

Empower Your Patients with Active Care

The Standard of Excellence

Morgan P. Mullican, D.C., DACBN, C.C.N.

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Dr. Vladimir Janda: The Crossed Syndromes

- Combined therapy and medicine in a hands on approach—a pioneer in the practice of physical medicine and rehabilitation.
- Published more than 16 books and 200 papers.
- Defined crossed syndromes in 1979.
- Emphasized that the sensorimotor system, composed of sensory system and motor system, could not be functionally divided.
- He emphasized the importance of proper proprioception.

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Neurodevelopmental Locomotor Patterns

- **Tonic Muscle System:** prone towards tightness.
- **Phasic Muscle System:** prone towards weakness.
- Work together synchronously through co-activation for posture, gait and coordinated movement.

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Janda's Muscle Imbalance Syndromes

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Dynamic Functional Assessment

Establishing Medical Necessity by Setting Your Criteria for Care

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Functional Capacities Evaluation


- **Alaranta:** 4 tests are safe, inexpensive, time efficient, reliable, and comparable to normative databases.
- **Sorensen's Static Trunk Extensor Endurance** has been shown to predict recurrence rates of low back pain in asymptomatic individuals.

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BREAKTHROUGH COACHING What to Perform

- Repeat positive tests from last exam
- Repeat Outcome Assessment Tools
- Perform functional tests
- Perform test related to ADL (activities of daily living)
- Write new treatment goals




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BREAKTHROUGH COACHING When to Perform Functional Tests

- As soon as the patient is out of the acute pain phase of care; when the goal of care transitions from pain relief to functional restoration.
- Retest at each re-eval and update care plan.
- Include a battery of tests, which are safe, inexpensive, time efficient, reliable, and comparable to normative databases.




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BREAKTHROUGH COACHING Doctor & Patient Motivation

- Functional tests identify the patient's "weak link".
- If a patient is less than 85% of normal for any specific test, then rehab training is required.
- These tests provide unmistakable evidence that the patient's condition may be due to factors in the patient's and not the doctor's control.

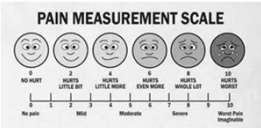


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BREAKTHROUGH COACHING When to Perform Functional Capacities Evaluation

- When should a physical capacity evaluation be performed?
- As soon as the patient is out of acute pain.
- This is when the goal of care transitions from **pain relief to functional restoration** and these tests are important for establishing clear goals.



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BREAKTHROUGH COACHING Functional Capacities Evaluation Guidelines

- Patient warm-up for 5 minutes prior to beginning testing (bicycle/ergometer).
- Tests are retested in the same order.
- 1-minute interval between each test.
- Tester may count repetitions aloud but should remain as neutral as possible.
- Test terminated if patient told more than one time to correct trunk motion.
- Patient informed about possible mild muscle pain during the days following the test.

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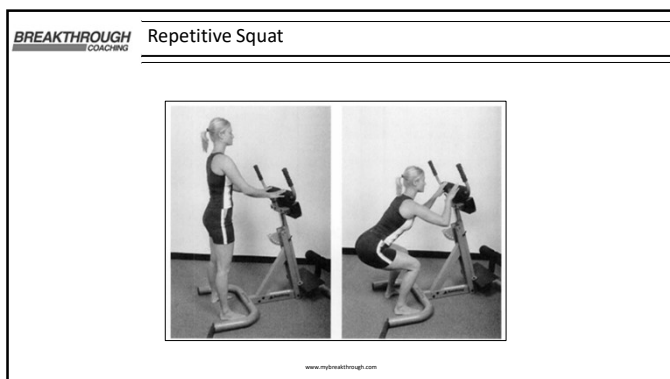
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BREAKTHROUGH COACHING Repetitive Squat

- Patient Position: The patient stands with feet shoulder-width apart.
- Technique: The patient squats until thighs are horizontal and returns to upright position. Each repetition rate is 1-3 seconds. Repeat to maximum.
- Observe: Count number of repetitions (max. 50).
- The normative data for dynamic squatting endurance is segregated by age, sex and occupation.

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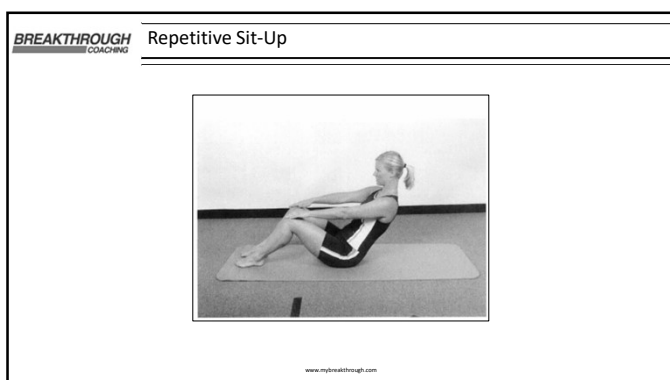
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BREAKTHROUGH COACHING Repetitive Sit-Up

- Patient position: The patient is supine, knees flexed 90 and ankles fixed.
- Technique: Patient sits up until touching the thenar-hand to patella, and curls back down to the supine position.
- Observe: Count number of repetitions (max. 50).
- The normative data for dynamic trunk flexor endurance segregated by age, sex and occupation.

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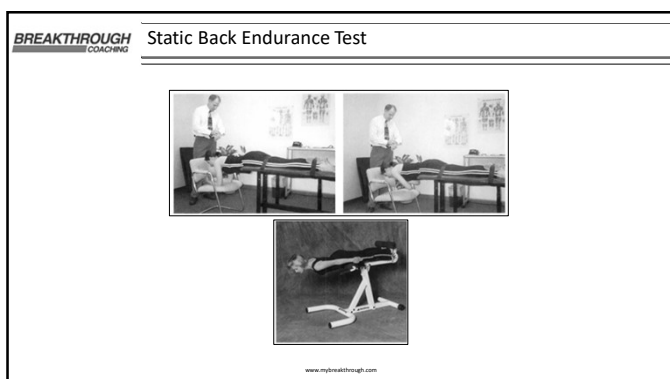
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BREAKTHROUGH COACHING Static Back Endurance Test

- Examiner Position: The doctor is at the side of the table holding the patient's ankles (strap is ideal). Alternatively, a Roman chair can be used.
- Patient position: The patient is prone with the inguinal region at the end of the table; arms at sides, ankles fixed and holding horizontal position.
- Technique: The patient maintains the horizontal position as long as possible.
- Observe: Time the duration the position can be held (max. 240 seconds).

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BREAKTHROUGH COACHING

Flexor : Extensor Ratio Testing

The Keys to Patient Retention

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BREAKTHROUGH COACHING Recurrence & Chronicity

- If the flexors and extensors are not in the proper ratio and a patient is given exercises to strengthen both the flexors and extensors in equal proportion, the exercise will reinforce this dysfunction.
- The literature states that a patient with a reversal of the normal Flexor: Extensor Ratio has a much greater likelihood of recurrence and chronicity.
- For this reason, the Flexor: Extensor Ratio must be addressed prior to exercise.

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BREAKTHROUGH COACHING The Flexor: Extensor Ratio


- The extensors muscles of the lower back should be approximately 30% stronger than the flexors.
 - This ratio is 1 to 1.3.
- The extensors muscles of the neck should be approximately 60% stronger than the flexors.
 - This ratio is 1 to 1.4
- This is called the Flexor/Extensor Ratio.

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BREAKTHROUGH COACHING The Flexor: Extensor Ratio

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BREAKTHROUGH COACHING Normative Data

- The extensors muscles of the **lower back** should be approximately **30%** stronger than the flexors.
 - Triano JJ, Schultz AB. Correlation of objective measure of trunk motion and muscle function with low-back disability ratings. Spine 1987;12:561-565.
- The extensors muscles of the **neck** should be approximately **40%** stronger than the flexors.
 - Vernon HT, Acker L, et al JMPT 15(6) 1992.

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BREAKTHROUGH COACHING Strong Predictor of Recurrence

- Decreased endurance of the trunk extensors has not only been shown to correlate with pain, but to predict **recurrences** and first-time onset in healthy individuals.
- This evidence is **extremely strong** because it is prospective and thus the findings are not merely correlated by association, but by etiology.
- Biering-Sorensen F. Physical measurements as risk indicators for low-back trouble over a one-year period. Spine 1984;9:106-119.
- Luuto S, Heliovaara M, Hurri H, Alaranta H. Static back endurance and the risk of low-back pain. Clin Biomech 1995;10:323-324.
- Vink P, van de Velde EA, Verbout AJ. A functional subdivision of the lumbar extensor musculature. Electromyogr Clin Neurophysiol 1988;28:517-25.

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BREAKTHROUGH COACHING Favorable Response to Rehab

- Chronic patients have been found to have a decreased extensor to flexor muscle strength endurance ratio and to **respond favorably** to both expensive high-tech back strengthening programs, as well as less costly low-tech approaches.
- Mayer TG, Gatchel RJ, Mayer H, Kishino ND, Keeley J, Mooney V. A prospective two-year study of functional restoration in industrial low back injury. JAMA, 1987;258:1763-1767
- Alaranta H, Rytokoski U, Rissanen A, et al. Intensive physical and psychosocial training program for patients with chronic low back pain. Spine 1994;19:1339-1349.

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BREAKTHROUGH COACHING The Reality of Health Club Exercise

- Walk into any Health Club and you'll see many people doing **abdominal workouts** and very few people doing back extensor exercises.
- Why, because it's not fun – everybody wants an abdominal six-pack up front!
- Everybody wants one, but unless you have the **proper ratio**, you can exercise your abs all day and you'll still end up with a chronic low back condition.



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BREAKTHROUGH COACHING Assess the Flexor:Extensor Ratio: Measure Strength

- Prior to initiating exercise, assess the patient's Flexor:Extensor Ratio. This can be done in several ways.
- You can use **computerized** muscle testing equipment, such as JTech.
- You can use **weight stack** equipment to measuring the Ten Repetition Maximum (10RM) Weight.
- This is the **amount of weight** that a patient can comfortably perform ten repetitions of in both directions of the plane of motion being analyzed.



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BREAKTHROUGH COACHING An Alternative Method: Count Reps

- The F:E Ratio can be measured with **resistance against tubing** by counting the number of repetitions the patient can perform in each direction and then checking the ratio.
- The number of repetitions of lumbar extension should be **30%** more than the repetitions in flexion.
 - For example: Flexion 15 reps: Extension 20 reps
- The number of repetitions of cervical extension should be **40%** more than the number of repetitions in flexion.
 - For example Flexion 15 reps: Extension 21 reps
- A repetition has the **same** form and speed as the movement preceding it.

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BREAKTHROUGH COACHING Another Alternative Method: Measure Time

- Counting repetitions can be tedious.
- You can also measure the F:E Ratio with resistance against tubing by **measuring the duration of time** the patient can exercise in both directions of the plane of movement with a stopwatch.
- The time performing reps of lumbar extension should be **30%** more than the repetitions in flexion.
 - For example: Flexion 45 sec: Extension 60 sec
- The time performing reps of cervical extension should be **40%** more than the number of repetitions in flexion.
 - For example Flexion: 45 sec: Extension 63 sec
- A repetition has the same form and speed as the movement preceding it.

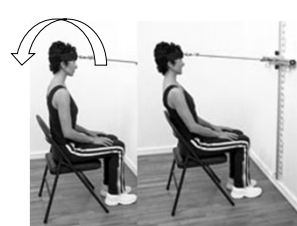
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BREAKTHROUGH COACHING Wall Station Cervical Flexion

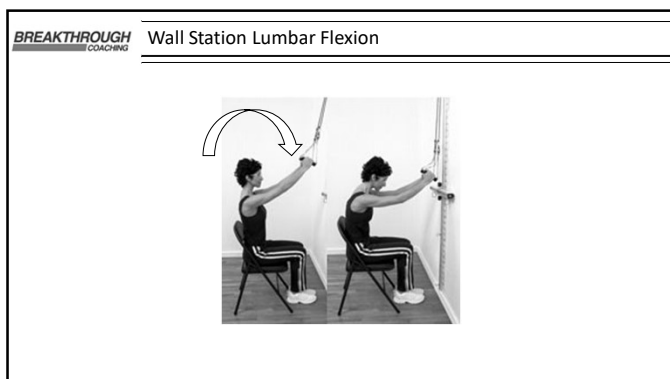


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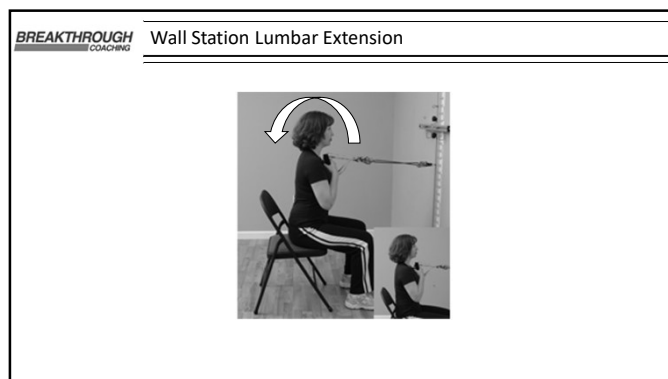
BREAKTHROUGH COACHING Wall Station Cervical Extension



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BREAKTHROUGH COACHING Single Leg Standing Assessment

- Stand with Posterior Pelvic Tilt, arms relaxed at sides and eyes forward.
- Flex hip 60 degrees and knee 90 degrees.
- Toes of raised foot are at height of ankle of planted leg.
- Maintain position until loss of balance or raised foot touches down.
- Repeat with eyes closed.

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BREAKTHROUGH COACHING Single Leg Standing Normative Data

Normative Data		
AGE (years)	EYES OPEN (seconds)	EYES CLOSED (seconds)
20-59	29-30	21-28.8
60-69	22.5	10
70-79	14.2	4.3

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BREAKTHROUGH COACHING Assessing Flexibility

- What is your **normative data** baseline for Range of Motion?
- Hopefully you are not assessing spinal ROM via goniometry but with **dual inclinometry**.
- The **AMA Guides to the Evaluation of Permanent Impairment** is used in Workers' Compensation systems, federal systems, automobile casualty and personal injury cases to rate impairment.

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BREAKTHROUGH COACHING Global Range of Motion

- An easy to report method for assessing range of motion is **global range of motion**.
- Rather than reporting each plane of movement individually, i.e.: Flexion 60 degrees
- Total all of the planes of movement into one global **denominator**.
- According to the AMA Guides:
 - Cervical = 385 deg.
 - Lumbar = 175 deg.
- Note that rotation cannot be accessed via inclinometry.

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BREAKTHROUGH COACHING Global Range of Motion		
Normative Data		
Region	ROM	Global
Cervical	F + E + L/R LF + Rot	385 deg.
Th-Lumbar	F + E + L/R LF	175 deg.

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BREAKTHROUGH COACHING	Movement Pattern Analysis
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- There are predictable muscle imbalances present in most of the patients you see.
- **Six movement pattern tests** screen for the proper functioning of the majority of the clinically significant muscles we address.



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BREAKTHROUGH COACHING	6 Movement Patterns
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1. Prone Hip Extension
2. Hip Abduction
3. Trunk Curl
4. Seated Arm Abduction
5. Trunk Lowering From Push Up
6. Supine Neck Flexion

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BREAKTHROUGH COACHING	1. Prone Hip Extension
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- Palpation of the posterior musculature reveals a pattern of contraction from caudad to cephalad
- Hamstrings then Gluteus maximus then Erector spinae
- Premature contraction of a muscle indicates overactivity




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BREAKTHROUGH COACHING	2 Hip Abduction
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- Hip Hiking: Overactive Quadratus lumborum
- Ratcheting: Inhibited Hip Abductors
- Anterior leg excursion: Overactive Iliopsoas.
- Posterior leg excursion: Overactive Hamstrings.
- External Rotation: Overactive Piriformis
- Internal Rotation: Overactive TFL




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BREAKTHROUGH COACHING	3. Trunk Curl
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- Ratcheting: Inhibited Abdominals & Overactive Erector spinae
- Foot lift prior to 30° of Flexion: Overactive Iliopsoas
- Chin poking: Overactive SCM and Suboccipitals

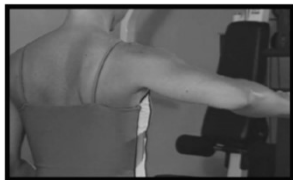


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4. Seated Arm Abduction

- Elevated shoulder girdle prior to 30° of Arm Abduction:
- Overactive Upper Trapezius and Levator scapulae
- Inhibited Serratus Anterior and Lower Trapezius



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5. Trunk Lowering from a Pushup

Winging of the scapula

Inhibited Serratus anterior



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6. Supine Neck Flexion

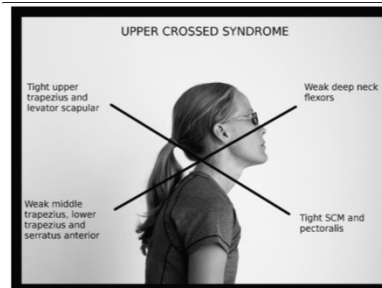
- Ratcheting: Inhibited Deep Neck Flexors and Scalenes
- Chin poking: Overactive SCM and Suboccipitals



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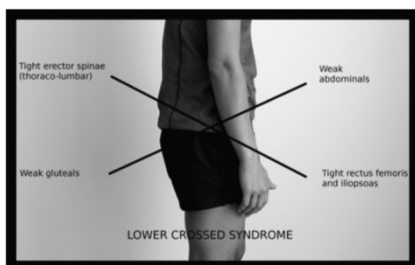
Upper Crossed Syndrome



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Lower Crossed Syndrome



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The DME Advantage

- Aspen Medical Products has spent over 20 years focusing only on the spine.
- Strong history and culture of research-driven design.
- Commitment to highest quality – quality of design, quality of material, quality of service.
- Award winning products with an option for every patient, clinician, condition and budget.
- Local sales reps provide world class service.
 - Full educational support and regular in-servicing as required.
- Aspen braces result in better patient outcomes!
- #1 Selling back braces on the market
 - Aimed at reducing muscle guarding

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Integrated Air Pump (2)
Early activation of the air pump and pressure release valve allow patients to easily achieve the level of compression that works best for them.

FORWARD HEAD CARRIAGE

CERVICAL NEUTRAL

Aspen Vista®
MultiPost Therapy Collar
CODE L0180 APPROVED

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The Vista Therapy Collar



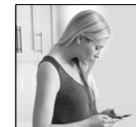
- Typical Protocol:
 - Use once a day for 20 min to 30 min while watching TV
- Goals:
 - Hold neck in more natural position
 - Encourages symmetrical spinal loading
 - Stretch or off-load deconditioned muscles and ligaments
 - Increase range of motion
 - Restore proprioception
 - Decrease symptoms over several days
 - Patient friendly to increase compliance
- Works in conjunction with current therapies.

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The Vista Therapy Collar

- Stabilizing product with therapy feature
- Protocol is to use at home
- Patient does not need to lay down to use
- Product works in harmony with Chiropractic treatment philosophy
- Has a payable code for Medicare and almost all insurances.
 - L0180
 - Reimbursed between \$440-\$330
 - No LCD
- Traction units are reimbursed very little and other cervical alignment devices are not reimbursed by insurance.



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Aspen Active™


- The Aspen Active™ Postural-TLSO is a lightweight, adjustable brace designed to address the symptoms associated with poor posture often due to prolonged use of electronic devices/technology.

Aspen Active™ P-TLSO
CODE L0456 APPROVED



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Aspen Evergreen™
Lower Spine Braces
Evergreen™ 637 LSO


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ComfortTrac Cervical Traction



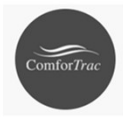
Best-in-class home pain relief.

Now available from the leader in spinal care.




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ComfortTrac Cervical Traction



- Forehead strap to ensure proper head positioning
- Slide stand allows for 10, 15, 20 degrees, depending on necessary flexion
- Provides up to 50 lbs. of continuous adjustable traction



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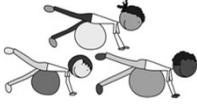


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Soft Tissue Techniques

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BREAKTHROUGH COACHING Soft Tissue Techniques

- Certain soft-tissue techniques, such as kinesiological and myofascial approaches, have been found to be effective in normalizing the balancing capabilities of the position receptors.
- Trigger-point therapy (using ischemic compression, spray and stretch, or injections) seems to be able to correct imbalances in muscle tone and tension that are perpetuated by sensory receptor problems.



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BREAKTHROUGH COACHING **Stretching Procedures**


- The more effective stretching maneuvers take advantage of our knowledge of the proprioceptive responses in the muscles and joints.
- A list of some of the more popular procedures includes: active release (Leahy technique), contract-relax (CRAC), muscle energy techniques, postisometric relaxation (Lewitt technique), and proprioceptive neuromuscular facilitation (PNF).
- By activating and coordinating the muscle spindles and the mechanoreceptors, these stretching procedures can be very effective in chronic cases.

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BREAKTHROUGH COACHING **Post Isometric Relaxation**

- Post Isometric Relaxation is a technique developed by Dr. Karel Lewitt.
- PIR is the effect of the decrease in muscle tone in a single or group of muscles, after a brief period of submaximal isometric contraction.
- PIR works on the concept of autogenic inhibition.



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BREAKTHROUGH COACHING **Post Isometric Relaxation**

- PIR is a gentle muscle relaxation technique that can be used to restore a muscle to its maximum length without dynamic stretching.
- There should be no pain.
- The patient is asked to resist with only minimal force (isometrically) and to breathe in for 8-10 seconds.
- Give the patient the auditory cue, "Don't let me move you."

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BREAKTHROUGH COACHING **Post Isometric Relaxation**

- The patient is then told to "let go" (relax) and exhale slowly.
- It is important for the therapist to wait to feel the relaxation.
- The therapist could wait 7-10 seconds or longer as long as relaxation is taking place.
- Due to pure relaxation there should be an increase in the range of motion.
- If the patient has difficulty relaxing, hold the isometric phase for 30 seconds before having the patient "let go."

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BREAKTHROUGH COACHING **Post Isometric Relaxation**

- Usually three to five times is all that is necessary to obtain spontaneous stretch each session.
- Along with the breathing, having the patient look up (with the eyes only).
- This helps facilitate the inspiration, which facilitates the muscle.
- Have the patient look down during expiration to aid in relaxation.

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BREAKTHROUGH COACHING **Post Isometric Relaxation**

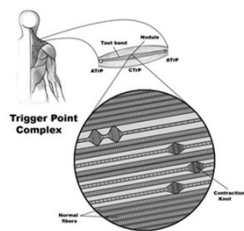
- The following script helps patients get the hang of it.
- Explain the purpose of the stretch: to lengthen the small but tightly knotted part of the involved muscle.
- "Stretching pulls the knot loose, and when you release the stretch, fresh blood flows through the painful area of muscle. This washes away the pain-causing chemicals trapped in the knot."

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BREAKTHROUGH COACHING Trigger Points

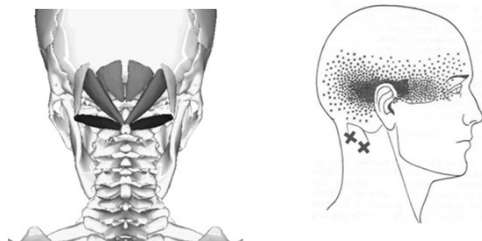
- Trigger points are discrete, focal, hyperirritable spots located in a taut band of skeletal muscle. The spots are painful on compression and can produce referred pain, referred tenderness, motor dysfunction, and autonomic phenomena.
- They are often found in overactive muscles and can be released with manual therapy techniques such as PIR.



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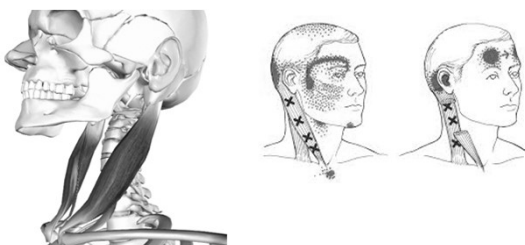
BREAKTHROUGH COACHING PIR Suboccipitals



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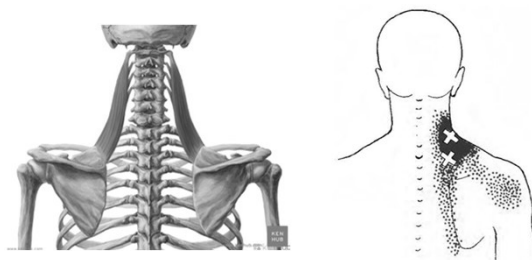
BREAKTHROUGH COACHING PIR Sternocleidomastoid



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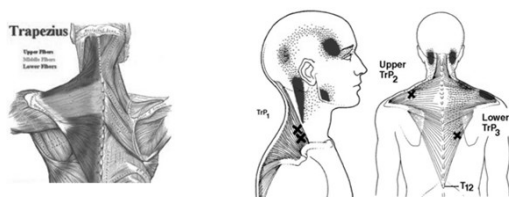
BREAKTHROUGH COACHING PIR Levator Scapulae



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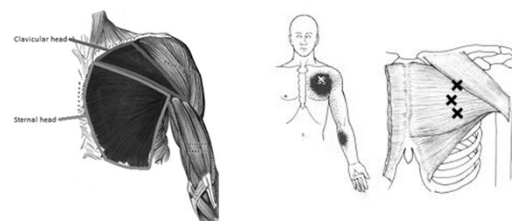
BREAKTHROUGH COACHING PIR Upper Trapezius



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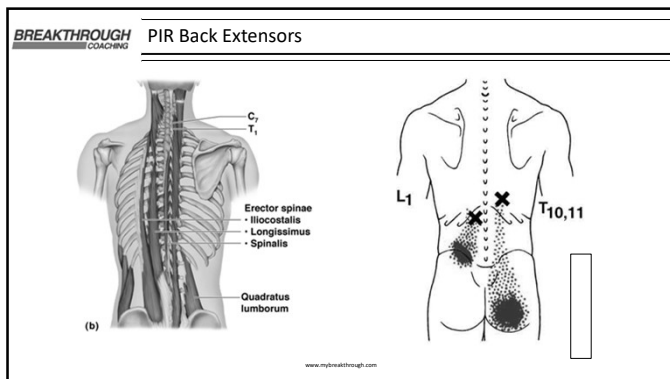
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BREAKTHROUGH COACHING PIR Pectoralis

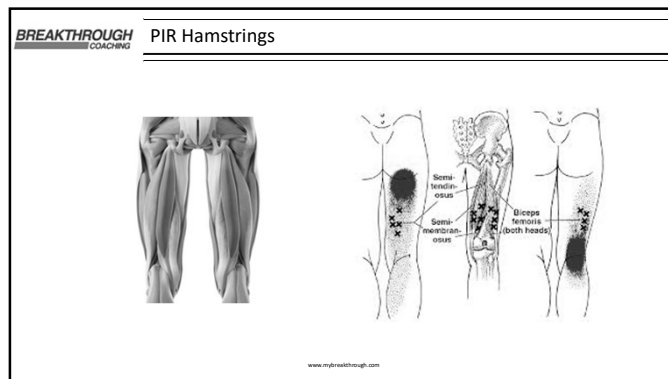


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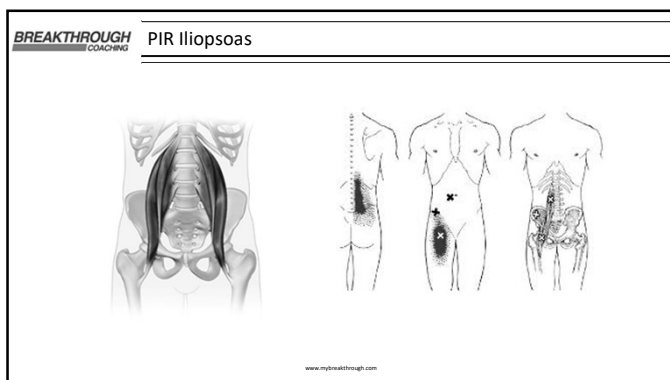
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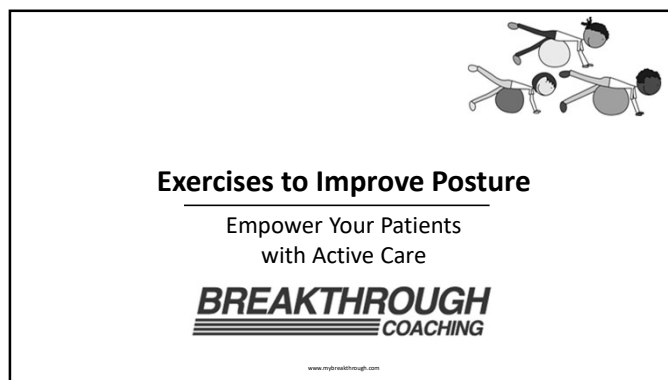
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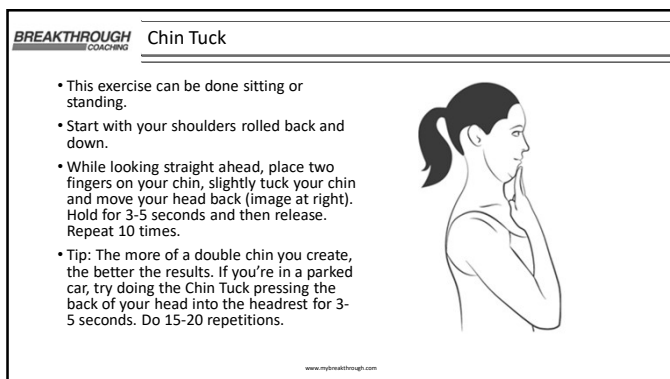
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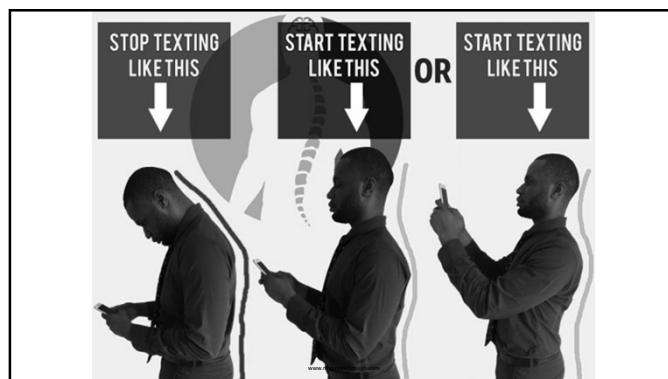
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Wall Angels

- Stand with your back against a flat wall with your feet about four inches from the base.
- Maintain a slight bend in your knees. Your glutes, spine and head should all be against the wall.
- Bring your arms up with elbows bent so your upper arms are parallel to the floor and squeeze your shoulder blades together, forming a letter "W". Hold for 3 seconds.
- Next, straighten your elbows to raise your arms up to form the letter "Y." Make sure not to shrug your shoulders to your ears.
- Repeat this 10 times, starting at "W," holding for 3 seconds and then raising your arms into a "Y."
- Do 2-3 sets.

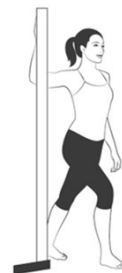


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Doorway Stretch

- Standing in a doorway, lift your arm so it's parallel to the floor and bend at the elbow so your fingers point toward the ceiling. Place your hand on the doorjamb.
- Slowly lean into your raised arm and push against the doorjamb for 7-10 seconds.
- Relax the pressure and then press your arm against the doorjamb again, this time coming into a slight lunge with your legs so your chest moves forward past the doorjamb for 7-10 seconds.
- Repeat this stretch two to three times on each side.



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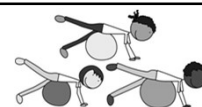
Hip Flexor Stretch

- Kneel onto your right knee with toes down, and place your left foot flat on the floor in front of you.
- Place both hands on your left thigh and press your hips forward until you feel a good stretch in the hip flexors.
- Contract your abdominals and slightly tilt your pelvis back while keeping your chin parallel to the floor.
- Hold this pose for 20-30 seconds and then switch sides.



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Your Friend the Foam Roller

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Tips for Effective Foam Rolling

- Fascia is a thick, fibrous web of tissue. As such, it can't be released with a quick pass of the foam roller.
- You need to be slow and deliberate in your movements.
- Once you find a sensitive area, slowly work back and forth over the spot.
- Be gentle at first.
- Start with half your body weight, using your hands or other leg to adjust pressure, and slowly work into full body weight.
- The maximum amount of time you should spend on any one area is 20 seconds.
- After this, you only risk irritating the spot more than you're helping it.

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Neck Extensors



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Thoracic Spine Extensors



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Low Back Extensors



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Hamstrings



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Quadriceps

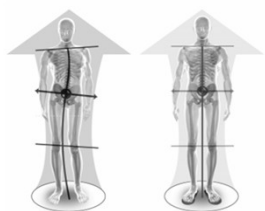


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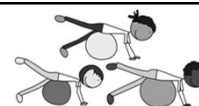
The Kinetic Chain

- The foot is the base of the lower quarter kinetic chain.
- If not managed properly, imbalances in the feet can ultimately cause secondary problems elsewhere up the chain.



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Training Proprioception

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BREAKTHROUGH COACHING Why Proprioception?

Research Letter
June 4, 2019


Mortality From Falls Among US Adults Aged 75 Years or Older, 2000-2016

Klaas A. Hartholt, MD, PhD¹; Robin Lee, PhD, MPH²; Elizabeth R. Burns, MPH²; et al

> Author Affiliations | Article Information
JAMA. 2019;321(21):2131-2133. doi:10.1001/jama.2019.4185

Fatal falls on the rise for seniors

June 5, 2019



More older Americans are reportedly dying after from falling. Many of these deaths are related to hip fractures and traumatic brain injuries that patients don't recover from.

As study published in the Journal of the American Medical Association states that fatal falls have nearly tripled in older Americans during a 16-year span, rising to more than 25,000 deaths yearly.

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BREAKTHROUGH COACHING The Levels

- Patients must be able to master an NMR exercise to a level B for 1 week or 3 visits, which ever comes first (this includes the instruction visit) or a Level C for 1 visit before progressing from one to the next the next Step of NMR.
- Level A = Assisted (Exercise with Assistance)
- Level B = Basic (Exercise without Assistance)
- Level C = Challenged (Basic Exercise with the addition of extremity movement)

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BREAKTHROUGH COACHING The Levels

- A patient may begin any exercise at a level other than B, but he or she may not advance to the next stage until all exercises within a stage are at a minimum Level B for one week or three visits (including the instruction visit).
- This means that some patients may not advance as quickly as others. Slow progress may indicate the necessity to alter the treatment plan and should be brought to the doctor's attention.
- A re-evaluation may be scheduled with the doctor or physical therapist and additional recommendations may be made at the time.

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BREAKTHROUGH COACHING The 80%


- This program is organized to rehabilitate the average patient to the point of pre-injury function that is mindful of office flow and patients' time commitments.
- Approximately 80% of patients should be able to perform NMR to the final stage of Stability ball exercises within a 3-month period.
- If patients progress is delayed, or they plateau at a particular stage of NMR exercises, without being able to advance to a level B, it may be necessary to re-examine the treatment protocol.
- The doctor and/or therapist should review all notes on a weekly basis screening for patients who fall outside of the 80%.

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BREAKTHROUGH COACHING Slow & Controlled Exercises

- Advances have been made in methods for strengthening postural muscles based on our knowledge of proprioception.
- Since postural (especially back and neck) muscles are tonic, slow-twitch muscles, we must use slow and controlled exercises in an upright position, in order to stimulate and normalize input from position receptors.



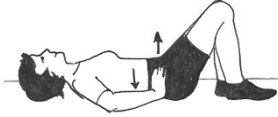
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BREAKTHROUGH COACHING Step 1: Posterior Pelvic Tilt

Level A:

1. Lie flat on your back with your hands flat on the floor. Therapist puts hand, palm up, under low back to accentuate position.
2. Bend your knees and keep your feet flat on the floor. Press your lower back onto the floor while pulling up and in with the muscles of the lower abdomen.
3. Hold the contracted position for 10 seconds, relax and rest 3 seconds. Perform 10 repetitions.



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Step 1: Posterior Pelvic Tilt

- Level B Pelvic Tilt:
- Instruction: Patient is supine; performs exercise unassisted. Hold for 10 second intervals, repeat, 10 times.
- Level C Pelvic Tilt:
- Instruction: Patient is supine; performs unassisted. Lift one leg at a time alternating, Holding for 10 second intervals, repeat, 10 times.
- This exercise is the foundation for all other NMRs, which must be performed with a proper pelvic tilt.

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Step 2: Unilateral Lower Extremities

- Standing Posterior Pelvic Tilt:
- Patient stands on each leg 10 times for 10 seconds or to the point of fatigue.
- Level A:
- The patient is allowed to use a chair or wall to balance him or herself during exercise.



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Step 2: Unilateral Lower Extremities

- Level B: The patient can perform the exercise without assistance.
- Level C: The patient is instructed to trace out the letters of the alphabet (A-E) with the toe of the raised leg.



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Step 2: Unilateral Lower Extremities

Normative Data

AGE (years)	EYES OPEN (seconds)	EYES CLOSED (seconds)
20-59	29-30	21-28.8
60-69	22.5	10
70-79	14.2	4.3

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Stability Trainers

- Thera-Band® Stability Trainers are closed cell foam pads with an anti-slip ridged surface and oval foot fitting shape.
- These foam pads are very effective for balance training, rehabilitation of lower extremities, and for sports performance enhancement.

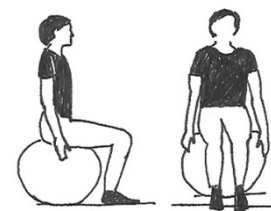


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Step 3: Seated Stability Ball

- The patient sits on the ball, feet at shoulder length apart. The patient assumes a position of a pelvic tilt with erect spinal posture.
- Level A: Basic Bounce. Starting Position: Sit correctly on the ball in optimal posture.
- Movement/Exercise: Begin bouncing by pushing feet into the floor and tightening thigh and hip muscles to slightly lift trunk, relax. Continue bouncing by alternately tightening and relaxing these muscles as vigorously as balance, coordination and comfort allow in optimal posture.

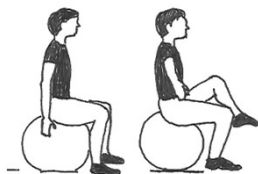


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Step 3: Seated Stability Ball

- Level B:
- The patient raises one heel at a time until he or she can perform a small march by lifting one foot at a time completely off the ground.
- Perform 10 repetitions per foot.

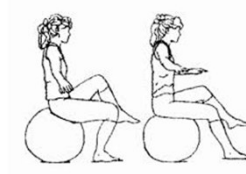


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Step 3: Seated Stability Ball

- Level C:
- The patient straightens out one leg at a time so that it is parallel with the ground.
- Perform 10 repetitions per leg.

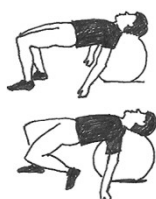


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Step 4: The Bridge

- The patient forms a bridge between his or her body and a stability ball.
- Level A:
- The patient places his or her shoulders on the ball and feet on the floor, and raises into a bridge.
- Maintain posterior pelvic tilt.

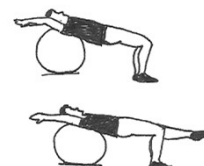


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Step 4: The Bridge

- Level B:
- The patient raises up to bridge position and then lifts his or her heels from the ground one at a time and performs a small march with his or her feet.
- Level C:
- The patient bridges up and straightens out one leg at a time so that it is parallel with the ground.

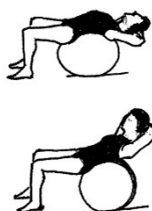


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Step 5: Abdominal Curl Up

- The patient sits on the ball and then slides the buttocks forward until the shoulders are on the ball and the body forms a bridge with the floor.
- Level A:
- The patient slowly curls up by raising his or her shoulders up from the ball while reaching, with arms extended, for the knees.



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Step 5: Abdominal Curl Up

- Level B:
- The patient curls up with arms folded across the chest.
- Level C:
- The patient curls up with the hand placed lightly by the side of his or her head at the ears.
- To avoid straining the neck, it is important not to interlock the fingers behind the neck while performing this exercise.




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BREAKTHROUGH COACHING Step 6: Superman on Stability Ball

- Instruction: The patient kneels with the ball in front of them in a "prayer position". With the heels against a wall, the patient extends his or her body forward.
- It is essential that proper alignment be maintained during this NMR.
- Level A:
- The patient performs the Superman position with arms at his or her sides.




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BREAKTHROUGH COACHING Step 6: Superman on Stability Ball

- Level B:
- The patient performs the Superman position and then extends both arms out in front of them as though flying like Superman.
- Level C:
- The patient performs the flying position and then performs a freestyle-stroke swimming motion with his or her arms.



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Closed-chain Exercising

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BREAKTHROUGH COACHING Closed Chain Exercises

- Closed-chain exercising (whether stretching or strengthening) is being used much more frequently in sports and rehabilitation.
- By keeping the body upright and weight-bearing during exercising, all of the proprioceptors are recruited to condition the muscle and joints.
- This provides a rapid and appropriate neuromuscular learning experience, and allows the skills practiced to be used in functional everyday and sports-specific situations.



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BREAKTHROUGH COACHING Theraband® CLX

- Theraband® CLX Consecutive Loops deliver versatility and ease of use that change how people experience exercise and rehab.
- It's all in the loops, which are versatile, and simple.
- According to multiple studies, the elastic resistance used in Theraband® CLX Consecutive Loops is equivalent to weight training in strength curve, muscle activation, perceived exertion, and strength gain.
- The CLX loops provide multiple, unique grip and anchor options.

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BREAKTHROUGH COACHING Theraband®

THERA-BAND® COLOR PROGRESSION

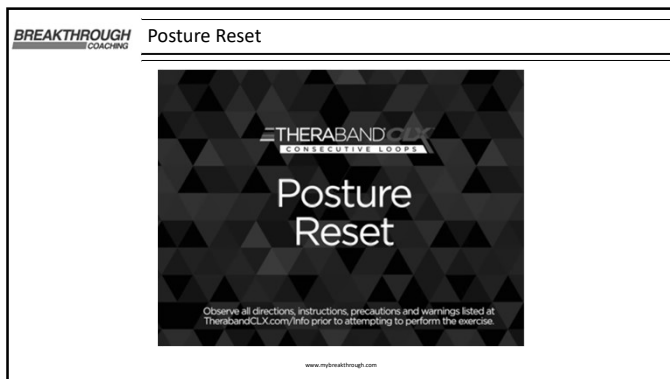
Use Thera-Band® System of Progressive Resistance™. Both Thera-Band® elastic bands and tubing produce similar levels of resistance when stretched to the same percent elongation.

Percent Elongation	Resistance in Pounds			
	Yellow	Red	Green	Blue
25%	1.1	1.5	2.0	2.5
50%	1.8	2.6	3.2	4.6
75%	2.4	3.9	4.2	5.9
100%	2.9	3.9	5.0	7.1
125%	3.4	4.4	5.7	8.1
150%	3.9	4.9	6.5	9.1
175%	4.3	5.4	7.2	10.1
200%	4.8	5.9	7.9	11.1

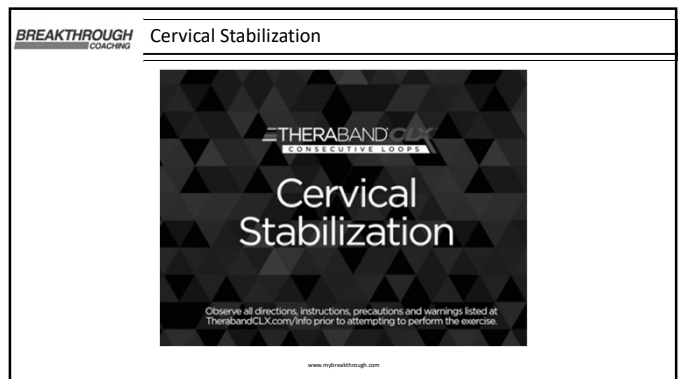
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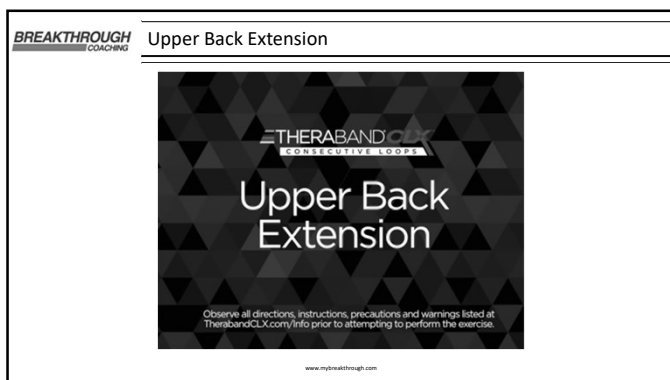
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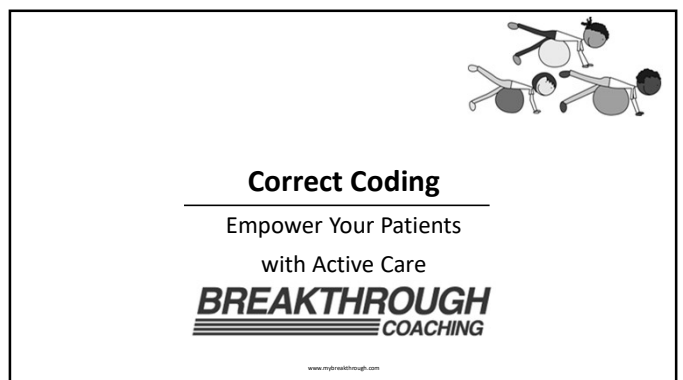
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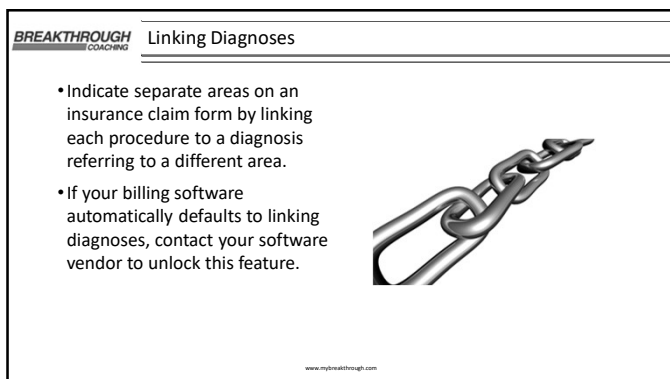
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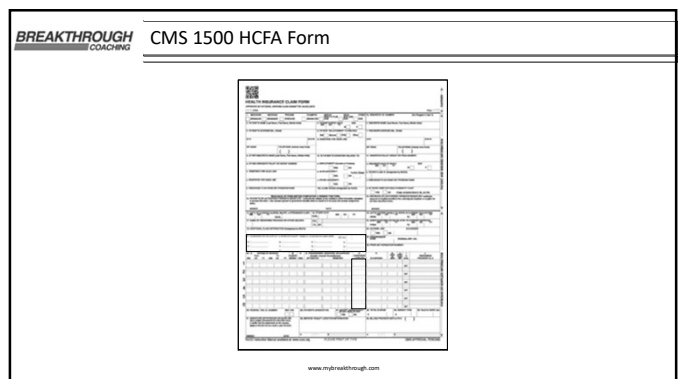
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- Therapeutic Procedures are time-based codes.
- Billed in 15-minute units beginning with 8 minutes.
- The patient is active in the encounter.
- Require direct one-on-one patient contact by provider of the service.



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- Develop one functional parameter: strength, endurance, range of motion, or flexibility
 - Treadmill for endurance
 - Isokinetic exercise for ROM
 - Lumbar stabilization exercises for flexibility
 - Stability ball to stretch or strengthen



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- Used when multiple parameters are trained including balance, strength, and range of motion.
- Must be related to a functional activity (ADL) with direct functional improvement expected.
- Use Outcomes Assessment Tools.



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- Used to describe those activities that affect proprioception:
 - Balance
 - Coordination
 - Kinesthetic sense
 - Posture
- 3rd Party Payers often interpret as Upper Motor Neuron Rehab.



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- Don't bake the cake from scratch each time—use a recipe.
- It is easier to modify a template Case Management Flow Sheet than to invent one from scratch for each new patient.
- Use template Case Management Flow Sheets so that consistent, high-quality care is given routinely.

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- The ultimate decision for the delivery of care should be based upon clinical findings and documentation that will support medical necessity.
- These documents are dynamic tools that are updated in real-time by the doctor as need arises.
- At each re-evaluation, the selected items are reviewed, and the patient's treatment plan should be adjusted based on documentation of medical necessity.




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Intelligence Imposes Order

- In order for your practice to function effectively, you **MUST** ensure that an intelligent order exists.
- The Criteria for Care driven practice brings order to your office, improves patient care, and eases the stress and chaos associated with practice.




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**If you are unsure if your practice
can implement these procedures
& don't want to go it alone:**

Breakthrough Coaching
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The Standard of Excellence

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