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Feature Commentary

PLANNING FOR THE FUTURE: THE MCKENZIE INSTITUTE INTERNATIONAL LOOKS AHEAD

DR. THOMAS E. (TED) DREISINGER, PHD, FACSM

The McKenzie Institute International (MII) Board of Trustees (BOT) met in 2011 in Ramauti Beach, New Zealand. It was at this meeting the current MII Strategic Plan began. Robin McKenzie visited the meeting and was supportive of the direction the Board was going with the plan.

For the next year, through multi-day face to face meetings and many emails, a five-year strategic plan was created. In September of 2012, the BOT met in San Francisco at its annual meeting and approved the plan, and MII put in place its initiatives, objectives, targets and measures for the next five years.

Strategic plans are tools companies use to create a business focus and contain goals and objectives for the organization. In many ways, they provide a road map for growth. Typically, they are directed toward financial goals to help companies move in the direction of profitable operation.

Drs. David Norton and Robert Kaplan from the Harvard Business School recognized a need to take into consideration company measures that were not just financial. They recognized there were other processes that were part of the success formula. The professors developed a model that took into account additional perspectives they felt more realistically reflected a business entity. It included efficiency of internal processes, organizational capacity (product), and customers/stakeholders. They called the approach the "Balanced Scorecard" to illustrate the importance of a more complete reflection of a business' growth.

Under the leadership of CEO Lawrence Dott, development of an international strategic plan was put forth, while BOT chair, Uffe Lindstrøm, brought forward the model and simplified it so that it could easily be taught and implemented across the Branches, if they were so inclined. The four perspectives became: Internal Processes, Teaching and Learning (our product), Customers and finally Financial. Of course, if the first three perspectives were successfully implemented, financial growth would occur.

MII had the interest in implementing the Balanced Scorecard model into the Branches worldwide, but was unclear whether it was something the Branches would be interested in doing. In the summer of 2013, at the Euromeeting in Helsinki, Finland, Uffe Lindstrøm and Ted Dreisinger - BOT member at large - introduced the model to all of the European Branches. At that meeting, a great deal of the MII strategic plan was presented through a PowerPoint presentation that provided an overview of the model. The Branches were asked whether they would like to use the Balanced Scorecard to develop their own strategic plans.

The response was overwhelmingly positive. So much so, that in November of 2013, a two-day workshop was set up in Frankfurt, Germany to teach the Balanced Scorecard model all of the European Branches. The Brazilian Branch also attended the training. That workshop was very successful using lecture and small group interaction to ensure enough of the model was understood to allow each of the Branches to return home and begin developing their own plans.

In the winter and early spring of this year (2014) Lindstrøm and Dreisinger held follow-up 'Go-To-Meeting' calls, over the internet, with each of the Branches. This technology permits participants to view each other's computer screens from remote locations. Branch plans were reviewed, questions answered and feedback for any technical issues were addressed.

In concert with this initiative taking place in Europe, the North Americans were already working on their strategic plans. MIUSA and RMIC (Canada) developed their plans using the same model, and all Branch plans were turned into International Headquarters for a final consistency check. At the Euromeeting in Toulouse June 4th and 5th, of this year, each of the Branches presented a very brief overview of one of their initiatives to the others.

Inside This Issue:

There are four Branches who have not yet been trained in the Balanced Scorecard model. At the end of August, a training workshop will be held in Wellington, New Zealand for the Australian, New Zealand, Japanese and Indian Branches. This means that by the end of 2014, all regions of the world will have been trained in using the same strategic planning model.

Each Branch will have objectives, initiatives, targets and measures that are specific to their country or region. The purpose for developing a common model is not to create common objectives, but rather so that every Branch will use the same model, making communication on Branch growth extremely streamlined.

The future? MII sees regional strategic planning committees developing in 2015 that will help to create strategic plans by regions. These plans will come from the current Branch plans. This will help MII as it moves forward with its strategic planning in the future.

Strategic plans are like the horizon: You can see it, but as you get closer, it moves a little further way. This means that a five-year strategic plan remains a five-year plan every year. As objectives and initiatives are accomplished, more are added so that the plan and growth always remain both current and future.

The future and horizon of The McKenzie Institute International looks bright indeed.

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BRANCH SPOTLIGHT

Robin McKenzie Institute Canada
Aileen Conway, RMIC Administrator

The Canadian branch first opened its doors in June of 1992. However, Colin Davies and Robin McKenzie actually began teaching the McKenzie Method in Canada in the early 1980's.

The branch is a registered Not-For-Profit organization, and, therefore, it is required by law to follow all of the provisions outlined in the Canadian Not-For-Profit Act. It is governed by a strong and extremely dedicated Board of Directors, consisting of Hugh Murray (President & MIUSA Faculty), Richard Rosedale (Vice-President/Secretary & MICanada Faculty), Bonny O'Hare (Treasurer & Owner/Director of Pro Motion Physiotherapy & OsteoCircuit) and Yannick Tousignant-Laflamme (Member, Cert. MDT & Professor, Faculté de médecine et des sciences de la santé, Université de Sherbrooke, Quebec).

The Canadian faculty pioneers back in the early days were Colin Davies, Phil Burchell, Riki Yamada and Mark Miller. Presently, the Canadian branch has a total of four faculty that teach courses from coast to coast, which is no small feat considering Canada consists of an area of 9,984,670 sq. kilometres, or 3,855,103 sq. miles. In some instances, it can take the instructor a full day of travel just to get to the course location. Due to the vast distances involved, faculty travel time to a course location always needs to be considered in the course planning process. From west to east, the faculty are logistically situated in the following locations: Colin Davies - Vancouver, British Columbia, Audrey Long - Calgary, Alberta, Richard Rosedale - London, Southern Ontario and Anja Franz - Barrie area, Central Ontario.

Aileen Conway, Canadian Branch Administrator since June 2011, originates from Scotland. Prior to joining the branch, Aileen was a long-time business owner and international conference planner. She handles all of the course coordination and promotion, along with all other branch related duties. Working in tandem with the team at MIUSA, Aileen is very actively involved with the planning of the MDT Conference of the Americas.

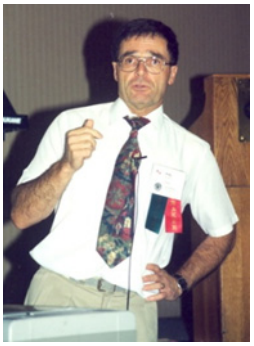
Carol Boaks, now retired and living in Canada's "cottage country", was the Branch Administrator from the inception of the branch in 1992 until May of 2011. For over 18 years, Carol dedicated herself to building the branch and promoting the McKenzie Method across Canada. Carol's plans to retire were completely thwarted when Aileen approached her about representing the branch as an exhibitor at events and conferences throughout the various regions of Canada. Her experience and knowledge as a PT and Cert. MDT, as well as her administrative knowledge of the branch, has remained invaluable as she networks with health professionals across the country.

The Canadian branch is now located in Dorchester, Ontario. It has about 3,000 active members, including 13 Dip. MDT's and 243 Cert. MDT's.

Canadian Courses and Events:
This year, the Canadian branch expects to run about 36 courses with an estimated total of 570 attendees. The courses are primarily held in major centres throughout nine of the ten provinces in Canada. The majority of the courses run in Ontario, Quebec, Alberta and New Brunswick. The good news is that in the past couple of years, we have experienced a significant growth in the number of practitioners progressing through the series of courses. This growth can be largely attributed to the extensive planning and advertising of subsequent courses to existing course registrants prior to existing courses getting underway. This advanced notice seems to work well, allowing potential participants to schedule their personal and professional obligations accordingly.

The faculty's distinct ability to engage students from coast to coast is continually reflected in the positive responses we receive on course evaluations. We consistently see comments like "best instructor I have ever had" and "excellent course and excellent instructor". The Canadian instructors always give freely of their time to mentor students that are eager to learn. Three cheers for the Canadian faculty, a small group of extremely dedicated and immensely skilled individuals!

Additionally, instructor Anja Franz' fluency in French has allowed us to offer courses instructed entirely in French. This has proven to be popular with the predominately French speaking PT's in Quebec. Even though the live portion of the courses is conducted entirely in French, the course materials, including the online component (if applicable) are provided only in English. So far, the fact that we have not been able to provide all of the materials in French has not proven to be a problem. We will, however, need to address this issue going forward if we continue to offer courses conducted in French.



Each year, the Canadian Branch awards one deserving Canadian Cert. MDT the coveted Phil Burchell MDT Diploma Scholarship, in recognition of dearly departed MICanada Faculty member, Phil Burchell. Phil's years of dedication and contribution to the Institute exemplify all things McKenzie. This annual scholarship is presented with the hope of encouraging more Cert. MDT's to progress on to the Diploma programme.

On another exciting front, after many years, the Canadian health associations are finally recognizing the MICanada faculty for their research and expertise in the field of MDT. Anja Franz has been invited to speak on centralization at the 40th Annual Quebec Congress in October 2014, where 600 PT's are expected to be in attendance!

The Branch's Greatest Challenges:
- Securing clinics and hospitals to sponsor courses - especially four-day courses
- Battling the manual therapy understanding of the McKenzie Method, especially in western Canada
- Providing *quality* MDT patient care outside of the large Canadian cities
- Having to limit our course sizes due to the typical size of private clinics
- Being able to provide continuity of training for all levels, with only four instructors, in a country the size of Canada

The Branch's Most Valuable Assets:
Our biggest and strongest asset has to be the dedication, passion, knowledge and experience of everyone directly involved with the execution of the courses and the operation of the branch. From our tirelessly dedicated faculty, to our determined Board of Directors and administrative staff, the focus is to get the MDT message out and make the training available to all eligible health professionals in Canada.

We also consider the U.S. branch to be another of our most valuable assets. Not only is the MIUSA branch our friendly neighbour just south of the border, but they have also proven to be an incredible support team for the Canadian branch. MICanada is very fortunate to have such a dedicated team of skilled and genuinely nice individuals that never fail to support the Canadian branch in its endeavors to grow. We have the utmost respect and admiration for MIUSA and the Canadian branch is extremely thankful for their continual support and guidance.

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CASE REVIEW: A CLINICIAN'S PERSPECTIVE

MDT to the Rescue!

Audrey Long PT, BSc, Dip. MDT

Mechanical Diagnosis and Therapy: It guides us to good outcomes and also helps to identify those we should not be treating. Frequently, I am reminded of the power of MDT by being able to identify those that are non-mechanical. The non-mechanical patients tend to remain vivid in my memory and reinforce that MDT is a continuous assessment and reassessment of the patient's clinical presentation. In 2013, I encountered three cases that highlight the non-mechanical patients that are rarely seen in the clinic.

Background

A few times per month, I receive referrals from consultants at our Worker's Compensation Board (WCB). These patients have already been through various stages of treatment by other providers (medical, PT and/or chiropractor), multidisciplinary programs, or they are being considered for surgery. I enjoy assessing these "complex" cases. They can be patients who have not responded to treatment, but respond well following the initial MDT assessment, or cases where psychosocial or central sensitization issues far out shadow the mechanical response. For a variety of reasons, these individuals often arrive disgruntled about having to see me. The first two cases I present today, came to my caseload via this WCB referral pathway.

Case 1

A 37 year old warehouse worker developed back pain while doing his repetitive work of lifting boxes of varying weights onto pallets. He was paid based on the number of orders he filled so there was a great motivation to work fast. My first impression was "what a quiet fellow" (shy, depressed, or not feeling well?). He displayed no overt pain behaviors nor expressed any of the usual complaints about the system. He had returned to some light duty work for three hours per day but had not progressed beyond that. Reports from his return to work program showed his willingness to repetitively lift up to 20 kg, but they suspected he was not motivated to return to this job. When he was not improving, an MRI was ordered and revealed a "disc bulge".

Summary of key points from his history: No clear directional preference could be elicited. His ache was constant, worse in the morning, later in the day, after a couple hours of bending and lifting, and prolonged walking. His sleep was disturbed. He was best about one hour after rising. Pain was always in the region of T12 to L5, often left worse than right. There had never been any referral of pain to the buttock or distally. Of note was that he was just finishing a course of antibiotics for chronic recurrent bladder infections. He was quite sure that his bladder infection was not related to the back pain because he has had recurrent infections since age fifteen and was very familiar with the signs and symptoms. This back pain felt quite different. I sensed that he did not wish to explore this aspect of his history. I could not recall seeing an otherwise healthy thirty year old male with recurrent bladder infections before.

Summary of exam: The physical exam was also inconclusive. His expression was rather flat. He explained that he was tired, and he looked pale. Postural correction: NE. He had a moderate limitation in flexion and extension ROM, and minimum loss of side glides symmetrically. He rated his pain as constant 3/10 and he could tolerate lots of reps in flexion and extension with no convincing changes in pain intensity, location, or ROM. He reported that he had already been doing extension exercises, though not taking them as far as we did this day. He had also been completing a regimen of various exercises in multiple planes of movement with no effect on symptoms.

Course of care: We spent a week exploring the extension principle and he started to feel "a bit better" (not convincing). We then switched to a week of flexion principle resulting in no change to his overall presentation. He completed a strength workout with few complaints. During this time, I managed to build more rapport and learned more about his bladder related issues. It became clearer that night pain and lack of sleep were his chief complaints, but he tended to attribute lack of sleep to having two children under the age of four at home. He revealed that he sees a urologist annually. In addition, his back had been assessed by two different physicians via the Worker's compensation system, and numerous PTs. No one seemed to have considered the question: "is this a non-mechanical situation?" All seemed satisfied with the initial diagnosis "lumbar strain" since the MRI seemed to confirm the source of LBP from a "disc bulge".

I sent him back to his GP who confirmed there was no current infection. We tried to get him back to his urologist but since the issue was not urgent or acute they would not see him before his annual review in two months. The WCB doctors refer “medical problems” back to the GP, and the GP deferred to the urologist that wouldn’t see him for several months. This cycle played out for a few weeks, and I became more convinced that his pain was non-mechanical. I did what I could do to get a medical review. He continued to increase his hours and lifting duties at work, motivated by the news that there was a new baby on the way. Understandably, he wanted to make more money. Because of his apparent functional “progress” at work, WCB was happy. However, his pain remained the same, best early/midday, worse during the night and early morning.

During about the fourth week of care, he arrived looking unwell. He claimed it was due to another bladder infection. The clinic was quiet at that time and he asked if we could talk at the far end of the room to assure privacy. He confided that he had birth defects to his genitourinary system which required numerous surgeries as a child. He had not mentioned this before because he felt it had no relation to his current back problem and he does not share this information readily with others. One of the surgeries was the insertion of an artificial valve in his bladder which requires him to bear down to open the valve and release urine; therefore, he must always urinate in sitting.

Fast forward: He eventually received a diagnostic ultrasound exam that revealed a condition where the ureters are somewhat scarred and narrowed from recurrent infections. When he is horizontal at night, the urine cannot drain to the bladder and pools in the kidney, thus the night and morning pain. Once upright, the urine takes a few hours to drain and his pain decreases.

Thank you MDT: MDT identified that the pain was non-mechanical in nature and that he needed to be referred to a specialist for furthering testing. How sad for him that he was put through months of unnecessary and ineffective treatments.

Case 2

This 48 year old gentleman was also referred by the WCB after making no progress with months of PT elsewhere. Unlike the patient above, this fellow presented with the whole nasty package of numerous complaints about how his claim and various doctor had treated him. He was difficult to interview, angry, and very anxious about his MRI findings which revealed severe disc degeneration and modic changes at L4-5. He was upset because everyone told him “there is no nerve compression so they won’t refer me to a specialist but even I can see there is a serious problem”. Thankfully, his PT had put in a good word for me so at least his anger was not directed toward me. He was loud, verbose, frustrated, and not pleasant at all.

Summary of history: What a challenge to try to pin down any useful information! Everything hurts and the pain is excruciating (9/10). His pain started five months ago after a long day of shoveling gravel. He displayed several overt pain behaviors. He arrived with a single crutch but carried it stating “it slows me down but sometimes I can’t move without it”. He points to his lateral left hip (butt, anterior groin and thigh as the primary pain sites). Secondary is the “sciatica” that refers down his left leg. This pain comes and goes with movement vs. rest, respectfully. The butt pain is constant and the other hip pains intermittent but sharp and “lock him up at times”. His descriptions are so animated that I started to think that perhaps this was one of those cases I could not handle in our setting; he needed a complex multidisciplinary program.

Summary of exam: Wow, what an odd gait pattern for a patient with a diagnosis of “sciatica”. He has a wide base of support and his leg stayed in external rotation. My thought was “he is not extending that hip”. For someone with sciatica that is described as 8-10/10, he sure moved his lumbar spine well. In fact, he had near full lumbar flexion, limited by hip/leg pain (fingers 6” above his toes). He moved quickly in transitions back and forth between sit-stand, supine-sit, long sit-supine, etc., by flexing his spine quite easily and weight bearing on the right leg. He kept using his left hand to assist his left leg to the different positions in a way that reminded me of patients with total hip replacements in the first week or two post-op.

He had normal reflexes and sensation. Myotome testing was not possible due to pain inhibition. Postural correction made him worse and produced the hip and leg pain. As we attempted a lumbar repeated movement exam, he was NW with FIS; EIS ROM looked asymmetrical because he would not weight bear much on the left leg. He was worse after repeated EIS. We had to stop side glides due to sharp pain in his butt and anterior hip. He collapsed into a seated position on the edge of plinth. Once supine, he could not straighten his leg. Pain behaviors escalated as he attempted FIL. Lifting the right leg first revealed a positive Thomas test on the left. With assist of his left hand, he attempted to flex his left leg and produced about 70 degrees of left hip flexion. I asked if I could assist him, and I was greeted with an empty end feel and a squeal! I had hardly touched him. He also could not adduct the hip to midline. He was stuck in about

30 degrees of external rotation and abduction, and could not internally rotate to neutral. He stated he could not lay prone, even over pillows as they already tried that in PT. He needed a rest (and so did I). It was a difficult exam and his personality was also "difficult". He was frustrated with his condition, angry at WCB and challenging to converse with him. After making him relatively comfortable in side lying with pillows, I retreated to the office for a breather and collected my thoughts.

What's going on in that hip, I wondered? I returned to him with an X-ray requisition for his left hip and told him I did not want to see him back in the clinic until he had that done. He looked at me like I was crazy, rolled his eyes, but he agreed to go.

The next morning his X-ray report was on my desk: "avascular necrosis of the femoral head". He had been sent directly to the ER for an urgent orthopedic consult and then sent home with crutches and instructed not to walk on the hip. He was admitted for surgery within a few days.

***Thank you MDT*:** Despite his diagnosis of disc disease and sciatica, MDT helped me to classify him in the "other" category and discontinue mechanical testing until he was investigated further. So often these "difficult" patients (personalities) are dismissed by healthcare professionals as "chronic pain patients".

Case 3

This case was not a worker's compensation referral. This active 68 year old grandmother presented in August 2013 with a four-five month history of a "groin strain" which she recalled first feeling while sweeping during curling earlier in the year. The side to side hip abduction/adduction required to move along the ice was a feasible mechanism of injury. At first, it was a mild intermittent pain which she just "pampered" for a while. A month or two later, she mentioned this pain to her physician and then attended a local PT clinic where modalities and some stretching to the hip provided temporary relief. She presented as a fit and active senior with intermittent groin pain that sometimes radiated about 20 cm into the upper thigh. When she returned to her GP to ask for more NSAIDS, he wondered if her pain might be coming from her back. She'd had two-three episodes over the past few years and prior imaging demonstrating multiple degenerative changes including a Grade 1 spondylolithesis.

Summary of history: No pain at rest, lying or sitting. Sometimes the pain was sharp or ached after attempting to walk fast and with certain movements of the hip (e.g., lifting knee up off chair, in/out of car, upstairs much more than downstairs, swing phase of the affected leg). What a great historian. It was now summer so she had not been curling. She was able to cycle daily with no pain, but overall the pain was becoming more intense and more frequent.

Summary of exam: Postural correction NE. No loss of lumbar ROM and repeated movements had NE. Active hip flexion and adduction were painful and mildly limited. Passive ROM was full and pain free. In brief, it did not take long to rule out the lumbar spine and to rule out derangement of the hip. Pain was clearly produced by resisted hip flexion or adduction. Provisional classification was contractile dysfunction.

Treatment plan: The pain was too sharp for her to control eccentric load so we started with isometrics in the target zone which was easy to do in the seated position squeezing a ball between her knees. She was sent off with all the usual patient explanations and instructions that the exercise should produce pain, NW after, and get easier over the next week or two.

A week later, the patient thought the exercises were "a bit easier" (not convincing), but certainly NW. Therefore, we progressed forces with her isometrics feeling braver now that "NW" was understood. We also added a few assisted eccentric movements through the flexion target zone with the desired NW result. She returned a week later, worse despite her perception that she had not done anything strenuous. She was sore enough that she stopped the exercises for a few days altogether until she saw me. It was harder to get up the stairs and get in/out of the car, but she was still sleeping well and had no pain at rest.

I rechecked for derangement in the hip and could not find any sign of obstruction to movement. Did I progress her too quickly last week? She was agreeable to going back to the isometric exercises. The following week, visit four, she again returned worse for no apparent reason. If this was a contractile dysfunction, why was it worsening when she was not overdoing her exercises or activities? I wondered if her tendon pathology might be an avulsion injury or larger tear that would not respond to loading. She wondered if her thigh was a bit swollen and indeed it did seem slightly larger than the right (measured 1.5 cm larger than left leg, she is right dominant). I reflected that I could not recall a "groin strain" in a senior

before (typically, it is younger athletes with a more clear mechanism of injury). Her only red flag was age >55, but her responses to loading seemed atypical, she was worsening, and now there might be some swelling in the area. I decided to order diagnostic ultrasound and was glad that I had cc'd her GP because I was out of town for a few days. I arrived back the following week to a report describing normal tendons but enlarged lymph nodes with biopsy recommended. Thankfully, when I phoned her, the GP had taken action and all needed tests were underway. Within a few days, the news came back that this was indeed cancer although the type had not yet been confirmed.

***Thank you MDT*:** This lady had no weight loss, no night pain, no prior history of cancer, and intermittent pain that appeared mechanical. Certainly, this did not initially look like a "red flag" situation. The MDT method of provisional classification and ongoing reassessment to confirm or rule out the classification within three-five visits, and the predictable nature of those classifications, saved this PT from continuing to treat something I should not be treating.

In conclusion, these three cases last year, and many others over the years give me great respect for MDT that goes beyond just the magical responses we get from derangements.

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

Van Helvoirt H, Appeldorm AT, Ostelo RW, Knot DL, Arts MP, Kamper SJ, van Tulder MW. (2014). Transforminal epidural steroid injections followed by Mechanical Diagnosis and Therapy to prevent surgery for lumbar disc herniation. *Pain Medicine;* In press.

Objective
To report the clinical course of patients with non-centralizing, MRI-confirmed, lumbar disc herniation who received transforaminal epidural steroid injections (TESI) and a Mechanical Diagnosis and Therapy (MDT) assessment.

Design
Prospective cohort study.

Participants
Patients had MRI-confirmed disc herniation, consented to surgery, possessed two or more neurological signs, failed conservative treatment and were non-centralizing after two MDT sessions. Initially, 132 patients were screened. 69 met the criteria, were included and did not drop out. Exclusions were as follows: pain duration less than 12 weeks (8); centralizing pain response with MDT sessions (41); language issues (4); refused injections (5); undefined reasons or dropped out (5).

Baseline characteristics were as follows: mean age 47; 49% male; median back pain duration nine months; constant leg pain 58%; employed and at work 51%; employed, but on sick leave 44%.

Intervention
The first intervention was fluoroscopic-guided TESI at level determined by clinical signs and MRI. If pain relief was 50-80% or patient refused, no further injections were given. Otherwise, up to four injections were given. 80% received either one or two injections. About two weeks after the last injection, MDT assessment and treatment (if appropriate) was reapplied, patients were re-classified into four groups as follows: 1) symptoms resolved; 2) significantly less pain and now centralizing; 3) significantly less pain, but still non-centralizing; or 4) still non-centralizing and high levels of pain and/or disability. Treatments were as follows, respectively: 1) advice on MDT principles; 2) MDT management with direction-specific exercises; 3) advice on MDT principles and stay active as much as possible; 4) surgery for disc herniation.

Main outcome measures
Primary outcomes were leg pain measured on a 0-100 numeric pain rating scale, 0-23 Roland-Morris Back Disability Questionnaire and 7-point Likert scale for global perceived effect. The latter was dichotomised into satisfaction (1 and 2) and dissatisfaction (3 to 7). Secondary outcomes were current back pain (0-100), anxiety and depression (HADS), medication use, work status and other treatments. Data were collected at intake, short-term (four to seven weeks), and long-term (12 months).

A strict definition of success was used: no operation in 12 months and $\geq$50% reduction in both leg pain and disability from baseline.

Main results
Classification as above was as follows: 1) 16%; 2) 46%; 3) 16%; 4) 22%. Numbers of MDT sessions were as follows: 1) mean 1.2; 2) mean 3.6; 3) mean 2.7; and 4) the surgery group had higher levels of baseline pain and disability than the groups who responded to conservative care (Figures 1 and 2). The resolved group (1) and the improved centralizing group (2) had similar levels of improvement in leg pain (Figure 1), but the resolved group (1) had somewhat better improvements in disability than the centralizing group (2) (Figure 2). The non-centralizing group (3) had a slower rate of improvement in both leg pain and disability (Figures 1 and 2).

Success, as defined above, at discharge and 12 months was: 1) 100%, 100%; 2) 100%, 90%; 3) 27%, 50%. Secondary outcome improved significantly for groups 1 and 2, but not 3.

Figure 1. Leg pain by group.

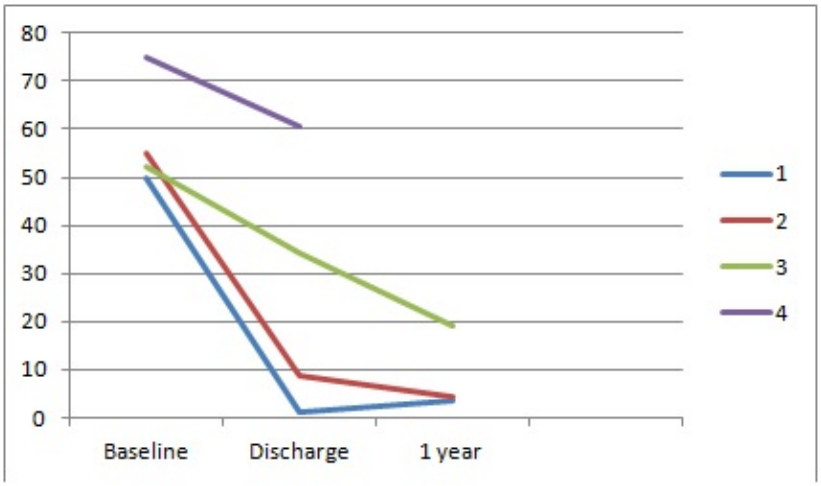
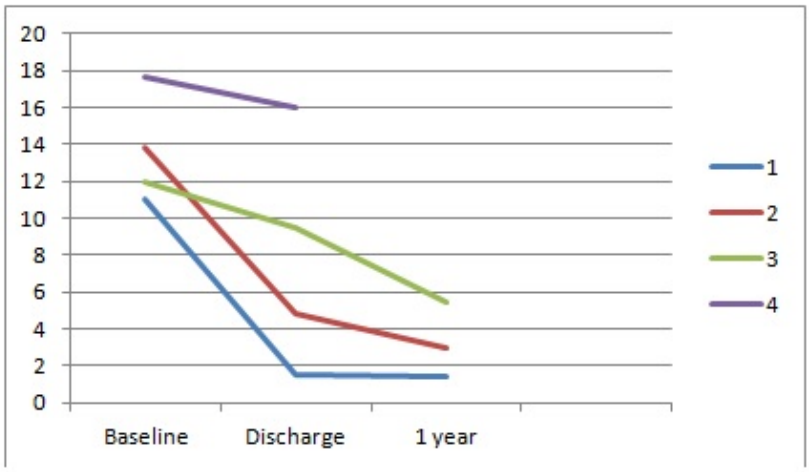


Figure 2. RMDQ scores by group



Figures 1 and - 1, symptoms resolved; 2, significantly less pain and now centralizing; 3, significantly less pain, but still non-centralizing; 4, still non-centralizing and high levels of pain and/or disability.

Conclusions

The results indicate that a course of TESIs followed by MDT may help avoid surgery in a substantial proportion of herniated lumbar disc surgery candidates.

Comments

The most interesting element of this study is that they have focused on patients with sciatica who are known to be unresponsive to conservative care. These patients had failed response to GP and physiotherapy care and also demonstrated non-centralization in response to repeated movements. These patients looked like they would need surgery. However, a combination of transformainal steroid injections and MDT management allowed the majority of patients to avoid surgery.

Because of the generally positive natural history, it is often recommended that conservative treatment be used initially for patients with sciatica, with many improving in the first three months, and surgery to be used if there is failure to improve (Valat et al. 2010). However, although surgery does appear to be associated with immediate better pain relief for carefully selected patients, conservative treatment has shown good short-term results as well.

Which conservative treatment should be recommended to patients with sciatica is less clear. Recommendations are as follows: reassurance about good natural history without specific interventions, advice to stay active, medication; starting with paracetamol, and progressing to non-steroidal anti-inflammatory drugs, codeine, and finally morphine; and referral to a neuro-surgeon only in cases of cauda equina or progressive parasesis, or six to eight weeks of failed conservative care (Koes et al.

2007). However, the level of evidence for these interventions, as well as physical therapy, acupuncture, manipulation, traction, transcutaneous electrical nerve stimulation and corticosteroid injection, has been put as unknown or low (Valat et al. 2010). One review of 'nonsurgical interventions' for radicular pain considered various types of injections, but no physical therapy interventions (Chou et al. 2009). In another review, corticosteroid injections and traction were not recommended, as there was evidence of no effect, but also there was no evidence for physical therapy, bed rest, manipulation, acupuncture or medication (Luijsterburg et al. 2007). This report suggests that carefully targeted injections combined with MDT is a way forward to improve outcomes.

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Clar C, Tsertsvade A, Court R, Hundt GL, Clarke A, Sutcliffe P. (2014). Clinical effectiveness of manual therapy for the management of musculoskeletal and non-musculoskeletal conditions: systematic review and update of UK evidence report. *Chiropractic and Manual Ther*; 22:12.

Objective

Update and extension of previous report (Bronfort et al. 2010) on the effectiveness of manual therapy for patients with musculoskeletal and non-musculoskeletal conditions.

Design

Systematic review of additional studies since previous review.

Inclusions

Search of ten databases and inclusion of additional articles on manual therapy since previous review. 187 additional articles were identified: 72 systematic review, 96 randomised controlled trials and ten non-randomised primary studies.

Intervention

Any form of manipulation or mobilisation for any condition.

Main outcome measures

Relevant outcomes, such as pain, function or adverse events.

Main results

There was inconclusive, but mildly favourable evidence for treating sciatica, however not better than surgery, with the McKenzie Method or advice only. There was inconclusive, but mildly favourable evidence for treating neck and thoracic pain, but no better than other active treatment. There was inconclusive, but mildly favourable evidence for treating ankle sprains, carpal tunnel syndrome, lateral epicondylitis, temporomandibular problems, and fibromyalgia. There was moderate positive evidence for treating shoulder problems, as long as combined with exercise, and headaches. In most of the other conditions included in the review, the conclusion was that evidence was inconclusive about the effect of manipulation or mobilisation.

Conclusions
Overall, there was limited high quality evidence for the effectiveness of manual therapy. Most reviewed evidence was low to moderate quality and inconsistent due to substantial methodological and clinical diversity. The review was broad in scope, and identified, appraised and summarised a large amount of literature, so the conclusions can be considered valid.

Comments
This wide-ranging and high quality systematic review makes clear that there is limited evidence for the effectiveness of manual therapy in a range of musculoskeletal and non-musculoskeletal problems. This is in contrast to the evidence for the value of exercise, which, for instance, is recommended in several guidelines for low back pain (van Middelkoop et al. 2011; Delitto et al. 2012).

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Russell S, Jariwala A, Conlon R, Selfe J, Richards J, Walton M. (2014). A blinded, randomized, controlled trial assessing conservative management strategies for frozen shoulder. *J Should Elbow*; 23:500-507.

Objective
To assess the efficacy of current physiotherapy strategies for frozen shoulder, as there is little evidence for the optimal conservative treatment.

Design
A randomized, controlled trial in which the outcome assessment was performed by an independent physiotherapist blinded to the treatment groups.

Participants
Spontaneous onset of painful, stiff shoulder for at least three months, with marked loss of active and passive shoulder range of movement; no clinical evidence of cervical spine problem, no steroid injection or physiotherapy in last three months.

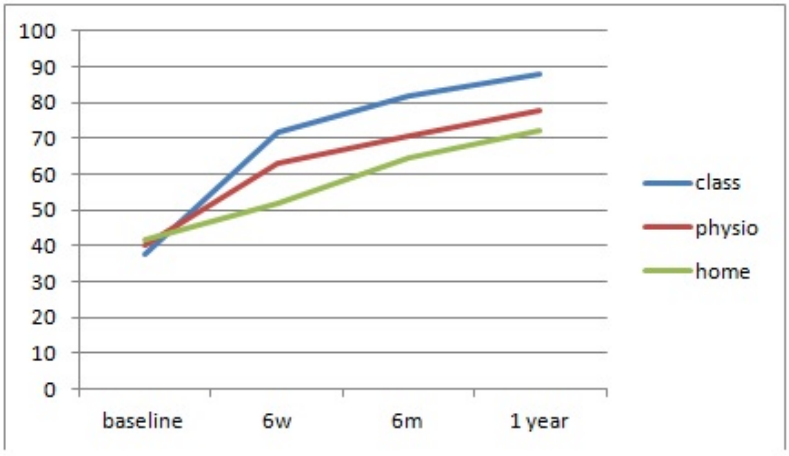
Intervention
Patients meeting the inclusion / exclusion criteria and consenting to participate were randomised into one of three treatment groups: exercise class (twice per week for six weeks) plus home exercises, individual multimodal physiotherapy (twice per week for six weeks) plus home exercises, or home exercises only.

Main outcome measures
The primary outcome was the Constant-Murley score, which produces a 0 to 100 score comprising of four parameters: activities of daily living, range of movement, pain and strength. A change of 15 points was considered by the authors as being of clinical importance. Secondary outcome measures were the Oxford shoulder score, the SF36 and the Hospital Anxiety and Disability Scale (HADS). Outcome measures were recorded at baseline, six weeks, six months, and one year.

Main results
75 patients, with a mean age of 51 years, a mean duration of symptoms for 5.8 months, and no baseline differences between the groups, were recruited to the study and randomised. There was a significant difference for all groups over time. The exercise group had significantly better outcomes than individual physiotherapy and the home exercise group ($p<0.001$) in Constant score and Oxford score.

Conclusions
A hospital-based exercise class can produce a rapid recovery from a frozen shoulder with a minimum number of visits and is more effective than individual physiotherapy or a home exercise programme.

Figure 3. Mean Constant score



Comments
In this blinded, randomised clinical trial for patients with frozen shoulder, all patients treated with an exercise class, individualised physiotherapy or home exercises only improved in the first six weeks, at six months and at one year. However, improvements were greater in the exercise class than in the other two groups. The exercise class lasted for 50 minutes and was comprised of 12 stations, with exercises designed to facilitate movement at the shoulder and thoracic spine. All groups also performed home exercises. Not only was the exercise class clinically more effective, but it is likely to have been more cost-effective as well in comparison to individualised physiotherapy, which would have required more therapist-to-patient hours. However, an economic evaluation was not done alongside the trial.

Previous reviews have highlighted the limited nature of the evidence-base for the treatment of frozen shoulder (Kelly et al. 2009; Hanchard et al. 2012). This study changes that and supports the role of physiotherapy in the management of frozen shoulder. A change of 15 points in the Constant-Murley score, the primary outcome, was defined as the Minimally Clinically Important Difference; this was achieved by 91% in the exercise group, 68% in the individual physiotherapy group, and 41% in the home exercise group.

The outcome that did not change was the HADS in the home exercise group, whereas it did significantly improve in the exercise class and the individual physiotherapy group. This would suggest that anxiety and depression are relevant components of frozen shoulder and that these are improved with direct contact with a physiotherapist, but not in the minimal contact provided in the home exercise only group.

Another interesting aspect of this study was the apparent overuse of the diagnosis of frozen shoulder. Over a 12 month period, patients were referred from primary care to physiotherapy with a primary diagnosis of frozen shoulder. There were 850 such referrals, however, 705 did not fit the inclusion criteria outlined above. A further 70 declined to participate. Thus, only 75 were recruited. Only 17% (N = 145) of those referred with frozen shoulder actually met the criteria, which would suggest that it is an overused diagnosis. In general, most studies suggest that rotator cuff pathology / impingement syndrome / contractile dysfunction is the most common classification made at the shoulder.

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MDT and CrossFit: An Interesting, Nay, Necessary Combination

Lee Poston PT, Dip. MDT

CrossFit is a fast growing and controversial fitness industry. In physical therapy, if you are not using MDT, the tendency is to think MDT isn't as useful as other methods. Interestingly, if you aren't a CrossFitter, you tend to think "it's too hard" or "there are too many injuries", etc. In fact, with proper coaching, it's perfectly safe, as it is simply functional movement.

Greg Glassman, the founder of CrossFit, not unlike Robin McKenzie, is going "Against the Tide," to the traditional exercise methods (exercises that elicit increased HGH and testosterone production naturally). If you are a CrossFitter, you know that CrossFit is also about community and a healthier lifestyle, not just a workout.

A few years ago, I reached out to a well-known CrossFitter, Dave Lipson, via Facebook. I saw a video where he had dropped out of the CrossFit Games due to a nagging back injury that had bothered him over six months. He had various non-MDT treatments and was unable to fully heal. We spoke on the phone and then followed up via text. He was a simple extension responder who got better reasonably quickly.

Interestingly, Dave had an extremely strong core when he hurt his back. Aside from his shredded six-pack, he went for one year squatting at least 465 lbs. EVERY SINGLE day (that's 365 days!). He did this to raise cancer awareness for a fellow CrossFitter who had died of cancer. He accomplished this pain free. A few months later, he hurt his back doing sub-maximal cleans (lifting from floor to shoulders with a front squat). Not coincidentally, he had been traveling and sitting more than usual during that period. Yet, one of his treating clinicians said, among other things, "You need to strengthen your core!"

Unbeknownst to me until receiving an email from a guy in Sweden, six to twelve months after working with him, Dave wrote an article about his experience, mentioning my name. As a result, I have had the good fortune of working on the back injuries of many CrossFit athletes who have been unable to fix themselves, or have had less than ideal care to date, across the US, as well as in about ten different countries via phone, Skype, text and/or email. This, in itself, shows the power of the Internet, as well as the global reach of CrossFit, which proclaims nearly 10,000 affiliates worldwide. It also shows the lack of MDT Certified clinicians available. Most report having primarily used non-MDT trained PTs, chiropractors, or massage. Not surprisingly, they also report the same tale of treatment, "stretch this, and strengthen that, modality here, modality there!" Oh, and core, core, core!!

So, for those of you who read this and think those CrossFit folk are nuts, think again. They deserve a mechanical exam and who better to help than a MDT clinician? Many don't have insurance, which is why some haven't sought care. Some are disillusioned with healthcare. Most CrossFitters tend to be go-getters and "I can take care of myself" kind of people, who turn to the Internet, search 'CrossFit' and 'back pain', and find me.

Truth be told, you can get a weekend certification in CrossFit and open a business. This lends itself to too many entrepreneurial types who latch on to the growing CrossFit brand without the skill to teach proper movement. I feel that due to many owners/coaches who are more concerned about making money than caring for their members, there is a lot of poor technique being allowed. Not to mention the fact that you have many participants who are middle aged, sit at a desk all day, and haven't worked out in years. They often don't start slowly, but jump in too fast, and that really is a recipe for disaster. This is not a CrossFit problem as much as it is a problem with coaching and individual responsibility. A problem nonetheless, it lends a perfect opportunity to introduce you as a solution to their injury. MDT is a great solution for all fields of sports.

At present, I have clients in Canada, UK, Moscow, and several in the US. I am very thankful that my MDT Diploma training makes assessment of some folks "sight unseen" very easy with five questions. As I learned in the Diploma Program to think outside the textbook, re: how movement affects pain, now I help these avid exercisers learn to treat their own pains.