

Feature Commentary**“PATIENTS COME FIRST—EXPLORING OPTIMAL CARE”: A CLOSER LOOK AT THE 14TH INTERNATIONAL CONFERENCE IN MECHANICAL DIAGNOSIS AND THERAPY***LINNET C. KAZEMII, PT, DPT, DIP.MDT*

Late September 2017 found many clinicians from around the world convening at the 14th International Conference in Mechanical Diagnosis and Therapy in California, USA. The conference kicked off on a beautiful, crisp, sunny day in San Francisco.

Welcoming remarks by Lawrence Dott, CEO of the McKenzie Institute International, and an official opening of the ceremony by Dr. Todd Wetzel, Conference Chairman, preceded Friday afternoon’s session entitled “Ensuring Optimal Care for Low Back Pain: Surgery or Not”. In this session, George Supp set the stage with his look at the persistent rising costs of low back pain and the need for consensus between practitioners in the management of patients. From there, we began the journey of one such patient, Betty, through four presentations.

Our first stop was with Mark Werneke’s examination into the usefulness of MDT and prognostic indicators, such as Centralization and psychosocial measures, to determine the progress of a patient. He reported such measures should be collected serially throughout a patient’s treatment and to also, “... consider both Centralization and mental factors in a patient. Even if they centralize, that may not change fear.” (Werneke et al. 2009) He advised that in patients like Betty, where fear may be a factor in their lack of improvement, to utilize a graded exposure approach to return them to full functioning. In the case of Betty, she was progressively reintroduced to biking, both in the clinic and at home. When her patient reported outcome measure (PROM) was repeated, her score increased as had been expected but not seen with Centralization. Hans van Helvoirt then presented on what to do when MDT fails. He reported that there is evidence to support combining TESI with MDT, creating good short and long-term effects as compared to short term effect with ESI alone (Van Helvoirt 2014). Following that, Dr. Tamar Pincus discussed which patients shouldn’t have surgery, how to tell them, and how to advise these patients that they’re not going to get better with surgery. Dr. Todd Wetzel rounded out the panel with his discussion of who really needs surgery and reported fusion is not supported for the treatment of axial spine pain and that an optimal invasive strategy has not been identified for axial spine pain.

Dr. Helen Clare presented on classification systems and noted that the NIH Task Force recommends subgrouping patients based on the impact that chronic low back pain has on the patient (Deyo et al. 2015). They have suggested subgrouping the patients based on the pain intensity, the functional status, and the pain interference on daily activities (Deyo et al. 2015), which, Dr. Clare feels, may be a useful addition to what we are already using. Mark Werneke continued the classification and subgroup discussion and stated that patients with NSLBP are too complex to identify measureable subgroups to treat. He reported that subgrouping boxes patients into rigid, unidirectional approaches and doesn’t consider either the multidirectional patient characteristics or the characteristics of the clinician. He suggested that maybe randomized controlled trials aren’t the only way to determine our effectiveness with subgrouping and suggested the use of observational studies with PROMs. He said that the caveat to subgrouping is serial PROMs in order to capture improvement, or lack thereof, in a patient. The bottom line: subgrouping alone isn’t enough. We, as clinicians, have to take that next step with serial PROMs to ensure that, even if our provisional classification is correct, we have included all aspects of the multifactorial patient in order to assure a successful patient outcome. Just like Betty’s case earlier, a patient may centralize, but her improvement not be reflected in PROM if there are other psychosocial aspects, such as fear, affecting the clinical presentation. Subgrouping with serial PROMs allows us to treat the entire patient biopsychosocially. Friday concluded with a presentation by Dr. Mark Hancock on the limitations of subgrouping in which he recommended combining subgroup approaches, for example, STarT back and MDT.

Inside This Issue:

- Feature Commentary
- Guest Commentary
- Clinician’s Perspective
- Literature Review
- Business & Marketing Corner

Saturday opened with Grant Watson setting the stage with a discussion on the extremity joints and differentiating the extremity from the spine as the source of the lesion. Dr. Andry Vleeming presented a talk on the SIJ where he stated that, due to pain provocation and palpation tests, there is a clear way to distinguish pain from the SIJ as the origin from the lumbar

spine. Dr. Heidi Prather discussed the hip joint and its overlap with the spine and pelvic girdle. She cautioned clinicians about the difficulty with searching for one “source of pain”, as this may cause the clinician to erroneously avoid the examination and treatment of another relevant area. Richard Rosedale presented the early findings from his current study that is still in the data collection phase regarding extremity pain and ruling in or out the spine as the source of the pain. In data collection so far, 46% of extremity patients who, on intake reported no neck or back pain with their extremity pain, have been found to have the cervical or lumbar spine as the origin of their pain. Chris Chase presented a case study to differentiate the lumbar spine from the hip joint and reminded us of a few key points: spinal pain is more constant and patients with extremity pain feel better at rest; often spine pain is NAR and extremity pain has a mechanism of injury; and, spinal patients feel better with movement and extremity pain with rest and inactivity. He reminded us to always add overpressure to rule out the lumbar or cervical spine with an extremity, and if there is no change with extension, quickly check flexion and side glides. From there, Dr. Michael Heggeness presented data from both a 16-person pilot study as well as a 225-patient, double blinded, placebo-controlled study in which the intraosseous nerves underwent ablation and patients were found to improve their ODI scores post ablation. He asked us to consider the vertebral bones as a pain generator.

After lunch, Robert Medcalf kicked off the afternoon session regarding the cervical spine. Dr. Annina Schmid discussed the importance of including the small fibers in our neuro exams through the use of pinprick and temperature, and that a normal neurodynamic test does not mean the nerve is okay (Apelby & Albrecht 2013). Hans van Helvoirt presented a pilot study of three patients in which patients who peripheralized with a MDT assessment underwent an ESI (Desai et al 2013). If after ESI the patient was still a non-centralizer, then the recommendation was to focus on graded loading respecting the upper extremity symptoms. However, if the patient centralized after the ESI, then s/he was treated with MDT (Desai et al 2013). Greg Lynch followed Hans with a systematic review on the differentiation of the cervical spine from the shoulder. He cautioned us to make sure we are carefully and thoroughly ruling in or out the cervical spine in patients with shoulder pain because up to 30% of these patients with the shoulder as the primary source of pain, could have the cervical spine as the origin of their pain (Abady et al. 2017). Finally, Dr. Pierre Cote presented on Whiplash Associated Disorder (WAD) and stated that 50% of patients will still have symptoms one year later, while 50% of patients will recover in three to six months. However, he cautioned that these numbers are highly dependent on how you define recovery. He reported that the prognosis of a patient with WAD is worse with radicular signs and symptoms, increased initial neck pain intensity and increased initial disability (OPTIMa Collaboration 2016). He stated that in the treatment of WAD, MDT, HEP and advice, strengthening therex, manipulation and mobs, acupuncture and educational videos helped the patient, but the degree to which they helped them was small (OPTIMa Collaboration 2016). At the same time, massage, heat, estim and TENS were found to have no effect being equal or worse than placebo (OPTIMa Collaboration 2016).

Saturday afternoon concluded with a series of talks on MDT outside the clinic. Connie Lee presented her experience treating patients in northern Canada via telehealth and Jason Ward presented his recent Mechanical Care Everywhere (MCE) trip to Peru to bring MDT to the locals. Nicolas Turcotte presented the challenge of treating athletes on the field to screen out who needs further medical attention versus who will benefit from MDT. He noted that when working with high level athletes, they need to be pushed harder and to do more reps to be successful with MDT. Peter Schoch presented his information on the use of MDT as a screening tool to determine which patients in a healthcare system should proceed directly for a surgical consult versus patients who could undergo MDT. He found that in 10 years of screening for a provisional classification with one visit, 66% were a Derangement and 30% were OTHER. At the same time, only 4% needed to go directly for the surgical consult. William Oswald presented on the use of MDT in the emergency room (ER) in a busy New York City hospital. He reported that 45% of patients are in the ER because they can't access their primary care doctor and 30% of patients use the ER as their primary care doctor. In 15,000 visits, 37% of patients had lumbar spine pain and 20% had cervical spine pain making the ER a great place to potentially capture patients and lead them down the road towards a successful outcome rather than down the road towards an opioid addiction. As you can see, Saturday was chock full of interesting and useful information to advance the clinicians breadth of knowledge as well as offered some new perspectives to consider in the use of MDT.

The final day of the conference opened with a panel on the management of the patient. Dr. Carrie Diulus offered a treatment alternative to those patients suffering from obesity related comorbidities such as Type II Diabetes. She reported that in such patients rather than encourage willpower or a decrease in caloric intake with an increase in energy expenditure, that perhaps a whole food, plant based diet of fat and vegetables would be more successful. Dr. Matthew Smuck presented on the use of medication in musculoskeletal conditions and reported the increase in heroin use in the U.S. over the past five to seven years is due to the restriction in opioid prescriptions. He reported that opioids cause greater than 40,000 deaths per year, surpassing the number one cause of accidental deaths, motor vehicle accidents. He concluded that, “There is no good evidence for medicine for the treatment of back pain.” (Bally et al. 2017). Dr. Adriaan Louw presented on words that harm and heal patients and stated that the most powerful words in medicine

are “You’re going to be okay.” Dr. Pincus gave us tips to change patients’ attitudes through providing sufficient knowledge, motivation and opportunity and that we need to ensure that we aren’t giving generic reassurance and taking into account the patient’s beliefs, their truth and their goals. As well, we as clinicians need to offer the patients options and discuss the pros and cons (Pincus et al. 2013). The Sunday morning session concluded with Dr. Vikas Agarwal depicting, through videos, his experiences with the use of MDT as a primary care physician in the U.S. It was fascinating to watch patients with complaints of abdominal and chest pain, or restless leg syndrome, respond to an MDT assessment. Be sure to check out these videos on Dr. Agarwal’s You Tube channel, as informing the mainstream medical community of these findings could significantly impact both patients and the healthcare system.

The final session of the conference was titled “Changing Health Care Practices”. Dr. Cote returned to discuss clinical iatrogenesis in those patients with WAD and stated that TENS has no effect on patients with WAD and the focus needs to be on physical activity and performance. Dr. Louw presented on pain and the patient. He stated that no treatment will make you 100% pain free and that “Tissues heal. So, it’s not that you have a tissue issue. You have a pain issue.” (Louw et al. 2016). As clinicians, he encourages us to focus on function not pain when questioning the patient and as the pain decreases, function increases, so despite the pain, slowly return to function. The conference session concluded with Ezequiel Gherscovici’s talk on MDT and public health. He invited clinicians to join his initiative to bring MDT to public healthcare officials. To get involved, email your local branch and tell them you want to get involved with the public health committee.

There was certainly a wealth of knowledge gained at this year’s conference, and as always, the conference concluded with the presentation of the Extension Award. The winners were:

2016: Ron Schenk, PT, PhD, OCS, FAAOMPT, Dip. MDT

2017: Hans van Helvoirt, MA, PT, Dip.MDT/MT

Thank you to both the conference organizers and presenters who have challenged us to think, grow and work towards becoming better MDT clinicians through this venue! Hope to see you next time!

References:

1. Werneke M, Hart D, George S, Stratford P, Matheson J, Reyes A. (2008). Clinical outcomes for patients classified by fear-avoidance beliefs and centralization phenomenon. *Arch Phys Med Rehabil*; 90:768-777.
2. van Helvoirt H, Apeldoorn AT, Ostelo RW, Knol DL, Arts MP, Kamper SJ, van Tulder MW. (2014). Transforaminal epidural steroid injections followed by mechanical diagnosis and therapy to prevent surgery for lumbar disc herniation. *Pain Med*; 15:1100-1108.
3. Deyo R, Dworkin S, Amtmann D, Andersson G, Borenstein D, Carragee E, Carrino J, Chou R, Cook K, DeLitto A, Goertz C, Khalsa P, Loeser J, Mackey S, Panagis J, Rainville J, Tosteson T, Turk D, Von Korff M, Weiner D. (2015). Report of the NIH task force on research standards for chronic low back pain. *In J Ther Massage Bodywork*; 8:16-33.
4. Apelby-Albrecht M, Andersson L, Klevia IW, Kvale K, Skillgate E, Josephson A. (2013). Concordance of upper limb neurodynamic tests with medical examination and magnetic resonance imaging in patients with cervical radiculopathy: a diagnostic cohort study. *J Manipulative Physiol Ther*; 36:626-632.
5. Desai M, Padmanabhan G, Simbasivan A, Kamanga-Sollo G, Dharmappa A. Directional Preference Following Epidural Steroid Injection in Three Patients with Acute Cervical Radiculopathy (2013). *Pain Practice*; 13:559-565.
6. Heidar A, Rosedale R, Chesworth B, Rotondi M, Overend T. (2017). Application of the McKenzie system of Mechanical Diagnosis and Therapy (MDT) in patients with shoulder pain: a prospective longitudinal study. *J Man Manip Ther*; 1-9.
7. Cote P, Wong JJ, Sutton D, Shearer HM, Mior S, Randhawa K, Ameis A, Carroll LJ, Nordin M, Yu H, Lindsay GM, Southerst D, Varatharajan S, Jacobs C, Stupar M, Taylor-Vaisey A, van der Velde G, Gross DP, Brison RJ, Paulden M, Ammendolia C, David Cassidy J, Loisel P, Marshall S, Bohay RN, Stapleton J, Lacerte M, Krahn M, Salhany R. (2016). Management of neck pain and associated disorders: a clinical practice guideline from the Ontario protocol for traffic injury management (OPTiMa) collaboration. *Eur Spine J*; 25:2000-2022.

8. Bally M, Dendukuri N, Rich B, Nadeau L, Helin-Salmivaara A, Garbe E, Brophy JM. (2017). Risk of acute myocardial infarction with NSAIDs in real world use: bayesian meta-analysis of individual patient data. *BMJ*; Ahead of Press.
9. Pincus T, Holt N, Vogel S, Underwood M, Savage R, Walsh DA, Taylor SJ. (2013). Cognitive and affective reassurance and patient outcomes in primary care: a systematic review. *Pain*; 154:2407-2416.
10. Louw A, Zimney K, O'Hotto C, Hilton S. (2016). The clinical application of teaching people about pain. *Physiother Theory Pract*; 32:385-395.

GUEST COMMENTARY

Mechanical Care Everywhere 2017: Peru

Colin Davies PT, Dip. MDT, Lynn Grimm PT, Dip. MDT, Laura Mannering DPT, OCS, Cert. MDT, Lee Poston PT, Dip. MDT, CSCS, Betsy Scudder, PT, DPT, Cert. MDT and Jason Ward MPT, Cert. MDT

The inaugural Mechanical Care Everywhere volunteer trip, organized by Jason Ward, took a group of six devoted MDT clinicians from six different locations to Peru in August 2017. Our recently assembled team of one McKenzie Institute Faculty Member, two Diplomates and three Credentialed MDT Clinicians hopped on multiple, long flights to reach the historical city of Cusco, 11,152 feet above sea level, and treat patients in a foreign language. Armed with knowledge, donated books and little else, we joined forces with a local crew, including Spanish and Quechua translators. On Monday and Wednesday, we treated patients in the village of Ccorca outside Cusco. On Tuesday and Thursday, we saw patients in a hospital outpatient department in Cusco itself. MI Faculty member, Colin Davies gave an introductory presentation on MDT our first evening, and we were able to provide some hands-on education to the hospital staff and even treat a few of the local crew members. Of course, sightseeing was built into the itinerary, and many a car/van/train trip and meal were spent discussing various aspects of patient care as well as MDT's role. We also had an impromptu treatment session: One evening, Colin treated a hotel clerk as Jason Ward facilitated and filmed. (Others of us had some wine and enjoyed the show!)



Frequency of flexion and poor sitting posture are not unique to the developed, technological world we know. Many women, men and children in Peru painstakingly farm and raise livestock without the assistance of machinery that we are accustomed to in North America. This means hours of planting and harvesting potatoes, as well as heaving, lifting and carrying sacks, not to mention miles upon miles of walking mountainous terrain. And? You guessed it! This daily routine involves very little spine extension. In the small mountain village of Ccorca, most residents are farmers and there are no physical therapists. (In the city of Cusco proper, physical therapists exist, though the ones we met performed treatments focused on massage, electrotherapy and heat.) The importance of assisting the patient in becoming self-reliant has rarely been so evident. What better system is there besides MDT (based on an assessment and subsequent education of the patient in self-care) to assist the Ccorca residents with their musculoskeletal problems? What better system for the public worldwide?

Lynn recounts:

"It was amazing to see how small the world is becoming and how many similarities we have. Cusco and New Orleans are both Roman Catholic cities and share many similar customs - masks, celebrations, Catholic school uniforms, even a second line parade following a funeral that reminded me of home.

After having traveled hours to get to our makeshift clinic in Ccorca, patients lined up waiting to see us. Some women could not wait patiently in line and would do their best to interrupt my evaluation to insist that I see them by tapping on my shoulder or thrusting their intake forms into my view. They were desperate for help! While many people were expecting pain medication based on their prior treatments, they were so grateful to find non-pharmaceutical methods to manage their symptoms. Numerous patients had tears in their eyes as they thanked us for the time that we spent assessing them and giving them tools to self-manage.

I had an 85-year-old woman who carried a pack who had walked two hours to seek care and had to rush back to take care of her animals before dark. Extension in standing over a table abolished her painful symptoms in minutes. There were tears in both of our eyes as we hugged each other after the assessment. Was this something she could do? Yes. Was this something she could do on her own?

Yes. No need for endless visits to the clinic, something that is not a possibility in this culture anyhow.

I remember reading many years ago that Robin McKenzie wanted to reach as many people as possible to allow them to have the tools to treat their own pain. Colin reminded us that this was indeed part of his mission and that he would be proud of our efforts in Peru. I am proud to have served and hope to do more in the future.”



Betsy writes:

“Early on in the week, my confidence in my MDT skills was tested. Our first day treating patients in Ccorca was my first opportunity to treat patients with limited access to healthcare and I was eager to help. One of my patients with neck pain that day had been injured in a taxi accident one month beforehand in which the vehicle rolled several times. X-rays had shown five cervical fractures. He was hospitalized for three days, but apparently no further treatment was offered, not even a neck brace to wear home. As I interviewed him that day, he rotated his head side to side while the translator interpreted, “They told him not to do that.” Asking him the dizzy/tinnitus/nausea/swallowing questions prompted him to report worsening vision in one eye. Lots of red flags were popping up in my own field of vision.

I was relieved to remember that other clinicians with a gold mine of knowledge and experience surrounded me. I consulted with Jason and Colin. Jason reminded me of the red flag 5 D’s / 3 N’s. Colin calmly stated, “Oh yes, this sounds like a patient I had at a course I was teaching in India. Not much to be done with that.” After finding a convergence loss in one of his eyes, I could only recommend posture correction and encourage an ophthalmologist visit, if possible. That encounter certainly taught me a deeper appreciation of the built-in red flag screening questions on the MDT assessment form.

I was also taught a valuable lesson about humility that week. I was embarrassed that I had panicked with the neck trauma patient that first day, but later in the week Colin spoke about two “McKenzie-isms” that resonated with me. First, Colin said that, “Mac was a truly humble man”. He never stopped learning from his patients. He was never satisfied that he knew it all, or knew enough, even at the end of his career. And second, that whatever Mac did with patients was motivated by a desire to find answers. He was curious. He made mistakes. He had successes, but he kept on learning. I internalized that perspective and became determined to carry it back home with me.

Fortunately, I was able to help other patients that week, from classic spine Derangements in several farmers, to a Wrist Derangement in an itinerant dentist. I learned important aspects of MDT care from all the people I met. The reach of MDT went “further, further, further” in Peru that week, and in my own heart and mind as well.”



Colin remarks:

“What did strike me was how six people who never really knew each other before could so quickly form an effective and harmonious team all driven by the same purpose of putting the patient’s needs first. Robin would indeed have been proud. Also striking was the irony that the people in Ccorca were better off not having what passes for therapy in Cusco.”

Laura relates:

“Among the many successful patient encounters I had in Peru, an especially memorable case was a male patient around 60-years-old who presented with complaints of left knee pain with walking on hills and with squatting. Testing demonstrated several objective deficits in his knee and lumbar spine. We used squatting as his primary baseline test. It was, indeed, very painful for his left knee, which also buckled at the bottom of the squat, forcing him to push on a table with his hands to return to standing. Repeated movements in the sagittal plane for the spine had no effect on squatting, nor did repeated movements of the left knee (sagittal

and transverse planes). I did not enjoy continually asking him to retest squatting, but that information was crucial, especially considering I would never see him again. I could sense he was growing frustrated as well since, after movement upon movement, squatting remained quite torturous. It wasn't until we performed supine rotation in flexion that squatting proved better. With repetition, his squatting ability continued to improve. He now had no knee movement loss, no knee pain with overpressure and no hip flexor weakness. You could see the excitement on his face! The translator conveyed that the patient was happy and appreciative. I taught him how to perform the maneuver at home and am optimistic that he will be walking and squatting better in the future. I can't think of a system outside MDT that would have given me the opportunity to help this gentleman in one visit and expect continued improvement solely with self-management."

Lee comments:

"The awesome landscape/scenery never hurt, but everyone was just awesome! Like minds, MDT *and* the goal of helping those less fortunate brought us together. After 23 years of physical therapy, it never gets old helping someone who has had chronic pain for years when no one else could - in any language! This is why I am still extremely passionate about MDT today. Robin McKenzie was a genius ... and Jason is a star!"

Jason shares:

"This exploratory trip with a group of mechanically-trained clinicians provided many learning opportunities regarding what is key for success and what does and doesn't work well when delivering MDT in a remote, short-term mission setting. Those who joined me showed such devotion and commitment to the system and to genuine goodwill, so common of many within our ranks. The trip confirmed my belief that there is great utility of MDT even in isolated locations, across unique and different cultures, through communication made



possible only with translation, without extensive clinic equipment or set-up, and with finite patient encounters. The members of this preliminary trip were mostly unfamiliar with each other but were all connected through a common persuasion that our assessment method could do so much good. And, as is usually the case, we were all positively impacted by helping those less fortunate. While working alongside each other, the team learned valuable clinical lessons and came away with a collective feeling of being inspired by working together for a great cause."

This endeavor, indeed, happened because of Jason's vision and determined commitment. Contributions from supporters, including a generous donation from Alistair, Joy and the rest of the McKenzie family, also helped make this a reality. We sincerely thank everyone who gave their time, money, and supplies to the effort. This pilot trip is just the start of what we hope will be a platform through which clinicians from all over can share their expertise and skills with well-deserving but under-served people the world over. More trips are in the planning stages, and if you want to learn more and identify your interest you can do so at www.mechanicalcareforum.com/mce.

- Colin Davies PT, Dip. MDT colindavies@shaw.ca
- Lynn Grimm PT, Dip. MDT lynngrimmpt@gmail.com
- Laura Mannering DPT, OCS, Cert. MDT lauramanneringdpt@gmail.com
- Lee Poston PT, Dip. MDT, CSCS outrigger70@yahoo.com
- Betsy Scudder, PT, DPT, Cert. MDT escudderpt@gmail.com
- Jason Ward MPT, Cert. MDT jwardpt73@gmail.com



A CLINICIAN'S PERSPECTIVE

Identifying Red Flags in Children

Andrew Merget, DPT, SST, Cert. MDT

Direct access gives the physical therapy profession a huge opportunity to be the primary assessor for all musculoskeletal care. With it also comes much greater responsibility to ensure we have the skills to provide an unbiased and thorough examination and evaluation of the person.

As was the case of a 12-year-old female patient seen in an outpatient clinic. At the time of the assessment, the patient looked unwell. The symptom and mechanical effect of the MDT evaluation ruled out derangement, dysfunction and posture syndromes. The OTHER category was ruled in, and in fact, the behavior of symptoms and mechanics was atypical. This case study demonstrates extra obstacles that I encountered during the subjective component of the exam due to her age. It also considers the question of when a patient should be referred out for further investigation.

As an MDT trained clinician, our assessment prior to treatment interventions will guide us on the nature of pain and the behavior of the patient's problem. The subjective examination enables us to create a provisional classification prior to the physical exam by ruling out possible diagnoses. Using the symptom location, the onset duration, Constant/Intermittent, B/W sections and safety/red flags helps us to make our provisional classification. We look for what the condition can and cannot be by letting the patient tell us the "truth" of their symptom behaviors based on unbiased questions regarding their symptoms. This will elicit the true condition of the patient. No matter how crunched we are for time, we can never skip our .

This 12-year old female patient with foot pain had several red flags to note in the history. The first was constant symptoms and a worsening presentation. Furthermore, the patient's 'better/worse' section demonstrated a consistent worsening of symptoms with all activities and no relief with rest. The unwell appearance of the patient was also concerning. Finally, she reported waking multiple times a night unable to find a position of relief forcing her to leave her bed.

The challenge I had with this patient was her young age. Her mother assisted in answering some of her health questions, which made it difficult to extract accurate information from the patient. The mother reported her health as being good, but when the question was redirected to the patient she reported her symptoms make her feel sick. She also stated feeling stomach pain on/off for the past couple of months as well. A point of emphasis for this age group is to ask follow-up questions that allow the patient in front of you to communicate what they are experiencing without assumptions that their parent's responses are an accurate description of the symptom behaviors. Following the history, the provisional diagnosis for her foot pain included derangement, as well as several red flags suggesting possible serious pathology.

The telling moment of the physical examination was the effect of posture correction on her symptoms. The patient's sitting posture was observed to be poor. Interesting, that with posture correction both her feet became numb and increased in pain intensity that continued to worsen over the course of one minute. The symptoms in her feet remained worse throughout the session. The baseline assessment of all lumbar spine movements was significantly limited due to pain, and her foot's active and passive ROM was significantly limited due to empty painful joint end feels.

The lumbar spine mechanical testing revealed no centralization or directional preference, but a relevant relationship to her foot symptoms. It was at this time that I discussed the need for the mother to return her to the MD for further diagnostic testing. As a result, the pediatrician ordered imaging that revealed a rare spinal tumor and referred the patient for follow-up with a neurosurgeon.

The lesson I learned from this patient was not to refer all patients out immediately with worsening symptoms, but to identify that this patient presented with several red flags while at the same time did not have a mechanical/physical examination that would lead to a favorable prognosis with conservative management. Also, to make sure we screen the spine on all extremity patients starting with posture correction.

It is essential to give every patient an unbiased mechanical evaluation. James Cyriax once said, "In each patient there is one truth" and we hold the biases of our opinions on what to do with these patients. It would be easy for clinicians to see this patient as a patient with a foot problem and give them treatment for the foot. However, as an MDT trained clinician, this system allowed me to let the symptoms speak for themselves. I am very thankful to Robin for that.



THE MCKENZIE INSTITUTE LOWER EXTREMITIES ASSESSMENT

Date _____

Name _____ Sex M / F

Address _____

Telephone _____

Date of Birth _____ Age _____

Referral: GP / Orth / Self / Other Other

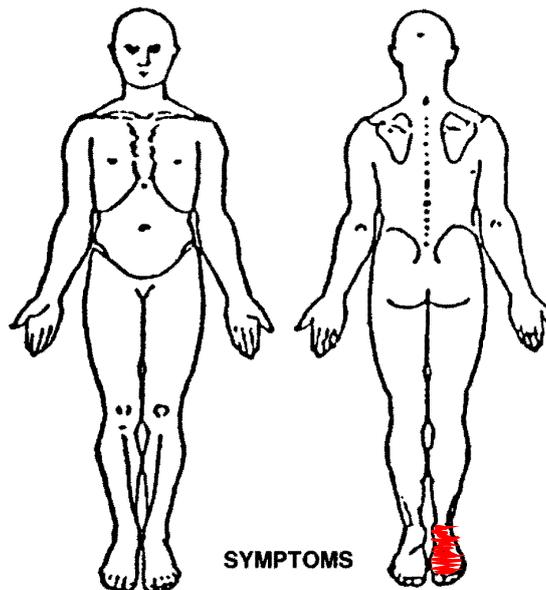
Work: Mechanical stresses _____

Leisure: Mechanical stresses _____

Functional disability from present episode _____

Functional disability score _____

VAS Score (0-10) _____



HISTORY

Present symptoms _____

Present since _____ Improving / Unchanging / Worsening

Commenced as a result of _____ Or No Apparent Reason

Symptoms at onset _____ Paraesthesia: Yes / No

Spinal history _____ Cough / Sneeze +ve / -ve

Constant symptoms: ? Intermittent Symptoms: _____

Worse ? ~~bending~~ ~~sitting~~ / ~~rising~~ / first few steps standing walking stairs squatting / ~~kneeling~~
 am / as the day progresses / pm when still / on the move Sleeping: prone / sup / side R/L
 Other _____

Better ? ~~bending~~ ~~sitting~~ standing walking stairs squatting / kneeling
 am / as the day progresses / pm when still / on the move Sleeping: prone / sup / side R/L
 other _____

Continued use makes the pain: Better Worse No Effect Disturbed night Yes / No

Pain at rest Yes / No Site: Back / Hip / Knee / Ankle / Foot

Other Questions: Swelling Clicking / Locking Giving Way / Falling

Previous episodes _____

Previous treatments _____

General health: Good / Fair / Poor _____

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

Imaging: Yes / No _____

Recent or major surgery: Yes / No _____ Night pain: Yes / No _____

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

Summary Acute / Sub-acute / Chronic Trauma / Insidious Onset

Sites for physical examination Back / Hip / Knee / Ankle / Foot Other: _____

Summary and Perspective of Recent Literature

Celia Monk, PT, Dip. MDT

Kjaer P, Kongsted A, Hartvigsen J et al. (2017). National clinical guidelines for non-surgical treatment of patients with recent onset neck pain or cervical radiculopathy. *European Spine Journal*; 26-9:2242-2257. DOI 10.1007/s00586-017-5121-8.

Objective:

To summarise the recommended non-surgical treatment for patients with neck pain and/or radiculopathy of less than 12 weeks' duration.

Design:

Two work groups performed systematic reviews and meta-analyses to answer clinical questions about the effectiveness of non-surgical treatment as represented in the literature. The subsequent report presented recommendations based on clinical evidence as well as patient preferences.

Setting:

The guidelines were funded for by the Danish Health Authority and the authors were from Universities and Health Institutions throughout Denmark.

Patients:

The target population for the systematic reviews search were patients older than 18 years of age with non-specific neck pain with/without arm pain of less than 12 weeks duration, or with clinical presentation of Cervical Radiculopathy of up to 12 weeks duration.

Main Outcome Measures:

The guidelines were developed around 19 clinical questions with primary outcomes of pain and pain-related activity limitations.

Secondary outcomes included worsening of neurological symptoms, pain at the end of treatment, dropout rates, surgery during the following year, adverse effects, return to work, sick leave, and quality of life.

Main Results:

Weak or good clinical practice recommendations were given for patients with neck pain and/or radiculopathy for:

- Information and patient education
- Advice to stay physically active
- Different types of supervised exercise
- Manual therapy alone or in combination with exercise

Weak recommendations were given against massage.

The recommendation for medication was to only use NSAID or tramadol for short-term use of severe, acute pain after careful consideration and not as the first choice.

In patients with neck pain (with or without somatic referred arm pain) the guideline recommends weakly for:

- Acupuncture
- Topical NSAID
- Exercise over NSAID

In patients with cervical radiculopathy there is a weak recommendation for traction and against acupuncture.

The work group recommended that the choice of any treatment should be done in consideration of patient preferences and the amount and intensity of treatment should be proportionate with the duration and level of pain and disability.

Conclusions:

The recommendations presented by the guidelines are based on weak evidence or general consensus as there is a lack of good-quality research available for this topic.

Comments:

This paper again highlights the lack of evidence in the literature for many non-surgical treatment approaches for neck pain and radiculopathy. Interestingly, the author's comment that there were no trials within their search parameters proving the effectiveness of directional exercise for cervical radiculopathy and that patients may find the exercises difficult to perform and to adjust to any worsening of symptoms. However, they do recommend the use of directional exercises due to the low risk of harm and the active patient approach. As MDT clinicians we have the responsibility to ensure our patients know exactly why they are doing any exercise and exactly how to perform it, and to adjust to any change in symptoms they may experience. We also have the responsibility to help increase the body of evidence of the effectiveness of directional exercises.

The four good clinical practice recommendations given for treatment of patients with neck pain and/or radiculopathy all reflect the mainstays of MDT: patient education, specific exercises, manual therapy when indicated, and staying active. That is very encouraging news for us as clinicians and for our patients. In their discussion, the authors state, "The informed clinician should choose an intervention in recognition of how different choices may be appropriate for different patients and that each management decision is consistent with the patients' values or preferences." It is important that as MDT clinicians we recognise one of the strengths of our system is that individual approach. Each decision we make as part of the clinical reasoning process should be based on the needs, values, and preferences of each of our patients.

An encouraging aspect of this paper is that all the recommendations are based on active treatment, demonstrating the international preference now for patient self-management and self-responsibility. Again, this is one of the founding principles of MDT and proves that not only is MDT still highly relevant, but its principles are recommended in the non-surgical treatment of recent onset neck pain and/or radiculopathy.

<https://link.springer.com/article/10.1007/s00586-017-5121-8>

Summary and Perspective of Recent Literature

Eduardo Correa, Dip. MDT, COMT

Heidar Abady A, Rosedale R, Chesworth B, Rotondi M, Overend T. (2017). Consistency of commonly used orthopedic special tests of the shoulder when used with the McKenzie system of mechanical diagnosis and therapy. *Musculoskeletal Science and Practice*; <https://doi.org/10.1016/j.msksp.2017.10.001>.

The aim of this multi-center prospective study was to investigate how classifying and treating patients with shoulder complaints according to MDT principles would affect the agreement levels of three commonly used Orthopedic Special Tests (OST) over time. This study ran concurrently with a study by the same authors that investigated the clinical application of MDT in patients with shoulder disorders¹.

The authors have acknowledged the body of evidence on the complex nature of establishing a diagnosis that leads to the appropriate management of shoulder conditions, highlighting the limited validity of commonly taught and used Orthopedic Special Tests (OST) to diagnose and consequently guide treatment decision making. They suggest that the use of a more reliable non-pathoanatomical classification system of diagnosis and treatment, such as MDT, might decrease practice variation and promote increased treatment effectiveness.

Participants of the study presented to physiotherapy with shoulder disorders. They were excluded if they had had surgery in the previous six months. They were assessed and treated by 15 therapists either Diplomaed or Credentialed in Mechanical Diagnosis and Therapy with at least one-year experience using MDT for the extremities with other blinded clinicians performing the OSTs. The OSTs performed were: Empty Can, Hawkins-Kennedy and Speed's. The data on the OSTs was collected at sessions one, three, five and eight, or at discharge from physiotherapy treatment, whichever came first.

One-way analysis of variance (ANOVA) and chi-square analysis was performed to compare baseline

characteristics and potential confounding factors among MDT classifications. The Kappa coefficients were calculated to determine the level of agreement of OSTs during treatment within each MDT classification and the results were included in the analysis when they were available at least three out of four data collection points.

Results:

From the 105 recruited patients, 12 drop outs and other exclusions, left a total of 75 eligible patients.

There was no statistically significant difference among the three main MDT classifications of Derangement, Dysfunction and Spinal at baseline.

As illustrated on the table below, the overall kappa value for the Empty Can test was 0.28, with the highest level of agreement within the Dysfunction category (0.84 for articular and 0.49 for contractile). There was no agreement for the Spinal and Derangement classifications, as the P values were greater than 0.05.

For the Hawkins-Kennedy test, the overall kappa value was 0.28, with the highest level of agreement within the Dysfunction category 0.60 (0.42 for articular and 0.59 for contractile). The agreement for Spinal classification was 0.26 and there was no agreement for the Derangement classification as the P values were greater than 0.05.

The overall kappa value for the Speed's test was 0.29, with the highest level of agreement within the Dysfunction category 0.46 (0.47 for articular and 0.45 for contractile). The agreement level for Spinal classification was 0.37 and there was no agreement for the Derangement classification as the P values were greater than 0.05.

	Overall	Derange-	Spi-	AD	CD	Dysfunction
Kappa	0.28	0.02	0.13	0.84	0.49	0.67
<u>Hawkins-</u> Kappa	0.28	-0.0005	0.26	0.42	0.59	0.60
<u>Speed's</u> Kappa	0.29	0.09	0.37	0.47	0.45	0.46

Abbreviations: AD, Articular Dysfunction; CD, Contractile Dysfunction

Commentary:

Shoulder complaints are commonly encountered by healthcare professionals in the general population and have been reported to be the third most prevalent form of complaint in average physiotherapy practice^{2,3}. However, the pathophysiology or pathoanatomy underlying shoulder disorders is unclear⁴. There appears to be a variety of issues in linking shoulder diagnosis to its management and these include a lack of standardized diagnostic labels, limited reliability⁵ and validity of most OSTs⁶. These issues may explain the persistent nature and high recurrence rates of shoulder disorders.

The gold standard for diagnostic comparison with clinical tests have traditionally been through direct intraoperative observation or imaging studies. As evidence has shown, not all structural failure correlates with symptoms⁷, and it is then evident that those gold standards are not ideal references. This might explain the high number of false positives and negatives observed on performing such tests in a clinical environment. Consequently, clinical decision making based on OSTs or imaging findings is flawed and does not provide an accurate pathoanatomical diagnosis, nor does it provide guidance to optimal management strategies.

This is an important study and the first of its kind to demonstrate and expose the low, or lack of, agreement of three common OSTs to diagnose shoulder disorder in the presence of either a shoulder or Cervical Derangement. The results are in agreement with the author's predictions, and is no surprise to MDT clinicians who understand the variable and quickly changing nature of the Derangement. The better levels of agreement that were observed for Dysfunction Syndrome is also no surprise, as Dysfunctions are described as having a greater consistency on symptomatic and mechanical presentation.

The authors do report some limitations of their study, one of which being that they only examined three OSTs, consequently results cannot be extrapolated to all other OSTs intended to diagnose shoulder disorders.

The results of this study may give additional support to the position taken that OSTs cannot be relied upon as diagnostic or prognostic tools, but ruling out Derangements before testing may be useful. This could potentially increase the clinical value of performing such OSTs and possibly improve their diagnostic capability.

References:

1. Heidar Abady A, Rosedale R, Chesworth B, Rotondi M, Overend T. (2017). Application of the McKenzie system of Mechanical Diagnosis and Therapy (MDT) in patients with shoulder pain; a prospective longitudinal study. *J Man Manip Ther*; DOI:10.1080/10669817.2017.1313929.
2. Van Der Windt, D. A., Koes, B. W., Boeke, A. J., Deville, W., De Jong, B. A. & Bouter, L. M. (1996). Shoulder disorders in general practice: prognostic indicators of outcome. *Br J Gen Prac*;; 46: 519-23.
3. Kooijman et al. (2003). Patients with shoulder syndromes in general and physiotherapy practice: an observational study. *BMC Musculoskeletal Disorders*; 14:128.
4. Lewis J, Green A, Dekel S. (2001). The aetiology of shoulder impingement syndrome. *Physiotherapy*; 87:458-469.
5. May S, Greasley A, Reeve S, Withers S. (2008.) Expert therapists use specific clinical reasoning process in the assessment and management of patients with shoulder pain: a qualitative study. *Australian Journal of Physiotherapy*; 54:261-266.
6. Hegedus EJ et al. (2008). Physical examination tests of the shoulder: a systematic review with meta-analysis of individual tests. *BJSM*; 42:80-92.
7. Connor PM, Banks DM, Tyson AB, et al. (2003). Magnetic resonance imaging of the asymptomatic shoulder of overhead athletes. *Am J Sports Med*; 31:724-727.

<https://www.sciencedirect.com/science/article/pii/S2468781217301509>

BUSINESS & MARKETING CORNER**Increasing MDT Awareness & Course Registrations Through Social Media***Yoav Suprun, PT, Dip. MDT*

Social media is an incredibly powerful tool with the ability to spread information, good or bad, quickly and efficiently. When utilized appropriately, the multitude of social media platforms can serve as excellent outlets for the dissemination of MDT knowledge and resources. One way social media can boost MDT awareness on a global level is to give additional exposure to exactly what goes on during MDT courses. Given the increasing popularity of social media in the past few years, we've begun to see a steady climb in pictures being posted by course participants in real time during courses. Not only do participants like to reflect on the techniques they have performed in class, but they also have a desire to share their experiences with friends, showing them how they practice "hands on techniques" in a McKenzie course.

This type of organic social media exposure is simple to generate and instantly becomes an incredibly powerful marketing tool for MDT course participation worldwide. All that is needed are a few course participants, or even a willing course cosponsor, to take a few pictures during the course and send to the course instructor. The instructor can, then, forward those images to their respective branches and social media representatives to be published and promoted across the Institute's social media platforms.

Creating a greater awareness of MDT through social media is only one example of how we can spread more knowledge of what is actually being done during courses. With very little to no startup cost involved, the return on investment will definitely open doors to brand new forms of marketing for all branches.

Over the years, I have heard people say things like, "I didn't know you teach 'Rotation in Flexion' in a McKenzie course!" or "Wow! You really had a great turn out!" or "It's nice to remember what we did in class by looking at the pictures!" or "You teach 'Flexion in Sitting'?" Engagement is power and social media exposure is the key that can unlock that power for a better understanding of MDT.

Two things to keep in mind when taking photos during a course:

1. Do not photograph the volunteer patients in the course.
2. Please use the hashtags #MDT and #McKenzieMDT.

A little effort will go a long way in promoting MDT courses and boosting course registrations worldwide!

So, the next time you take a course, consider the above tips and help us increase awareness of what MDT courses are all about.

Yours,

A handwritten signature in black ink, appearing to be 'Yoav Suprun', with a long horizontal stroke extending to the right.