women following menopause
- Get MD’s clearance to be safe

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# SUDDEN DEATH DURING EXERCISE

- How to avoid it
  - Potential warning signs
    - Chest pain or a “funny feeling”
    - Nausea or abdominal discomfort
    - Dizziness or light-headedness
    - General fatigue

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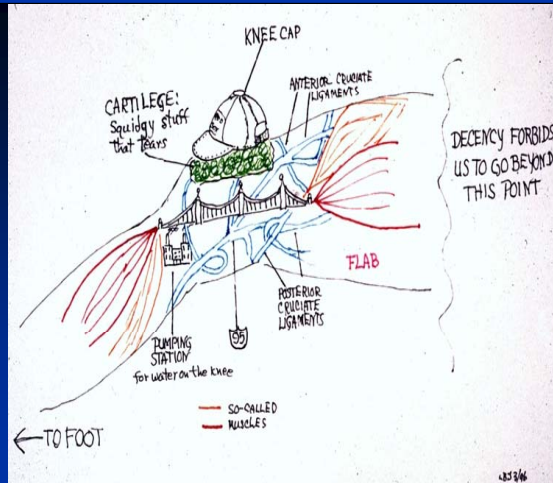
# SUDDEN DEATH DURING EXERCISE

- How to avoid it
  - “Talk test”
  - Don’t exercise for several hours after eating
  - Warm-up before & cool-down after exercise to << cardiovascular stress & prevent musculoskeletal injury
  - Avoid exercise in high auto exhaust areas

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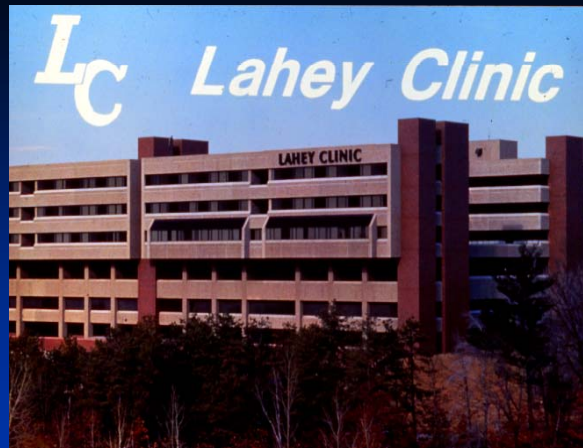
## WEEKEND WARRIORS

- Get in Shape
- Rule of 10%
- Cross Train
- Get Medical Clearance
- Treat Injuries Early



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## Thank You



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