



## Lower Body Overuse INJURIES

### Hip, knee, and Ankle Overuse Injuries in Lacrosse Players

- 1.5% of youth athletes will sustain some type of injury
- 33% to 50% of these injuries will be an overuse injury
- An overuse injury is repetitive stress on the body (bone, muscle, and/or tendon) without adequate rest
- Overuse injuries have been increasing in the youth population; secondary to playing multiple sports, longer seasons, and/or multiple team

#### *Common Overuse Injuries*

- **Apophysitis:** is increased stress/inflammation where the tendon attaches to the bone
  - **Little League Elbow:** is made up of several conditions. Primary cause is an overuse of the pronator muscle group and increase force on the inner elbow joint.
    - **Signs/Symptoms:** increased joint spacing, positive special test, increased bone density at inner elbow, pain, inflammation
    - **Treatment:** rest, anti-inflammatory meds, stretching, and strengthening
    - **Return to throwing in 6 weeks if asymptomatic**
  - **Iselin Disease:** overuse of the pronator brevis muscle where it attaches on the outer portion of the foot.
    - **Signs/Symptoms:** Common in 8-15 year olds, more common in cutting sports, tenderness over the outer foot, pain with eversion, possible bruising, modified gait, positive radiograph
    - **Treatment:** icing, activity modification, stretching, strengthening, anti-inflammatories, and balance training
    - **Return to sport in 3-6 weeks**

- **Sever Disease: overuse injury of the calf muscles where it attaches on the heel.**
  - **Signs/Symptoms: common in soccer, basketball, track, gymnastics, and dance; pain in one or both heels, most common in 10-12 year olds, modified gait, decreased calf flexibility, weak dorsiflexors**
  - **Treatment: rest, activity modification, ice, anti-inflammatories, stretching, strengthening, and orthotics**
- **Osgood-Schlatter Disease: Overuse of the quad muscles resulting in increased stress at the tibial tuberosity (where the patella tendon attaches on the shin)**
  - **Signs/Symptoms: swelling, pain, tenderness, and possibly a visible bump over the tibial tuberosity**
  - **Treatment: ice, anti-inflammatories, pain meds, strengthening, exercises, soft tissue mobilization**
- **Pelvic Apophysitis**
- **Epiphysitis: injury to the growth plate**
  - **Little League Shoulder is an over use injury of the humerus in overhead athletes. The muscles of the shoulder pull on the unclosed bone resulting in increased stress. Commonly occurs in 11-16 yo.**
    - **Signs/Symptoms: progressive pain over the lateral surface of the shoulder that is present with overhead activities. Increased space at the growth plate (seen on X-ray)**
    - **Treatment: rest, strengthening, and education on proper mechanics**
- **Tendon injuries: Common sights include patella, Achilles, rotator cuff, and IT-Band**
  - **Tendonitis: inflammation of a tendon due to micro-tears**
    - **Duration: several days to 6 weeks**
  - **Tendinosis: degeneration of a tendon's collagen due to chronic overuse**
    - **Duration (early recognition): 6-10 weeks**
    - **Duration (when chronic): 3-6 months, up to 9 months**
  - **Tendinopathy: Can be used as blanket term to describe tendon injuries. It is sometimes used to describe a chronic tendon issue.**
- **Stress Fractures:**
  - **Shin Splints (Medial Tibial Stress Syndrome):**
    - **Signs/Symptoms: usually runners, tenderness over the middle of the lower shin, positive radiograph**
    - **Treatment: stretching, rest, soft tissue, orthotics, and balance**
    - **Duration: healing can last up to 6 months**
- **Avulsions: is a separation of bone at the insertion of the tendon due to a muscular imbalance and underdeveloped bone. Can also be due to trauma**
  - **Common sights in the pelvis include the Anterior Superior Iliac Spine, Anterior Inferior Iliac Spine, Ischial Tuberosity Avulsion, Lesser Trochanter, Iliac Crest, Tibial Tuberosity.**

- **Signs and Symptoms:** there is a sudden sharp pain or pop during a muscle contraction followed by limping or inability to weight bear (if in lower extremity)
- **Treatment:** activity modification, strengthening, flexibility
- **Duration:** 4-12 weeks of therapy, Surgery is needed if the avulsion is greater than 2 cm. (in most cases)
- **Other:**
  - **Patellofemoral Pain Syndrome:**
    - **Signs/symptoms:** insidious onset, knee pain, negative special test, increased pain with activity
    - **Treatment:** Strengthening, flexibility, balance exercises, taping, orthotics. May require surgery if medial patellofemoral ligament is torn
  - **Shoulder Impingement:** when the tendon of the rotator cuff rub against the shoulder blade causing tear in the muscle tendon and pain.
    - **There all multiple types. Internal Impingement is most common**
    - **Signs/Symptoms:** shoulder laxity, inflammation, pain, decreased rotator cuff strength, and positive special test
    - **Treatment:** Rest, cryotherapy, anti-inflammatory meds, and strengthening exercises. Surgery is sometimes needed if not progressing
    - **Treatment can last up to 4 months**
  - **Lateral Epicondylitis:** An inflammation of the outer elbow due to repeated wrist extension; can become chronic.
    - **Signs and Symptoms:** tenderness over the outer elbow, pain with wrist/finger extension
    - **Treatment:** rest, stretching, strengthening, and avoiding aggravating activities. May require a corticosteroid injection
  - **Medial Epicondylitis:** Inflammation of the inner elbow due to repeated wrist flexion.
    - **Signs/Symptoms:** Tenderness over the inner elbow, pain, inflammation
    - **Treatment:** Rest, activity modification, stretching, strengthening.

## *Prevention*

- **In Endurance (running) athletes:**
  - **Identify risk**
    - **Measuring the standing Q angle:** individuals with Q angles more than 20 or 4 degree difference between the 2 legs should participate in hip and quad strengthening
    - **BMI:** Increased BMI is associated with lower extremity overuse injuries

- Navicular drop test: indicates increased over pronation and possible need for orthotics
- Hip strength: Decreased hip strength is associated with common lower extremity overuse injuries
- Examining gait and running mechanics
- Examining prior history of injuries and activity level
- Early sport specialization: limiting the athlete to one sport can cause stress on one area of the body
- **Implementing exercise to decrease risk**
  - **Increase hip strength (external rotators, extensors, and abductor muscles)**
  - **Modifying training volume (especially those with a recent growth spurt)**
  - **Participation in other activities to help increase coordination and neuromuscular control**
  - **Gait training**
  - **Neuromuscular training (balance, proprioception)**
  - **Proper sleep and diet**
  - **Use of proper equipment (shoe wear or proper baseball size)**

**If there are any questions regarding this topic or other topics of interest, please reach us at [prorehab.max@gmail.com](mailto:prorehab.max@gmail.com)**



**815-267-6263**

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