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Chiropractic Spine Care

November 9, 2018
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Objectives

- Current algorithms for back pain
- Current non-pharm care options
- Spinal manipulation
- Chiropractic care
- Chiropractic referral

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BACK PAIN "101"

- "Non-complicated" back pain is quite "complicated"
- Care/referral algorithms vary widely in in practice from research
- Most currently used medical practices do not align with current research recommendations

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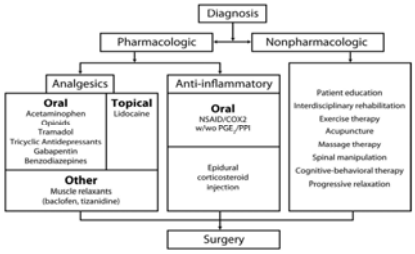

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Pharmaceutical treatment recommendations

- NSAIDs and acetaminophen
  - Side effects must be considered
  - NSAIDs may be more effective if tolerated by the patient
  - 100,000 hospitalized from complications annually
  - 16,500 deaths from complications annually
  - Estimated cost - $4 billion
- Muscle Relaxers
  - Recommended for short-term therapy (1-3 weeks only)
  - Cyclobenzaprine
- Opioids
  - Supportive research for the use of opioids for acute low back pain is minimal. The use of opioids for back pain is a matter of clinical judgment vs. scientific research. The cautious use of opioids may be considered in the case of severe pain not controlled with NSAIDs or acetaminophen. Recommended for the first 1-2 weeks only

Am J Manag Care. 2013;19(16 suppl):S267-S272
PT. 2014 Jun; 39(6): 427-435.

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- Encourage the patient to remain active and continue activities of daily living as symptoms allow
- Avoid bed rest
- Home care stretching and ergonomic recommendations
- ***Spinal Manipulation***
- Exercise
- Reassure, reassure, reassure!

Ann Intern Med. 2017;166(7):514-530.

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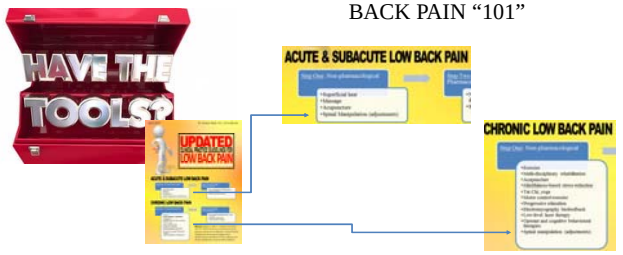
BACK PAIN "101"



Ann Intern Med. 2017;166(7):514-530

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Spinal Manipulation Therapy (SMT)

- *Hippocrates (460-385 BCE) wrote how he would "impart spinal pressure and thrust" on prominent vertebra*
- *Multiple times throughout history SMT – popularity has waxed/waned*
- *Modern SMT is a manual procedure that utilizes highly refined skills to enhance the biomechanics of the spine*
- *The Chiropractic physician adapts the procedure to meet the specific needs of the patient*

J Man Manip Ther. 2007; 15(3): 165–174.

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Current Research supports manipulation for back pain

- Manipulative Therapy in conjunction with standard medical care offers significant advantage at decreasing pain and improving function.
- Acute low back pain: spinal manipulation was significantly better than non-steroidal anti-inflammatory (mobility, function, time off work).
- Manipulation provides greater short-term reductions in self-reported disability and pain compared with usual medical care. 94% of the manual-thrust manipulation group achieved greater than 30% reduction in pain compared with 69% of usual medical care.
- Significant amount of current research demonstrates early conservative intervention (manipulation, physical therapy) improves patient outcomes, patient satisfaction and decreases cost

Ann Intern Med. 2012;156:1-10.
Journal of Occupational and Environmental Medicine, 2014 June, Vol. 56, Issue 6, 604-620.
Spine J. 2014;14(7):1106-16.
Ann Intern Med. 2017;166(7):514-530.

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Spinal Manipulation Therapy (SMT)

Tools
- Manual technique
- Activator technique

Popping sound "cavitation"
- Synovial fluid contains the gases oxygen, nitrogen and carbon dioxide
- Gas is rapidly released

J Manipulative Physiol Ther. 2011 Jan; 34(1): 2-14.

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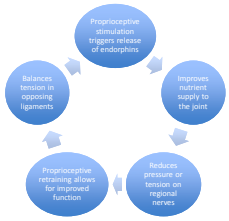
Physiological effects of manipulation



J Man Ther. 2015 Dec;20(6):797-804.

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Outcomes of SMT

Reduces pain and Improves joint function
- Re-align a joint
- Regain normal distribution of forces and stresses about a joint
- Regain normal active joint range of motion (AROM)
- Restore normal passive motions (PROM)
- Eliminates or dramatically reduces need for pharmaceuticals

J Man Ther. 2015 Dec;20(6):797-804.

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SMT Safety

- Effective and widely used technique
  - Manual technique – hands
  - Activator technique – hand-held device
- Cervical manipulation - AROM applies more stress on the internal carotid/vertebral arteries than manipulation
- *Rare adverse events - 1 in 5.85 million manipulations*.
- *Malpractice insurance is $1500-$2000/year.*

J Manipulative Physiol Ther. 2015 Nov-Dec;38(9):664-71.
CMAJ 2002 April 2; 166(7):886

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Is patient a good candidate for SMT?

- Contraindications
  - Inflammatory arthritis, malignancy, bone disease, fractures, infection
- red flags
- Patient preference
- Both Acute/Chronic conditions
- Insurance coverage
- Previous chiropractic care – good or bad experience

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Chiropractic Referral

- Spine specialists
  - Direct access provider
  - Primary musculoskeletal practitioners
- Spinal manipulation specialist
- Team player
  - Referrals to and from PCP/specialists
- Imaging
- Value – high patient satisfaction, low cost, measurable outcomes

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Educational Comparison*

Chiropractic vs. Medical

Chiropractic	Subject	Medical
540	Anatomy-Physiology	508
240	Physiology	326
360	Pathology-Geriatrics-Pediatrics	401
165	Chemistry	325
120	Microbiology	114
630	Diagnosis, Dermatology, Ears, Eyes, Nose, Throat	324
320	Neurology	112
360	Radiology	148
60	Psychology-Psychiatry	144
60	Obstetrics-Gynecology	148
210	Orthopedics	156
3065	Total	2706

* 800 hours of manual therapy after completing classroom hours.

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Current Imaging Guidelines

- NO imaging is indicated in the first 4-6 weeks of non-complicated, mechanical back pain.
  - What am I expecting to see?
  - Will it change my initial care recommendations?
  - Any "red flags"?
- When indicated A-P and lateral views are usually adequate
- MRI is recommended when:
  - Persistent radicular symptoms after 4-6 week trial of conservative care
  - Low back pain and radicular symptoms in the presence of red flags
  - Progressive neurological deficit

Eur Spine J. 2018 Jul 3. doi: 10.1007/s00586-018-5673-2.

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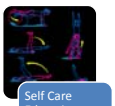
Care Plan

Manipulation
- Pain reduction/relief
- Joint mobility

Soft Tissue Therapies
- Pain reduction/relief
- Joint mobility



Self Care Education
- Stretches
- HEP
- Yoga

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Soft tissue and adjunctive therapies to CMT

- Mobilization
- Trigger Point Therapy
- Modalities (TENS, IFC, Russian Stim, Hi-volt, ultrasound)
- Acupuncture
- Cranial/Sacral Release Technique
- Active Myofascial Release
- Graston/tool-assisted release
- Low level laser

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Chiropractic Referral

Referral – "amb chiro"

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Provider Locations

- Cambridge - Dr. Jenna Therrien
- Isanti - Dr. Jenna Therrien
- Coon Rapids (Courage Kenny) - Dr. Derek Doty
- Woodbury (PGIHH) - Dr. Derek Doty
- Edina – Dr. Molly Magnani
  Dr. Doug Pernula
  Dr. Rochelle Rougier-Maas
- West Health – Dr. Steve Dandrea
- Nicollet Mall – Dr. Dean Bruns

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Case Study

47 yo female – L MB/LBP, L ankle sprain
- Mild MB/LBP 1/16 – no radicular px
- 3/16 – rolled ankle when standing up
- 6/16 – increase in MB/LBP
- HX
  - Denies known trauma to mid or low back
  - Denies radicular symptoms, b/b changes, weakness, numbness, night pain
  - Denies weakness/numbness
- EX
  - Unable to perform heel walk, weak EHL
  - LE DTRS – mildly hyper-reflexive
  - Babinski's neg
  - Valsalva neg

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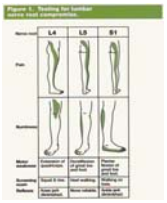
Case Study

- EX cont.
  - Paresthesia noted on L L5
  - Yeoman's increases pain in the L L4/L5/S1
  - Moderate hypermobility – L subtalar joint
- Chiropractic assessment:
  - Standing – L PSIS superior (extended ilium)
  - Prone – L PSIS – even with R PSIS
  - Supine – L ASIS – anterior to R ASIS
- Assessment
  - Neuro – suspect L4/L5
  - Ortho – ankle sprain
  - Chiro – imbalance of iliopsoas, multifidi, obliques; restriction at right si joint, restriction of L4, L5 motion



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Case Study

- Plan (after consulting with group)
  - Referral to ortho for ankle management
  - MRI
- Results:

CONCLUSION:
1. Broad-based left-sided protrusion-osteophyte into left foramen at L5-S1, with severe disc degeneration, mild foraminal stenosis and no neural compression.
2. 3 mm AP central-paracentral protrusion at L5-S1, with mild-moderate disc degeneration, encroachment upon S1 roots and mild right foraminal stenosis/L5 ganglionic encroachment.
3. 3 mm AP right dorsal to dorsolateral protrusion at mildly degenerated T10-11 level.

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Case Study

- Plan cont. (after consult with group)
  - Conservative care – 4- 6 visits
    - Manipulation – L4, L5, right sij
    - Interferential
    - Muscle rehab – passive/active
  - 1st week – 2 visits – t/l pain reduced by 80%
  - 2nd week – 1 visit – stronger heel walk; ortho rx immobilizer for 3 weeks, EHL stronger
  - 4th week – 1 visit – ½ dollar area of paresthesia/no LBP milder MBP, EHL stronger/sustained
  - 5th week – 1 visit - progressing function r sij/L4/L5, heel walk improving, quarter size tingling
  - 6th week – 1 visit - able to sit longer than 30 minutes, navigating stairs, EHL sustaining, progressing heel walk

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Case Study

- 45 yo female presented to UC with left sided neck, upper back and left upper arm pain x 3 weeks. R/O cardiac/pulmonary etiology.
  - UC - Medrol dose pack and Flexeril - no relief
  - PCP - Percocet for pain
  - ED - negative xrays and NORCO for pain
  - PT - for 4 sessions - pain seemed to be worsening
- Self referred to Chiro - SMT, myofascial release, infrared light therapy for 4 visits - 95% resolved

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- 33 yo male presents with mid back pain following a weekend of hiking and kayaking. No specific trauma.
  - History: previous issues with mid back pain related to a rollover MVA long ago. Carries an extra 30 pound vest during work days as a policeman.
  - Examination: no radicular symptoms, rib head tenderness in mid thoracic region that can radiate around to the left sternal area. Taking deep breaths can be painful and lying on the ribs at night is painful. Certain movements will also elicit pain. ROM wnl, no red flags. Spinal tenderness T45678 along with rib head tenderness at the same levels L>R.
  - Treatment: SMT, TPT, strain counter-strain stretching. Is actively doing foam rolling and topical arnica which has been helpful. Follow up in two days.

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- Treatment plan cont.
  - Patient returned and pain was relieved for the entire day of treatment but then returned when lying down at night and was still painful most of the next day. Discussed imaging with patient and decided to do cervical and thoracic films.
  - Cervical films negative
  - Thoracic films. There is abnormal widening of the mediastinum and CT scan of the chest is recommended.
- CT scan: An 8.7 x 7.9 x 6.3 cm left anterior mediastinal mass is demonstrated. This mass is mixed attenuation, including a large fatty component. No mediastinal or hilar lymphadenopathy is apparent.
- A small left-sided pleural effusion is noted along with minor atelectasis in the left lower lobe base. The lungs are otherwise clear. No pleural effusion is demonstrated. No airway abnormality is evident. No mediastinal or hilar lymphadenopathy is demonstrated. The heart size is normal.
- Images of the upper abdomen are unremarkable.
- IMPRESSION:
- 1. 8.7 x 7.9 x 6.3 cm left anterior mediastinal mass with large fat component. Consider germ-cell tumor and thymolipoma.
- 2. Small left pleural effusion.
- **Referral to PCP**

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Chiro Osteo 2010 Feb 25;18:3

Effectiveness of manual therapies: the UK evidence report

Bronfort G, Haas M, Evans R, Leininger B, Triano J

Background: the purpose of this report is to provide a succinct but comprehensive summary of the scientific evidence regarding effectiveness of manual treatment of the management of a variety of musculoskeletal and non-musculoskeletal conditions.

Spinal Conditions	Intervention	Evidence		
		Inconclusive	Moderate	High
Acute Low Back Pain	Spinal manipulation /mobilization		positive	
Chronic Low Back Pain	Spinal manipulation /mobilization			positive
Chronic Low Back Pain	Massage		positive	
Chronic Low Back Pain	Foot reflexology added to usual medical care	non-favorable		
Sciatica/ Radiating Leg Pain	Spinal manipulation /mobilization	favorable		
Coccydynia	Spinal manipulation	favorable		
Mid Back Pain	Spinal manipulation	favorable		
Acute/subacute Neck Pain	Thoracic spinal manipulation/ mobilization		positive	
Acute Whiplash-Associated Disorders	Mobilization with exercise		positive	
Chronic Neck Pain	Spinal manipulation /mobilization with exercise		positive	
Neck Pain of any duration	Cervical spinal manipulation/ mobilization alone	favorable		
Chronic Neck Pain	Massage		positive	

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Headache and other Conditions	Intervention	Evidence		
		Inconclusive	Moderate	High
Migraine Headache	Spinal manipulation		positive	
Migraine Headache	Massage alone	favorable		
Tension type headache	Spinal Manipulation	unclear		
Cervicogenic Headache	Spinal Manipulation		positive	
Cervicogenic Headache	Self-mobilizing Apophyseal Glides		positive	
Cervicogenic Headache	Friction massage and trigger points	non-favorable		
Cervicogenic Headache	Mobilization	unclear		
Miscellaneous Headache	Mobilization	favorable		
Cervicogenic dizziness	Self-mobilizing Apophyseal Glides		positive	
Temporo-mandibular joint dysfunction	Mobilization/ massage	favorable		
Fibromyalgia	Massage	favorable		
Fibromyalgia	Spinal manipulation	unclear		
Fibromyalgia	Manual lymph drainage	favorable		
Myofascial Pain Syndrome	Massage	favorable		

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Allen H et al, *Journal of Occupational and Environmental Medicine*, 2014 June, Vol. 56, Issue 6, 604-620

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