VOLUME 4 ISSUE 2

The Rehab Report

Fall 2012

Brought to you by Kanata Orthopaedic Physiotherapy Clinic

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2 **Sports Medicine Referrals**

The Impact of Quadriceps Femoris Strength Asymmetry on Functional Performance at Return to Sport Following Anterior Cruciate Ligament Reconstruction

Laura C. Schmitt, Mark V. Paterno, Timothy E. Hewett

J Orthop Sports Phys Ther 2012;42(9):750-759, Epub 19 July 2012. doi: 10.2519 /jospt.2012.4194

The objectives of this study were to investigate the impact of quadriceps femoris (QF) muscle strength asymmetry at the time of return to sport on self-reported function and functional performance of individuals following anterior cruciate ligament reconstruction (ACLR).

Fifty-five individuals who were cleared for return to sport following primary ACLR (ACLR group) and 35 uninjured individuals in a control group participated in the study. QF strength (maximum voluntary isometric contraction) was assessed, and the quadriceps index (QI) was calculated [(involved strength/uninvolved strength) × 100%]. The ACLR group was further subdivided into 2 groups, based on the QI results: high-quadriceps (QI of 90% or greater) and low-quadriceps (QI of less than 85%). The International Knee Documentation Committee Subjective Knee Evaluation Form score and hop tests were also used to evaluate performance.

The individuals in the ACLR group in general were weaker, reported worse function, and performed worse on hop tests compared to those in the control group ($P<.05$). The low-quadriceps group demonstrated worse performance on the hop tests compared to the high-quadriceps group and the control group ($P\leq.016$). Hop test performance did not differ between the high-quadriceps and control groups ($P\geq.14$). QF strength predicted performance on the hop tests beyond graft type, presence of meniscus injury, knee pain, and knee symptoms.

At the time of return to sport, individuals post-ACLR who had weaker QF (QI of less than 85%) demonstrated decreased function, whereas those with minimal QF strength deficits (QI of 90% or greater) demonstrated functional performance similar to uninjured individuals.

The Authors suggest that QI testing may be a useful adjunct in evaluating athletes' preparedness for return to sport.

Electromechanical Delay of the Vastus Medialis Obliquus and Vastus Lateralis in Individuals With Patellofemoral Pain Syndrome

Han-Yu Chen, Chia-Chen Chien, Shyi-Kuen Wu, Jiann-Jong Liau, Mei-Hwa Jan
J Orthop Sports Phys Ther 2012;42(9):791-796, Epub 2 August 2012. doi:10.2519/jospt.2012.3973

The objectives of this study were to examine electromechanical delay (EMD) of the vastus medialis obliquus (VMO) and the vastus lateralis (VL) in individuals with patellofemoral pain syndrome (PFPS). EMD is a mechanical property of muscles related to protective reflex and sports performance. The time duration of the EMD can be shortened with strength training and, conversely, can be lengthened secondary to immobilization or injury.

Twenty-six individuals with PFPS and 26 healthy volunteers were studied. The VMO and VL were electrically stimulated to evoke muscle twitches. Ultrasound was used to assess patellar movement elicited by the muscle twitch. The time from the onset of electrical stimulation to the onset of patellar movement was measured as the EMD.

Analysis indicated that the EMD of the VMO was longer and the EMD of the VL was shorter in the PFPS group. Therefore, in the individuals with PFPS, the EMD of the VMO was significantly longer than that of the VL, which was not the case for those in the control group.

The Authors suggest that mechanical properties of the VMO and VL may be altered in patients with PFPS, which may lend itself to an avenue for rehabilitation and training of injured athletes.

KANATA ORTHOPAEDIC PHYSIOTHERAPY CLINIC has been offering evidence based, one-on-one physiotherapy to residents of Kanata for over 22 years, and is now offering sports medicine services.

We are pleased to announce the addition of our latest clinician, Dr. Atif Kabir. Dr. Kabir has his sports medicine specialization, and will be seeing patients at KOPC starting this month. We are happy to welcome him on board.

For Physicians interested in referring for sports medicine consultations, please fax referrals to:

Fax # 613-599-6139

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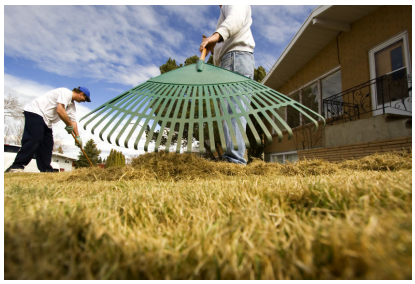
Kanata Orthopaedic Physiotherapy Clinic



Be sure to stay active this fall!

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