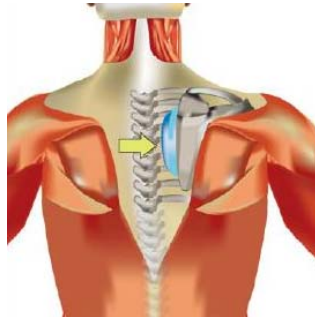


# clinical conduit

by Ed Mulligan, PT, DPT, OCS, SCS, ATC

## Scapulothoracic Bursitis - Snapping Scapula



This summer I've seen three cases of subscapular pathology in the orthopedic clinic and it made me go the literature to review this somewhat unusual conditions.

The scapulothoracic articulation is unique in that it isn't a true diarthrodial joint but we can all agree that the functional gliding of the scapula on the rib cage is an essential element of normal upper extremity movement. The translations that take place (elevation-depression and pro-

retraction) are a combination of rotational motions (int-external rotation, scapular tipping, and up-downward rotation) controlled by the precise force couples exerted by the axioscapular muscles. Imbalances or dysfunction of these muscles can lead to dyskinesthetic movements that may irritate subscapular tissues.

The subscapular (infra and supra serratus bursae facilitate smooth gliding of the scapula on the thorax. Adventitial bursae are considered pathological and typically reside near the superior or inferior angles of the scapula. Under excessive physiological loads symptoms are often manifested as pain and crepitus with repetitive upper extremity elevation. A chronic inflammatory environment can lead to fibrotic "snapping" or recalcitrant bursitis. These symptoms may be magnified with postural malalign-

ments (scoliosis or kyphosis), anomalous musculature, malunion scapular or rib fractures, scapular masses, or abnormal bony (costal or scapular) con-tours. Plain radiographs may screen for obvious osseous anomalies but CT scans may be necessary for symptoms that persist with appropriate rest and subsequent attention to posture and neuromuscular retraining. An MR imaging can also identify bony irregularities in addition to inflamed bursae or soft-tissue masses.

Medical management begins with a referral to physical therapy but injection of a local anesthetic or steroid under ultrasound or fluoroscope guidance can be very helpful. This injection is done with the patient prone and the arm internally rotated behind the back .

- continued on page 2

### Inside this issue

Snapping Scapula	1
Ankle Sprains	1
Predicting Knee Stability	2
STarT Back Screening Tool	3
Piriformis Stretching	4
Ethics Home Study	4

### Upcoming Courses for 2013

Advanced Manual Therapy Series  
Clinical Orthopedic Rehab Education

2013 Dates - Plano, TX

Part 5: The Lower Quarter - Oct 19-20  
(Leg, Ankle, and Foot) - COURSE IS FULL

Dates for the 2014 CORE Education series should be available on our web site later this fall

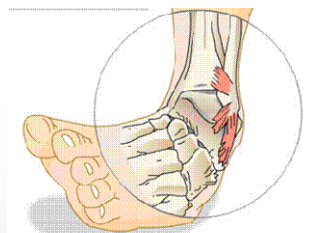
A detailed description of the course content and learning objectives is available at our web site — [www.continuing-ed.com](http://www.continuing-ed.com)

Single course attendance is allowed on a space-available basis

## NATA Ankle Sprain Position Statement

In the most recent issue of the *Journal of Athletic Training* the NATA issued a position statement on the conservative management and prevention of ankle sprains in athletes. The NATA publishes position statements as a service to promote the awareness on certain issues to its members. Previous position statements include content such as emergency management of spine injuries, heat illness, and environmental issues. More recently they have focused on pediatric overuse injuries, athletic type I diabetes, eating-disorders, and safe weight loss and maintenance. For a full list of their position statement go to <http://www.nata.org/position-statements>.

It is important to note that information contained in a position statement is not intended to be neither exhaustive nor exclusive to all circumstances or individuals. Variables such as institutional human resource guidelines, state or federal statutes, rules, or regulations, as well as regional environmental conditions, may impact the relevance and implementation of any published recommendation. The NATA advises its members and others to carefully and independently consider each of the recommendations before adopting and implementing its intent. While this position statement should not be relied upon as an independent basis for decision making it does provide a rather thorough overview of the current understanding of ankle instability management. Please go to page 3 for my review of some of the important highlights from this position statement. The complete position statement can be found in the 2013 August issue (48(4):528-45).



- continued on page 3

## Scapulothoracic Pathology continued ...

### REFERENCES

Gaskill T, Millett PJ. Snapping scapula syndrome: diagnosis and management. *J Am Acad Orthop Surg.* 2013 Apr;21(4):214-24..

Conduah AH, Baker CL 3rd, Baker CL Jr. Clinical management of scapulothoracic bursitis and the snapping scapula. *Sports Health.* 2010 Mar;2(2):147-55.

Manske RC, Reiman MP, Stovak ML. Nonoperative and operative management of snapping scapula. *Am J Sports Med.* 2004 Sep;32(6):1554-65.



In the conservative management of these patients it is important to try and identify the subtle differences between scapulothoracic crepitus and bursitis. Crepitus is usually less painful and the result of an osseous lesion or fibrous band that produces a grinding or popping sound that is amplified by the resonant nature of the thoracic cavity. On the other hand, bursitis (while possibly creating crepitus) is often visually identified by a palpable, fluctuant mass.

Treatment of subscapular pathology should include postural awareness and re-education, scapular taping or postural braces, scapular distraction and mobilization, and neuromuscular training of the axioscapular muscles. Physical agents and electrotherapeutic modalities (while possibly offering palliative value) such as thermotherapy, diathermy, ultrasound, and iontophoresis have only been recommended as an adjunctive intervention. While unstudied to my knowledge, it seems that "dry needling" any identified trigger points or palpable bands in the subscapular area may have potential value. Do not expect quick fixes as it is typical that symptoms will not resolve for up to 6 months.

Symptomatic cases which do not resolve in 6-12 months may be considered for surgical intervention. Potential operative interventions include partial scapulectomy or open versus arthroscopic bursectomies. Resection of the offending portion of the medial scapular spine is usually offered for those with painful crepitus and evidence of bony incongruities identified by imaging. Post-operative rehabilitation guidelines may require 4 weeks immobilization (in the case of an "open" approach) with active range of motion beginning at 4-8 weeks and strength training at approximately 3 months. If an arthroscopic approach is employed then immobilization is only needed for comfort with the introduction of passive to active ROM activities beginning quickly after surgery. These surgical interventions, while generally reported to be safe and effective, do have "low risk" complications such as pneumothorax, post-op hematomas, and potential injury to the dorsal scapular or long thoracic nerves.



## Question of the Month Predicting Dynamic Stability after ACL Injury

*Is there any way to predict who does not need surgery after injuring their ACL?*

References:

1. Hurd WJ, et al. *J Orthop Sports Phys Ther.*, 2008 38(2): 36-41
2. Fitzgerald GK, et al. *Phys Ther.* 2000 Feb;80(2):128-40
3. Button K, et al. *Br J Sports Med.* 2006 Oct;40(10):853-9



That is the \$64,000 question (an idiom from a late '50s game show that should probably be updated to the "million-dollar question due to inflation). Anyway, it is a question that is probably asked about ¼ million times per year by MDs, PTs, and ATCs (the estimated prevalence in the U.S. of this injury).

We've known for over 10 years of the prediction rule proposed by Fitzgerald that the following factors provide prognostic insight. If after the pre-op rehabilitation phase the patient has achieved the following criteria (and are willing to at least slightly modify the demands on their knee) they have about an 80% chance of dealing with an ACL-deficient knee if the following conditions are true.

1. > 80% on 20' unilateral timed hop test compared to uninvolved side
2. > 80% score on KOS ADL Scale

3. > 60% on Global Rating Scale
4. No more than one "giving way" episode since the original traumatic event

I think the final parameter may be the most important and can be somewhat accurately gauged by simply asking the patient if they "trust their knee"? I believe an affirmative response is suggestive of the ability to appropriately compensate and cope with the pathoanatomy.

Another insight that I believe is somewhat predictive is how rapidly the patient can normalize their gait. In a study by Button KE, et al, they found that copers and adaptors were able to normalize their gait (stride length, cadence, stance time, etc) by about 30 days. Conversely, non-copers took two months or longer.

Finally, an interesting study was published in *JOSPT* back in 2008 that looked at the influence of a variety of demographic variable's impact on dynamic stability. They found that the greatest proportion of non-copers were middle-aged women (35-44) and individuals who initially sustained a non-contact mechanism of injury.

So the short answer to your question is "no". This is a multifactorial decision that should be made jointly between the physician, patient, and rehab expert. It may go back to the simplest of concept dichotomies – does the surgeon need to modify (stabilize) the need to allow the desired lifestyle or does the patient need to modify their lifestyle (activity modifications) so as to not elevate their risk for further damage to the knee.

Questions you would like addressed in a future issue can be sent to [mulliganpt@tx.rr.com](mailto:mulliganpt@tx.rr.com)

## Reference

Kaminski TW, Hertel J, Amendola N, Docherty CL, Dolan MG, Hopkins JT, Nussbaum E, Poppy W, Richie D. National athletic trainers' association position statement: conservative management and prevention of ankle sprains in athletes. *J Athl Train.* 2013 Jul-Aug;48(4):528-45.



### "Featured Internet Link"



[www.acr.org/Quality-Safety/Appropriateness-Criteria](http://www.acr.org/Quality-Safety/Appropriateness-Criteria)

The American College of Radiology publish "appropriateness criteria" as evidence-based guidelines for physicians and other health care providers to ensure the most appropriate imaging or treatment decisions for specific clinical conditions. These recommendations provide guidelines to enhance quality of care and the efficacious utilization of imaging resources. Orthopedic clinicians may find the musculoskeletal imaging criteria of particular interest.

For each clinical variant the ACR rates the indication of all potential imaging modalities on a 9-point ordinal scale (1-9) with values of 7-9 indicating an appropriate imaging strategy, values of 4-6 suggesting possible appropriateness, and values of 1-3 suggesting that this imaging technique is usually not appropriate. Additionally, each imaging modality is also rated for its relevant radiation level as practitioners need to weigh the risk of radiation exposure against the value of the diagnostic information.

## Ankle Sprain Position Statement continued -



The position statement was broken down into categories of diagnosis, treatment and rehabilitation, return-to-play considerations, prevention, and special considerations. Each recommendation was given a letter grade according to the Strength of

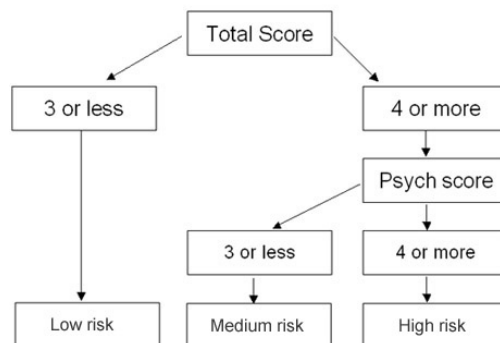
Taxonomy scale where an A represents a recommendation based on consistent and good-quality, patient oriented evidence; a B grade indicates inconsistent or limited-quality evidence, and a C represents a recommendation based on consensus, usual practice, opinion, or case study or series.

In the diagnostic area only the Ottawa Ankle Rules were designated as an "A" level recommendation. Most imaging related diagnostic tests were given level "B" recommendations while most of our subjective history and physical exam findings (including special tests) were given "C" level recommendations.

In regards to treatment – the use of ice, elevation, compression, and physical agents/electrotherapeutic modalities were categorized as "C" level recommendations. Higher level recommendations were found for functional rehabilitation as opposed to rigid immobilization for Grade I and II injuries and a recommendation for a stricter immobilization (10 days) with Grade III injuries. Balance training received an "A" level recommendation and a manual therapy intervention to improve mobility was rated at the "B" level.

As a precursor to return to play the use of functional testing and protective bracing or taping when return is allowed received level "B" recommendations. High ankle sprain diagnosis and treatment strategies were evaluated separately and received level "C" recommendations secondary to the lower level of evidence associated with the management of these distinctly unique injuries.

I highly recommend you take the time to read this document thoroughly as it does an outstanding job of detailing all of the available evidence that allows us to make intelligent choices in the management of ankle instability.



A copy of the SBST can be found at <http://www.keele.ac.uk/sbst/downloadthetool/> or in the appendix of the Fritz reference.

## STarT Back Screening Tool



With all the recent emphasis on the importance of screening for psychological risk factors associated with poor clinical outcomes in patients with chronic LBP I

was intrigued by a couple of articles from our *Physical Therapy* journal the past couple of years on a relatively new outcome measurement instrument called the STarT Back screening tool (SBST). The optimal method for screening for psychological factors has been the subject of intense debate and often relied on a variety of self-report measurement tools. These include, but are not limited to, the Fear Avoidance Belief Questionnaire, Tampa Scale of Kinesiophobia, Pain Catastrophizing Scale and a variety of "quality of life" measurement tools.

The SBST 9-item tool is available in a number of languages with questions that focus on established predictors for persistent disabling back pain. They include radiating leg pain, pain elsewhere, disability (2 items about difficulties with dressing & walking taken from the Roland and Morris Disability Questionnaire), fear (1 item from the Tampa Scale of Kinesiophobia), anxiety (1 item from the Hospital Anxiety and Depression Scale), pessimistic patient expectations (1 item from the Pain Catastrophizing Scale), and low mood, (1 item from the Hospital Anxiety and Depression Scale) and how much the patient is "bothered" by their pain. All 9-items use a Likert scale response format.

The SBST produces two scores: an overall score and a distress subscale. The distress subscale score is used to identify the high-risk subgroup. The subscale score is calculated by focusing on the fear, anxiety, catastrophizing, and depression and bothersomeness scales. Subscale scores range from 0 to 5 with patients scoring 4 or 5 being classified into the high-risk subgroup.

The overall score is used to separate the low risk patients from the medium-risk sub-group. Scores range from 0-9 and are produced by adding all positive items. Patients who achieve a score of 0-3 are classified into the low-risk subgroup and those with scores of 4-9 into the medium-risk subgroup. A couple of studies have found correlations between both pain and disability scores. It appears that this tool may be a simple screening tool that helps identify a number of modifiable prognostic factors.

### References

Beneciuk JM, et al. The STarT back screening tool and individual psychological measures: eval of prognostic capabilities for LBP clinical outcomes. *Phys Ther.* 2013 Mar;93(3):321-33.  
Fritz JM, et al. Relationship between categorization with the STarT Back Screening Tool and prognosis for people receiving PT for LBP. *Phys Ther.* 2011 May;91(5):722-32.

Previous issues are archived at  
[www.continuing-ed.cc/newsletter.htm](http://www.continuing-ed.cc/newsletter.htm)



## continuing ED

1901 Pintail Parkway  
 Euless, TX 76039

Phone: 817-488-2061  
 Fax: 817-684-7201  
 Email: [mulliganpt@tx.rr.com](mailto:mulliganpt@tx.rr.com)  
[www.continuing-ed.cc](http://www.continuing-ed.cc)

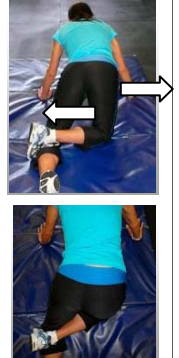
The "Clinical Conduit" newsletter is an every other month publication available to any allied health care provider free of charge upon request. Individuals who would like to be included on the email distribution list should contact the editor at [mulliganpt@tx.rr.com](mailto:mulliganpt@tx.rr.com)



## Piriformis Stretching

A traditional stretch used for the piriformis muscle is the "Figure 4" position where the uninvolved side is used to flex the hip upward. Unfortunately, this does not stretch the piriformis as effectively because of the lack of horizontal adduction inherent to the stretch. A better stretch may be accomplished in a quadruped position as pictured to the right.

To do this stretch have the patient cross their leg behind them (external rotation) in a quadruped position. The patient then shifts their entire trunk (hip and shoulders) away from the side being stretched (don't side bend the spine) while the femur moves in the opposite direction (adduction). The patient also needs to maintain their mild lordotic position during the stretch. This stretch can be done statically and or dynamically by rocking back and forth. Monitor for any signs of hip impingement (medial groin discomfort) and ensure the stretch is felt in the area of the sciatic notch.

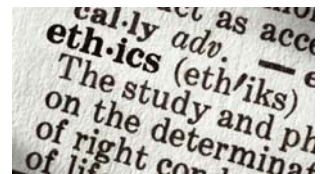


**There is no right way to do the wrong thing**

**continuing ED**



## Featured Home Study Program Ethical Decision Making



All of us have an ethical responsibility to provide patient-centered care as we manage our patients. A recent article from the *American Journal of Physical Medicine and Rehabilitation* proposed an intriguing decision-making ethics model. This model is called the Patient-Centered Care Ethics Model for Rehabilitation (PCEAM-R) and was designed to highlight concerns, considerations, and information that would be relevant to ethical issues and dilemmas that may arise during rehabilitation services. While its non-algorithmic approach does not "resolve" ethical issues it does provide a framework to carefully and systematically review critical ethical features and options to facilitate a more comprehensive, rigorous, and principled decision in rehabilitation care.

The PCEAM-R model has six steps with multiple prompts to stimulate reflection, discussion, and thoughtful deliberation among those involved in ethically-challenged situations. The six steps are 1) identification of

the issue(s); 2) collection of information; 3) review and analysis; 4) weighing of identified options; 5) making the decision; and 6) evaluation and follow-up. These steps remind me of the patient-care model in which we gather a history, perform a physical exam to collect data, evaluate our findings, design a plan of care, implement our treatment, and follow-up with self-report outcome tools.

This model encourages shared control of consultations and decisions regarding appropriate intervention and management strategies with an appreciation for the "whole" person with individual preferences and unique social contexts. If you like to read the details of each step you can find the article in the June issue of the *American Journal of Physical Medicine and Rehabilitation* and was written by Matthew R. Hunt and Carolyn Ellis from the School of Physical Therapy at McGill University in Montreal. (2013. 92(6):1-10.

We have a TPTA approved written home study that can help you with professional ethical decision-making strategies. This self-study meets your relicensure requirement and explains the rules and regulations that define our practice and professional responsibilities. This inservice can be read free of charge. A post-test for CEU credit is available at <http://www.continuing-ed.cc/homestudy.htm> for a reasonable fee.

### Home Studies Now Available

**Study and learn at your own pace at home!**

Medical Screening for the PT	.3 CEUs
Knee Osteoarthritis	.2 CEUs
Pharmacology for the PT	.2 CEUs
Radiology for the PT	.3 CEUs
Goniometry 101	.2 CEUs
Foot-Ankle Anatomy	.3 CEUs
Achilles Tendinopathy	.2 CEUs
Lateral Ankle Instability	.2 CEUs
Plantar Fasciitis	.2 CEUs
Knee Meniscal Injuries	.2 CEUs
Orthopedic Hip Injuries	.2 CEUs
Principles of Joint Mobilization	.2 CEUs
Functional Anatomy of the Shoulder	.3 CEUs
Scapular Significance: Ortho Perspective	.2 CEUs
Proximal Humerus Fracture Rehab	.2 CEUs
Subacromial Impingement Syndrome	.2 CEUs
Examination-Treatment of Hand/Wrist	.3 CEUs
<b>Ethics and Professional Responsibility</b>	<b>.2 CEUs</b>

Convenient access to web based content relevant to your practice needs. Only \$12.<sup>50</sup> per contact hour to meet your relicensure requirements.

**[www.continuing-ed.cc](http://www.continuing-ed.cc)**