

# moving in the right direction

Mechanical Diagnosis And Therapy™  
of the spine and extremities

## Thoughts from Baltimore...

Michelle Miller, PT, Dip. MDT

This year's McKenzie Conference of the Americas, "Striving for Clinical Excellence in an Era of Evidence Based Medicine", was held in the beautiful harbor city of Baltimore. Topics focused on marrying the current state of research in MDT and other orthopedic approaches to patient care in the clinic. As I participated in this year's conference, I walked away with a "wow moment".

One of things that I have always enjoyed and respected about McKenzie conferences is that the presenters and topics run the gamut of orthopedic opinions, not just pro-MDT. This year's conference was no different. Presenters discussed the use of orthopedic tests and groups of tests in order to improve diagnostic and prognostic indicators.

Chad Cook, PT, PhD, MBA, OCS, FAAOMPT started off this year's conference discussing the importance of getting away from diagnosing and treating using a patho-anatomical model. He talked about how the data collected from a group of tests can improve the probability of a successful outcome. He also discussed how the order of tests can improve that probability. Dr. Cook emphasized the idea that classification leads to better outcomes.

Several speakers including Dr. Cook, Steven George, PT, PhD and Mark Werneke, PT, MPT, Dip. MDT brought up the new CPR (clinical prediction rule) for Low Back Pain. The CPR will be discussed in greater detail by Ron Schenk, PT, PhD, FAAOMPT, Cert. MDT within this edition of the MDT Bulletin. In short, several specific orthopedic tests, when positive, are shown to be a good indicator that a patient will respond to a general non-specific

lumbosacral manipulation. Thus, as stated in Dr. Cook's presentation, the CPR classifies patients into a subgroup to prognose outcomes.

These concepts are really nothing new to McKenzie therapists. Classifying patients into subgroups in order to determine prognosis is something that Robin McKenzie has been talking about for decades. McKenzie therapists group tests such as ROM measurements, neuro baselines and repeated movement tests to determine if symptoms centralize/peripheralize or if mechanics change. These results allow us to classify patients in the subgroups. We can predict good vs. poor outcomes and often rapid vs. slow responders. The order of these tests (repeated movement testing) is extremely important in order to correctly subclassify the patients. Additionally, we have learned that there is just as much value in a general mobilization/manipulation as a specific one, which the CPR is now indicating.

As I sat there listening to the various speakers, I had the excited realization that many of the orthopedic physical therapy ideas from various camps are beginning to slowly merge and come together. We may use different words, but the ideas are similar. Ideas of classification, sub-grouping and generalized hands-on techniques are now beginning to grow throughout orthopedics. So, now is the time to take the opportunity to talk to your non-McKenzie colleagues and educate them on the similarities, learn from each other, and get physical therapy to take a giant leap forward together. Wow!

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## You're Not an Island

Christie Downing, PT, Dip. MDT

As a PT student, my McKenzie training was summarized as: 'There's this guy, Robin McKenzie...he came up with some exercises...but there isn't really any evidence for it.' I accepted that philosophy at face value without ever investigating it myself. I graduated PT school in 2000, with what I thought was a very sound basis in spinal care...and then I entered the real world. I found that positional faults were hard to find and that it was hard to reach a consensus amongst other practitioners. Sometimes patients got better and sometimes they didn't...positional faults or not.

It took an exceptional PTA to turn on my proverbial light switch. She kept giving my patients "REIL," which of course she needed to translate for me as "Repeated extension in lying." I still could not understand why she gave patients this exercise until we had our own 'Mr. Smith.' I thought, ok, I guess if I'm going to understand this McKenzie stuff, I'll have to take a course...so then I can really scrutinize it...and I'll be prepared to challenge the instructor with their lack of evidence!

I took Part A in 2005 from Jerry Pica. I positioned myself in the front row... ready to shoot down his "theories." Jerry is a nice, humble man who proceeded to discuss the lumbar spine. Then he pulled out a research article to support what he was discussing. With each passing point, he pulled out another article, inviting us to review the research as we pleased. By the third day, the table on which he placed the articles was completely full. "Oh man!"

I thought, "Now I'm going to have to eat crow!" I walked away with a whole new respect for MDT, but it would still be a couple years before I convinced myself I needed to take the Part B course.

By the time I did take Part B with Dana Greene in Chicago, I was convinced I wanted to sit for the certification exam, and by the time I took Part D with Scott Herbowy in Springfield, I wanted the Diploma. In 2009, I attained that goal in Rio.

So, here I am, one year after obtaining the Diploma, when I had thoroughly convinced myself just five years ago that MDT was meaningless!

This year marked the first conference at which there was a track for Diplomaed therapists. During this time, I had a chance to have an in depth discussion with a Diplomate, who is the only MDT trained PT in her clinic. "It must be nice to be around so many MDT trained professionals," she said. "I'm in a clinic where I'm the only one doing it! I am...an island." It was at this point I realized something very important, and replied, "No, you are not an island, you are a seed!"

It takes but one seed to grow an entire forest. However, that seed needs to be planted and nurtured. Never underestimate the influence you can have on your co-workers and local community of physical therapists. Are you doing all you can to plant the seeds of MDT?

## ►► Play Ball: How to Win the Game when Applying Extension Principles

Kim Greene, PT, Dip. MDT

Have you ever become frustrated watching football players as they attempt the same plays over and over again without scoring? The players get increasingly frustrated while the fans slowly trickle out of the stadium. You can often see the same phenomenon in the clinical setting when students improperly use extension principles, leaving their patients on the sidelines without any noticeable progress. Even if the students correctly classify the patient as having a lumbar derangement, for example, they might go for a touchdown with REIL. Unfortunately, many fail to get even a first down because they don't use the correct extension technique. In applying the extension principle, students often make the following mistakes:

1. Too much force instead of force regression
2. Not enough time for lesion to reduce
3. Failure to assess alternative loading strategies
4. Failure to get patients to end-range
5. Failure to progress force

One common error is using too much force. When the history suggests starting slowly, you should proceed with caution and use modified starting positions, aided by pillows or props. Prone lying can be an effective starting exercise for some patients. With a kyphotic deformity, you must be patient – don't expect to score on Day 1. If you don't have hours to allow the patient to reduce in the clinic, you must protect the patient from further injury at home: warn them not to be too aggressive with the exercise. These lesions take time, and too much force WILL result in severe exacerbation and often peripheralization. Force regression can also be demonstrated by decreasing the frequency of daily exercise. For example, if a patient returns complaining that they are worse in that their back pain is now constant, you should consider decreasing their number of repetitions per day. Unfortunately, some students assume that a constant ache indicates centralization, and fail to make the necessary adjustments. Being able to recognize the proper exercise technique and frequency is a skill that requires practice using the MDT method. Remember to remain cautious on Day 1, avoid becoming too doctrinal with your exercise prescription. Wait for the patient to return so that you can observe their response over time. If the patient is able to manage their problem merely by performing their exercises three times a day, you can go into ball control and run out the clock, confident of victory.

When faced with problems that are long-standing or accompanied by a deformity, remember to allow ample time for the lesion to reduce. In the MDT world, therapists often expect rapid changes within a few days and start to fret if the patient is seen for more than six visits. If we think we have fallen behind early, there is a tendency to change strategy too quickly. But time and patience can heal, especially when using sustained positions to reduce a derangement. Don't abandon your game plan until three weeks have passed without improvement. But keep your head in the game. Reassess weekly to:

- a. Confirm classification;
- b. Keep the patient motivated/encouraged; and
- c. Reinforce proper technique

If the lesion is going to take time, the therapist needs to reassure the patient that the treatment is on the right track. Knowing the relevant literature is vital. The patient needs to understand that the exercises can resolve the problem, and that moving in the wrong direction is associated with

poor outcomes (Long et al 2004). Significantly, you must educate the patient that their likelihood of surgery decreases significantly if they can tolerate lumbar extension techniques without leg symptoms (Kopp et al 1986). Any literature that supports directional preference provides reassurance, and will keep the patient's head in the game until they begin to see real progress.

Even when the therapist is convinced that the game plan is sound, flexibility is superior to myopia. Assessing alternative loading strategies is fair game at any point during the assessment process and the therapist should exhaust the alternatives before aborting the extension principle. For example, sustained extension and REIS are both alternative loading positions, and either can be a powerful tool when used with the right patient. Either procedure can result in full reduction, and the therapist can use either as the first test movement of the repeated movement section of the examination. Once the technique decreases, abolishes or centralizes symptoms, the game is over and treatment complete. Every patient does not require end-range techniques to attain full reduction; a concept that is difficult for many students to grasp.

Nonetheless, for most patients, failing to get to end-range will not result in victory. As always, the therapist can stay in the game with extension techniques by constantly assessing the patient's symptomatic response. For example, just because a patient can fully extend their elbow in a prone lying position does not necessarily mean they have reached end-range lumbar extension: the patient MUST feel strain or pain in the affected area. Particularly with post-surgical patients, it is common to fear a worsening presentation with end-range extension techniques.

Demonstrating end-range on peripheral joints can help patients recognize the importance of achieving maximum joint mobility. In the lumbar spine, the following suggestions can help attain end-range:

- a. Using SAG technique described in lumbar spine text (McKenzie & May 2003)
- b. Using phonebooks under hands
- c. Using armrest from couch + pillows (sustained extension)

Finally, extension techniques can fail because therapists do not progress force when necessary. Force progressions are required with derangements, if the patient plateaus or reports no improvement. Assuming the patient returns without improvement, the following symptomatic responses require force progressions: prod/NW, dec/NB, inc/NW, abolished/NB, or partial centralization (i.e. centralizing). Force progressions are described in the lumbar text as follows: patient generated forces, patient OP, clinician OP, mobilizations and manipulations (McKenzie & May 2003). If you are not putting your hands on patients approximately 20% of the time, you are spending too much time on the sidelines. Our ability to know when to progress force is critical to march down the field in crunch time, so keep your head in the game and stay focused.

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## Hot off the Press... Journal of Manual & Manipulative Therapy announces John Medeiros Award winner



The Journal of Manual & Manipulative Therapy (JMMT) editorial team announced the winner of the 2010 John Medeiros, Distinguished Authorship Award at the AAOMPT annual conference in October: 'Prevalence of Classification Methods for Patients with Lumbar Impairments using the McKenzie Syndromes, Pain Pattern, Manipulation and Stabilization Clinical Prediction Rules' (JMMT, Vol. 18, No. 4, December 2010) by Mark Werneke, Dennis Hart, Dave Oliver, Troy McGill, David Grigsby, Jason Ward, Jon Weinberg, William Oswald and Guillermo Cutrone.

JMMT's Editor, **Chad Cook** (Walsh University, USA), commented on the winning paper: "One of the greatest strengths of the paper lies in the potential impact on day-to-day clinical practice. This paper demonstrates that variant forms of classification have significant overlap and that some forms of clinical decision rules lack prevalence in clinical practice."

Congratulations to Mark Werneke, PT, Dip. MDT and his team of researchers supporting the McKenzie Method!

*Read the complete press release in the online post of this issue.*

### CASE STUDY

## Evaluation and Treatment of a Lumbar Derangement: Asymmetrical to Knee

*Garima Ramchandani, PT, DPT, Cert. MDT, Cert MP*

### HISTORY

A 49 year old female came to the clinic; she has been experiencing mild right side back pain for a four month period for no apparent reason. Two weeks ago, the symptoms markedly worsened. She now has severe right sided back, buttock and thigh pain. She denies any symptoms below the knee level. Symptoms are intermittent in the back and thigh.

Symptoms are worsened with bending, sitting, prolonged standing and walking. She gets relief with lying down although she complains of disturbed sleep. She did report of low back pain, after a bike injury three years ago that resolved fully. There are no red flags.

### EXAM

Patient did not want to sit for the history taking secondary to the pain. Standing posture demonstrated an accentuated lumbar lordosis. Her neurological examination was within normal limits. Movement loss demonstrated a major loss of flexion, minimal loss of extension and a minimum loss of left side glide movements. Repeated movements demonstrated increase symptoms with FIS and EIS had NE. Repeated FIL (70 repetitions) resulted in a marked decrease in the overall symptoms and symptoms started centralizing with a good restoration of lumbar flexion range of motion. A provisional classification of a Derangement (Asymmetrical to the knee) was established. Patient was instructed to do RFIL 10-15 repetitions every hour.

### VISIT 2 (4/14/10)

Patient reported that the thigh pain had reduced in intensity, at present had groin pain. Intake of pain medication had also reduced. She could sit for five minutes yesterday. FIS now demonstrated a moderate loss. Left SGIS min loss. RFIL had no effect on her symptoms. She was progressed to RFIL+ over pressure, with that, her pain was centralizing and her flexion ROM was increasing. She was sent home with RFIL with overpressure (10 reps every hour).

### VISIT 3 (4/16/10)

Patient reported being worse after doing the RFIL + OP. She was advised to stop the overpressure, however continue with RFIL. FIS and left SGIS demonstrated moderate loss, left SGIS was painful. RFIL reduced her thigh pain, had no effect on the right buttock pain. At this time, repeated flexion in step standing RFISS (R) was explored and reduced the thigh and buttock pain, which remained better as a result. The FIS and Left SGIS now demonstrated an increase ROM with less distal pain. A relevant lateral component was exposed. Patient was sent home doing RFIL, followed by RFISS (R) 10-15 reps every hour.

### VISIT 4 (4/19/10)

Patient was moving better, the intensity of right buttock and thigh symptoms had reduced. FIS now demonstrated minimal loss and left SGIS had a minimal loss. No change in Home Exercise Program (HEP).

### VISIT 5 (4/21/10)

Patient could now walk for 10 min and cook at home. The ability to get the patient back on the sagittal plane was tested. The patient was sent home doing RFIL 10-15 reps every hour.

### ADDITIONAL VISITS (4/23/10-5/11/10)

On the sixth visit, the patient reported ability to sit and walk for 7-8 min. Intensity of symptoms continued to decrease. She was advised to do flexion in sitting 10-15 reps every hour.

Patient was progressed using flexion principles for next four visits. On 11th visit FIS and Left SGIS demonstrated no loss. She had minimal left sided groin symptoms. She could now sit and walk for 45 min to an hour. Standing was still limited to 30 minutes. Patient reported sitting and housework had improved 75% and ability to dress independently had improved 95%. She was driving independently.

### DISCUSSION

This patient demonstrates the importance of force progressions using MDT principles, and how force progression can expose a relevant lateral component. RFIL + OP demonstrated a good response in clinic, but the patient's symptoms worsened at home. That response exposed a relevant lateral component. Thereafter, she was put back on sagittal principle and followed the force progressions of flexion principle according to MDT guidelines.

Some therapists might conclude that a worsening presentation (Day 3) would indicate the need to explore extension rather than the lateral component. Clinical reasoning for addressing the lateral component includes:

1. No obstruction to extension
2. Flexion ROM improved, but still had unilateral symptoms
3. Left SGIS mod loss/increased distal symptom after RFIL + OP

The time frame required to reduce an anterior derangement is usually about three weeks. This patient reports 50% improvement at three week mark, but this is not surprising considering she had symptoms four months prior to treatment. Therefore, the longstanding history correlates with the amount of time required to reduce the derangement.

In the spirit of learning to translate MDT, we must understand what other evidence is available for clinicians. There has been a growing body of evidence to support the use of clinical prediction rules (CPRs) to help with our treatment choices. This body of evidence is well supported by the American Physical Therapy Association (APTA) and the American Academy of Orthopedic and Manual Physical Therapists (AAOMPT), and is becoming the "gold standard" when discussing "evidence based practice" for musculoskeletal disorders. Ron Schenk is a well renowned clinician, educator, and fellow of AAOMPT. He is associate professor at Daemen College and director of Daemen College Orthopaedic Manual Physical Therapy (OMPT) Fellowship and MDT Fellowship programs. In addition to being a clinical mentor, he teaches thrust manipulation which is a required course if you are considering the MDT fellowship program. He recently published an article in the *Journal of Manual and Manipulative Therapy*\* supporting the efficacy of MDT in patients who meet the CPR for spinal manipulation. His insights to the similarities and differences between this body of evidence and our body of evidence can serve as a bridge towards better understanding our approaches, thus allowing better "translation" with your colleagues. (\* <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC2813504/>)

## ▶▶ Clinical Consideration of the Clinical Prediction Rule for Spinal Manipulation

Ron Schenk PT, PhD, OCS, FAAOMPT, Cert. MDT and Terrence Rose PT, DPT, FAAOMPT

The Clinical Prediction Rule (CPR) for Spinal Manipulation has been referenced and discussed among those professionals who treat musculoskeletal disorders (Flynn et al 2002, Childs et al 2004). This rule, and the establishment of others, has greatly contributed to the body of evidence available to clinicians. How the CPR for manipulation has been interpreted, particularly among manual physical therapists, has created considerable debate. How the rule may be clinically applied is another question which warrants discussion.

The CPR for spinal manipulation demonstrated that a lumbopelvic thrust technique may reduce symptoms and improve perceived level of function, in the short term, among patients with low back pain (LBP). The CPR criteria, which include acute pain, low Fear-Avoidance, lumbar hypomobility, no pain below the knee, and hip internal rotation >35 degrees, indicate that the specificity that many physical therapists, osteopaths, and chiropractors thought to be critical in applying thrust may not be as necessary as previously thought.

The CPR lumbopelvic thrust technique has been presented in the past as one which would address dysfunctions of the sacroiliac joint. In the 1980s, a physical therapist/chiropractor, Dr. Richard Erhard, described the technique later used in the Flynn et al (2002) study as being effective for treatment of the lumbar spine, as well as the sacroiliac joint. When asked why the technique was so effective, Dr. Erhard remarked "the technique simply gets people with acute back pain moving again". Restoration of movement and function is a patient goal shared among rehab professionals, and, although Dr. Erhard may have identified the patients who may be responsive to the technique intuitively, his results speak to the outcomes of skilled clinicians who provide the foundation of evidence based practice.

Similar to the effectiveness of a lumbopelvic manipulation for people with acute LBP, manipulation of the thoracic spine has been found to be effective in a subgroup of patients with neck disorders (Cleland et al 2007, Cleland et al 2010). The results related to both of these lines of research may point to more of a neurophysiological effect, rather than a mechanical effect from thrust manipulation. The neurophysiologic effects from thrust may render these procedures to be most efficacious early in the continuum of care as a means of controlling the symptoms to better prepare the patient for corrective interventions. Perhaps, as noted by Dr. Erhard, their most common use is to provide symptomatic relief. Based on the presumed ability to impact intra- and periarticular mechanoreceptors, thrust may be considered an important pain relieving modality that serves its greatest role in addressing symptoms early in the plan of care.

The CPR investigations also challenge the clinical relevance of the passive movement testing (Gonella et al 1982, Insaco et al 1995). Although hypomobility appeared in the CPR criteria, it was not found to be among the strongest predictors of a favorable outcome (Flynn et al 2002). Despite this, the lack of reliability in mobility studies may stem from research designs, which do not directly parallel the sequence of diagnostic information gathered from the history, structural, and active and passive movement examination. Such clustering of examination findings has been identified as being critical in arriving at a physical therapy diagnosis (Van Dillen et al 2001, Cibulka et al 1999).

The information gathered from the patient, through a thorough diagnostic process that includes a thorough history, active, repeated, and passive motion testing, may not only benefit the individual patient, but may also be utilized to explain unusual results or failure of subgroups of patients to improve with a selected intervention. Kent et al (2010) examined research methods used to subgroup low back pain and found that studies of subgrouping of patients should involve assessment methods, hypothesis-setting studies, hypothesis-testing studies, narrow validation studies, broad validation studies, and impact analysis studies. To date, published CPRs have not enveloped this breadth of analysis.

In a further examination of CPRs, May and Rosedale (May and Rosedale 2009) evaluated existing CPRs against established criteria to determine the quality of the studies and the overall development of the CPRs against a set number of stages. In this research, 16 studies were reviewed that related to nine different CPRs. These studies investigated and attempted to find clinical characteristics for responders to manipulation, stabilization exercise, physical therapy, chiropractic, traction,

rehabilitation, usual care, and zygapophyseal joint injections. In regards to the manipulation CPR, evidence to date for its clinical utility is limited and contradictory. The authors concluded that, overall, there is limited evidence to support the general application of spinal CPRs.

As opposed to a "rule", CPRs may add to the clinician's decision making when combined with a thorough and detailed examination process. The resultant diagnosis may still not indicate appropriateness of thrust if the patient's affect, culture, or willingness to receive that intervention creates doubt in the clinician as to its potential benefit. Another concern in the application of a CPR as a "rule" is that other, competitive interventions could be as effective in patients who meet the selection criteria described in the CPR.

In a study supported by a grant from the International Mechanical Diagnosis and Therapy Research Foundation (IMDTRF), 32 consenting adult patients who met the CPR selection criteria were randomly assigned to receive Spinal Thrust Manipulation (STM) (n=12) or Mechanical Diagnosis and Therapy (MDT) (n=19) treatment. The Oswestry Disability Questionnaire (ODQ), Fear-Avoidance Beliefs Questionnaire work subscale (FABQ), and the Numerical Pain Rating Scale (NPRS) were administered initially, and at 2-week, 6-month, and 1-year follow-up. Data were analyzed for changes in ODQ, NPRS, and straight leg raise scores from initial examination through 1-year. Subject crossover from one treatment to another was allowed once, if symptoms failed to improve. All four subjects choosing crossover went from spinal thrust STM to MDT. Results indicated a more favorable reduction in pain response with MDT in patients who met the CPR for spinal manipulation (p=.008), indicating that patient selection criteria for this CPR may not be exclusive for lumbar regional STM (Schenk and Dionne 2010).

A thorough examination process, which includes testing of patient-generated end range movement, may be an option for patients who meet the CPR for spinal manipulation. A critical question remains as to which approach or approaches, based either on CPRs or a standardized examination, will provide not only improvement on a short-term basis, but also on reducing recidivism in the long-term. As we consider increasing health care costs, better management strategies may involve subgrouping of patients based on detailed examination and patient response rather than CPRs alone.

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# THE MCKENZIE INSTITUTE LUMBAR SPINE ASSESSMENT

Date 4/13/10  
 Name \_\_\_\_\_ Sex **F**  
 Address \_\_\_\_\_  
 Telephone \_\_\_\_\_  
 Date of Birth \_\_\_\_\_ Age **49**

Referral: GP / Orth / Self / Other

Work: Mechanical Stresses Homemaker

Leisure: Mechanical Stresses \_\_\_\_\_

Functional Disability from present episode Sitting, bending, driving

Functional Disability score \_\_\_\_\_

VAS Score (0-10) \_\_\_\_\_

## HISTORY

Present Symptoms See above

Present since 4 1/2 months Improving / Unchanging / Worsening

Commenced as a result of \_\_\_\_\_ Or no apparent reason

Symptoms at onset: back / thigh / leg

Constant symptoms: back / thigh / leg Intermittent symptoms: back / thigh / leg

Worse bending Sitting / rising Standing [long term] walking [short term] lying  
 am / as the day progresses / pm when still / on the move  
 other \_\_\_\_\_

Better bending sitting standing [short term] walking [short term] 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 \_\_\_\_\_

Previous History \_\_\_\_\_

Previous Treatments 3 yrs ago bike injury

## SPECIFIC QUESTIONS

Cough / Sneeze / Strain / +ve / -ve Bladder: normal / abnormal Gait: normal / abnormal

Medications: Nil / NSAIDS / Analg / Steroids / Anticoag / Other

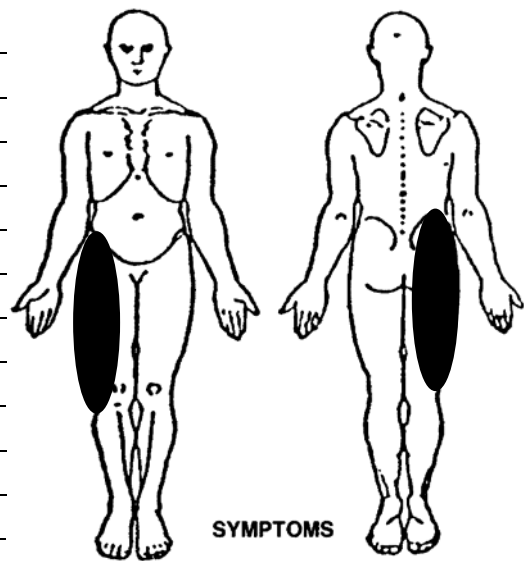
General Health: Good / Fair / Poor

Imaging: Yes / No

Recent or major surgery: Yes / No Fibroid Tumor 3 yrs Night Pain: Yes / No

Accidents: Yes / No Unexplained weight loss: Yes / No

Other: \_\_\_\_\_



**EXAMINATION**

**POSTURE:** Sitting posture **NA** as pt **unable to sit**

Sitting: *Good / Fair / Poor* Standing: *Good / Fair / Poor* Lordosis: *Red / Acc / Normal* Lateral Shift: *Right / Left / Nil*  
 Correction of Posture: *Better / Worse / No effect* \_\_\_\_\_ Relevant: *Yes / No*  
 Other Observations: \_\_\_\_\_

**NEUROLOGICAL**

Motor Deficit WNL Reflexes \_\_\_\_\_  
 Sensory Deficit \_\_\_\_\_ Dural Signs \_\_\_\_\_

**MOVEMENT LOSS**

	Maj	Mod	Min	Nil	Pain
Flexion	✓				++
Extension			✓		
Side Gliding R				✓	
Side Gliding L			✓		

**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	↓Rom	No Effect
<b>Pretest symptoms standing: Right hip/thigh</b>					
FIS	↑ LB				
Rep FIS					
EIS					
Rep EIS					
<b>Pretest symptoms lying: Right hip</b>					
FIL					
Rep FIL	X70 ↓↓	B	↑		
EIL					
Rep EIL					
<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 \_\_\_\_\_ Long sitting \_\_\_\_\_

**OTHER TESTS** \_\_\_\_\_

**PROVISIONAL CLASSIFICATION**

Derangement \_\_\_\_\_ Dysfunction \_\_\_\_\_ Posture \_\_\_\_\_ Other \_\_\_\_\_  
 Derangement: Pain location **Ant: Asymmetrical to knee**

**PRINCIPLE OF MANAGEMENT**

Education \_\_\_\_\_ Equipment Provided \_\_\_\_\_  
 Mechanical Therapy: **Yes** \_\_\_\_\_  
 Extension Principle: \_\_\_\_\_ Lateral Principle: \_\_\_\_\_  
 Flexion Principle: **Rep FIL 10-15 reps q 1 hr** Other: \_\_\_\_\_  
 Treatment Goals: \_\_\_\_\_