Avoiding Common Fitness Injuries

EXERCISE ETC. INC.

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REMINDER

- Obtain medical clearance and physician's release prior to beginning an exercise program for clients with medical or orthopedic concerns.

Be Aware Of Risk Factors

- Injury risks increase as amount of training increases.
- Higher levels of fitness protect against future injury.
- History of previous injury is a risk factor for future injury.
- Smoking increases risk.
- Most important factor for predicting exercise-related injury may be low aerobic fitness levels.

Common Fitness Injuries

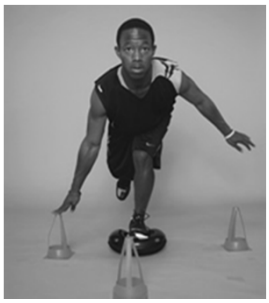
From Most Common to Less Common

1. Ankle Sprains
2. Jumper's Knee
3. ACL Tear
4. Back Sprains & Strains
5. Rotator Cuff Tears
6. Concussions

1) Ankle Sprains

- Account for 1 out of every 10 visits to the emergency room
- Acute ankle sprains should be treated with R.I.C.E.
- Sprained ankles often heal with residual weakness that must be addressed.

Stability Training



Resistance Band Eversion/Inversion

2) Patellar Tendinitis or *"Jumper's Knee"*

- Chronic Degenerative Condition
- Caused by:
  - Repetitive eccentric forces as in jumping, deep squats

Preventing *"Jumper's Knee"*

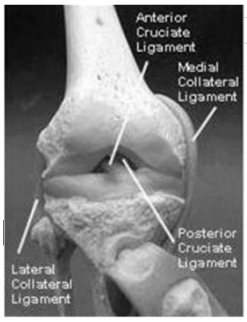
- Strengthen and Stretch Quads
- Manage volume and intensity of Patellar Loading

Management of Patellar Stress

- Limit Squats to "parallel" depth
- Keep maximum knee flexion to 90° during Step Up and Lunging Exercises
- Recommend a professional bike fitting
- Avoid or limit time spent in high gears and hill climbing

3) ACL & OTHER KNEE LIGAMENT SPRAINS

- Anterior Cruciate
- Posterior Cruciate
- Lateral Collateral
- Medial Collateral



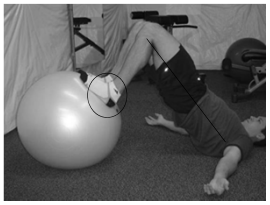
ACL INJURY RISK & WOMEN

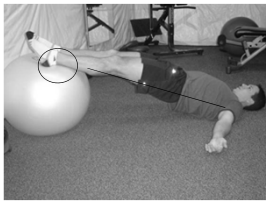
- Estrogen
- Femoral Notch
- Hamstring Firing
- Landing Mechanics
- Q-Angles
- Fatigue

Best Practices to Prevent ACL Injuries

- Strengthen the Hamstrings
- Improve Jump/Landing Mechanics
- Train Change of Direction
  - Running/Jumping

Stability Ball Bridge w/ Leg Curl





Preventing Knee Issues

- Improve hip and ankle mobility.
- Strength glute and hamstring function.
- Improve landing mechanics
- Stamina!

Improving Ankle Dorsiflexion

Improving Hip Mobility


Hamstring Slides


Jump & Landing Mechanics

- Land on the balls of the feet
- Immediately sit back to the heels
- Flex simultaneously at the hips and knees falling into a semi-squat to absorb the impact

4) Back Sprains & Strains

- Causative factors:
  - Poor conditioning
  - Obesity or Smoking
  - Poor exercise technique
  - Poor Body Mechanics
  - Extreme spinal rotation and/or hyperextension
  - Muscle Imbalances
  - Aging

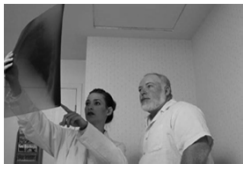
Symptoms of Strains & Sprains

- Grade 1 Symptoms:
  - ✓Tightness in the back
  - ✓May be able to walk properly
  - ✓Minimal, if any swelling
- Grade 2 Symptoms:
  - ✓Some difficulty walking without compensation
  - ✓Occasional sudden twinges of pain during activity
  - ✓Some swelling may occur
  - ✓Pain on palpation

Grade 3 Symptoms Include

- ✓ Significant ambulatory difficulty
- ✓ Severe pain
- ✓ Immediate swelling
- ✓ Any contraction will be painful and might produce a bulge in the muscle
- ✓ Expect to be out of commisssion for 3 to twelve weeks…or more

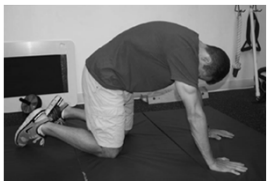
What to do about it?



- Rest (not more than 48 hrs)
- Control pain and inflammation
- See a professional to determine which tissues have been injured & to rule out more severe injury or condition
- Following inflammation phase encourage movement & gradual return to activity

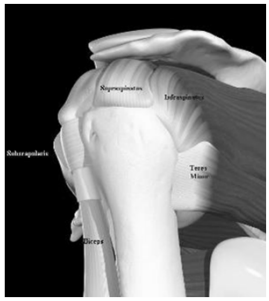
Exercises Following Sprains & Strains

- Select from movements that feel best
  - Cat-Camel
  - Hip Stretching
  - Birddog



5) Rotator Cuff Tears

- Causes:
  - Long history of overhead sports or movements.
  - A fall or direct impact.
  - Resulting from impingement
  - Overuse or degeneration
- Symptoms:
  - Pain associated with reaching or overhead activities.
  - May also experience weakness.
- Treatment:
  - Surgery may be required or PT.



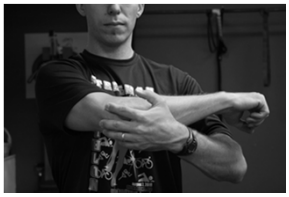
Causes of Rotator Cuff Dysfunction

- Significantly weaker External Rotators
  - <60% of Internal Rotation Strength
- Tight Posterior Shoulder Capsule causing poor internal rotation
- Posture
  - Excessive Cervical Lordosis
  - Excessive Thoracic Kyphosis
  - Excessive Internal Rotation

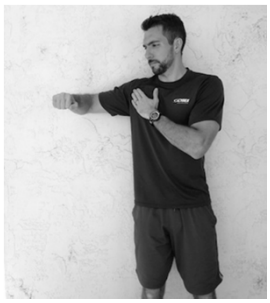
The Cuff is Reactive

- Strengthen Eternal Rotators
- Integrate Proprioception Training
- Pendulum Swing
  - Used to maintain shoulder mobility during inflammation phase of acute injury
- Movement from Legs
  - Forward/Backward
  - Circular

Improving Internal Rotation



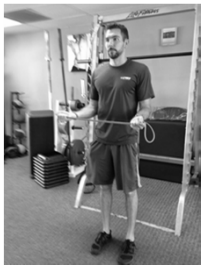
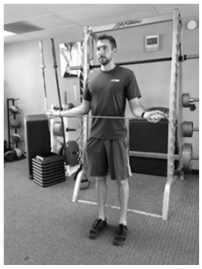
External Rotation Against A Wall




Side Lying DB External Rotation

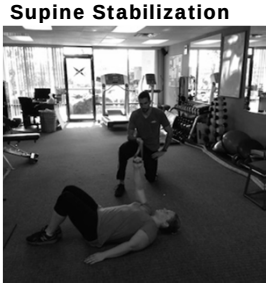
- Trains infraspinatus & teres minor, external rotators
- EMG Studies have shown this to be best exercise for the external rotators of the cuff
  - Reinhold et al


Bilateral Tubing External Rotation

Rhythmic Stabilization

Supine Stabilization

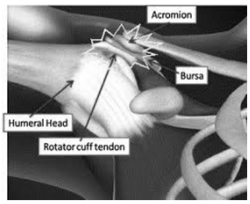


Quadruped Stabilization

Yoga Push Up


Shoulder Impingement Increases Risk of Rotator Cuff Injuries

- Compression of the rotator cuff tendons & subacromial bursa between the humeral head & coracoacromial arch
- Muscles involved:
- Supraspinatus
- Long head of the biceps tendon
- Subacromial bursa



Causes of Shoulder Impingement

- Anatomical or bony abnormalities
  - type 3 or hooked acromion
  - arthritic changes
- Muscle imbalances
- Scapula dyskinesis
- Poor exercise technique
- Overuse Overhead
- Secondary due to anterior shoulder laxity

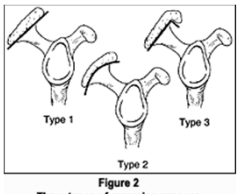


Figure 2
Three types of acromion process
Magee D. Orthopedic Physical Assessment. 3rd ed. Philadelphia: W.B. Saunders; 1997.

Preventing Impingement

- Improve Scapula Stability
- Improve Thoracic Mobility
- Reduce Scapula Winging
- Avoid Excessive Overhead Activity

Improve Soft Tissue Quality

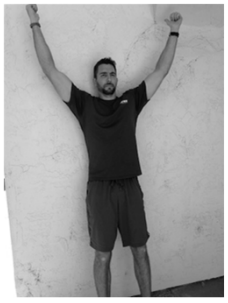
- Release shortened muscles with self myofasical release of the pec minor and posterior capsule.

Stretching Subscapularis

- If client has limited external rotation OR internally rotated posture subscapularis may be tight

Side Lying Windmill

Wall Shoulder Flexion



Wall Sliding

7.Concussions

- Causes:
  - Impact to the head with an acceleration-deceleration force.
- Identified with alteration in mental status (confusion) or loss of consciousness.
- If a concussion is suspected call 911 immediately.
- If neck not injured try to have them sit upright to decrease intracranial pressure.

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