



Happy Holidays!



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Your 1st Choice!

***Physical & Occupational Therapy
Movement Training Specialist***

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Physical & Occupational Therapy News

You don't have to live with repeated injury and pain.

Make a difference in your health for life!



EXPAND Your Upper Chest; Save Your Shoulders

Resting Position Variables at the Shoulder: Evidence to Support a Posture-Impairment Association (Borstad, J.D, 2006). This study explored relationships among posture, pectoralis minor muscle length and movement alterations of the shoulder while in a seated position. 50 people between 18 and 40 years of age who were not having shoulder problems or pain were involved in this study. They were divided up into two groups based on pectoralis minor

muscle resting length, range across upper chest and front of shoulder. One group consisted of individuals with more optimal range and the other less range. Borstad found significant group differences with the distance from the sternal notch (top of sternum) to the coracoid process (front of scapula/front shoulder region) showing the highest correlation with shortened pectoralis minor muscle length. In other words, a seated resting posture in which shoulders are rotated or rounded forward and elevated.

This structural position of the shoulders does not in and of itself cause shoulder pain or dysfunction but is a “set up” for injury. Kinematics of the shoulder for efficient function dictate the scapula needs to move downward in a rotational pattern and move back to provide optimal stability for the arms while at rest and during function. In particular, the scapulas ability to stabilize in its “downward and toward spine” pattern allows for clearance of soft tissues around the shoulder joint when reaching out and overhead. Tightness across the upper chest and front of shoulders due to pectoralis minor muscle shortening directly compromises this important function of scapular movement . Over time, injury such as soft tissue impingement or joint space wear & tear will result along with stress to soft tissues. It is the repeated movement on poor structure along with force and time that brings on varied degrees of injury.

To summarize, we all spend time in seated positions and catch ourselves in the forward head and rounded shoulder posture, some more than others. Daily scapular stabilization and simple range of motion activity can be done in 30 seconds while seated. Other activity can be learned for your workout or daily home program. It is essential to see a qualified professional to work with you in finding the appropriate injury preventive activities that fit into your lifestyle.



Walking for Exercise is not the same as walking in a rush to get to the office, bus, or other hurried tasks.

There are many ways to exercise but one of the most valuable and easily obtainable exercises is walking. This article is about the difference in walking for whole body fitness versus hurried walking. Taking a moment to slow down and get aware of your stride can make a difference in the muscles you strengthen in your walk and your overall balance and stability. It can make a significant difference in charting your overall health & fitness course as you age. Studies of elderly individuals with a history of falls (fallers) compared with elderly who do not have a history of falls (nonfallers) provides us with key information about gait inefficiency and balance.

A recent study (Barak, Wagenaar, Holt) confirmed what some earlier studies have shown; non-fallers exhibit greater variability in their walk, greater weight shifts over their standing leg with more time in a balanced position over their standing leg. This activates the gluteus medius muscle for hip stability during walking thus strengthening hip stability. It also prolongs the time of the other leg moving forward providing an opportunity for the standing leg to coordinate hip extension with ankle movement to push off. The fallers have been shown to have short, quick strides, minimal hip extension or minimal use of their gluteal muscles with poor ankle movement. They tend to be in a state of hip flexion overall limiting their ability to vary their gate.

Slowing your walk and prolonging your time on your stance leg is an excellent opportunity to strengthen your gluteal muscles and to actually lengthen your hip flexors after prolonged seated work. Prolonged stance phase in your walk automatically increase the activity in your ankle. This is important for balance and for activating your lower leg circulation.

Contact Peter & Karen at Catalyst Therapies if you would like to learn how to achieve therapeutic and pain-free walking.

Barak,Y, Wagenaar RC, Holt K, *Gait characteristics of elderly people with a history of falls: a dynamic approach*, Physical Therapy, 2006; 86:1501-1510.

Good Read

**Chronic Pain: “Is it all in My Head?”
Yes, it is all in your head, and it’s also very real!**

Because pain is how your brain perceives a threat to your body; all pain is actually “in your head”. Often, in the health care professions, we encounter patients whose pain symptoms seem to be out of proportion with our objective findings. By the same token, many people with what would seem to be significant findings such as degenerative joint disease or herniated discs may have very little pain.

An excellent resource about pain is the book *Explain Pain*, written by two Australian physiotherapists, David Butler M. App.Sc. and Lorimer Moseley PhD. It is written in a humorous, entertaining style, taking the reader through the physiologic and neurological aspects of pain experiences. It does this in a manner which is helpful and understandable for health professionals and for lay people. The book is intended for people who experience chronic pain. Their belief is that if a person understands how their pain is perpetuated, he or she will understand that their body is not necessarily in danger, so they will be more able to control and lessen their pain.

In their book they give many colorful examples of “Amazing Pain Stories”. For example, a World War II veteran had a routine x-ray done, and a bullet was found lodged in his neck. Because he did not “feel it”, he had no idea it had been there for years and did not have pain. By contrast, a minor paper cut with little tissue damage can hurt severely due to repeated irritation to the surface tissues.

They explain the various pain receptor cells in our tissues and how the nerve impulses can be inhibited or amplified in the spinal cord. When there is tissue damage, pain receptors are activated. When the signal from the pain receptors is strong enough, the pain neurons send a signal to the dorsal root ganglion at the spinal cord.

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About Us



We are a healthcare company dedicated to providing excellence in services directly to you at a price you can afford.

Certified Functional Manual Therapy Techniques

Orthopedic & Neuromuscular Physical Therapy

Back, Neck & Shoulder Pain

Joint & Muscular Dysfunction

Repetitive Injuries

Work, Auto, Sports & Leisure related injuries

Injury Prevention

Sole Supports Foot Orthotics

dress, casual, sport

Running Well™ Seminars

Injury Prevention & Joint Health

Running Form with Videotaped Analysis

Visuals & Videotaped Analysis

movement education

postural analysis & training

Neuro-rehab & Interactive Metronome

TBI, post concussion, whiplash, stroke

Sustained Mental Focus & Motor Accuracy

When the synapses at the spinal cord are strong enough the "danger message" is sent to the brain. The message will then be processed by the brain. If the brain concludes (usually subconsciously) that you are in danger, you will experience pain. The brain may then activate processes in the sympathetic nervous system, the motor system, the endocrine or immune systems.

The authors give the analogy of a symphony orchestra. Ideally, an orchestra should be able to play many different tunes and different styles of music. If the orchestra only plays one tune ("the pain tune") over and over, it will get really good at playing that one tune. It would have difficulty playing any other tune. Members of the orchestra who aren't involved much in that tune would lose their skills and be less able to learn or relearn different songs or types of music. Our nervous systems are not much different. If we learn to experience pain, and our brain believes we're in danger, we will get really good at experiencing pain.

It is the long-term activation of "the pain tune" that re-wires brain perception of pain from specific identifiable body parts to regions of combined body parts making localization of pain more difficult. In *Explain Pain*, the authors state all of the parts of our bodies are represented in the sensory area of our brains called the sensory *homunculus*. If an individual experiences long-term pain in a certain part, the area of the brain that represents that part will become larger. That area will also become more diffuse. Therefore a chronic pain patient may be less likely to be able to point to an exact point where his or her pain is.

A pain response is more likely to stick when greater meaning is applied. This is the meaning to the event that produced the pain response from the central nervous system (brain). Identification of the meaning and an individual's response pattern to events in their life is frequently the best first step in weakening the pain pattern. Response patterns may occur daily below the radar of an individual's awareness. Most of us have had a friend or coworker comment we appear stressed, concerned, or tense when we are completely unaware ourselves.

We recommend *Explain Pain* for individuals experiencing unexplained or chronic pain. Self awareness and understanding will begin the process of regaining control of your body's needs to nurture healthy responses. We are not machines or computers with simple input and output functions. All of our experiences and stimuli get "tagged" with emotional content some more memorable than others. When we are aware of these emotional tags we can begin to change the tag to lessen the meaning placed on an event thus weakening the pain response. A weaker signal to the brain will begin to rewire the brain to a different response, one which is more identifiable and manageable.

Butler, D, & Moseley L. (2003) *Explain Pain*, Adelaide, Australia: Noigroup Publications, distributed by OPTP (800) 367-7393.



Results of a recent pilot study using the *Interactive Metronome*© www.InteractiveMetronome.com

At Catalyst Therapies, we use the IM program because it creates measurable results. The program brings about brain processing speed in the areas of motor skills combined with auditory and visual stimuli. This is necessary for sustained attention through both auditory and visual means. Functional measures in academics of math, reading and comprehension reflect changes in auditory awareness and active attention. This is necessary for working memory and sustained time on task supporting academics. The measures reflect an individual's ability to be "on task" for greater duration and initiate tasks in a timely manner. Children perform better, feel better about themselves and feel smarter. All of these qualities support their self confidence and worth. Feeling better about themselves alone can result in improvement in their mood and attention skills.

In Anaheim, CA, eighty 4th & 5th grade students performing 2.5 years below grade level in reading participated in this study. Forty of the children participated in Interactive Metronome sessions at their school and the other forty participated in regular remedial classes. Both groups were pre- and post-tested with reading and math fluency subtests of the Woodcock Johnson III standardized test and the STAR reading assessment. The author stated, "These students struggled with reading & math fluency and are likely the children who will "shut down" to avoid subjecting themselves to peer "jeers" that go with being seen as "slow". IM training consisted of 3 to 4 one-hour sessions per week for 3 to 4 weeks for a total of 12 sessions.

Post 4 weeks intervention Results:

Reading Post-tests for the IM group showed improvement of 1.71 grade equivalency while the control group showed a slight decline or stayed relatively the same.

Mathematics post-tests for the IM group showed improvement of 1.29 grade equivalency while the control group stayed relatively the same.

The IM participants continue to work on the reading and math assignments but in addition, they participate in the program, each session being about one hour long. During that time, they are re-training their brain function in the areas of processing speed of visual and motor skills along with attention to & discrimination of auditory information. The auditory stimuli re-alerts the central nervous system to attend and to modify movements on a millisecond level.

Because of results such as these, IM will continue to be a part of the multi-modal treatment options offered at Catalyst Therapies.

Catalyst Therapies, LLC

2727 Bryant St, 540 Denver, CO 80211

Physical & Occupational Therapy

Movement Training Specialists

Affordable Evaluation & Treatment Services



Your 1st Choice!
Physical & Occupational
Therapy



Catalyst Therapies has a new team member!

Please welcome Dave Briggs when you call in to the office.



We are very excited to have him on the team. As you all know we are therapists and best at treating the body. Dave brings a whole new level of energy and creativity as our assistant front office manager. Watch for changes around the office because of Dave's innovative ideas!

2007 Schedule for *Running Well™ Seminars by Catalyst Therapies, LLC.

Practice drills and video-taped analysis for running form, movement efficiency, and injury prevention!

Great preparation for early season events in 2007 or for overall wellness and health!

2 opportunities to sign up for a Six- Week Program: Tuesday Evenings, 6pm, 90 minute sessions.

April 4th through May 9th, 2007 OR May 16th through June 20th, 2007.

Great preparation for a fall marathon!

Weekend Running Well™ Seminars. 8 am till 12 or 1pm on Saturday and Sunday.

An intense and condensed version of the 6-wk program for individuals who would like the benefit of a small group but don't have the weekly space in their schedules.

To be scheduled. Check our web site, Rocky Mountain Sports, or call to find out the dates. Dates will be announced in our January newsletter.

Individual Running Well™ Training Sessions available any time by appointment.

Call or email to schedule.

*A portion of each participants registration fee is donated to the charity, Colorado Youth at Risk

For more information contact Karen or Peter at 303-458-9660

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