

moving in the right direction

Mechanical Diagnosis And Therapy®
of the spine and extremities

In preparation for next year's 12th International Conference in Mechanical Diagnosis and Therapy "Pushing the Boundaries of Musculoskeletal Care" in Austin, Texas, October 6-8, this is the first in a series of interviews with a few of our keynote speakers – Meet Maurits van Tulder, PhD*.

1. What led you to present at the MII conference in Austin and what do you hope to achieve?

I enjoyed participating in the last conference in Rio de Janeiro and look forward to a similar great experience of mixing clinical and scientific expertise. I hope that participants get a better understanding of the usefulness of scientific research for their clinical practice.

2. Since the international conferences primarily focus on research, there are often varying opinions on the best evidence for musculoskeletal pathology. What advice do you give to clinicians trying to obtain the most accurate evidence available?

My advice would be to use reliable sources, such as the Cochrane Library or BMJ Clinical Evidence. It is especially important to utilize clinical guidelines, as it is very difficult for clinicians to critically read and understand scientific evidence. In clinical practice, other aspects play an important role as well; for example, patient preferences, clinical experience and costs. Guideline committees have weighed the evidence against these other aspects and developed recommendations that are relevant to and feasible in clinical practice.

3. How has literature on the effectiveness of treatments for low back pain changed over the last 15 years? Do you think we are getting closer to understanding the best way to treat this population, and if so, in what way?

The most important changes over the last 15 years are that there are more randomized controlled trials that have an adequate sample size and a low risk of bias, that have a pragmatic study design, that have evaluated multimodal treatments, and that have a more specifically defined population of low back pain. We have improved our understanding of what the best treatment is for specific subgroups of low back patients, but there is still a need to better identify subgroups and target treatment to these subgroups.

4. What advice do you have for clinicians reading the literature and how do you translate research to clinical practice?

My advice would be to always critically read scientific papers and ask the question: What is the relevance for your practice? The best way to translate the literature to clinical practice is through clinical guidelines (see above).

5. During the conference, you will be discussing the behavioral interventions for LBP. Is there a particular tool to measure biopsychosocial issues that you would recommend?

No, the problem is that you would need different tools to measure the 'bio', the 'psycho' and the 'social' aspects. For each of these domains, many tools are available. The most important factor when choosing a tool is that it is a valid and reliable tool.

6. Since your forum will be focusing on biopsychosocial issues, is there any material participants should read before preparing for your discussion?

I do not expect participants to read any material before the meeting, but people who are interested in the biopsychosocial model could read two papers that debate the model:

Weiner BK. Spine update: the biopsychosocial model and spine care. *Spine* 2008;33(2):219-23

And a response to this paper by –Gatchel RJ, Turk DC. Criticisms of the biopsychosocial model in spine care: creating and then attacking a straw person. *Spine* 2008;33(25):2831-6.

7. Is there an outcome survey that you frequently use in the clinic? If so, how do you recommend that it is applied in the clinical setting?

I am not a clinician, so I do not use any surveys in clinical practice. However, be careful when choosing a tool because most are developed for and tested in research and not in clinical practice.

8. Why is it necessary to measure outcomes in clinical practice if applying evidence-based physical therapy to your patient population?

It is necessary to measure outcomes because they can help you to better target treatment. Knowing what the important outcomes are for a patient and knowing that a patient has or has not improved on these important outcomes should be an essential part of clinical practice. For example, measuring improvement in flexibility or range of motion may not be important in a patient who wants to return to work and be able to play tennis again. It might be important as an intermediate step to reaching the ultimate goal of returning to normal daily activities.

9. With your interest in the cost related to chronic diseases, how do you see the management of back pain changing with health care reform?

This question is difficult to answer because, being from the Netherlands, I probably don't have enough insight in the US health care system and in the plans to reform the system. However, if the ultimate goal of this reform is to "lower health care costs while improving the quality of life for those who did not receive health care insurance through their jobs," I think it should mean that management of back pain in the US will shift from care driven by medical specialists in hospitals with a tremendously high surgery rate towards care driven by primary care health professionals with a much lower surgery rate and higher rate of conservative treatments. This would increase quality and decrease costs. However, I think it would be naïve to believe that this change will occur on the short term.

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►► Understanding Critical Appraisal of Literature: A Review from the CSU in Austin, TX 2011

Christie Downing, PT, DPT, OCS, Dip. MDT

At this year's CSU for MDT Diplomates, Mark Werneke, MS, PT, Dip. MDT presented "Clinical Research Fundamentals: What you need to know and how to get started." Course attendees were assigned to review Machado et al's "The Effectiveness of the McKenzie Method in addition to first line care for acute low back pain: a randomized controlled trial." *BMC Medicine* 2010, 8:10 (<http://www.biomedcentral.com/1741-7015/8/10>). In this study, 148 patients with acute non-specific low back pain were assigned to receive a treatment program based on MDT as well as first line care, or first line care only. The results demonstrated that the addition of the McKenzie Method did not lead to clinically meaningful differences in pain, disability, or function compared to first-line care only. A thorough assessment helped us to discern why the results of this study did not yield the results we see in the clinic.

During a practical session on how to critique a research paper, Werneke emphasized three questions to consider when reading a research paper:

1. What is the question being asked by the study?
2. What is the study design?
3. Is the study design appropriate for the question?

The next area for consideration was to perform a critical appraisal of the study's quality, which includes an assessment of internal and external validity. Internal validity judges the methodological criteria intended to control confounding factors and author bias. External validity speaks to the "generalizability" of the study to clinical practice.

There are many ways by which internal validity is assessed through various standardized rating

systems. Cochrane's Methodological Criteria; Delphi list, PEDro and CONSORT are some examples of quality rating systems. Course attendees were asked to use Cochrane's methodological criteria.

We broke into groups to discuss Machado's study against the Cochrane Methodological Criteria which includes:

1. Method of randomization
2. Concealment of treatment allocation
3. Similarity of baseline characteristics
4. Blinding of patients
5. Blinding of outcome assessor
6. Blinding of care provider
7. Co-interventions avoided or equal
8. Compliance
9. Withdrawal/dropout rate
10. Similar timing of outcome assessment
11. Intention to treat analysis

Scoring is administered using a numerical scale with 1=addressed appropriately, 0.5=partially addressed and 0=not addressed. High quality reviews typically have an internal validity $\geq 7/11$. The CSU participants rated the Machado's paper's internal validity as high with an average score of 8.5/11.

While internal validity is often discussed in the literature, external validity is more difficult to quantify. It is here we discuss the paper's relevance or generalizability to current clinical practice and ask questions such as: "are these patients similar to my patients?", "was the treatment applied in a manner consistent with what can/should be done in practice?" Machado et al did not describe specific treatments or combination of treatment components, which were used for each patient classification. For example, there was no discussion on what type of interventions were applied for patients

without directional preference or centralization. In addition, we looked at the study with a critical eye to determine what might have affected outcomes between the two treatment groups. Despite evidence in the literature supporting that classification of patients *prior* to assignment into treatment groups is important to meaningful interpretation of randomized controlled trial (RCT) results, patients in the Machado study were not classified prior to the randomization process. For example, if a patient with an irreducible derangement were included in the MDT plus first line care group; this would have confounded the results, and it would not be consistent with MDT practice guidelines.

Data analysis did reveal those who participated in MDT first-line care group were less likely to seek additional healthcare. Although cost analysis was beyond the scope of the current study, the association between MDT and cost effectiveness merits further investigation especially in light of today's health care financial crisis. The CSU group concluded that the generalizability or external validity of the Machado study leaves many clinical questions yet to be fully answered.

In conclusion, critical appraisal of any study is an important part of evidence-based clinical practice. While the RCT is considered the gold standard for judging treatment efficacy, both the study's internal and external validity need to be critically appraised by the clinician before the quality of a study can be meaningfully assessed. A poorly designed RCT is of little benefit; however, even a well-designed RCT with good internal validity must still be evaluated for its external validity before the clinician should consider changing their practice pattern.

It is now easier than ever to start training in the McKenzie Method thanks to the development of our new comprehensive online component for Parts A and B!

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Go Lateral with help from the REPEX (Repetitive End Range Passive Exercise) Table

Kim Greene, PT, Dip. MDT

Day 1 (8/5/11):

Patient reports that she is better with a decrease in leg pain. She reports no change in function, but feels exercises are helping. Left side glide - Major Loss. Treatment: L SGIS x20 q 2 hrs. + posture correction.

Day 2 (8/10/11):

Patient reports she is better as leg pain abolished for several days. Primarily complains of hip/thigh pain which increases with the exercise. Improved walking and standing tolerance. Improved L SGIS. Still unable to exercise or walk at faster speeds. Treatment: L SGIS x20 q 2 hrs. + posture correction.

Day 3 (8/17/11):

Patient reports no change. Hip pain is limiting her ability to exercise or walk at faster pace. L SGIS increases hip symptoms. Extension dec/NB. REIL with hips R + lateral OP dec/B. Treatment: REIL with hips R x20 q 2 hrs. + posture correction.

Day 4 (8/19/11):

Patient reports no change. Patient reports having difficulty with lateral OP at home. Initiated REPEX x 150 reps with pillows to offset hips (**see picture**) which decreased hip pain/ Better. Treatment: REIL with hips R x20 q 2 hrs. + posture correction. Return next day for Repex.

Day 5-10 (8/20/11-9/3/11):

Patient reports slow improvement. Repex with hips off center improves symptoms, but patient unable to replicate at home. Patient initiated a two week treatment of REPEX x 200 reps with pillows to offset hips three days/week. Treatment: REIL with hips R x20 q 2 hrs + posture correction.

Day 11 (9/10/11):

Patient reports improved walking speed and feels she can return to exercise with minimal hip pain. No longer with motion loss. Good response to sagittal plane loading. Treatment: REIL x20 q 2 hrs. + posture correction.

Day 12-14 (9/17/11-9/24/11):

Patient returned to gym and fast pace walking without difficulty. Good response to recovery of function. All goals met and discharged to home program.

This case study is an excellent example of a patient that was treated using only the extension principle when she required lateral techniques to fully reduce her lumbar derangement. The criteria for initiating lateral techniques are as follows (McKenzie & May, 2003):

- a. Relevant lateral shift deformity
- b. Loss of lateral movement**
- c. Sagittal plane worsens/peripheralizes
- d. Plateaus with sagittal plane**
- e. Unilateral/asymmetrical symptoms**
- f. Improves with frontal plane techniques**

This patient met **four of six of the above criteria** indicating lateral forces were required. Unfortunately, this patient was unable to create enough force at home due to the following obstacles:

- a. Decrease in upper extremity strength; often seen with aging population
- b. Lived alone without help to provide lateral overpressure

Since the duration of symptoms lasted nine months, the derangement required many repetitions to reduce; therefore, the REPEX was utilized aggressively for a two week period resulting in a decrease in thigh and hip pain. As noted in the picture, the lateral component was addressed using the REPEX with pillows and belt fixation to offset the hips. During the initial evaluation, the REPEX was used diagnostically to determine if more repetitions in sagittal plane would be beneficial; in her case, there was no lasting effect, so lateral techniques were implemented.

In summary, the REPEX is a very effective tool in reduction of a stubborn derangement and diagnostically to determine if lateral techniques are necessary; therefore, it is highly recommended that every clinic make use of this valuable modality.

McKenzie RA, May S (2003). The Lumbar Spine, Mechanical Diagnosis and Therapy (1st Edition). Spinal Publications Ltd, Waikanae.

View the completed assessment form online at www.mckenziemdt.org/newsletter/CaseStudy.cfm



»» MDT representation at AAOMPT Conference 2011

Christopher Chase, PT, Dip. MDT

I was recently able to attend the 2011 American Academy of Orthopedic Manual Physical Therapy (AAOMPT) Conference in Anaheim, California. Having attended a number of APTA conferences and five MDT conferences, I thought I knew somewhat to anticipate; however, it was not exactly what I expected. The conference was attended by over 500 manual physical therapists; it was very well designed, and I am very proud that MDT is a participatory member of this Academy. The amount of quality information I listened to, the number of excellent networking opportunities I experienced, and the overall experience cannot be well summarized in such a brief overview, but I can present a glimpse of my experience attending an AAOMPT conference.

The conference began for me with a two day pre-conference manipulation workshop led by Tim Flynn. The ratio of lab instructors to participants was excellent at 4:1 and there was a treatment table for every two participants. A number of course participants were presenters at the main conference and many were well published, very experienced, and instructors in various manual therapy fellowship programs. We all were given considerable instruction, constructive feedback towards our skills, and even given the opportunity to share with the group our own variations and techniques.

The main conference began on Friday with four main speakers. Bill Vicenzino from Australia presented treatment information for elbow conditions, chiefly lateral epicondylitis and gave both excellent summaries of current research that is being done and the protocols that he has utilized. His treatment focuses on mobilization with movement and, while his search for directional preference is much different than an MDT practitioner, his treatments looked very similar to those who respond to elbow extension.

Stanley Paris then gave the first ever Distinguished Lecture. He gave a nice summary of the history of Orthopedic Manual Therapy and included information on the most influential manual therapists in his opinion. He included significant information about Robin McKenzie and even suggested that every clinic should have someone on their staff that is trained in this method as it is highly effective for a large patient population. He went on to challenge other current researchers and said some spirited comments that encouraged debate about where the future of manual therapy is going.

During lunch, a number of awards were given. In particular, Ron Schenk, PT, Cert.MDT, FAAOMPT and the Director of both the Daemen College and McKenzie Fellowship programs was presented the prestigious Kaltenborn "Teach I Must Award" in recognition for his many accomplishments in the field of Orthopedic Manual Physical Therapy. His speech was great and (although only cell phone quality) here is a video capture of his speech - <http://www.youtube.com/watch?v=sE70TO90aCs>

Friday afternoon, Eric Robertson gave a keynote address about healthcare moving forward and utilizing technology to assist in the delivery of manual physical therapy. His information was very up to date and made me think about whether or not we are using technology to our advantage in our current practice. Tim Flynn was the final Keynote speaker and gave an address entitled: "Stop the Madness: Physical Therapists Solution to Chronic Spinal Pain." He spoke of all the money spent on typical medical intervention and provided data on the cost saving when patients are allowed to seek physical therapy directly. His address was well organized and motivated therapists to be very proactive in providing excellent care to those in need of spinal treatment.

Friday's assembly concluded with a Panel Discussion. The first question challenged whether Clinical Prediction Rules (CPR's) can coexist with current treatment and schools of thought involving manual physical therapy. Many contested opinions were given and the next hour provided lively debate and allowed a number of different points of view to be expressed.

On Saturday, from approximately ten break-out sessions, you could choose to attend four. I chose 1) clinical decision making, 2) research focused, 3) current thoughts and indications for cervical manipulation, and 4) an extremity workshop that dealt with causes of pain and offered differential neurological examination techniques to help with your clinical decision making process. Each workshop was well organized, but I have to say Mark Werneke, PT, Dip.MDT and Dennis Hart's research workshop was very well received and a number of well published researchers were very complimentary on their current research designs and offered significant praise for the research they are collecting using Practiced-Based Evidence. If anyone who is either Cert or Dip in MDT is thinking they want to contribute to research but they do not know how, I highly suggest you contact Mark at mwerneke@centrastate.com and inquire to see if joining his team collecting data might be right for you.

Sunday concluded with one last keynote speech from Gerard Brennan and nearly 20 research presentations. There were other great highlights to this conference including an impressive demonstration of poster presentations (80 to be exact), numerous opportunities to socialize and network in the exhibit hall, a very nice welcoming ceremony, the annual AAOMPT business meeting, and even a social reception including a dance on Saturday evening. I must also congratulate Bob Robinson, DPT, Dip.MDT, FAAOMPT who completed his Fellowship in the MDT program and was recognized in the 2011 class of new Fellows in the Academy.

In conclusion, it was an impressive conference with good MDT representation. As always, MIUSA exhibited and provided great information for those professionals who did not know much about MDT. Dr. Schenk and Bob Robinson deserve congratulations on their awards and accomplishments with this organization! I look forward to growing professionally by learning from those in the Academy as well as hopefully exposing them to my experiences using MDT.

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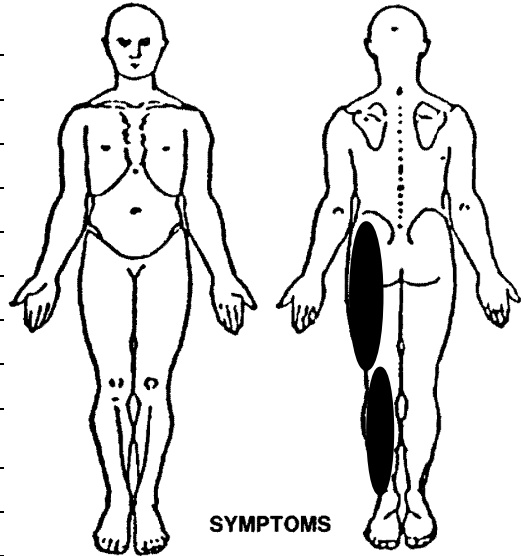
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THE MCKENZIE INSTITUTE LUMBAR SPINE ASSESSMENT

Date 8/3/11
 Name Mrs. Repex Sex M / F
 Address _____
 Telephone _____
 Date of Birth _____ Age 63
 Referral: GP / Orth / Self / Other chiropractor
 Work: Mechanical Stresses retired
 Leisure: Mechanical Stresses _____
 Functional Disability from present episode Unable to exercise and walk fast
 Functional Disability score _____
 VAS Score (0-10) _____



HISTORY

Present Symptoms Left low back, thigh and leg
 Present since 9 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 walking lying
am / as the day progresses / pm when still / on the move
 other Exercise and fast walking
 Better bending sitting standing walking 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 Chiropractor x3 months with some improvement: REIL

SPECIFIC QUESTIONS

Cough / Sneeze / Strain / +ve / -ve Bladder normal / abnormal Gait: normal / abnormal
 Medications: Nil / NSAIDS / Analg / Steroids / Anticoag / Other nil
 General Health: Good Fair / Poor Heavy smoker
 Imaging: Yes / No (+) DJD Lumbar Spine
 Recent or major surgery: Yes No Night Pain: Yes No
 Accidents: Yes No Unexplained weight loss: Yes No

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** Relevant: Yes / No

Other Observations: _____

NEUROLOGICAL

Motor Deficit Nil Reflexes Nil
 Sensory Deficit Nil Dural Signs Nil

MOVEMENT LOSS

	Maj	Mod	Min	Nil	Pain
Flexion		X			Increase
Extension			X		Nil
Side Gliding R				X	Nil
Side Gliding L	X				increase

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
Pretest symptoms standing: Left back, thigh and leg pain					
FIS					
Rep FIS					
EIS	X1 NE				
Rep EIS	X30 Inc	NW			
Pretest symptoms lying:					
FIL					
Rep FIL					
EIL	X1 NE				
Rep EIL	X30 +belt OP Dec	NB			X
Trial of REPEX + Belt	X 50 reps Dec	NB			X
If required pretest symptoms:					
SGIS – R					
Rep SGIS - R					
SGIS - L	Increase				
Rep SGIS - L	X60 Dec/B	Improved walking	X		

STATIC TESTS

Sitting slouched _____ Sitting erect _____
 Standing slouched _____ Standing erect _____
 Lying prone in extension _____ Long sitting _____

OTHER TESTS _____

PROVISIONAL CLASSIFICATION

Derangement Asymetrical/Unilateral below knee Dysfunction _____ Posture _____ Other _____
 Derangement: Pain location _____

PRINCIPLE OF MANAGEMENT

Education _____ Equipment Provided Lumbar Roll
 Mechanical Therapy: Yes / No
 Extension Principle: _____ Lateral Principle: Rep L SGIS x20 q 2 hrs
 Flexion Principle: _____ Other: _____
 Treatment Goals: Improve standing, walking and exercise tolerance