CEP | Providers

Manual Therapy as an Evidence-Based Referral for Musculoskeletal Pain

Introduction

Musculoskeletal (MSK) pain conditions are the biggest cause of disability internationally and a major societal burden.[1] However, there is little guidance to assist primary care providers in implementing non-pharmacological treatments such as manual therapy in addition to, or as an alternative for, pharmacological treatment. This tool is designed to increase primary care provider confidence in implementing an evidence-based multimodal program of patient education, exercise and manual therapy for MSK pain.[1–10] It will guide providers in the referral for manual therapy by a chiropractor, physiotherapist or registered massage therapist (RMT), and the evaluation of patient outcomes.

Section A. Multimodal treatment for MSK pain

Non-pharmacological treatment for MSK pain should begin with patient education and exercise. For low back, neck and shoulder pain, current high-quality clinical practice guidelines (CPGs) also recommend various manual therapies tailored to the needs and abilities of the individual patient. [2-4, 6-9]

Low back pain (LBP)
Low-to high-quality evidence

Acute and chronic low back pain, with or without sciatica.

Neck pain
Low-to moderate-quality evidence

Acute and chronic:
- neck pain-associated disorders (NAD) , grades I-III.
- whiplash-associated disorders (WAD), grades I-III.

Shoulder pain
Low-to moderate-quality evidence

Acute and chronic:
- non-specific shoulder pain
- shoulder impingement syndrome
- rotator cuff-associated disorders
- adhesive capsulitis

Patient education

Provide patient with information about their condition and the management options available to them. Education should be customized to the individual patient.

Refer to:
- Section B. Implement clinical best practices
- Section C. Assess manual therapy as an option

Exercise

Can include formal or enhanced exercise therapy provided by a chiropractor or physiotherapist, or informal self-directed physical activity for the purpose of maintaining movement and fitness.

Refer to Section B. Implement clinical best practices

Manual therapy

Chiropractors, physiotherapists and registered massage therapists are regulated professions providing manual therapy. Techniques can include joint manipulation, mobilization and soft tissue therapies.

Refer to:
- Section C. Assess manual therapy as an option
- Section D. Evidence for manual therapy
- Section E. Refer to appropriate clinician

Section B: Implement clinical best practices

Pain and function evaluation

Perform the same outcome evaluation measures before and after the patient has completed their course of treatment to determine effect on function and pain. Clinically meaningful improvement in function and/or pain has been defined as a 30% improvement in scores.[11]

The treatment is ended as soon as the agreed-upon treatment goals have been achieved, or if maximum therapeutic benefit has been reached (improvement has plateaued and is unlikely to improve further).[6] If the patient's function or pain has not improved, or has gotten worse, consider specialist referral.

Validated measures

- Brief Pain Inventory (BPI)
- Bournemouth Disability Questionnaire
- Neck Disability Index (NDI)
- RAND 36
- Revised Oswestry Disability Index
- Roland Morris Disability Questionnaire

Patient education

Patient education is an important part of the treatment program for MSK pain and should be individualized based on patient needs.[1,9,12,15] Materials should be provided in the patient's preferred format (printed materials, videos or multimedia). Education should include information and reassurance about:

- The nature of their symptoms
- The low risk for serious underlying disease
- The management plan, including prognosis and psychosocial aspects
- The importance of resuming or continuing work or usual activities
- The importance of the patient's active engagement in care, including self-monitoring of symptoms, identifying causes of pain exacerbation, relaxation techniques and modification of negative self-talk. For self-management resources, see patient resources in Section F.

Talking tips[11]

When discussing non-pharmacological treatment options with patients, use motivational interviewing techniques, as appropriate. If patients are reluctant to try something new, try the Elicit-Provide-Elicit technique:

Elicit the patient's thoughts/feelings:
"How do you feel about trying some exercise or manual therapies for your pain?"

Provide information (a common patient concern is that these therapies will increase pain):
"If I understand correctly, you are concerned that these therapies will increase your pain. However, they can actually help decrease pain over time."

Elicit the patient's opinion:
"What do you think about this?"

Yellow flags[10]

A patient with a positive yellow flag may be at greater risk for development of chronicity, and will benefit from additional education and reassurance. Yellow flags can be assessed at any time before, during or after course of treatment.

Questions to ask	Listen/look for
Do you think your pain will improve or become worse?	Belief that pain and activity are harmful or potentially severely disabling (e.g. catastrophizing).
Do you think you would benefit from activity, movement or exercise?	Fear and avoidance of activity or movement.
How are you emotionally coping with your pain?	Tendency to low or negative mood and withdrawal from social interaction.
What treatments or activities do you think will help you recover?	Unrealistic expectations of treatment. Expectation of passive treatment(s) rather than a belief that active participation will help.
If appropriate, use the GAD-7 and PHQ-9 to set baseline scores for depression/anxiety.	

Exercise[11]

Recommend general activity and exercise therapies as appropriate. For low back, neck and shoulder exercises, see patient resources in Section F. Chiropractors and physiotherapists may provide a planned, structured and repetitive physical activity program for the purpose of conditioning any part of the body.

- If appropriate, start low and go slow (e.g. 5 min every other day) and aim for a moderate level of intensity.
- Encourage graded activity – add 10 min every 3-4 weeks, toward a minimal goal of 30 min of exercise 5 days a week.
- Recommend combined home and group physical activities to help increase activity levels.
- Pick a low impact physical activity, such as walking, Pilates, Tai Chi, yoga or aquatic therapy.

Section C: Assess manual therapy as an option

The decision to proceed with manual therapy should be based on patient preference, functional ability and absence of absolute contraindications. Patient preference may be influenced by cost, accessibility and personal factors.

Talking tips

What is manual therapy?
"Manual therapy is movement of the joints and muscles by a healthcare professional such as a chiropractor, physiotherapist or registered massage therapist (RMT) with the aim of relieving pain, increasing joint range and improving function." [16,17]

Are there side effects to manual therapy?
"You may experience minor-to-moderate short-lived (<48 hours) episodes of muscle stiffness or soreness after treatment."[6]

How many sessions will I need?
"If manual therapy is effective, most patients respond within 4-8 weeks with minimum 1 treatment per week. However, the frequency and duration of your treatment may be influenced by individual factors."[6]

Will manual therapy cure my pain?
"There is no cure-all for this kind of pain. A multimodal program including manual therapy may improve function, pain and quality of life, allowing you to resume or continue your regular daily activities."[6]

How much does manual therapy cost?
"Although manual therapy is generally not covered by OHIP, most Extended Health Care (EHC) plans cover chiropractic, physiotherapy, and/or massage therapy. Talk to your employer if you are unsure about your coverage."

As part of the Ministry of Health's Low Back Pain Strategy, two provincial models of care are available to eligible patients with low back pain[18]:

Primary Care Low Back Pain Program
Select inter-professional primary care teams in Ontario offer a low back pain program to their patients. In most cases, a physician referral from within the team is required.

For more information and a list of teams offering this program, go to https://chiropractic.on.ca/helping-ontarians/programs-initiatives/primary-care-low-back-pain-program

Rapid Access Clinics
Rapid Access Clinics (RAC) for low back pain are being implemented across Ontario to improve patient care and access to low back pain assessment, education and management. Referrals are available to eligible patients whose primary care provider has enrolled in the program.

For more information, go to http://www.isaec.org/

OHIP-funded physiotherapy clinics
Individuals with a valid Ontario health card who meet one or more of the following criteria are eligible to access OHIP-funded physiotherapy:

- 65 years and older
- 19 years and under
- After an overnight hospital stay for a condition requiring physiotherapy
- a recipient of the Ontario Works or the Ontario Disability Support Program

For a directory of these clinics, go to https://www.health.gov.on.ca/en/public/programs/physio/pub_clinics.aspx

Absolute contraindications (Red flags) [4,8,14,15,17]

	Indication	Investigation
Neurological	**All conditions:** diffuse motor/sensory loss, progressive neurological deficits **Low back:** cauda equina syndrome **Neck:** cervical cord compression, demyelinating process, progressive neurological deficits, sudden and intense onset of headache **Shoulder:** significant weakness not due to pain	MRI
Infection	**All conditions:** fever, IV drug use, immune suppressed **Neck:** meningism **Shoulder:** septic joint	X-ray and MRI
Fracture	**All conditions:** trauma, osteoporosis risk/ fragility fracture **Low back:** presence of a contusion or abrasion which might indicate spinal fracture **Shoulder:** unexplained deformity and/or swelling	X-ray, may require CT
Tumour	**All conditions:** history of cancer, unexplained weight loss, significant night pain, severe fatigue	X-ray and MRI
Inflammation	**Low back:** chronic low back pain >3 months, age of onset <45, morning stiffness > 30 minutes, improves with exercise, disproportionate night pain **Neck:** rheumatoid arthritis, polymyalgia rheumatica, giant cell arteritis **Shoulder:** unexplained deformity, swelling or erythema of the skin	Rheumatology consult

Relative contraindications
Generally, these types of conditions contraindicate the relevant anatomy and do not necessarily contraindicate therapy for other areas.[6]

- Local open wound or burn
- Prolonged bleeding time/ hemophilia
- Pacemaker (contraindicated for electrotherapy)
- Joint infection*
- Tumour*
- Recent/healing fracture
- Increasing neurological deficit*
- Spinal internal fixation or artificial joint implants will require special consideration by the manual therapist.

*Does not prohibit treatment, but warrants investigation via imaging or specialist referral to rule out more serious pathology. See Absolute contraindications (Red flags).

Section D: Evidence for manual therapy

In the evidence table below, manual therapy is defined as treatment programs involving a variable combination of mobilization, exercise therapy and/or soft tissue therapies, with or without manipulation.

For classification of low back and neck conditions, see Appendix A.

	Condition	Management options	Quality of evidence
Low back[2,7,19]	**Acute LBP (class Ia/IIa/IIc)**	Manual therapy, education, self-management, usual medical care	Low
	Chronic LBP (class Ib/IIb/IId)	Spinal manipulative therapy, non-thrust SMT or myofascial therapy	High
		Manual therapy with or without SMT	Moderate
	Acute/chronic LBP with or without sciatica	Manual therapy with exercise	Low to high
	Chronic LBP in older populations	Manual therapy with or without exercise	Moderate
Neck[20]	**Acute neck pain-associated disorders (NAD) grade I/II**	Manipulation/mobilization	Low
		Manipulation/mobilization with massage, assisted stretching, heat/cold therapy	Moderate
	Acute whiplash-associated disorders (WAD) grade I/II	Manual therapy, education, exercises	Moderate
	Chronic/persistent NAD & WAD grade I/II	Manual therapy, heat, exercise	Low
	Chronic/persistent NAD & WAD grade III	Manual therapy, exercise	Low
Shoulder[4,10,12]	**Acute/chronic:** • non-specific pain • shoulder impingement syndrome • rotator cuff-associated disorders • adhesive capsulitis	Manual therapy with exercise	Low to moderate
	Acute/chronic rotator cuff associated disorders	Manual therapy and exercise	Moderate

Technique definitions[17,21-23]

Assisted stretching	Active or passive muscle lengthening with assistance of manual therapy clinician.
Heat/cold therapy	Local application of heat or cold over protected body part.
Joint mobilization (non-thrust manipulation)	Techniques incorporating a low velocity and small or large amplitude oscillatory movement within a joint's passive range of motion.
Manipulation (adjustment)	A passive, high velocity, low amplitude thrust applied to a joint beyond its physiological limit of motion but within its anatomical limit. Includes spinal manipulative therapy (SMT).
Manual traction	A therapeutic method to relieve pain by stretching and realigning the joints.
Soft-tissue therapies	Mechanical therapy in which muscles, tendons and ligaments are passively pressed or kneaded by hand or with mechanical devices. Includes myofascial therapy, relaxation massage, clinical therapeutic massage, movement re-education and energy work, Active Release Therapy (ART), progressive muscle relaxation and range of motion therapy.

Section E: Refer to appropriate clinician

Chiropractors, physiotherapists and registered massage therapists (RMT) can perform all or some of the manual therapy techniques recommended as part of a multimodal program for low back, neck and shoulder pain. However, manipulation or spinal manipulative therapy (SMT) can only be performed by chiropractors or trained physiotherapists rostered with the College of Physiotherapists to perform manipulation (rostered physiotherapists). See Appendix B for required credentials.

	Chiropractor	Rostered physiotherapist	Physiotherapist	with RMT
Low back pain				
Acute LBP (class Ia/IIa/IIc)*	✓	✓		✓
Chronic LBP (class Ib/IIb/IId)	✓	✓		
Acute/chronic LBP with or without sciatica	✓	✓		✓
Chronic LBP in older populations	✓	✓	✓	✓
Neck				
Acute/chronic NAD**, grade I/II	✓	✓	✓	
Acute/chronic WAD***, grade I/II	✓	✓	✓	✓
Chronic/persistent NAD & WAD grade III	✓	✓	✓	✓
Shoulder pain				
Acute/chronic non-specific pain	✓	✓	✓	✓
Acute/chronic shoulder impingement syndrome	✓	✓	✓	✓
Acute/chronic adhesive capsulitis	✓	✓	✓	✓
Acute/chronic rotator cuff-associated disorders	✓	✓	✓	✓

* For definitions of back and neck pain classification, see Appendix A.
**NAD = Neck pain-associated disorders
***WAD = Whiplash-associated disorders

A qualified clinician will meet the following criteria:[24,25,26]

- In good standing in the appropriate provincial regulatory college.
- Willing and able to provide proof of credentials, such as degrees and proof of registration.
- Experience in treating patients with low back, neck or shoulder pain.
- Willing to work collaboratively with family physician and other health care professionals as required to provide best patient care.

For detailed patient/provider resource on selecting a clinician, see Appendix B.

Chiropractor

Scope of practice:[27]

Assess the spine, nervous system and joints. Diagnose, prevent and treat dysfunctions/ disorders arising from the spine or joints, and resultant effects on the nervous system.

Find a chiropractor:
College of Chiropractors of Ontario

Physiotherapist

Scope of practice:[28]

Assess neuromuscular, musculoskeletal and cardio-respiratory systems. Diagnose diseases/disorders associated with physical dysfunction, injury or pain.

Find a physiotherapist:
College of Physiotherapists of Ontario

Registered Massage Therapist (RMT)

Scope of practice:[29]

Assess the soft tissue and joints of the body. Treat or support prevention of physical dysfunction and pain of the soft tissues and joints.

Find an RMT:
College of Massage Therapists of Ontario

Section F: Resources

CEP Clinical Tools

[i] CORE Neck Pain and Headache
https://cep.health/clinical-products/core-neck-tool-and-headache-navigator/

[ii] CORE Back tool
https://cep.health/clinical-products/low-back-pain/

[iii] Chronic Non-Cancer Pain
https://cep.health/clinical-products/chronic-non-cancer-pain/

[iv] Opioid Manager
https://cep.health/clinical-products/opioid-manager/

[v] Opioid Tapering Template
https://cep.health/clinical-products/opioid-tapering-template/

Supporting material

[vi] Brief Pain Inventory (BPI)
http://www.npcrc.org/files/news/briefpain_long.pdf

[vii] Bournemouth Questionnaire
http://oml.eular.org/sysModules/obxOml/docs/ID_45/bournemouth%20questionnaire_english%202.PDF

[viii] Neck Disability Index (NDI)
https://www5.aaos.org/uploadedFiles/NDI.pdf

[ix] RAND-36 Health Survey
https://www.wsib.ca/sites/default/files/2019-03/mtbi_rand.pdf

[x] The Revised Oswestry Disability Index
https://brentwoodchiropractic.ca/wp-content/uploads/2018/03/Form-LowBack.pdf

[xi] Roland Morris Back Disability Index (available in 47 languages)
http://www.rmdq.org/Download.htm

[xii] GAD-7
https://www.integration.samhsa.gov/clinical-practice/GAD708.19.08Cartwright.pdf

[xiii] PHQ-9
https://www2.gov.bc.ca/assets/gov/health/practitioner-pro/bc-guidelines/depression_patient_health_questionnaire.pdf

Patient resources

[xiv] Personal Action Planning for Patient Self-Management (targeted to low back pain but applicable to neck and shoulder conditions)
http://www.health.gov.on.ca/en/pro/programs/ecfa/docs/lb_tk_planning_c.pdf

[xv] Self-Management Resource Centre
https://www.selfmanagementresource.com/resources/evaluation-tools/english-evaluation-tools

[xvi] Positive Coping with Health Conditions
https://psychhealthandsafety.org/pcwhc/

[xvii] HQO LBP Patient Guide
https://www.hqontario.ca/Portals/0/documents/evidence/quality-standards/qs-low-back-pain-patient-guide-en.pdf

[xviii] Neck Pain Exercise Sheet
https://www.versusarthritis.org/media/3092/neck-pain-exercise-sheet.pdf

[xix] Shoulder Pain Exercise Sheet
https://www.csp.org.uk/system/files/5_shoulder_pain.pdf

[xx] ISAEC Low back pain Positions of Relief, Stretches and Exercises
http://www.isaec.org/isaec-exercise-videos.html

[xxi] Ontario Chiropractic Association (OCA) Self Management & Patient Education Resources
https://chiropractic.on.ca/public/self-management/

[xxii] Canadian Chiropractic Guideline Initiative Exercise Videos
https://staging.chiropractic.ca/guidelines-best-practice/exercise-videos/

Other resources for providers and patients

[xxiii] Ontario Chiropractic Association
https://www.chiropractic.on.ca

[xxiv] College of Chiropractors of Ontario
https://www.cco.on.ca/

[xxv] Ontario Physiotherapy Association (OPA)
https://opa.on.ca/

[xxvi] College of Physiotherapists of Ontario
https://www.collegept.org/

[xxvii] Registered Massage Therapists' Association of Ontario
https://www.rmtao.com/

[xxviii] College of Massage Therapists of Ontario
https://www.cmto.com/

[xxix] The Inter-professional Spine Assessment and Education Clinics (ISAEC)
http://www.isaec.org/

[xxx] Publicly Funded Physiotherapy: Clinic Location
http://www.health.gov.on.ca/en/public/programs/physio/pub_clinics.aspx

[xxxi] Primary Care Low Back Pain (PCLBP) Program
https://chiropractic.on.ca/helping-ontarians/programs-initiatives/primary-care-low-back-pain-program/

[xxxii] Toronto Academic Pain Medicine Institute (TAPMI)
http://tapmipain.ca/

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