

clinical conduit



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Upcoming Course Schedule

Shoulder Course

Feb 16-17 - Grapevine, TX
Apr 5-6 - Iowa City, IA

Lumbopelvic Course

Mar 1-2 - Salina, KS
Mar 15-16 - Plano, TX

Knee Course

July 12-13 - Grapevine, TX

Pilates Course

Aug 16-17 - Grapevine, TX

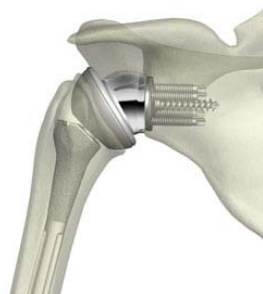
Foot-Ankle Course

Sep 27-28 - Plano, TX

Cervical Course

Nov 15-16 - Plano, TX

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



The “Reversed” Total Shoulder Arthroplasty

Rotator cuff arthropathy (arthritis in conjunction with a massive cuff tear) is a devastating condition that seriously compromises the comfort and function of the shoulder. This condition is characterized by the permanent loss of tendon function along with significant degenerative changes on the joint surfaces. These tissues cannot be restored to their normal condition and the humeral head is no longer stabilized in the glenoid fossa.

Until recently, patients with this condition had little choice other than arthrodesis. In 2004, the FDA approved the use of a Reverse or Inverse Total Shoulder Arthroplasty (rTSA) which is specifically designed for the treatment of glenohumeral (GH) arthritis when it is associated with irreparable rotator cuff damage, complex fractures as well as for a revision of a previously failed conventional Total Shoulder

Arthroplasty (TSA) in which the rotator cuff tendons are deficient.

The reversed prosthetic design provides humeral stability by reversing the usual positions of the typical ball and socket morphology. The convex (previously the humeral head) side of the joint is replaced with a shaft and concave cup while the concave side (previously the glenoid fossa) is replaced with a glenoid base plate and glenosphere.

This biomechanical orientation alters the center of rotation of the shoulder joint by moving it medially and inferiorly. This shift increases the deltoid moment arm and deltoid tension, which enhances both the torque produced by the deltoid as well as the line of pull and action of the deltoid. The enhanced mechanical advantage of the deltoid compensates for the deficient rotator cuff as the deltoid becomes the primary elevator of the shoulder joint. Ultimately, this results

in an improvement of shoulder elevation allowing the patient to raise their upper extremity into positions of basic function.

The typical patient who is a candidate for the rTSA is approaching 70 years old with a relatively low demand and functional expectation given the significant arthropathy with little rotator cuff function or shoulder motion. The patient does need good bone stock and deltoid function with active control of their limited external rotation range to expect a good outcome.

The joint replacement is usually performed through an anterior deltopectoral incision; however some surgeons prefer a superior approach to maximize the surgical field exposure. This approach requires detachment of the anterior deltoid from the clavicle and will necessitate a more conservative post-operative progression to protect the healing tissue that was detached.

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The Propensity to Practice According to the Evidence



Physical therapists are expected to practice in a manner that is consistent with the current best evidence. We can no longer justify our clinical decisions based on tradition, expert opinion, unsystematic clinical experience, or intuition. However, adopting evidence-based practice habits may require a change in our clinical behavior and/or the work environment in which we see patients. A recent study in BioMed Central evaluated the personal characteristics and workplace structure that influence the adoption of these evidence-based practice principles. This

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Reverse Total Shoulder Arthroplasty continued ...

References

http://www.orthop.washington.edu/uw/reverseshoulder/tabID_3351/ItemID_168/Articles/Default.aspx

Boudreau S, Boudreau E, Higgins LD, Wilcox RB. Rehabilitation following reverse total shoulder arthroplasty. J Orthop Sports Phys Ther. 2007; 37(12):734-43.

Matsen FA, Boileau P, Walch G, Gerber C, Bicknell RT. The reverse total shoulder arthroplasty. J Bone Joint Surg Am. 2007 Mar;89(3):660-7.



Post-Operative Rehabilitation Highlights

Precautions: Protection from dislocation is a primary concern during the early post-operative phase. The patient should be instructed to avoid extension of the shoulder past neutral for at least the first 3 months post-operatively. This is particularly true if the motion is combined with shoulder adduction and internal rotation. Activities such as tucking in a shirt behind the back or performing bathroom personal hygiene with the affected extremity should be avoided during this time. Passive acquisition of internal rotation is also avoided during the first six weeks.

Immobilization: The patient will typically be immobilized in a sling for the 4-6 weeks. This period may need to be extended a few weeks if an alternate surgical approach, poor bone stock, or the surgical repair was tenuous in nature.

Expectations: The patient should expect approximately 105-120° of elevation with additional range possible given decent external rotation function. External rotation range typically is in the 15-30° range.

Rehabilitation Progression: The rehabilitation program is limited to passive range of motion in the scapular plane for the first month. At about 4 weeks the patient can begin submaximal intensity isometrics for the deltoid and periscapular muscles. Active and active assistive range of motion exercise can be initiated at about 6 weeks with progression towards isotonic exercise at about two months.

Points of Emphasis: The focus of the muscular retraining should target the deltoid and axioscapular muscles. This can be accomplished with manual facilitation, biofeedback, and/or properly dosed exercise. Given the nature of the condition and the expectations of the typical patient it would be unusual for the progressive resistance exercises to exceed 3-5 pounds.



I have a 13 year old patient with chronic anterior instability. The patient has already dislocated it three times. I'm looking for a shoulder functional brace that may help stabilize. The patient is a competitive basketball player.

T.R., PT - TX

Question of the Month

Tough case. As I'm sure you know the likelihood for recurrence in a young, active, overhead athlete is extremely high (50-90% depending on who you read). I've had some success with bracing and there is a variety of products on the market ranging from \$60 to well over \$200.

For contact athletes or those who do not have overhead requirements I like devices that tether the arm to the side like a Duke-Wyre Vest or Breg's Shoulder Stabilizer.



Breg Shoulder Stabilizer

Duke-Wyre Vest

For overhead athletes I would recommend some type of dynamic



system (adjustable straps) like the "Sully" Shoulder Stabilizer or the Cadlow Shoulder Stabilizer.



A very good device that fits nicely under football pads and allows some overhead function is the SAWA shoulder brace.



SAWA under pads

It is important to note that no brace offers immunity from re-dislocation. In fact, studies have shown that motion limitation pre-sets should be set at about 45° to ensure avoidance of provocative positions.¹

There are also relatively inexpensive shoulder wraps like the Universal Shoulder Support by McDavid that may not provide any static or dynamic restraint but simply offer good proprioceptive feedback.



Here are some web sites that have information about these braces.

- www.bracesupport.com
- www.breg.com
- www.dmsystems.com
- www.alertservices.com
- www.medco-athletics.com
- www.supports4less.com
- www.mcdavidusa.com

1 – Wesie K, et al. Effectiveness of GHJ stability braces in limiting passive ROM in collegiate football players. J Athl Training. 2004; 39(2):151-55.

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

References

Bridges PH, et al. The propensity to adopt evidence-based practice among physical therapists. *BMC Health Serv Res.* 2007 Jul 5;7:103



"Featured Internet Link"



<http://scholar.google.com>

I'm sure all of you have used "Google" to perform an internet search on a clinical topic and been frustrated by the many irrelevant or unscientific responses. Did you know that Google has a search engine dedicated to scholarly work? It is called Google Scholar and provides a simple way to broadly search for scholarly literature. From one place, you can search across many disciplines and sources such as peer-reviewed papers, theses, books, abstracts and articles, from academic publishers, professional societies, preprint repositories, universities and other scholarly organizations. Google Scholar helps you identify the most relevant research across the world of scholarly research and uses some of the same type of search limitations that PubMed makes available such as author, publication dates, publication sources, and search term strategies by clicking on the advanced search link. Google Scholar aims to sort articles the way researchers do, weighing the full text of each article, the author, the publication in which the article appears, and how often the piece has been cited in other scholarly literature. The most relevant results will always appear on the first page. While Google Scholar does not replace PubMed it is a nice site for quick searches while seeing a patient in the clinic.



Propensity for Evidence-Based Practice

continued -

study was conducted via self-report surveys. Nearly 1000 questionnaires were returned for a response rate of over 70%. The personal characteristics that showed a moderate association to practice according to the evidence were a **desire for learning** ($r = .36, r^2 = .13$), **higher degree of education** ($r = .29, r^2 = .08$), **practicality** ($r = .27, r^2 = .07$), and **non-conformity** ($r = .24, r^2 = .06$). In the context of this study practicality was defined as the self-opinion of the respondent that evidence-based guidelines and scientific studies could be used to make clinical decisions in a day-to-day practice without interfering with the productivity or the smooth and orderly flow of patient care. The personal characteristic of non-conformity was defined as the therapist who viewed themselves as one who was willing to practice out of step with popular opinion or in conflict with traditional recommendations.

A negative correlation to adopt evidence-based practice into every day practice was found between increasing age, increasing number of years in practice, and a smaller percentage of time spent in direct patient care. Most of the work place social characteristics had a relatively small influence on the propensity for daily utilization of the evidence. Things like empowerment, leadership, team learning, and dialogue/inquiry did not contribute to the variance in practice habit amongst the practitioners that were surveyed.

The best three-variable model that correlated with the likelihood of evidence based practice was the "practical" clinician who had an advanced degree and great desire for continued learning. The combination of these three findings explained 23% of the variance in the propensity to routinely use evidence-based practice patterns.

Finally, another study showed a weak association between our trust in a treatment and the evidence to support its use (Johansson K, et al, *Br J Gen Pract*; 2002). This particular study looked at the interventions commonly used for subacromial impingement syndrome and found very little congruence between the frequency of utilization with the level of scientific evidence that would support its efficacy. For me, the take home message from these two studies is that we must make our day-to-day experiences "continuing education events". Each decision we make should have its foundation in the evidence-based resources that are readily available through common internet search strategies.



Medicare Changes for 2008

Medicare patients received relief from arbitrary caps on rehabilitation services under legislation signed last month by President Bush. The American Physical Therapy Association (APTA) applauded the President and Congress for postponing inflexible financial limits (therapy caps without exceptions) on rehab services and for reversing Medicare cuts for health professionals that were slated to begin this year. *The Medicare, Medicaid, and SCHIP Extension Act of 2007* (S 2499), through June 30, 2008, extends the current therapy cap exceptions process and provides a Medicare pay raise in place of the scheduled reductions.

Without this action, arbitrary financial limits on rehabilitative care would have continued beyond 2007, only now without exceptions for medically necessary treatments. Without these exceptions, the caps would limit Medicare coverage to \$1,810 for physical therapy and speech-language pathology combined and \$1,810 for occupational therapy services. The therapy caps originally were adopted by Congress in the Balanced Budget Act of 1997. This legislation also prevents the scheduled reduction in payments to health care providers under the Medicare physician fee schedule's "sustainable growth rate." Health care professionals would have faced a 10.1% cut to the conversion factor, which determines Medicare payments. Instead, the new law authorizes a 0.5% rate increase through June 30, 2008. It also contains a variety of other provisions, including an 18-month extension of the State Children's Health Insurance Program (SCHIP).

Although permanently repealing the therapy caps is the best long-term solution (IMO), this legislation will ensure seniors and disabled Americans are not forced to pay out-of-pocket expenses or alter their course of care. Combined with cuts in fee schedule payments, both patients and the physical therapy profession would have faced unprecedented challenges. The APTA looks forward to working with Congress to completely repeal the caps – eliminating this threat once and for all.

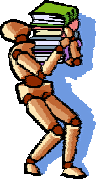
You can help by contacting your Congressional representatives and asking for their support on the Medicare Access to Rehabilitation Services Act (Bill S 450 /HR 748) which provides the best long term solution with a complete repeal of the therapy cap. You can also raise awareness by sending advocacy letters to your local media and asking your Medicare patients to contact their federal representatives as well. The APTA's advocacy page has some excellent resources to generate these letters at the legislative action center (www.apta.org/advocacy). This is an effective way of raising awareness of critical issues at the grassroots level, especially if the letters are personalized and applicable to the concerns of the representative's constituents.

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The only real mistake is the one from which we learn nothing


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Happy New Year!

Home Studies Now Available

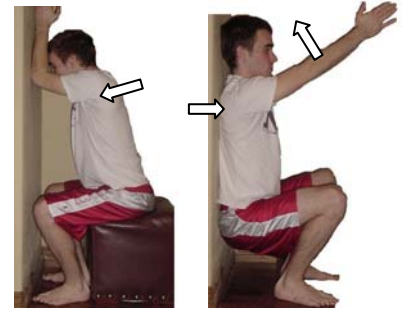
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Achilles Tendinopathy	.2 CEUs
Lateral Ankle Instability	.2 CEUs
Plantar Fasciitis	.2 CEUs
Knee Meniscal Injuries	.2 CEUs
Orthopedic Hip Injuries	.2 CEUs
Principles of Joint Mobilization	.2 CEUs
Functional Anatomy of the Shoulder	.3 CEUs
Scapular Significance: Ortho Perspective	.2 CEUs
Proximal Humerus Fracture Rehab	.2 CEUs
Subacromial Impingement Syndrome	.2 CEUs
Examination-Treatment of Hand/Wrist	.3 CEUs
Ethics and Professional Responsibility	.2 CEUs

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Thoracic Extension Stretching

Upper thoracic extension is required to accommodate the terminal range of shoulder flexion. Changes in upper thoracic posture and mobility can contribute to Subacromial pathology due to the effect on scapula and glenohumeral mechanics. Here are a few passive, active assistive, and active thoracic extension exercises that will help improve thoracic mobility in conjunction with your manual therapy techniques applied during the clinical visit.



Rehabilitation Exercise Technique



Featured Home Study Program Subacromial Impingement Syndrome

Postural abnormalities and muscle imbalance are thought to contribute to the pain and a loss of normal function in shoulder impingement syndrome. A shortened pectoralis minor muscle is commonly identified as part of this imbalance. A number of studies have shown that a tight pectoralis minor lowers the coracoacromial hood and decreases the clearance for soft tissue structures during elevation as the scapula cannot adequately tilt in a posterior direction. A recent study in *BioMed Central Musculoskeletal Disorders* evaluated the diagnostic accuracy and intratester reliability of a simple linear measurement technique commonly used to evaluate pectoralis minor muscle length.



The intraclass correlation coefficients for the measurement technique ranged from .92 to .96 indicating excellent reliability (repeatability). The standard error of measurement was approximately .5 cm with a typical value of approximately 6 cm representing the mean distance measured in the subjects. The diagnostic accuracy to identify shoulder pathology using an asymmetry of more than 2.6 cm (approximately 1") as the gold standard had very high sensitivity but very poor specificity.

If you're interested in learning more about the current best evidence in the evaluation and management of shoulder impingement syndrome you may want to look at one of our newer on-line home studies entitled "Subacromial Impingement Syndrome. This inservice can be viewed or read 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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