

**Feature Commentary****DENVER IS THE PLACE TO BE IN JULY 2013!**

**AUDREY LONG BSc, PT, Dip. MDT**  
**CONFERENCE CHAIR**

This beautiful city is the location of the triennial MDT America's Conference. Our theme is **MDT for Peak Patients Outcomes**. I am energized about this year's conference for two main reasons.

First, I have the honor of being invited to be the Chair of the conference. I have been working with a great group of people on our organizing committee and we can boast that we came up with some exciting new ideas to help clinicians achieve peak outcomes.

Second, while I had a blast last year at the International MDT Conference in Austin and truly admired the impressive lineup of international speakers, the updates on research, and the diverse opinions expressed, the Regional Conferences have a different flavor of their own. We transition from the big picture to a more intimate MDT clinical experience. We have kept to the trusted menu of a short list of speakers with panel discussions mixed with a series of breakout workshops. I am excited to say we will have six breakout sessions this year instead of four as in the past few MDT America's Conferences. We have added a few new "spices" to the menu that I am sure will make this year's conference a highlight of your year. The ingredients include:

*A line up of speakers who are all MDT experts.* You have never seen this before at past MDT conferences. While they will speak to a wide variety of topics, the fact that they are all either MDT Credentialed, MDT Diplomates, or participating in MDT research means that we all speak the same language as they challenge us to achieve Peak MDT outcomes.

*All the speakers have generously agreed to participate in the breakout workshops.* This means that they can use their one or two podium presentations to introduce their topic, and then they will help teams of faculty facilitate intriguing and practical workshops. A total of seven invited speakers, 32 faculty from North and South America, and 10 invited Diplomates including five MDT Fellows, will be at your service.

*Instead of one generic extremity workshop, we have chosen two feature joints.* There will be one workshop devoted entirely to the shoulder, and one entirely to the hip. Advanced assessment, clinical reasoning, and even some techniques specific to the treatment of the shoulder and hip joints will be emphasized.

*There will be a manual therapy workshop.* Spend time with our faculty reviewing the concepts of force progression, practicing the techniques as they are currently being taught and receive feedback on techniques that may have gotten rusty.


*We have an entire workshop devoted to the joys of flexion!* This movement is often underutilized and can be the key to unlocking some of the mystery contained within your difficult patients. You will learn how flexion can advance your classification skills as you try to diagnose faculty role playing a variety of conditions.

**Inside This Issue:**

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*You know the importance of collecting data,* but the prospect is overwhelming. We are providing you a more intimate chance to work with research gurus who will break it down for you in easy, relevant terms.

*We all struggle with patients in the challenging "other" category.* Join our resident "chain gang" experts who will show you how to sub-classify patients who initially fall into the chronic pain or irreducible categories with an exciting practical approach and immediately useable skills.



For complete details about the workshops and to see the conference program details, visit the website at: <http://www.mckenziemdt.org/conf2013.cfm>.

I invite you to come experience the conference, make new friends, reconnect with old and network with MDT clinicians. Surrounded by famous majestic mountains, learn new ideas, master current skills, and aspire to achieve peak outcomes with MDT.

Don't just take my word on summer in the Rockies! Our local Denver reporter, Renee Ostertag, DPT, MPT, COMT, Cert. MDT, M. Physio, shares her personal insights about this amazing city and surrounding area highlights. Read Renee's commentary on the following two pages!

**GUEST COMMENTARY****The Magic of the Mile High City**

*Renee Ostertag, DPT, MPT, COMT, Cert. MDT, M. Physio*

I express my enthusiasm and welcome you in advance to Denver, Colorado, the Mile High City. I am pleased and honored to write about one of my favorite cities, my home, and the location of the next McKenzie Americas Conference: MDT for Peak Patient Outcomes taking place July 26<sup>th</sup>-28<sup>th</sup>, 2013. Since the last Americas conference was sold out, be sure to catch the early bird fee before April 1<sup>st</sup>, 2013 to reserve your spot and enjoy this exciting city.

Denver is known as the Mile High City because its official elevation is exactly one mile, or 5,280 feet about sea level, although the elevation within the city limits ranges from 5,130 to 5,690 feet. Denver is home to the famous "Unsinkable" Molly Brown, the survivor from the *Titanic*, as well as Peyton Manning (go Broncos!) and 300 days of sunshine per year. (For those with a curiosity for random knowledge, it's also the birthplace of the cheeseburger.)

***Mile High Magic for Evidence Based Enthusiasts***

For those requiring evidence of Denver's elevation (we are evidence-based, are we not??), it can be found in two places: the Capital Building and Coors Field. The official elevation of Denver is measured outside the west entrance of the Capital Building, where the 15th step is engraved with the words "One Mile Above Sea Level." Coors Field, where the Colorado Rockies play, is filled with mostly dark green seats except for the 20<sup>th</sup> row of the upper deck. These seats are purple, and also mark the city's one-mile elevation point.

***Mile High Magical Shopping***

16<sup>th</sup> Street Mall is a 1.25-mile long tree-lined outdoor mall that runs through the center of downtown. The non-motorized shopping area starts at Wewatta Street at Union Station and runs to the intersection of 16th Avenue and Broadway at Civic Center Station. It is home to over 300 locally owned stores, over 50 restaurants, and the Denver Pavilions. Window shop as you stroll along the red-and-gray granite pedestrian promenade, head to the Pavillions to catch a movie, or stop by **Earl's Restaurant** for my favorite sushi appetizer, the Dynamite Roll.

There are plenty of shops to visit along the way including **Rockmount Ranchwear**, which is the birthplace of the snap-button Western shirt. Free shuttle buses cruise the mile-long Mall seven days a week. You can also go to Denver's Visitor Information Center for more tourist tips (16th & California on the 16th Street Mall).

**Cherry Creek Shopping Center**, located 3 miles southeast of downtown Denver is one of the premiere shopping destinations in Colorado. With over 160 shops, including 40 stores exclusive to the area such as **Neiman Marcus, Tiffany & Co., Burberry, Louis Vuitton** and **Ralph Lauren**, there won't be a dull moment for those looking to treat themselves to a shopping spree.

***Mile High Magical Arts and Culture***

For those culturally inclined, head to Denver's Theatre District off 16<sup>th</sup> Street Mall and Arapahoe Street. The **Denver Performing Arts Complex**, in the heart of the Theatre District, is home to a Tony Award-winning repertory theatre company, Broadway touring productions, contemporary dance and ballet, magnificent chorales, a major symphony orchestra, internationally-acclaimed opera, and much more.

With a collection of more than 70,000 works of art divided between nine permanent collections, The **Denver Art Museum** is one of the largest art museums between Chicago and the West Coast. Collections include African, American Indian, Asian, European and American, modern and contemporary, pre-Colombian, photography, Spanish Colonial, and western American art.

Like to read? Head to the **Tattered Cover Bookstore** and browse to your heart's delight. The LoDo (lower downtown) store on 16<sup>th</sup> Street and Wynkoop offers two stories of books paired with the added comfort of curling up by a fire and reading amongst beautiful antique furnishings.

If jazz and blues appeal to your finely-tuned ear, head to **El Chapultepec**, a tiny bar at the corner of Market and 20<sup>th</sup> Street to enjoy live music every night of the week. Be warned: eat before you go. Their food leaves a bit to be desired, but the drinks, atmosphere and music are well worth the visit.

### ***Mile High Magic for Sports and Outdoor Adventures***

The **Colorado Rockies** will be hosting the Milwaukee Brewers July 26-28. Before the game, grab a beer at the **Sandlot Brewing Company**, the only brewpub in the world located inside a baseball stadium. The brewpub is built right into Coors Field with its own entrance into the ballpark. The Sandlot is owned by the Coors Brewing Company, but features hand-crafted small batch beers.

The **Cherry Creek Trail** is a picturesque 40-mile route that begins in downtown Denver. There's a paved path that begins near the Platte River Trail and Confluence Park, which marks the area where an 1858 gold discovery led to the founding of the city. For downtown trail access, begin at Confluence Park off of Water Street near 15th Street and enjoy some beautiful views of Denver and the Front Range as you meander along the South Platte River.

For those seeking more rugged terrain to hike or trail-run, head to either **Red Rocks** or **Matthews-Winters Park**. Both parks are about a 15-20 minute drive west of downtown. Within Red Rocks Park is **Red Rocks Amphitheater**, a world famous venue used since 1941. The Amphitheater is an award-winning venue for concerts, and is surrounded by geographically unique, impressive and very large red sandstone outcrops.

### ***Mile High Magic for the Beer Enthusiast***

More beer is brewed in Denver than in any other city! The Mile High City is home to the world's largest single brewery, has the nation's largest brewpub, and has the highest number of home brewers. It's also host to the Great American Beer Festival, the brewing industry's most prestigious event of the year – the "Super Bowl" of beer. Given that Colorado boasts 161 breweries in the state, good craft beer can be found on tap at any bar in Denver.

To check out Denver's first brewpub, head to **LoDo** and go to **Wynkoop Brewing Company**. Wynkoop was opened by a former geologist, turned brewer, turned Denver Mayor, and now Colorado Governor, our very own John Hickenlooper. For other great breweries, check out Rockbottom Brewery, Breckenridge Brewery, Sandlot Brewing Company, or the Denver Chop House.

A short 30 minute drive from downtown gets you to Golden, Colorado, home of **Coors Brewery**. Thirty minute tours with free samples at the end are available 7 days a week during the summer time from 10am-4pm and 12-4pm on Sunday.

### ***Mile High Magic for the Foodie***

As far as cuisine goes, Denver's Front Range has anything from northern Italian sophistication to authentic street tacos, and just about everything in between.

For a contemporary Southeast Asian menu, head to **ChoLon Modern Asian Bistro** at 1555 Blake Street. If you want to watch the magic unfold in front of you, you can sit at the chef's counter and watch these magnificent dishes come together. Another favorite spot to watch the cooks prepare food is at the kitchen bar at **Tag Restaurant** on Larimer Street. Tag's multicultural dishes pull from the chef's upbringing in Hawaii, his stints in Asia, and his home in Colorado.

In case you feel like taking a stroll and exploring to find your own restaurant, LoDo is home to 90 sports bars, restaurants, rooftop cafes, and brewpubs. One of my favorite spots is **Larimer Street**, a charming area lined with white lights and a myriad of restaurants to choose from: **Ocean Prime, Osteria Marco, Bistro Vendome, Rioja**, and the recently opened **Tom's Urban 24**.

Breakfast time? No problem. Head to brunch at **Snooze A.M. Eatery** before the conference starts on Friday and be delighted by their from-scratch recipes focusing on the highest level ingredients in a setting filled with energy and out-pouring creativity. For a quicker option and to satisfy a craving for one of Denver's best, make your way to **Asada Rico** on the 16<sup>th</sup> Street Mall for a perfectly-proportioned egg-and-potato breakfast burrito. You can't beat the price at \$3.25 a pop.

No matter what you do or where you go in Denver, you can be sure you'll be surrounded by friendly people, ample sunshine, and a lightness in the air. With that, finding something to do isn't more than a few steps outside your hotel.

I do hope you enjoy your stay here in the place I am happy to call home. Please be sure to drink extra water and stay hydrated... the air is rare up here!

Plan your visit at [www.visitdenver.org](http://www.visitdenver.org)



## BRANCH SPOTLIGHT

### McKenzie Institute Germany | Switzerland | Austria

Georg Supp, PT, MT, Dip. MDT

**1. How long has the branch been officially established, and where is the branch office based?**

The Swiss branch was founded in 1987 by Jeanette Saner-Bissig, Reto Genucchi, Heinz Hagmann and Kees Righter. Jeanette and Reto also taught the first courses in Germany and Austria in the late 1980s. In 1992, Jürgen Schmid founded the German Institute. The branches then united in 2009 and McKenzie Institute Germany / Switzerland / Austria was established.

The official branch office is located in Rosshaupten, which is in the very south of Germany. Administration work is also done in our member's office in Gundersheim, two hours north of Rosshaupten.

**2. What is your current branch structure?**

The McKenzie Institute D / CH / A is a public charity. The Board of Directors consists of Reto Genucchi (chair), Georg Supp (vice chair) and Jörg Schellbach (treasurer). Currently, Tine Rotter and Simone Loderer-Schmid do a great job as Branch Administrator and Secretary, respectively. Four senior instructors, two instructors and one probationary instructor teach the courses.

**3. How many Credentialed and Diplomaed clinicians do you have?**

German therapists have been able to take the exam in the German language for 12 years now. Currently, we have 400 Credentialed MDTs and 12 Diplomaed MDTs.

**4. Do you have memberships? If so, how many members?**

Four years ago, we launched a membership. 250 MDT fans have joined as members...and that number is still growing.

**5. How many courses do you hold every year, and in how many venues?**

In Germany, Switzerland and Austria, all postgraduate PT courses are organized by different companies that specialize in adult education. Instructors of McK D / CH / A educate about 1,000 participants in over 55 courses in 15 different venues per year.

**6. What has been some of the branch's greatest attributes?**

***An end and a new start...***

Jürgen Schmid, the founder of the German Institute, did a tremendous job installing MDT in Germany. He was a marvelous organizer and a great teacher. When he died in 2008, we were faced with a Herculean-task. But life treated us well, and we stayed together as a real team. At this time, our branch found wonderful support in our new Branch Administrator, Tine Rotter. She's a real pearl! We were able to pool the power of different people and since then have launched a quarterly newsletter and organized three MDT conferences. In 2012, our conference attracted 250 clinicians. Due in part to our presence in the German specialized press, our faculty continues to get more and more invitations to speak at conferences.

### ***Leap forward...hopefully***

At the end of 2012, we made a big leap forward in the arena of marketing and public attention. Together with a professional production company, we created a 10-minute video clip that is presenting the MDT method using a case study and some scientific references. We received overwhelmingly positive feedback; interestingly enough, not just from German speaking viewers. MDT seems to speak a global language. [Check out the video clip here!](#)

#### **7. What are the greatest challenges for your branch?**

##### ***Supremacy of Manual Therapy***

In Germany, MDT is faced with the supremacy of different Manual Therapy concepts. Doctors can prescribe "Manual Therapy" or "Neurological Therapy". If this happens, only therapists with a MT certificate or a certificate in Bobath or PNF are allowed to treat the patient. Public health insurances restrict the payment in these cases to the aforementioned therapists. So, young therapists are first heading to those certificate courses. The MDT concept doesn't fulfill the requirements as an MT certificate course, and, in fact we are NOT exclusively a manual therapy concept.

##### ***Public awareness***

Gaining more recognition, or at least awareness, by the public is one of our goals for the next years. The above mentioned video clip will surely support that.

##### ***Involve doctors***

Now and then doctors must also attend courses. We already have some credentialed physicians, but that number must grow. One of our faculty members, Christian Schmidt, is a Medical Doctor. We are hoping this will help to catch the interest of others like him and get them involved.



**CASE REVIEW: A CLINICIAN'S PERSPECTIVE**

**Case Report: Centralization in a Chronic Renal Insufficiency Patient with Sciatica**

*Santiago Inaqui Ramos Sanchez, PT, Cert. MDT, Cert. Vojta*

**Objective**

The Centralization Phenomenon is a common characteristic occurring in mechanical back pain and is exposed in approximately 65% of patients with back pain who undergo a mechanical assessment known as Mechanical Diagnosis and Therapy (MDT). Centralization has been demonstrated to be a strong predictor of good to excellent outcomes. This assessment and treatment tool is useful in determining which patients could develop a successful outcome, therefore a good prognosis for her/his problem. The Centralization Phenomenon is also able to help us to determine whether or not the person being assessed can use this method as a better way to manage the pathology when other pathologies are present, such as renal insufficiency.

**Introduction**

The centralization phenomenon was first observed by Robin A. McKenzie in New Zealand in 1956, and subsequently described and published by him in 1980. (24) He observed it in a patient with spinal pain referred to his lower right limb. The patient entered the treatment room and without Robin's instructions, placed himself in the position as shown in *Figure 1* for a few minutes, resulting in the abolishment of leg pain with only a little low back pain remaining. (1,24)



Figure 1

Centralization of pain is described as “the abolition of distal limb symptoms in response to the deliberate application of repeated movements or sustained postures.”

An example of centralization is shown in Figure 2. (1,13,17) Centralization is obtained through the assessment that McKenzie proposed in 1981 (39), using repeated end range movements or sustained end range positions.

The McKenzie Method is based on the classification and sub-classification of non-specific mechanical low back pain problems (14,17,38); problems that represent up to 90% of clinical cases. The derangement classification is further subdivided according to pain location:

- Central Symmetrical symptoms
- Unilateral / asymmetrical symptoms above the knee
- Unilateral / asymmetrical symptoms below the knee

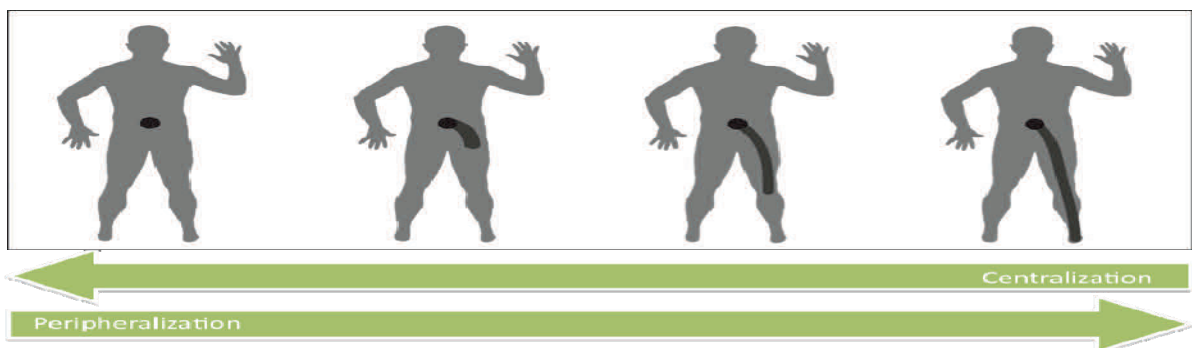


Figure 2

Figure 2. Centralization and peripheralization

### **Clinical Case History**

An MDT assessment was performed on a 67 yr. old female homemaker. She was referred by her neurosurgeon to begin physical therapy. The patient has a history of chronic renal failure diagnosed with a 75% loss of function in both kidneys. Instruction by the Nephrologist was to avoid any kind of pain killers or anti-inflammatories. Therefore, the patient was not a candidate for spine surgery due to anesthesia and post-surgical medications that would be required.

The patient described a 10/10 pain level on a visual analog scale (VAS) of pain in the lumbar area that progressed down the right lower limb through the buttock, thigh, calf and foot. She also reported symptoms of parasthesia. Due to the severity of pain, the patient was unable to walk without the use of a cane.

This episode had been present for three months. She described having had her first episode of low back pain (LBP) two years earlier than the first visit at the office. This constant and inconsistent LBP-sciatica episode was described by the patient as gradually worsening. At onset, the symptoms were only in the low back with no specific cause triggering the symptoms.

The symptoms were provoked in positions of slouched sitting, rising from sitting, and sometimes walking. The pain was improved sometimes walking or lying (prone, supine, or side lying).

Her previous history has involved several episodes of LBP, none of which referred symptoms to the lower extremity. She had diagnostic imaging that included x-ray, MRI, and EMG. Based on imaging, she was diagnosed with three herniated discs (L3-L4,L4-L5,L5-S1) and lumbar scoliosis.

### **Physical Examination**

There was no lateral shift observed in standing and her lordosis was accentuated. Upon posture correction, the patient had an increase in both low back and thigh symptoms.

The patient's neurological status was significant for motor loss in the L3, L4, and L5 myotomes. She presented with decreased sensation as well in the L3-L5 distribution. Her dural tension was positive at 30 deg. SLR in supine. She also had diminished reflexes at L3 and L4.

The patient had a major limitation in both flexion and extension of the lumbar spine in a standing position causing an increase in pain during movement (PDM) in the lumbar region. In a right side gliding movement, there was minimal limitation with increase in pain in the right buttock. However, the left side gliding movement resulted in only minimal limitation in the range of movement with no effect on symptoms.

### **Repetitive Movement Exam**

The repeated movement tests are used to expose the behavior of symptoms in order to determine the mechanical classification. (17,18,19) A specific direction of movement that produces the centralization phenomenon is also referred to as the patient's directional preference. There is often a concordant increase of ROM and reduction in pain as well. (40) Initially, this patient had LBP, right buttock, thigh and calf symptoms. Based on the patient's behavior of symptoms in the history and the mechanical baselines observed above, the following movement and positioning strategies were sequentially tested during the initial evaluation.

- Extension in standing - The patient was asked to bend backwards for 10 repetitions. This resulted in a worsening of her distal symptoms. Therefore, further testing in this position was not indicated.
- Prone lying - This position caused her symptoms to peripheralize. We then tested this position with a pillow under the abdomen. The symptoms started to centralize to right buttock and low back. When there was no further improvement, the pillow was withdrawn. This resulted in further reduction in pain intensity from 10/10 to 5/10 in right buttock and low back.
- Repeated extension in lying - She did 10 repetitions which resulted in further symptom reduction.



As a result of the above extension procedures, there was an increase in flexion, extension, and bilateral side glide ROM in the standing position. The weakness improved to 3+/5 and the dural tension test in supine increased to 60 deg.

Due to centralization, which is one physical sign and symptom indicating mechanical low back pain (17,18,19), a provisional diagnosis of derangement with a sub-classification of asymmetrical/unilateral symptoms below the knee, without an acute deformity was made at completion of the first visit.

To begin reducing the derangement and maintaining reduction, the patient was advised to perform REIL every two hours or more often when symptoms of pain and/or numbness presented. Posture correction in sitting with the use of a lumbar roll and standing was addressed as well. Patient was educated on the behavior of the mechanical problem in positions of flexion and extension, which involved understanding peripheralization and centralization during exercises and/or positions.

*Second Visit:* The patient was re-evaluated one week after the first evaluation. She reported abolishment of all pain except paresthesia that was still present in the right leg. Improved strength was noted (L3- 4/5; L4- 4/5; L5- 4-/5). Positive dural tension signs were present, but improved (SLR – 80 degrees). Her lumbar spine ROM was no longer limited. However, the left side glide was painful to the right buttock.

REIL was reviewed and supervised by a Credentialed MDT therapist. It was well performed by the patient, but she said that it was difficult for her to get that position every two hours at work. Therefore, repetitive extension in standing (REIS) was tested as an easier position for her life activities. After 10 repetitions, the numbness in the right leg abolished, concordantly the weakness significantly improved. The provisional classification of derangement was confirmed at this visit.

*Third Visit:* This visit took place two weeks after the initial assessment. The patient was completely asymptomatic. There was no weakness evident in the right leg. Her SLR was negative as well and her lumbar range of motion fully restored. The mechanical diagnosis was again confirmed.

## **Discussion**

The purpose of this study was to demonstrate how an MDT assessment is a very important and successful tool when used properly to identify individuals with rapidly changeable mechanical lesions. In addition, more specifically, in patients with significant health impairments that put them at risk for invasive medical procedures or when medication use is contraindicated due to health problems. This patient avoided a potential pain killer injection in lumbar region and surgery in which there was a great risk of losing the last 25% of her kidneys due to the medications and anesthesia required.

Patients with significant health problems may have a mechanical problem that can be reversed by simple but well prescribed exercises. This type of mechanical assessment, known as MDT, can save or reduce the risk of losing vital organs, such as the case presented in this report. In this assessment, the phenomenon of centralization of symptoms guides the therapist in prescribing specific treatment for this condition (14,19); as well as establishes a mechanical classification for patients with the non-specific low back pain. Classification of patients with non specific low back pain has been recommended by recent clinical practice guidelines to improve patient outcomes. (1, 2,14,17,18,19,29,38)

## **Conclusion**

Many doctors, physiotherapists, and general staff dedicated to caring for patients with low back problems may have observed the centralization phenomenon. However, the clinician may not fully understand or appreciate the clinical prognostic value and outcome effectiveness associated with centralization.

Mechanical Diagnosis and Therapy (MDT) - the McKenzie Method is most importantly an assessment process that allows the trained clinician to reach a mechanical diagnosis, which guides the clinician to specific treatment. This assessment has the ability to determine whether the condition may be reversible, often times rapidly, as well as expose quickly those who must be referred to a specialist. Therefore, because of the ability to identify different types of mechanical pain as well as its prognostic value, all patients suffering from back pain should pass through a MDT assessment by a trained clinician before any other kind of intervention. Up to 80% of spinal surgery in the lumbar area could potentially be avoided. (1, 2, 10, 14, 17, 39)

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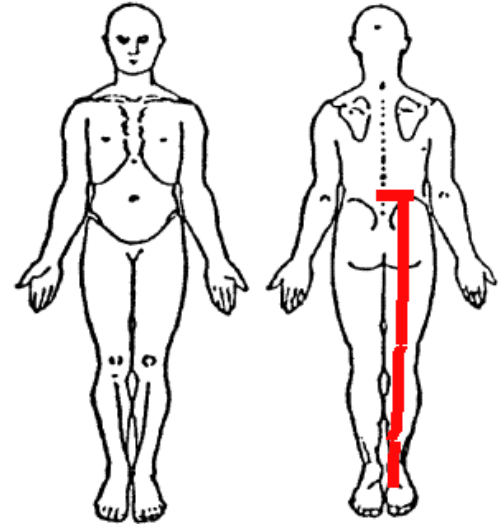
*Translated by: Angélica Botello de Habib ([angelica\\_habib@hotmail.com](mailto:angelica_habib@hotmail.com))*

*Cekin – Kinesiology Training Center and Intervention Integral, LTD. Mexico City, Mexico. May 2011*



# THE McKENZIE INSTITUTE LUMBAR SPINE ASSESSMENT

Date 18/11/2008  
 Name GR Sex M /  F  
 Address MEXICO CITY  
 Telephone \_\_\_\_\_  
 Date of Birth 01/01/1954 Age \_\_\_\_\_  
 Referral GP / Orth / Self /  Other \_\_\_\_\_  
 Patient accepts anonymous use of data for research  Yes / No  
 Work: Mechanical Stresses Retired, sitting for 8 hours a day, no training  
exercise.  
 Leisure: Mechanical Stresses No reason  
 Functional Disability from present episode Walking  
 Functional Disability score 60%  
 VAS Score (0-10) 7/10



## HISTORY

Present Symptoms LBP` till right calf, weakness during gait, right calf paresthasias  
 Present since 3 months with sciatica Improving / Unchanging /  Worsening  
 Commenced as a result of \_\_\_\_\_  Or no apparent reason  
 Symptoms at onset  back / thigh / leg \_\_\_\_\_  
 Constant symptoms  back /  thigh /  leg LBP-sciatica/paresthesia R calf Intermittent symptoms back / thigh / leg  
 Worse  bending LBP  sitting /  rising \_\_\_\_\_ standing \_\_\_\_\_  walking \_\_\_\_\_ lying \_\_\_\_\_  
am / as the day progresses / pm when still / on the move  
 other \_\_\_\_\_  
 Better bending \_\_\_\_\_ sitting \_\_\_\_\_ standing \_\_\_\_\_ walking \_\_\_\_\_  lying any position in lying  
am / as the day progresses / pm when still / on the move  
 other \_\_\_\_\_  
 Disturbed Sleep Yes /  No \_\_\_\_\_ Sleeping postures prone / sup side / R / L Surface  firm / soft / sag  
 Previous Episodes 0 / 1-5 / 6-10 /  11+ Year of first episode 2006 - LBP at first.  
 Previous history: No reason  
 \_\_\_\_\_  
 Previous treatments Paracetamol, magnets

## SPECIFIC QUESTIONS

Cough / Sneeze / Strain +ve /  -ve Bladder  normal / abnormal Gait normal /  abnormal Antialgic gait  
 Medications Nil /  NSAIDS / Analg / Steroids / Anticoag / Other Paracetamol  
 General Health Good / Fair /  Poor Chronic renal insufficiency, Arterial Hypertension  
 Imaging  Yes / No RM,EMG ? 3 herniated discs L3-L4, L4-L5, L5-S1  
 Recent or major surgery Yes /  No \_\_\_\_\_ Night Pain Yes /  No \_\_\_\_\_  
 Accidents Yes /  No \_\_\_\_\_ Unexplained weight loss Yes /  No \_\_\_\_\_  
 Other 75% of renal insufficiency: no pain killers/meds/surgery are/were able to be administrated to GR.

## EXAMINATION

### POSTURE

Sitting Good / Fair / Poor Standing Good / Fair / Poor Lordosis Red / Acc / Normal Lateral Shift Right / Left / Nil  
 Correction of Posture Better / Worse / No effect Increase paresthesias R knee, LBP increases Relevant Yes / No  
 Other Observations \_\_\_\_\_

### NEUROLOGICAL

Motor Deficit Right L3, L4, L5 Reflexes R L4, L5 deminised  
 Sensory Deficit Right L3, L4, L5, S1 bilateral Dural Signs SLR R pos 30°

MOVEMENT LOSS	Maj	Mod	Min	Nil	Pain
Flexion	X				Incr.LBP - 10/10
Extionsion	X				Incr.LBP - 10/10
Side Gliding R			X		Pain R buttuck
Side Gliding L			X		N/E

### TEST MOVEMENTS

Describe effect on present pain - During: produces, abolishes, increases, decreases, no effect, centralising, peripheralising. After: better, worse, no better, no worse, no effect, centralised, peripheralised

	Symptoms during testing	Symptoms after testing	Mechanical Response		
			^ ROM	v ROM	no effect
<b>Pretest symptoms standing:</b> center + back R, thigh R/ VAS 10					
FIS					
Rep FIS					
EIS	Increase LBP				
Rep EIS	Increases/ back R, thigh R/ VAS 10	Worse			X
<b>Pretest symptoms lying:</b> center + back R, thigh R/ VAS 10, R foot numbness,					
FIL					
Rep FIL					
EIL					
Rep EIL	10 rep/ Centralising/ center + back R/ VAS 5	Better	X		
<b>If required pretest symptoms:</b>					
SGIS - R					
Rep SGIS -R					
SGIS - L					
Rep SGIS -L					

### STATIC TESTS

Sitting slouched \_\_\_\_\_ Sitting erect \_\_\_\_\_  
 Standing slouched \_\_\_\_\_ Standing erect \_\_\_\_\_  
 Lying prone in extension 5 min/ Centralising/ center + back R/ VAS 7 Long sitting \_\_\_\_\_

**OTHER TESTS** Lying prone in extension was the second load strategy tasted. \_\_\_\_\_

### PROVISIONAL CLASSIFICATION

Derangement \_\_\_\_\_ Dysfunction \_\_\_\_\_ Posture \_\_\_\_\_ Other \_\_\_\_\_

Derangement: Pain location unilateral/asymmetrical - below knee \_\_\_\_\_

### PRINCIPLE OF MANAGEMENT

Education Posture \_\_\_\_\_ Equipment Provided Lumbar roll \_\_\_\_\_

Mechanical Therapy Yes / No \_\_\_\_\_

Extension Principle EIL rep 10 reps every 2 hrs \_\_\_\_\_ Lateral Principle \_\_\_\_\_

Flexion Principle \_\_\_\_\_ Other \_\_\_\_\_

Treatment Goals Reduce the derangement \_\_\_\_\_

## LITERATURE REVIEWS

**Summary and Perspective of Recent Literature***Stephen May, PhD, MA, FCSP, Dip. MDT, MSc (UK)*

*Synopsis: Stabilisation exercises for the lumbar spine do not stabilise; pre-manipulative tests for the cervical spine lack validity; neurological recovery from lumbar disc herniation is not guaranteed. ~ Stephen May*



**Laird RA, Kent P, Keating JL. Modifying patterns of movement in people with low back pain – does it help? A systematic review. BMC Musculoskeletal Disorders 2012;13:169**

**Objective**

To investigate the effect of interventions to change lumbar muscle activity or kinematics with no restriction according to duration of back pain.

**Design**

Systematic review of randomised controlled trials.

**Patients**

All patients with low back pain.

**Interventions**

Interventions that were specifically designed to influence muscle activity, lumbo-pelvic kinematic patterns, or postural patterns.

**Main outcome measurements**

Specific muscle activation, measures of kinematics or posture to see if these changed between baseline and post-intervention; plus, measures of pain and disability to see if changes between the two correlated.

**Main results**

Twelve trials were finally selected, of which half appeared to be high quality. Six of the 12 considered muscle activity, four considered the flexion relaxation response, two movement patterns, and one postural patterns. Effect sizes for muscle activity pattern changes, for instance in transversus abdominus or multifidus, were inconsistent, mostly non-significant, and generally small to moderate in size. Interventions to change the flexion relaxation response were inconsistent, two were no different, and two favoured the intervention group. A relationship between improvements in pain or function and changes to these movement patterns was observed in one of six, one of four, and two of three in respectively muscle activations, flexion relaxation response, and lumbo-pelvic kinematics or posture interventions.

**Conclusions**

Movement-based interventions aimed at changing physiological attributes, such as muscle activation or flexion relaxation response, were generally ineffective at changing any of these patterns. Furthermore, changes in physiological attributes were infrequently associated with positive changes in pain or disability.

**Comments**

This review provides further evidence that those interventions supposedly directed at changing muscle function for transversus abdominus, lumbar multifidus, etc., do not bring about these changes. The results from so-called specific core stabilization exercises are no better than those receiving general exercises in terms of what happens to muscle function. In other words, 'core stabilization' exercises do not effectively strengthen so-called 'core stability' muscles. Furthermore, improvements in pain and functional disability, which are patients' key concerns and much more important than proxy physiological measures mentioned above, appear to be unrelated to these physiological changes.

This is yet another systematic review that highlights the limitation of the evidence-base for stabilization exercises for the management of low back pain. Previous reviews have highlighted the limited evidence-base for stabilization exercises; this review takes our understanding a stage further. Not only are these type of exercises not particularly helpful in reducing pain and disability, but if this happens this does not correlate with changes in muscle function. In other words, the theoretical rationale for doing the exercises is not supported by this data.

<http://www.biomedcentral.com/1471-2474/13/169/abstract>





**Hutting N, Verhagen AP, Vijvermann V, Keesenberg MDM, Dixon G, Scholten-Peters GGM. Diagnostic accuracy of premanipulative vertebrobasilar insufficiency tests: a systematic review. Manual Therapy 2012;in Press**

### **Objective**

To evaluate the diagnostic accuracy of pre-manipulative vertebrobasilar artery insufficiency tests.

### **Design**

Systematic review of three databases up until 2012; included studies had to include a comparison of a clinical test with a 'so-called' gold test, and sensitivity, and specificity. The methodological quality was judged by the QUADAS criteria.

### **Patients**

Patients varied, in one study they were asymptomatic, in two studies there were symptomatic and control groups, and one study involved patients undergoing a neurovascular examination. Symptomatic groups included those with vertigo and patients with vertebrobasilar ischemia.

### **Intervention**

Following a detailed search strategy and then filtering of studies, only four studies were finally included. The index test was a combined extension rotation manoeuvre in three studies, and cervical rotation only in one study. The reference tests used were duplex and Doppler.

### **Main outcome measurements**

Studies were judged for quality using QUADAS, and accuracy was reported for sensitivity, specificity, and positive and negative predictive values and likelihood ratios.

### **Main results**

Study quality varied from 6-9 out of 14 criteria. Sensitivity was low and insufficient, range 0-57%; specificity was moderate to good, range 67-100%. Positive predictive values had a very large range 0-100%; negative predictive values from 26-96%. Positive likelihood ratios had a vast range from 0.22 to 83.25, with extremely large confidence intervals; negative likelihood variables ranged from 0.44 to 1.40.

### **Conclusions**

It was concluded that it was impossible to draw firm conclusion from only four studies of questionable quality. However, they suggest that the data on the diagnostic accuracy of the tests indicates that these 'pre-manipulative tests' do not seem to be valid in the pre-manipulative screening process as indicators of risk for a poor outcome.

### **Comments**

How does the reader interpret these results? Sensitivity was low indicating that the tests miss too many people at possible risk of complication (false-negatives). Specificity was better, indicating an ability to prevent false-positive tests, but this is less important in this instance than detecting those at risk, which requires better levels of sensitivity. The 95% confidence intervals for the positive and negative predictive values were very wide indicating a lack of precision; furthermore, the predictive values are questionable because of the low population prevalence of the condition. Positive likelihood ratios greater than one indicate greater risk, and negative likelihood ratios less than one indicate reduced risk. These are the preferred measure of a test's accuracy as they use all the data, and unlike predictive values, are unaffected by changes in the prevalence of the disease. However, the fact that the figures lay either side of one, and again the extremely large 95% confidence intervals mean that the data must be interpreted with extreme caution. Bottom line – the usefulness of the test 'is almost zero'. The focus should be on risk factors for vascular trauma if wanting to predict a dire outcome rather than pre-manipulative tests only. Alternatively, do not consider using manipulation as the results are no better than exercises only.

[http://www.unboundmedicine.com/medline/citation/23127991/full\\_citation/  
Diagnostic\\_accuracy\\_of\\_premanipulative\\_vertebrobasilar\\_insufficiency\\_tests:\\_A%  
c2%a0systematic\\_review](http://www.unboundmedicine.com/medline/citation/23127991/full_citation/Diagnostic_accuracy_of_premanipulative_vertebrobasilar_insufficiency_tests:_A%c2%a0systematic_review)



**Suri P, Rainville J, Gellhorn A. Predictors of patient-reported recovery from motor or sensory deficits two years after acute symptomatic lumbar disc herniation. American Phys Med Rehab 2012; *in Press***

**Objective**

To determine the prevalence of patient-reported recovery from motor or sensory deficits two years after an acute lumbar disc herniation, and to identify predictive factors for recovery.

**Design**

A prospective cohort.

**Setting**

An out-patient spine clinic in the USA.

**Patients**

Consecutive adults (N = 154) with lumbosacral radicular symptoms with onset 12 weeks or less due to disc herniation, confirmed by MRI with neurological signs and symptoms.

**Intervention**

The interventions varied, but were mostly conservative, and consisted of advice on return to normal activity, oral medications, physical therapy, and epidural injections; with a very small minority receiving surgery. All patients received a standardised neurological assessment at baseline.

**Main outcome measurements**

Those with a motor or sensory deficit at baseline were followed up at two years to determine how many still had a neurological deficit, and if any baseline factors predicted recovery from neurological deficit.

**Main results**

At baseline of 154 patients with non-chronic lumbar radiculopathy with neurological signs or symptoms, 95 (62% of total) presented with motor deficit, of whom 48 (50% of those with motor deficit) had combined motor and sensory deficits, and 59 (38% of total) presented with sensory deficits only. Response rate from those who had had neurological deficit at baseline was 110 (71% of initial 154). Of those who had had muscle weakness at baseline, there was follow-up of 69 / 95 (73%). At follow-up, 49 (71% of those followed up) had no weakness, and 20 (29% of those followed up) still had muscle weakness. Of those who had had sensory deficit at baseline, there was follow-up of 41 / 59 (69%). At follow-up, 21 (51% of those followed up) had no sensory loss, and 20 (49% of those followed up) still had sensory loss.

A positive straight leg raise test (odds ratio 0.26) and opioid use (odds ratio 0.24) were independently and negatively predictive of motor recovery. Female gender was independently and negatively predictive of sensory recovery.

**Conclusions**

Recovery from neurological deficits is not standard with recovery from lumbar radiculopathy, and can persist despite recovery from predominant pain symptoms.

**Comments**

There is limited literature on recovery rates from neurological impairment following disc-related lumbar radiculopathy. This article provides a useful contribution to knowledge in this area. This study would suggest that long-term persistence of motor deficit occurs in a third of patients, and long-term persistence of sensory loss in about half of patients presenting with neurological impairment at baseline. A positive straight-leg raise test ( $p=0.02$ ) and female gender ( $p=0.01$ ) is weakly associated with persistence of motor and sensory deficit respectively.

Unfortunately, the authors do not report improvements in pain and function associated with neurological improvements or lack of them. And in what appears to be a parallel paper on the same cohort, the numbers are reported as 133 consecutive patients (Suri et al. 2011), rather than 154 as reported here. However, in this additional paper, it does report outcomes for the whole group, and these are generally very positive. Oswestry disability index falls from about 50% at baseline to about 10% at 12 months; leg pain from 7/10 to less than 2/10; and back pain from around 5/10 to 2/10 (Suri et al. 2011). Clearly, the cohort as a whole improved.

The authors do not indicate exactly what the conservative treatment was; description of one component of the treatment as 'physical therapy' is not very helpful as no detail is provided as to exactly what was done. The other disappointing aspect of the study is that it does not identify how many of the cohort came with radicular pain patterns, but no neurological symptoms of weakness or paraesthesia.

The authors suggest that female gender and positive straight-leg raise are associated with a poor prognosis. It has also been suggested, but not tested, that numbness becoming tingling, decrease in severity of numbness, decrease in constancy of tingling, and reduction in area of paraesthesia, may be indicators of improvement in neurological deficit (McKenzie and May 2006). These rather more detailed ways of testing neurological impairments would require further testing.

Bottom line – if a patient comes to you with radicular pain and neurological symptoms, you might or might not make the pain centralize and abolish; but even if you do, the sensory loss or muscle weakness will persist in a significant minority.

<http://www.ncbi.nlm.nih.gov/pubmed/23153857>

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**BUSINESS & MARKETING CORNER****A Great Marketing Angle on Getting Dentists to Recognize the Importance of MDT**

*Yoav Suprun, PT, Dip MDT*

The article below illustrates how common sense and good business sense have allowed two practitioners, Timothy J Caruso, PT, MBA, Cert. MDT and David J Pleva, PT, MA, Dip. MDT to expose the benefits of MDT at the American Dental Association Annual Conference.

I feel this article is a great read, offering smart marketing techniques. I hope it will help stimulate you to think of ways you can expose the value of MDT and all the benefits it has to offer.

Dentists are professionals that constantly load and abuse their own spines, making mechanical knowledge invaluable to them. With heavy patient loads every day, they will most certainly refer you to others after discovering how you have helped them and their staff.

No matter what profession, whether a Dentist, Gynecologist, Veterinarian, Lawyer, Accountant or any other, all can benefit from MDT assessment and treatment.

We thank Tim and David for submitting this article and encourage others to send us more stories like this one! We can all benefit from assisting each other with tips on marketing MDT to the world.

Yours,  
Yoav Suprun, DPT, Dip. MDT

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**McKenzie Physical Therapists and the American Dental Association**

*Timothy J. Caruso, PT, MBA, Cert. MDT and David J. Pleva, PT, MA, Dip. MDT*

Dentistry has come a long way in the last 150 years. The evolution of anesthesia, dental techniques, materials, equipment, and approaches has come a long way from standing up with a pair of pliers and a can of ether. However, daily discomfort continues to be tolerated day in and day out by many dental practitioners. Pain appears to be an accepted part of the dental profession, and it seems to be worsening. The patients are pain free but how about the dental staff? While back pain is one of the most common causes of disability in the working population, there are very few professions besides professional sports that regularly accept pain as part of their daily routine. What has dentistry done about the pain experienced by the practitioner? Football, soccer, wrestling and boxing all have pain built into the equation for participation but why do dental professionals?

To answer that question, in 2011 at the American Dental Association Annual Conference in Las Vegas, we were invited to participate in the health screenings portion of the national meeting. We were asked to perform musculoskeletal surveys and postural screenings on dental professionals who attended this portion of the conference. Additional screenings the dental professionals participated in included latex allergies, carpal tunnel syndrome, levels of mercury, head neck screens and a blood draw for cholesterol levels. The screenings were so well received that we were invited back to the health screening at the annual conference in 2012 in San Francisco.

In Las Vegas, using MDT, we screened 62 participants in two days. We had originally allowed for 20 minute "appointments", but due to some confusion with scheduling, we were quickly overrun with dental professionals that wanted to be screened. The process included having seated and standing posture photographed before and after his/her screening. Next, a musculoskeletal pain survey and abbreviated MDT assessment were given. The recorded complaints ranged from spinal to extremity pain and even a few non-mechanical presentations. The dental professionals were very appreciative of the time we had with them, the tips we provided and recommendations for follow-up with a McKenzie certified therapist closer to home. Tim also provided several presentations on Posture Pain & Productivity in Dentistry and Fitness & Function in Dentistry. At 8am on the last day of the conference, he did a lecture on Surviving Back & Neck Pain in Dentistry with over 500 dental professionals in attendance! Perhaps there is a real need out there?!



In San Francisco, we enlisted the help of three other California licensed, McKenzie certified therapists (Todd Soares, PT, Cert. MDT, Karl von Tiesenhausen, PT, Cert. MDT, Marianne Potts, PT, Cert. MDT) to perform the screenings. Over 100 dental professionals were screened for various spinal and extremity problems. Once again, we performed seated and standing postural photos prior to the musculoskeletal pain survey and then the MDT assessment. On Friday, Tim gave the "Posture, Pain and Productivity in Dentistry" presentation to over 200 attendees. The talk discussed what proper posture is compared to the faulty postures dental professionals maintain during the day in the operatory and ways to improve their posture with various seating/standing strategies, how the use of loops, proper seating and lighting along with proper body mechanics and ergonomic strategies can enhance one's dental career. On Saturday, we gave a presentation "Surviving the Rest of Your Career" to the same audience regarding conservative versus surgical intervention for back and neck pain with the goal of encouraging dental professionals to take control of their back/neck pain. We presented common pain generators as well as the role poor posture has in the development or prolonging pain. In addition, we presented on MDT as an effective way to relieve their current pain as well as preventing future onset or episodes. Once again, we made the attendees aware of the McKenzie Method of MDT as a first line of defense for ongoing back and neck pain. Additionally, we informed them how to access the McKenzie website to search for certified MDT therapists nationwide.

Our experience and the feedback that we have received has been invaluable and speaks to the need to share the importance of seeking out and exhausting conservative spinal care before signing up for surgical intervention. There are a significant number of individuals in any number of professional organizations that don't have any idea where to start to seek out initial care and treatment for ongoing back and neck pain. We can see the potential of partnering with the American Dental Association to provide this information and perhaps one day MDT evaluation and treatment as a service to its members.

We are excited to be returning once again to perform musculoskeletal screenings at the 2013 American Dental Association National meeting in New Orleans.