

**PRE-COURSE
SYMPOSIUM**

in conjunction with the

**61st McGill Refresher Course
for Family Physicians**

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Hilton Montréal, Bonaventure Hotel

Management of Low Back Pain in Physiotherapy



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Disclosure statement

No disclosure

Epidemiology

- Physiotherapists are one of the healthcare workers most frequently involved in the treatment of low back pain (Cote et al., 2009)
- Represents 25-45% of a physiotherapist's caseload (Kent et al., 2005)

Physiotherapy assessment



Case



- A 45 year old customer service agent presents to your office with a 1 week history of low back pain. This began the day after raking leaves at home. He has tried acetaminophen but remains symptomatic.

What treatments are available in Physiotherapy?

- Surveys on types of therapies most often provided by physiotherapists

...some with strong evidence to support them and others not.

“Management of work-related low back pain: a population-based survey of physical therapists.” (Poitras, 2005)

| | NR | R |
|------------------------------------|-------|-------|
| Spinal mobilization | 65% | 63% |
| Soft-tissue mobilization / massage | 59.7% | 50.8% |
| Manual traction | 46.3% | 54.9% |
| McKenzie approach | 43.2% | 45.6% |

Treatment choices

Quebec physiotherapists

- Education
- Exercise (lumbar stabilization, strengthening exercise, ROM, stretches, aerobic conditioning)
- Spinal manipulation
- Postural correction
- Ultrasound
- IFC
- TENS
- Heat/Cold

(Poitras et al., 2005; Mikhail et al., 2005)

Manual Therapy

(spinal manipulation and mobilization)

“A comprehensive system of diagnosing and treating neuromusculoskeletal disorders involving specific skills, including assessment, mobilization, manipulation and education, including exercise, to restore optimal motion, function and/or reduce pain” (Harman et al., 2009)

Manual Therapy

- Entails the use of the therapist's hands on the spine
- Considered a core skill for physiotherapists

Manual Therapy

Table 1
Categorization of MT techniques.

| MT technique | Definition | Desired outcomes |
|--|---|---|
| <i>Joint biased</i> | | |
| <ul style="list-style-type: none"> • Manipulation • Mobilization | <ul style="list-style-type: none"> • Passive movement of a joint beyond the normal range of motion • Passive movement of a joint within its normal range of motion | <ul style="list-style-type: none"> • Improved range of motion • Decrease muscle spasm • Decreased pain |
| <i>Soft tissue biased</i> | | |
| <ul style="list-style-type: none"> • Swedish massage | <ul style="list-style-type: none"> • Stroking and kneading of the skin and underlying soft tissue | <ul style="list-style-type: none"> • Improve circulation • Decrease muscle spasm • Relaxation |
| <ul style="list-style-type: none"> • Deep tissue massage | <ul style="list-style-type: none"> • Deep stroking and pressure across the muscles and soft tissue | <ul style="list-style-type: none"> • Re-align soft tissue • Break adhesions • Increase range of motion |
| <ul style="list-style-type: none"> • Trigger point massage | <ul style="list-style-type: none"> • Deep pressure to areas of local tenderness | <ul style="list-style-type: none"> • Release muscle spasm • Remove cellular exudates |
| <ul style="list-style-type: none"> • Shiatsu massage | <ul style="list-style-type: none"> • Varying, rhythmic pressure from the fingers | <ul style="list-style-type: none"> • Improve Circulation • Decrease muscle spasm • Relaxation |
| <i>Nerve biased</i> | | |
| <ul style="list-style-type: none"> • Neural dynamics | <ul style="list-style-type: none"> • Passive, combined movement of the spine and extremities, within their normal range of motion, in ways to elongate or tension specific nerves. | <ul style="list-style-type: none"> • Improve range of motion • Decrease pain |

Classification of MT techniques referenced in manuscript along with specific examples of each. Proposed model is general and accounts for all techniques regardless of their theorized anatomical emphasis. Adapted from NCCAM website (<http://nccam.nih.gov/>, 2007).

(Bialosky et al.,2009)

Manual therapy

Spinal manipulation

- High-velocity, low-amplitude thrust taking the joint beyond its available range of movement
- Used by specialist physiotherapists, chiropractors and osteopaths
- <10% of back pain patients are manipulated
(Mikhail et al., 2005; Gracey et al., 2002; Li et al., 2001)
- Requires advanced level of manual therapy training

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Manual therapy

Spinal Mobilizations

- Gentler and more conservative technique
- Therapist delivered low-velocity, passive movements within or at the limit of joint range
- Frequently used by physiotherapists for treatment of back pain

Manual therapy

Traction

- The use of externally applied force to stretch and mobilise the spine
 - Manual
 - Mechanical

McKenzie approach

- Mechanical Diagnosis and Therapy
- Classification system of assessment, treatment and prevention for mechanical spine disorders
- Places a specific emphasis on patient education and self-management of the spinal disorder

McKenzie Mechanical Diagnosis & Therapy

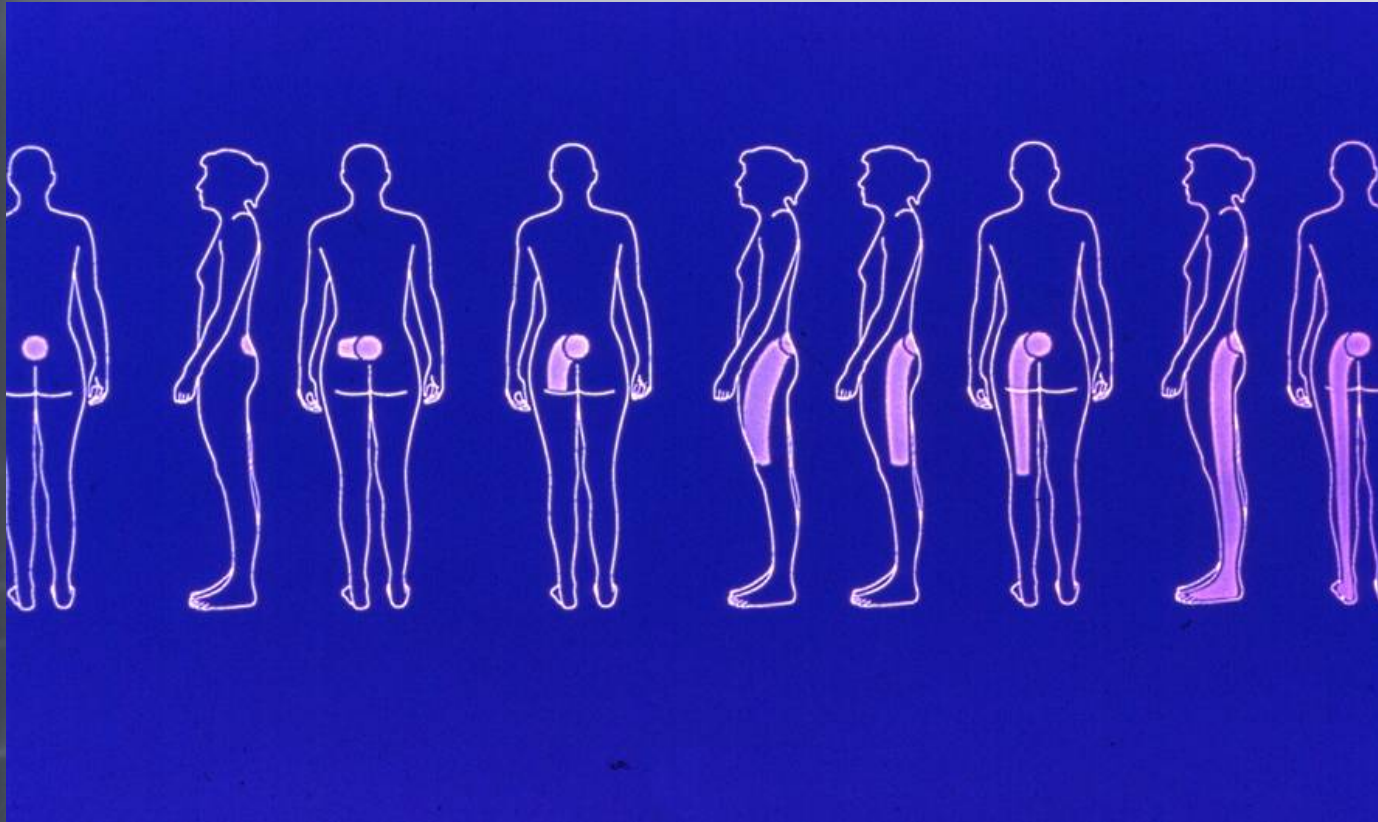
- Therapists using the McKenzie approach use positions and repeated movements to influence symptom behaviour

Directional preference

A single direction of posture or movement that *decreases, centralizes, or abolishes* symptoms and typically eliminates prior limitation of movement.

(McKenzie, 2003)

Centralization



The abolition of local or distal pain emanating from the spine in response to repeated movements or sustained postures.

Centralization

Patients who centralize have better outcomes

Broetz et al., 2010

Werneke et al., 2009

Christiansen et al., 2009

Long et al., 2008

Skytte et al., 2005

Werneke et al., 2005

Aina et al., 2004

Werneke et al., 2001

Karas et al., 1997

Donelson et al., 1990



Centralization and Directional Preference

closely allied not synonymous

Clip

Practice Guideline

Clinic on
Low-Back Pain in
Interdisciplinary
Practice



2007



AGÉPP



Table 2.3.1 Therapeutic interventions for acute LBP (0-4 weeks)

| Grade of scientific evidence | | | |
|---|---|--|---|
| High | Moderate | Low | Absence |
| NSAIDs <ul style="list-style-type: none"> Efficacy to ↓ pain = acetaminophen for all NSAIDs (van Tulder 2005¹; Jackson 2004²; Bogduk 2004³; Van Tulder 2000⁴) | Vertebral manipulations <ul style="list-style-type: none"> Efficacy > placebo (Van Tulder 2000⁴) Efficacy > mobilisation for short term pain reduction (Bronfort 2004⁵) Efficacy = conservative treatment (Assendelft 2003⁶; Cherkin 2003⁷) | Steroid epidural infiltration for radicular pain <ul style="list-style-type: none"> Efficacy > placebo or bed rest (Van Tulder 2000⁴) | Physical agents (ice, heat, diathermy, ultrasounds) (Nadler 2004 ⁸ ; Van Tulder 2004 ⁹) |
| Muscle relaxants <ul style="list-style-type: none"> Efficacy of non-benzodiazepines > benzodiazepines; both with potential harm (Van Tulder 2000⁴; Van Tulder 2005¹⁰) | Exercises for disc herniation <ul style="list-style-type: none"> Efficacy of extension > flexion (Hayden 2005¹¹) | Analgesics <ul style="list-style-type: none"> Non-opioids as efficacious as NSAIDs for pain relief Opioids: weak evidence of superiority to non-opioids (Van Tulder 2000⁴; Jackson 2004¹²; Bogduk 2004³) | Antidepressants (Bogduk 2004 ³ ; Schnitzer 2004 ¹³ ; Van Tulder 2000 ⁴) |
| Combination relaxants + NSAIDs or analgesics <ul style="list-style-type: none"> Efficacy > placebo (Van Tulder 2005¹⁰) | | Exercises in flexion (Hayden 2005 ¹¹) | Lumbar support <ul style="list-style-type: none"> Weak efficacy compared to no treatment Efficacy unknown compared to conventional therapies No efficacy for prevention (Van Tulder 2000⁴) |
| Advice to remain active <ul style="list-style-type: none"> Efficacy > conventional medical treatment (Hilde G. et al. 2005¹⁴; Van Tulder 2004¹⁵) | | Acupuncture <ul style="list-style-type: none"> Weak efficacy (Furlan 2005¹⁶; Manheimer 2005¹⁷) | Steroid epidural infiltration for non-radicular pain (Van Tulder 2000 ⁴) |
| Bed rest (Van Tulder 2000 ⁴ ; Hagen 2005 ¹⁸) | | McKenzie approach (Clare 2004 ²⁰) | Back schools (Heymans 2005 ¹⁹) |
| Strengthening exercises (Hayden 2005 ¹¹) | | Steroid drugs (Van Tulder 2000 ⁴) | Massage (Furlan 2005 ²¹ ; Cherkin 2003 ⁷) |
| Specific exercises (Hayden 2005 ¹¹) | | TENS <ul style="list-style-type: none"> Weak efficacy compared to other treatments No efficacy in meta-analysis (Nadler 2004²²; Van Tulder 2000⁴; Philadelphia 2001²³) | |
| Mechanical tractions (Philadelphia 2001 ²³ ; Nadler 2004 ²⁴ ; Harte 2003 ²⁵) | | | |
| Exercises in extension (Hayden 2005 ¹¹) | | | |
| | | | |

Yes, can be recommended in the specified context

NO, cannot be recommended in the specified context

Insufficient information to recommend or not

Table 2.3.2 Therapeutic interventions for subacute LBP (4-12 weeks)

| Grade of scientific evidence | | | |
|---|--|--|--|
| High | Moderate | Low | Absence |
| Advice to remain active • Graded activity + behavioral intervention = ↓ absence from work and ↓ risk of chronicity (Hilde 2005 ¹⁴ ; Hagen 2005 ¹⁶ ; Van Tulder 2000 ⁴) | McKenzie approach (Clare 2004 ²⁰) Multidisciplinary program • Efficacious if intensive, includes return to work component with visit of workplace. (Karjalainen 2005 ²⁸ ; Van Tulder 2004 ²⁹) | Acupuncture (Furlan 2005 ¹⁸) | Lumbar support (Jellema 2001 ²⁶ ; Van Tulder 2004 ²⁷) |
| | | Vertebral manipulations • Efficacy > placebo (Van Tulder 2000 ⁴) • Efficacy > mobilisation to reduce short term pain (Bronfort 2004 ⁹) • As efficacious as other conservative treatments (Assendelft 2003 ⁶ ; Cherkin 2003 ⁷) | TENS (Philadelphia 2001 ²³) Radiofrequency denervation (Niemisto 2003 ³⁰) Physical agents (ice, heat, diathermy, ultrasounds) (Van Tulder 2000 ⁴) |
| Exercises • No superiority of one type compared to another (Hayden 2005 ¹¹ ; Philadelphia 2001 ²³) | | Massage • Efficacy > no treatment • Better efficacy if combined to exercises and education (Furlan 2005 ²¹) | Steroid epidural infiltration (Van Tulder 2000 ⁴) |
| | | Behavioral therapy • Efficacy on pain and functional limitations > traditional care (Van Tulder 2004 ³¹) | Infiltration of trigger points (muscles or ligaments) (Nelemans 2001 ³² ; Van Tulder 2000 ⁴) |
| | | NSAIDs • Efficacy to ↓ pain = acetaminophen for all NSAIDs (van Tulder 2005 ¹) | |
| | | Analgesics • Non-opioids as efficacious as NSAIDs for pain relief • Opioids: weak evidence of superiority to non- opioids (Van Tulder 2000 ⁴ ; Jackson 2004 ³² ; Bogduk 2004 ³) | |
| | | Bed rest (Hagen 2005 ¹⁶) | |
| | | Mechanical tractions (Harte 2003 ²⁵ ; Philadelphia 2001 ²³) | |

Yes, can be recommended in the specified context
 NO, cannot be recommended in the specified context
 Insufficient information to recommend or not

When to Stop Physiotherapy

- Painfree
- Patient able to manage their symptoms and return to normal activity
- Unchanging condition
- Worsening condition

How to find a therapist

- Ordre professionnel de la physiothérapie du Québec:
oppq.qc.ca/chercher-professionnel
- Canadian Academy of Manipulative Therapy:
manippt.org/patients.php
- McKenzie Institute Canada:
www.mckenzieinstitute.ca/Quebec.htm


Thank you



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LE RÉPERTOIRE DES MEMBRES DE L'ORDRE PROFESSIONNEL DE LA PHYSIOTHÉRAPIE DU QUÉBEC EST LA RÉFÉRENCE DE TOUS LES QUÉBÉCOIS. LES PHYSIOTHÉRAPEUTES ET LES THÉRAPEUTES EN RÉADAPTATION PHYSIQUE (T.R.P.) QUI PRATIQUENT AU QUÉBEC DOIVENT OBLIGATOIREMENT ÊTRE MEMBRES DE L'ORDRE PROFESSIONNEL DE LA PHYSIOTHÉRAPIE DU QUÉBEC. DES TRAITEMENTS DE LA PLUS HAUTE QUALITÉ, DES CONNAISSANCES APPROFONDIES ET UN SAVOIR-FAIRE INÉGALÉ, VOILÀ LA PREUVE DE COMPÉTENCE QUE VOUS OFFRENT LES MEMBRES DE L'OPFQ.

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de la physiothérapie
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Preuve de compétence

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