Letter from the ISLAND

Islanders

A Monthly Newsletter for All Preceptors

Texas A&M University-Corpus Christi

Athletic Training Program

Volume 27, April 2014

April Events/Due Dates

Save the Dates!:

April 4 — All ATS: **March Hour Log Deadline** by 5pm
(Must be submitted via E*Value and verified by the Preceptors)

April 4 — AT Program Student Workshop "Nature is Calling?" by Sy Hiraishi 3-4pm

Evidence Based Practice (EBP), Disablement Models, and Outcomes Assessment—Part II

In last month's edition, the concepts of EBP, Disablement Models, and Outcomes were discussed. As you may recall, clinical outcomes assessment is a study of the "end result of healthcare services that take patient's experiences, preferences, and values into account."[1] The concept of ensuring that what we do as a professional is actually helping the patient embodies EBP and patient-centered healthcare. The Nagi and the NCMRR disablement models have been proposed as a new framework of classifying injuries & conditions. Both using disablement models and outcomes assessments are critical to ensuring that clinical interventions are actually helping the patient.

Clinical outcomes are typically classified as either clinician-based outcomes or patient-based outcomes.[1] Clinician-based measures include a variety of assessments that are preformed from the perspective of the clinician such as assessment of range of motion, muscle strength, swelling, etc. It is common for AT clinicians to measure these overtime to see if improvements have been made. Related to the disablement models, "clinician-outcomes have been labeled as 'objective' and often target impairments"[1] (**Table 1**). Although these measures tell us how impairments are improving, they do very little to tell the clinician how the patient's function is improving or how the patient is becoming less disabled in the social context. Because the objective measures seen by the clinician often do not correlate or represent what is most important to the patient, it is "necessary to complement clinician-based outcome measures with patient-based measures in order to assess the true effectiveness of healthcare interventions and patient satisfaction."[1] Patient-based outcomes are obtained from the patient by self-report surveys or questionnaires.[2] These survey instruments are aimed at gaining invaluable information related to functional ability, symptoms, health status, health-related quality of life (HRQOL), results of specific interventions, and overall patient satisfaction.[1] It is important that clinician's choose patient-centered surveys and scales which are valid, reliable, and pertain to the condition of interest.[1] **Table 2** lists some examples of region specific self-report scales that may be useful for some of your current patient cases. Optimally, we should strive to utilize both clinician-based outcomes as well as reliable and valid patient-based outcomes to ensure we are truly helping out patients by providing patient-centered healthcare. Moreover, as the profession of AT strives for reimbursement from insurance companies, this will be a critical element to show that what we do is working for our patients, and helps in cost effectiveness.

By Mary Williams, MA, ATC, LAT For more info, see the article and the link!

Table 2. Examples of Region Specific Self-Report Scales

Region/Condition	Scale
Region	
Upper Extremity	Disabilities of the Arm, Shoulder, and Hand (DASH)[49] Upper Extremity Function Scale[60] Shoulder Pain and Disability Index (SPADI)[61]
Lower Extremity	AAOS Sports Knee Scale[62] Lower Extremity Functional Scale[42,50] Foot and Ankle Outcome Score[63]
Spine	Oswestry Low Back Pain Disability Questionnaire[51] Roland Morris Disability Questionnaire[64] Quebec Back Pain Disability Scale[65]
Disease/Condition	
Asthma	Asthma Quality of Life Scale[66] Asthma Control Test (ACT)[67,68]
Arthritis	Arthritis Impact Measurement Scale[69] Knee Injury and Osteoarthritis Outcome Score (KOOS)[70]
Shoulder Instability	Western Ontario Shoulder Instability Questionnaire (WOSI)[71]
Headache	Headache Impact Test (HIT-6)[72,73] Migraine Specific Quality of Life (MSQOL)[74-76]
Pain	Numerical Pain Rating Scale[77] Faces Pain Scale[78] McGill Pain Questionnaire[79]

Table 1: General Classification and Definitions of Disablement Models

General Classification	Definition	Example	Specific Model Domains
Origin	The illness/pathology giving rise to disability	Fx humerus, muscle strain, concussion	Nagi[a]: Pathology NCMRR[b]: Pathophysiology NCMRR[c]: Pathophysiology ICF[d]: Health Condition
Organ Level	Organ or body system level of impairment arising from the illness/pathology	Muscle weakness, swelling, decreased ROM	Nagi[a]: Impairment NCMRR[b]: Impairment NCMRR[c]: Organ Dysfunction ICF[d]: Body Structure & Function
Person Level	Limitations in performance at the level of the whole person	Inability to throw a baseball, inability to walk w/o crutches	Nagi[a]: Functional Limitations NCMRR[b]: Functional Limitations NCMRR[c]: Task Performance ICF[d]: Activity
Societal Level	Limitations in normally assumed/desired social and personal roles	Inability to play football, inability to run with friends	Nagi[a]: Disability NCMRR[b]: Disability NCMRR[c]: Roles ICF[d]: Participation
Other Domains	Additional factors that may impact a person's level of disability	Loss of scholarship (societal limitation), Age or education (personal factors)	Nagi[a]: None NCMRR[b]: Societal Limitations NCMRR[c]: None ICF[d]: Environmental & Personal Factors

1. Snyder AR, Valovich McLeod TC, Sauers, EL. (2007). Defining, valuing, and teaching clinical outcomes assessment in professional and post-professional athletic training education programs. *Athl Train Education J.* 2(Apr-Jun),31-41
2. Synder AR, et al. (2008). Using disablement models and clinical outcomes assessment to enable evidence-based athletic training practice, part I: disablement models. *J Athl Train.*43(4),428-436

What's Going on in Classroom

KINE 2192 Clinical II: Emergency Care, Equipment Fitting and Removing, UE Taping
KINE 3192 Clinical IV: Hip, Pelvis, Thigh, L-Spine & Low Back Evaluations
KINE 4192 Clinical VI: Elbow, Wrist, Hand, Low Back, Hop, Knee & Thigh Therapeutic Interventions
KINE 4194 Clinical VIII: Professional Communication, Facility Design Project and EAP Development, Values of Service and Return on Investment

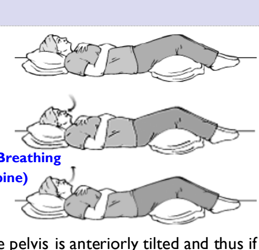

Figure 1: Diaphragmatic Breathing (Supine)

Let's Blow Up A Balloon! The Importance of the Diaphragm

Our therapeutic intervention to an orthopedic injury is becoming more and more holistic. When we see hamstring tightness, for example, we no longer just stretch hamstring: We check for the patient's pelvic alignment to see if the pelvis is anteriorly tilted and thus if the altered reciprocal inhibition and synergistic dominance are present, and the activation of gluteus maximus follows as well as neurologically inhibiting the iliopsoas—it's exciting that these holistic approaches are becoming our standard of care.

Why do we stop there? Let me add an interesting fact—Hruska[1] dissected 17 cadavers and found **the diaphragm** to be inseparable from the psoas major, indicating that human breathing has direct effects on the pelvic alignment and vice versa. The diaphragm is known as the primary respiratory muscle, but also works secondarily as a postural muscle, providing stability to the thoracic/lumbar spine.[2] If a hip flexor becomes overactive, it will also create tension over the diaphragm since they are virtually connected. Chronically tightness of the diaphragm will increase its postural functions but decrease the respiratory functions because it will lose its elasticity and ability to freely contract & relax. As the result, the accessory respiratory muscles such as scalenes/SCM/upper trap will be overused, making the person "a chest/shoulder breather."[3] Constant activation of those accessory muscles can further lead to upper crossed syndrome, forward neck posture,[4] scapular dyskinesis[5]...well, you get the picture...the whole kinetic chain will be affected!

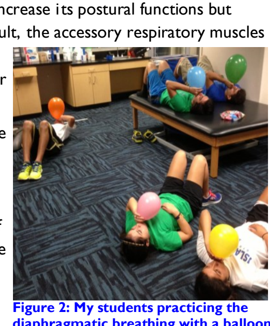

Figure 2: My students practicing the diaphragmatic breathing with a balloon

So how can we learn how to use the diaphragm fully as a respiratory muscle? Just like everything else, we must **train** it. While simply having the patient lying down and breathing quietly is a great way to start (**Figure 1**), you can also utilize **a balloon**—which will be an excellent tool, it will give you visual feedback and resistance[6] (**Figure 2**)! Here are simple steps: 1) Hold the balloon with your left hand; 2) Take a breath in through the nose, slowly exhale through your mouth and blow up the balloon as much as you can; 3) Hold your breath at the end of the exhalation for 3 seconds, while lightly pinching the balloon with your lips (Don't use your teeth) and the tongue resting against the roof of the mouth; 4) Take another breath in through the nose, and repeat 3 more times; 5) Release the air and repeat 3 more sets.

By Sy Hiraishi, MS, ATC, LAT, PRT

For more info, see the links or come to SPATS in June 6-8! I will have 45-min presentation about this topic!

1. Hruska RJ. Influences of dysfunctional respiratory mechanics on orofacial pain. Dent Clin North Am. 1997;41(2): 211-227.
2. Hodges PW, et al. Contraction of the human diaphragm during rapid postural adjustments. J Physiol. 1997;505(2):539-548.
3. Keyon CM, et al. Rib cage mechanics during quiet breathing and exercise in humans. J Appl Physiol. 1997 Oct;83(4):1242-55.
4. Moore MK. Upper crossed syndrome and its relantionship to cervicogenic headache. J Man Physiol Ther. 2004;27(6): 414-420.
5. Kibler WB, Uhl TL, Maddux JW, et al. Qualitative clinical evaluation of scapular dysfunction: a reliability study. J Shoulder Elbow Surg. 2002;11:550-6.
6. Boyle K, et al. The Value of Blowing Up a Balloon. N Am J Sports. 2010;5(3):179-188.