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## ***Physical Therapy Update***

*The clinical staff at Frederick and Middletown Sport and Spine Clinics regularly reviews articles, discusses the content and implements the information into our patient treatments. As a service to the local medical community, we are offering a summary of these articles to Physicians and Medical Practitioners. It is our intention to provide only the most pertinent info in these ½ page summaries. Further info is available at the clinic and on our web site. Please take a moment to peruse the information below and contact us if you have any questions about the subject matter. Enjoy!*

### **Anatomy, Function and Rehabilitation of the Popliteus Musculotendinous Complex**

Journal of Orthopedic and Sports Physical Therapy, Vol 35, Number 3, March 2005

The Popliteus muscle is an important, primary, dynamic transverse-plane, rotatory knee stabilizer which is often overlooked in the rehabilitation of patients with instability. Located at the posterior lateral aspect of the knee, it works to control the knee at many points in the closed and open kinematic chains. During concentric activation, the muscle internally rotates the tibia on the femur. Conversely, during eccentric activation, the muscle serves as a secondary restraint to tibial ER on the femur. It functions during single leg stance, assisting with 3-dimensional dynamic lower extremity postural stability and preventing forward femoral dislocation on the tibia during flexed-knee stance. The cadaver dissection of the Popliteus Complex shows a tremendous array of variability of attachment points, and even showed (37.5%) had attachment to the lateral meniscus. This indicates a level of dynamic positional control of the of the mobile lateral meniscus – if not functioning correctly, the Popliteus does not get the meniscus into its proper location on the plateau and may pose a risk of injury.

The Popliteus is a key muscle to address in all of our athletes with lower extremity injuries. EMG analysis reported that the Popliteus was most active during standing, when the ACL and PCL became uncrossed and relaxed during mid-swing phase of gait; this occurs when the knee was flexed between 30 and 50 degrees. During this phase, the Popliteus acts as a dynamic knee guidance substitute for the cruciate ligaments, a position commonly assumed with sudden stopping during running and cutting activities.

In rehabilitating the injured athlete, attention to dynamic transverse plane control is important and stimulating the Popliteus is a key factor in a successful rehab outcome. We have added the exercises indicated in the article to our treatment schemes and protocols to further intensify the level of training your patients undergo in our clinics. It is our hope that your patients train to the best of their ability in a facility that has the same goals. We hope to see your patients in our clinic after their next injury.

Reviewer: Mark Acierno, PT, DPT, OCS

***‘Physical Therapists for the Frederick Keys’***

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