

Surgical & Non-Surgical Care. Sports Medicine. Physical Therapy.

**ON-SITE
ORTHOPEDIC
CLINICS EACH
WEEK**

- No Charge
- Open to patients of all ages
- Appointments (918) 346-7800

Collinsville Public Schools

Monday/Wednesday
2:00pm—3:00pm

Coweta Public Schools

Wednesday
2:45pm—3:30pm

Edison Preparatory School

Monday/Thursday
2:45pm—3:30pm

Glenpool Public Schools

Tuesday
2:45pm—3:30pm

Kellyville Public Schools

Wednesday
Noon—12:45pm

Regent Preparatory School

Wednesday
Noon—12:45pm

Rejoice Christian School

Monday/Wednesday
3:15pm—4:00pm

Victory Christian School

Tuesday
2:45pm—3:30pm

Wagoner Public Schools

Wednesday
2:45pm—3:30pm

*Hosted by CSO
Athletic Trainers and
Physician Assistants.

EXAMINATION OF THE SPINE AND EXTREMITIES: THE KNEE (PART 2)

Volume 7, Issue 10, May 2016

Orthopedic and musculoskeletal trauma to the knee is perhaps one of the most common injuries for recreational and competitive individuals. And, as injuries to the knee joint often require immobilization, rehabilitation, and oftentimes surgical repair, we will utilize the next several newsletters to not only discuss the knee joint in detail but likewise give you a “leg up” so to speak on how to reduce your own personal risk of sustaining a knee injury.

- Bones:** Femur, Tibia, Fibula, Patella
- Ligaments:** Anterior Cruciate Ligament (ACL)
Posterior Cruciate Ligament (PCL)
2 Collateral Ligaments (MCL, LCL)
- Muscles:** Anterior: Quadriceps Complex (4), Sartorius
Lateral: Tensor Fascia Latae (IT Band)
Posterior: Hamstring Complex (3), Popliteus,
Gastrocnemius
Medial: Adductor Complex (5)



Lower Leg Physiology

While many athletes and active individuals are often most focused about the health and integrity of the cartilage within their knees, most are currently unaware how they can go about ensuring the long-term health of such. Additionally, most would also be unaware that there are actually two distinct types of cartilage in the knee; the meniscus and the articular cartilage. The meniscus (pl) refers to two circular fibrocartilage discs within the knee joint. These discs reside inside the knee joint, one on each side, and provide for the shock absorption necessary to keep the bones of the joint from coming in contact with each other. The articular cartilage is not nearly as dense as the cartilage in the meniscus, but instead serves to line the ends of the long bones to cover and protect the ends of each bone.

Working together, the meniscus absorbs force in the center of the joint, and the articular cartilage protects the ends of the bones as they articulate with the meniscus.



Central States Orthopedics Physicians

- | | | | | |
|------------------------|--------------------------|-----------------------|------------------------|----------------------|
| R. Clio Robertson, MD | Randall L. Hendricks, MD | Jeffrey R. Morris, DO | Brent C. Nossaman, DO | Debbie A. Gladd, DO |
| David R. Hicks, MD | David K. Wong, MD | Ronald S. LaButti, DO | Kathleen M. Sisler, MD | Casey L. Smith, MD |
| James D. Cash, MD | Bryan J. Hawkins, MD | Jeff A. Fox, MD | Troy A. Glaser, DO | Wendy B. Emerson, MD |
| David E. Nonweiler, MD | Thomas G. Craven, MD | Blake E. Shockley, MD | Bradley J. Lawson, MD | Chad E. Crawley, DO |

Common Injuries

“Growing Pains”

Often referred to as growing pains, both Osgood-Schlatter’s Disease and Larsen-Johannson’s Disease are chronic inflammatory conditions in the growth plates of the tibia and patella, respectfully. As a review, tendons are dense collagen structures that anchor muscles onto the bones. When muscles contract, tension is then transferred from the muscle through the tendon and into the bone, thus resulting in movement of that particular bone and/or joint. Unfortunately however, because growing and developing bones have open growth plates that are softer and less tolerant to tension compared to solid bone, when a tendon inserts on or near a bony growth plate and that tendon is subjected to long-term bouts of tension, inflammation of the tendon and the growth plate is the result.

Fat Pad Impingement

Though fairly rare in frequency compared to other knee injuries, as patients who have dealt with a fat pad impingement can describe, this injury can be one of the most debilitating and painful knee injuries around. Sitting below the kneecap, behind the patella tendon, and just anterior to the tibia and femur is a fatty tissue pad that protects the anterior aspect of each bone from impact and also provides for a significant amount of the vascular supply to the anterior knee joint. Most commonly, the fat pad is injured when the knee is forced into hyperextension or when the knee is hit from a direct blow to the front of the joint. Most commonly misdiagnosed as patella tendinitis, fat pad impingement however, does not develop over longer periods of time like tendinitis, is usually is very tender to the touch on either or both sides of the patella tendon, and likewise tends to hurt worse when the knee is extended rather than when the knee is bent.



Volume 7, Issue 10, May 2016

Injury Prevention

Rest

Probably the most misunderstood component of strength and performance training, especially in regards to the knee joint, rest is being bypassed on a regular basis by many. Although rest refers to the time immediately following an exercise or a training session, rest also refers to an offseason where the demands on the tissue are removed. As many have hopes of improving technique beyond their peers or possibly earning an athletic scholarship, the “offseason” has been removed by many. School season is followed summer leagues, which is followed by the club season, which in turn means year-round in one sport. However, if you're truly looking for the best and most effective way to train for a particular sport or event, year-round training in one sport is absolutely one of the worst things you can do. By not resting the body’s ligaments, tendons, bones, muscles, and cartilage, an individual athlete’s risk for significant injury is dramatically increased. And, as each tissue requires 8-12 weeks to completely remodel, heal, and repair, this is why a 2-3 month offseason is often recommended.

However, if you would like additional research to support having an offseason, take a simple survey of those whom you know are in year-round training for one particular sport. When you ask how many of them have dealt with a chronic injury in the last year, the results may surprise you.

So, regardless of what a coach or another individual may say, medically speaking, the most effective way to train the body’s nervous system, muscles and tendons, etc... to be effective and efficient in one sport, is actually to compete in multiple sports up until the ages of 14-15. Additionally, by making the change each season from an upper extremity sport to a lower extremity sport, or vice versa, you can drastically reduce your risk for chronic pain, injury, and/or surgical repair.

Central States Orthopedics does not endorse any of the organizations or research groups whose information has been published herein. Furthermore, information in this publication is provided for informational purposes only and not as medical advice, or as a substitute for the advice provided by your physician or other healthcare professional, or for diagnosing or treating a health problem or disease. This publication is designed to provide you, the reader, with information only. It is your choice how to apply the information given herein, and not a directive from Central States Orthopedics. It is simply an informative resource for you, the reader.

For our entire newsletter disclaimer, visit the Sports Medicine Newsletter page on our website: <http://www.csosortho.com/sports-medicine-monthly.html>

Main Clinic

6585 S. Yale Ave., Ste. 200
Tulsa, Oklahoma 74136
918-481-2767

Bixby Clinic

12800 S. Memorial, Ste. D
Bixby, Oklahoma 74008
918-394-2767

South Tulsa Clinic

9716 S. Riverside Dr., Ste. 110
Tulsa, Oklahoma 74137
918-528-3300

Owasso Clinic

13616 E. 103rd St. N., Ste. B
Owasso, Oklahoma 74055
918-272-4488

Downtown Clinic

802 S. Jackson, Ste. 405
Tulsa, Oklahoma 74127
918-583-4400

Hillcrest South Medical Plaza

8803 S. 101st E. Ave, Ste. 300
Tulsa, OK 74133
918-994-6277