

clinical conduit

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Upcoming Courses for 2014

Advanced Manual Therapy Series
Clinical Orthopedic Rehab Education

2014 Dates - Plano, TX

- Part 1: Cervicothoracic/TMD- Apr 12-13
- Part 2: The Upper Quarter - May 31-Jun1
- Part 3: Lumbopelvic Spine-Jul 12-13
- Part 4: Hip/Knee-Aug 16-17
- Part 5: The Lower Quarter-Oct 11-12 (Leg, Ankle, and Foot)

A detailed description of the course content and learning objectives is available at our web site — www.continuing-ed.cc

Single course attendance is allowed on a space-available basis

Posterior Cruciate Ligament Testing



In an issue last year I talked about the identification and management of injuries to the posterior cruciate ligament ([Volume 7:4](#)). In the November issue of the *Journal of Orthopedic and Sports Physical Therapy* there was a systematic review of the diagnostic accuracy on the variety of examination procedures that are used to detect this relatively uncommon injury.

Through a transparent and rigorous literature search the authors found 11 articles to include in their qualitative analysis. This is a difficult pathology to critically evaluate because of its relatively low incidence in comparison to other ligament injuries. The vast majority of the studies included in their analysis were over 25 years old with the most recent (and best study IMO) being published in 1994.

So what did they find? Generally speaking the authors found that while PCL tests are pretty specific they are not very sensitive. High specificity means the test is good at identifying the ligamentous pathology with a low likelihood for a false positive (i.e. – if you see or feel excessive posterior tibial translation it is probably “real”).

Conversely, the studies generally

found lower sensitivity meaning the current testing techniques are not great screening tools. This is unfortunate as we prefer to have examination procedures to screen for the more obscure pathologies. The low sensitivity findings in these studies suggest that we cannot routinely rule out the presence of a PCL injury with high confidence. In other words, there may be a high number of false negative tests.

Since I always recommend screening for PCL involvement at the initiation of any knee ligamentous evaluation I use the posterior sag sign because it was the one PCL test that had a reasonably high sensitivity value in 5 of the 11 studies that were critically evaluated. The sag sign is present when you anatomically

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Post-Op Management of Meniscal Repair Update: RCT on Restricted vs. “Free” Rehabilitation

In the November issue last year I talked about the post-op management of patients with meniscal repairs and then in December, the *American Journal of Sports Medicine* published a randomized controlled trial challenging the conventional wisdom I use to protect the healing meniscus during the first 1-2 months. If you are a Chicago Bulls fan you probably read this article with an optimistic perspective wondering if this means Derek Rose could come back this season in time for the NBA playoffs. Why? Because the trial seemed to indicate that a more aggressive or “accelerated” rehab progression did not alter the failure rates of the repair. Granted the failure rate was relatively high in both groups but this is not surprising in subjects who had an isolated meniscal repair. A 25% failure rate is about par for the course (much better in those having a concurrent ACL reconstruction).

The study randomized about 60 patients into one of two groups a couple of days following arthroscopic repair. As mentioned above, only patients with isolated meniscal repairs were included. The arthroscopic procedure was performed with an “all-inside” technique and the authors were very particular to only include patients with vertical tears within 4 mm of the peripheral rim of the meniscus.



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PCL Testing Algorithm continued ...

REFERENCE

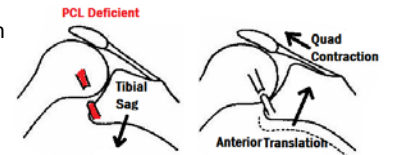
Kopkow C, et al. Physical examination tests for the diagnosis of posterior cruciate ligament rupture: a systematic review. *J Orthop Sports Phys Ther.* 2013 Nov; 42(11):804-813.

visualize a posterior translation of the tibia on the femur with the knee bent to 90°. Normally the tibial plateau should be a least 1 cm in anterior to the femoral condyle. A Grade I injury is when that distance is less than 10 mm, a Grade II is when the tibial plateau and femoral condyle are flush (or parallel) to one another, and Grade III injury is represented by the tibial plateau falling posterior to the femoral condyle (see Figure A below). If the sag sign is absent I am pretty confident the PCL is intact and any sagittal plane displacement present is probably attributable to ACL pathology. Conversely, if I think there may be tibial sag I will I perform a posterior drawer to get a sense of the “firmness” of the end feel (see Figure B below). I confirm the presence of a PCL injury with an "active drawer" because of this test’s high specificity. With the knee in the same position the quadriceps are gently contracted. Because of the vector of the patellar tendon, a gentle quadriceps contraction will visibly draw the tibia forward effectively reducing the posterior sag (see Figure C below). If I felt more posterior translation with my drawer test on the lateral side I will go on to evaluate the collateral ligaments (varus and valgus stress) and/or perform a Dial Test to evaluate the integrity of the posterolateral corner of the knee. While injuries to the PCL only constitute about 5% of all knee ligament injuries I think it is important to have a methodological algorithm to rule in or out these ligamentous problems.

A - Grade III Posterior Sag Sign from a PCL tear



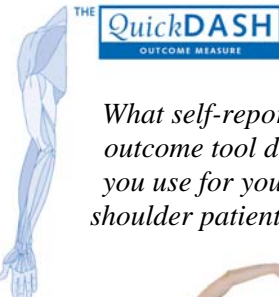
B - Posterior Drawer for “end-feel”



C - Active Drawer



Question of the Month Shoulder Outcome Tools



What self-report outcome tool do you use for your shoulder patients?



www.orthopaedicscores.com

The Disabilities of the Arm, Shoulder and Hand Score (QuickDASH)

Instructions: This questionnaire asks about your symptoms as well as your ability to perform certain activities. Please answer every question, based on your condition in the past week. If you did not have the opportunity to perform an activity in the past week, please mark your best estimate on which response would be the most accurate. If absent, mark "not at all" or "not at all or never".

1. Open a light or heavy jar	No difficulty	Mild difficulty	Moderate difficulty	Severe difficulty	Unable
2. On heavy household chores (eg. scrub walls, wash floors)	No difficulty	Mild difficulty	Moderate difficulty	Severe difficulty	Unable
3. Carry a shopping bag or briefcase	No difficulty	Mild difficulty	Moderate difficulty	Severe difficulty	Unable
4. Wash your back	No difficulty	Mild difficulty	Moderate difficulty	Severe difficulty	Unable
5. Use a knife to cut food	No difficulty	Mild difficulty	Moderate difficulty	Severe difficulty	Unable
6. Recreational activities in which you take some force or impact through your arm, shoulder or hand (eg golf, swimming, tennis, etc)	No difficulty	Mild difficulty	Moderate difficulty	Severe difficulty	Unable
7. During the past week, to what extent has your arm, shoulder or hand problem interfered with your normal social activities (eg. family, friends, neighbors or group)?	Not at all	Slightly	Moderately	Quite a bit	Extremely
8. During the past week, were you limited in your work or other regular daily activities as a result of your arm, shoulder or hand problem?	Not limited at all	Slightly limited	Moderately limited	Very limited	Unable
9. Arm, shoulder or hand pain	None	Mild	Moderate	Severe	Extreme
10. Tingling, pins and needles in your arm, shoulder or hand	None	Mild	Moderate	Severe	Extreme
11. During the past week, how much difficulty have you had sleeping because of the pain in your arm, shoulder or hand?	No difficulty	Mild difficulty	Moderate difficulty	Severe difficulty	So much difficulty I can't sleep

How difficult was it for you to complete all of the questions in this questionnaire?

The Disabilities of the Arm, Shoulder and Hand (quickdash) Score: 5

For about the last 10 years I've used the Disabilities of the Arm, Shoulder, and Hand (DASH) tool. About 5 years ago I switched from the original version to the abbreviated or "QuickDASH". For a brief discussion on other shoulder outcome tools refer to a previous newsletter article I did back in 2007 (<http://www.continuing-ed.cc/newsletter/continuing%20ED%20newsletter%20Volume%202;1.pdf>)

The QuickDASH has 11 questions that are mathematically convert-

ed to a 100 point scale with an optional work and sports module. The QuickDASH correlates strongly with the DASH and has been shown to be reliable, valid, and responsive. The test-retest reliability is above an ICC of 0.90 in multiple studies with a minimally clinically important difference somewhere between 8 and 15 points. I generally use a 12 point change in my short term goals to indicate a "real" change in the patient's report of function.

The patient can fill out a paper

form that you can easily score or there are on-line versions (that automatically generate a functional score). Here is the link to the on-line version shown below - http://www.orthopaedicscores.com/scorepages/disabilities_of_arm_shoulder_hand_score_quickdash.html.

There is also an iPad app that can be purchased from the Apple iTunes store for \$4.99 at <https://itunes.apple.com/us/app/dash-outcome-easure/id656696682>

Also there is an e-bulletin that is published a couple of times every year with news and updates about this disability rating tool. The most recent issue had a nice discussion on the use of DASH scores as G code severity modifiers for our Medicare reimbursement. Also they had a commentary on if the DASH score could be categorized into levels of mild, moderate, and severe disability. The publication can be accessed at http://www.dash.iwh.on.ca/system/files/dash_e-bulletin_2013_summer.pdf

Questions you would like addressed in a future issue can be sent to mulliganpt@tx.rr.com

References

Lind M, Nielsen T, Fauno P, Lund B, Christiansen SE. Free rehabilitation is safe after isolated meniscal tear: a prospective randomized trial comparing free with restricted rehabilitation regimens. *Am J Sports Med.* 2013 Dec; 41:2753-2758



"Featured Internet Link"



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If you got a new tablet computer for or smart phone for Christmas you may be looking for medical applications to help you organize your professional life. Medical App Journal is an independent website created by and for medical professionals to index and review applications used by medical doctors and healthcare professionals in clinical care. The intent is to provide a comprehensive database of independent, insightful, and unbiased reviews of mobile medical apps by the very professionals who use them on a daily basis in clinical practice. It has an impressive search function and is set up much like the app stores you have on your iPad or tablet. May want to check it out before spending a few bucks.



Meniscal Repair Rehab continued -

This is an important caveat to the study in that we know these types of tears approximate with compressive weight bearing (as opposed to radial tears which tend to displace with axial loading). As can be seen in the chart below the subjects were assigned to either a "free" or "restricted" post-operative rehabilitation course.

Details of the Free and Restricted Rehabilitation Regimens After Isolated Meniscus Repair

	Free Rehabilitation	Restricted Rehabilitation ^a
0-2 weeks	ROM 0°-90°, no brace, touch weightbearing	ROM 0°-30°, brace, no weightbearing
3-4 weeks	Free ROM, free weightbearing	ROM 0°-60°, brace, touch weightbearing
5-6 weeks	Free ROM, free weightbearing	ROM 0°-90°, brace, free weightbearing
Running	8 weeks	12 weeks
Contact sports	4 months	6 months

Outcomes were primarily measured by failure rates (meniscus injury remained symptomatic and was observed to have not healed during a follow-up arthroscopy). Secondary dependent variables measured were self-report outcome tools and patient satisfaction ratings. At all follow-up intervals (6, 12, and 24 months) there were no differences in tear rates, self-report outcomes (KOOS and Tegner scores), or patient satisfaction.

These results should make us at least consider if we've been too conservative in the post-operative management of meniscal repairs. Have we told athletes their season is over when maybe they could return in 4 months without additional risk of long-term meniscal health? I think it is too early to tell. This is only one study and I think we need this more accelerated perspective validated in additional patient populations before universally adopting this approach. The meniscus is too important to the long term health of the knee to be cavalier in its rehabilitation.

I do think this study indicates that in certain populations (peripheral, vertical tears with concurrent reconstructive techniques) it is o.k. to begin early progressive weight bearing particularly if the knee is locked in full extension. I would still be very cautious with active hamstring contractions and/or flexion range beyond 90° secondary to the deforming shear forces these circumstances create. This study is a good example of why we have to remain current in keeping up with the literature. I write about a rehabilitation approach one month and a challenge to my traditional paradigm is published the next month. The one constant in physical therapy is change.



Sports Physical Therapy Residency

The Department of Physical at UT Southwestern's School of Health Professions is offering a 15-month residency-based training program that will begin this August. This new program will augment our existing orthopedic and neurological residency programs. A residency is defined as a planned program of post entry-level clinical and didactic education designed to advance a clinician's skill and knowledge in the delivery of unique aspect of physical therapy. The resident will provide patient care in our faculty's sports medicine practice while working with a designated mentor and assigned to event coverage with professional, collegiate, and high school athletes. The curriculum is taught by clinical experts with advanced credentials and residency experience.

During the program the resident will have experienced the following opportunities:

- Field and Venue coverage for a variety of athletic competitions including professional, collegiate, and high school settings
- Flex time to participate in research activities suitable for platform presentations or peer-reviewed publications
- Participation in monthly sports medicine Imaging and musculoskeletal examination conferences provided by the University's orthopedic surgery department
- Attendance at weekly Brown Bag journal clubs and distinguished lectureship presentations
- Assist with teaching sports physical therapy elective in accredited DPT program
- Participation in certified strength and conditioning specialist examination prep course
- Opportunity to regularly participate in orthopedic surgery department grand rounds
- Surgical observations with sports fellowship trained surgeons and clinical shadowing with primary care sports medicine physicians

The program consist of 200 hours of educational content (approximately 50% of which will be through independent learning), over 200 hours of field or venue coverage, a minimum of 150 hours of direct collaborative learning with a supervising mentor, and at least 1400 hours of direct patient care. The program is seeking accreditation by the American Board of Physical Therapy Board's Committee on Residency and Fellowship. UT Southwestern is already a credentialed site for both orthopedic and neurological residencies.

The selected residents will be offered a 15-month employment contract with the University as a Clinical Affiliate. The Resident maintains a 70% patient load inclusive of time reserved for collaborative care with their mentor. At the completion of the residency the resident will be fully prepared and qualified to sit for the American Board of Physical Therapy Specialty's Sports Clinical Specialist certification (SCS) examination. Applicants should have experience in an orthopedic /sports setting, licensure or board eligibility to practice physical therapy in the state of Texas, and emergency responder or ATC certification. The salary for this position will be commensurate with the applicant's qualifications and experience. For more information please contact Ed Mulligan at 214-648- 1553 or email at ed.mulligan@utsouthwestern.edu.

Application deadline for sports residency is March 17, 2014



Previous issues are archived at
www.continuing-ed.cc/newsletter.htm



"Cheers to a new year and
 one more chance for us to
 get it right."


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**Happy
 New Year!**

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2014

Clinical Orthopedic Residency Education Series: An Advanced Manual Therapy Education Track



These courses are designed to provide a comprehensive overview of orthopedic physical therapy (from head to toe) based on the APTA's definition of advanced specialty practice. We've had a number of clinicians from the community take the series over the past 4 years and received excellent feedback on the content and format. In fact, we've had over 20 clinicians from our first three classes pass the orthopedic specialty (OCS) exam. We anticipate another 10-12 from the 2013 class to be sitting for the exam in March. If you'd like a mechanism by which to prepare for the exam or would simply benefit from advanced coursework with expert colleagues, we hope you'll consider joining us this year. These courses are taught by the orthopedic faculty at UT Southwestern. The 2014 series will begin again in April. The course content includes examination and intervention strategies for the cervicothoracic spine, upper quadrant (shoulder, elbow, hand), lumbopelvic spine, and lower quarter (hip, knee, ankle/foot). All of the material is based on current evidence with over 50% of the on-site course work devoted to lab demonstration and practice. For more information on the 2014 advanced clinical orthopedic education series please visit our web site at www.continuing-ed.cc/residencycourse.htm. Let us know if you'd like us to send you a brochure. The courses are designed as a series but attendance at singular courses is allowed on a space available basis.



Achilles Tendinopathy Alfredson's Protocol

Back in 1998, Hakan Alfredson published his famous article on the value of a painful (but not disabling) eccentric "heel drop" training protocol to address Achilles tendinopathy. Since that time it has been widely adopted in clinical practice; however, there is no evidence that the volume of exercise he utilized is ideal. Alfredson's protocol requires 3 set of 15 reps in both a knee straight and knee bent position twice per day – this adds up to 180 repetitions which can be both time consuming and painful. A study that is published ahead of print in the *J Orthop Sports Phys Ther* evaluated if this



repetition volume is, in fact, the most efficient dosage of therapeutic exercise intervention. The study took approximately 30 patients and randomized them into a standard exercise group (180 reps/day) vs. a "do-as-tolerated" exercise group. The "do-as-tolerated" group actually averaged 112 reps/day which would be roughly equivalent to a 3 x 10 BID protocol in the knee bent and straight positions. Patient outcome was assessed via a self-report outcome measure and a pain rating scale at 3 and 6 weeks. While both groups improved there was no significant difference in pain or function at both follow-up intervals. The authors concluded that performing a 6-week "do-as-tolerated" program of eccentric heel drop exercise program (as compared to the standard protocol of 180 reps/day) resulted in similar improvements in pain and function. Perhaps there is not a definitive number of repetitions to realize an optimal outcome – empowering the patient to select their tolerance for exercise (within reason) without adversely impacting the value of the intervention.

The subjects in this study did not exclusively use heel drop eccentric training to affect their change in status. Both groups were provided additional services and usual medical advice. If you'd like a good review on common interventions appropriate for Achilles pathology you may enjoy our TPTA approved written home study that covers this topic. This self-study is approved by the TPTA and can be accessed free of charge. A post-test for CEU credit is available at <http://www.continuing-ed.cc/homestudy.htm> for a reasonable fee.

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