

EVIDENCE BASED MEDICAL RESEARCH THAT SUPPORTS MOBILIZATION/MANIPULATION:

GENERAL EVIDENCE:

Spinal manipulation/mobilization, in [stark](#) contrast to prescription medication, has been experimentally demonstrated to be a safe and efficacious intervention for the treatment of acute, sub-acute ([51](#)) and chronic spinal pain (45,46,65) as it normalizes chronically dysfunctional motion segments at the skeletal level ([68](#)). In fact, in a randomized controlled trial, Dabbs and Lauretti concluded that spinal manipulation was several hundred times safer than prescription NSAIDS and was just as efficacious for the treatment of spinal pain. (65)

In other “randomized controlled trials” (which are considered “to be the strongest scientific proof of the effectiveness of an intervention” (47) and “generally accepted as the paradigm of intervention research...” (48)), spinal manipulation/mobilization has been demonstrated to be more efficacious than Medication (49-54), Physical therapy (51,55,52,53,80), Acupuncture (49,50,56), [Physician](#) Visit with booklet (57-59,80), Hospital Outpatient [Management](#), (60,61) Exercise (62,55,80) and Placebo (58,63,52-54,80), in its ability to effectively treat chronic spinal pain.

DECENT RANDOMIZED CONTROLLED TRIALS THAT SUPPORT MANIPULATION/MOBILIZATION:

< [Aure et al. 2003](#) | [Triano et al. 1995](#) | [Muller & Giles 2003](#) | [Hoiriis et al. 2004](#) | [Niemisto et al. 2003](#) | [Koes et al. 1993](#) >

In 2003, [Aure et al.](#) randomized forty-nine chronic pain suffering patients into either a spinal manipulation/mobilization group (aka: manual therapy) or a supervised exercise/stretching group. These cohorts were then treated for two months (16 visits) and then followed for one year. The authors concluded “ *the manual therapy group showed significantly larger improvements than the exercise therapy group on all outcome variables throughout the entire experimental period.*” More explicitly, the manipulation/mobilization group achieved the following outcomes: 1) a 33mm drop in pain on VAS (versus 17mm in the exercise group), 2) a 9 point improvement on the Dartmouth COOP (versus 4 point in the exercise group); and (3 a 21% improvement in functional disability via Oswestry (versus only 9% in the exercise group). And, maybe even more importantly was the fact that immediately after the two month treatment period, 67% of the manipulation group had returned to work versus only 27% of the exercise group. This statistic was indeed quite impressive! ([62](#))

In 1995, [Triano et al.](#) randomized 209 chronic low back pain patients into a manipulation group, a back booklet group, or a placebo manipulation group. They were treated 6 times per week for two weeks and then reassessed at 4 weeks: The outcome

revealed that patients who received spinal manipulation had a much greater improvement in their level of pain (via VAS) than the other groups. The authors of this randomized placebo-controlled trial concluded “ *there appears to be clinical value to treatment according to a defined plan using manipulation even in low back pain exceeding 7 weeks’ duration.... Greater improvement was noted in pain and activity tolerance in the manipulation group. Immediate benefit from pain relief continued to accrue after manipulation,*” (58)

In 2003, **Muller and Giles** published the results of their randomized controlled trial with long-term follow-up. They concluded, “*Overall, patients who have chronic mechanical spinal pain syndromes and received spinal manipulation gained significant broad-based beneficial short-term and long-term outcomes.*” This investigation randomized a group of 109 chronic spine pain patients, who had been suffering back or neck pain for an average of 6.4 years, into one of three treatment groups: a manipulation group, a medication group (Celebrex or Vioxx), or an acupuncture group. After a nine week course of care, the authors concluded that the manipulation group experienced a much more favorable clinical outcome when compared to either the medication group or the acupuncture group. More explicitly, 27.3% of the manipulation patients became asymptomatic (had no pain); versus only 9.4% of the acupuncture patients and 5% of the medication patients. Even more impressive was the increase in functional ability, as indicated in the Oswestry scores: The manipulation group obtained a 50% improvement; versus only a 5% improvement for the acupuncture group and a 4% improvement in the medication group. Finally, the subjective pain scores also strongly favored the manipulation group: The manipulation group obtained a 50% drop in their VAS scores (self pain intensity rating); versus only a 15% drop in the acupuncture group and 0% drop in the medication group. (56) In 2005, his same cohort was followed for another 12 months; the outcome numbers did not change, which led the authors to the conclusion the following: “ *In patients with chronic spinal pain syndromes, spinal manipulation, if not contraindicated, may be the only treatment modality of the assessed regimens (acupuncture & prescription medication) that provides broad and significant long-term benefit .*” (50)

In 2004 **Hoiriis et al.** published a randomized double-blind placebo-controlled trial that investigated the efficacy of manipulation, muscle relaxants, and placebo as an intervention for the treatment of low back pain. One-hundred and ninety two patients suffering low back pain were randomized into one of the aforementioned groups. The results indicated that manipulation was more effective at reducing pain and the patient’s ‘Clinical Global Impression of Severity Scale’ (GIS) than either placebo or muscle relaxants; the authors concluded “*Chiropractic was more beneficial than placebo in reducing pain and more beneficial than either placebo or muscle relaxants in reducing GIS.*” (54)

With the addition of supervised spinal stabilizing exercises into the Chiropractic treatment protocol, which is well within the scope of Chiropractors (99), the effect of spinal manipulation is even more efficacious for the treatment of chronic spine pain

(64,59):

In 2003 **Niemisto et al.** released a large randomized-controlled trial that randomized 204 chronic low back pain patients into either a spinal manipulation with stabilization exercise group or a medical doctor consultation with home exercise group. At the “12-month follow-up, the manipulative-exercise group showed “more significant reductions in pain intensity ($P < 0.001$) and in self-rated disability ($P = 0.002$) than the consultation group.” The authors of this ‘Spine’ published investigation concluded the following: “*The manipulative treatment with stabilizing exercises was more effective in reducing pain intensity and disability than the physician consultation alone .*”(59)

In 1993 **Koes et al.** conducted a randomized placebo-controlled trial into the efficacy of spinal manipulation as an intervention for the treatment of chronic back and neck pain conditions. The researchers randomized 256 chronic pain patients into a manual therapy group (which consisted of either/or spinal mobilization/manipulation); a physical therapy group; a general medical-care group (which consisted of prescription medication, posture advice, a home exercise sheet); or a placebo group (which consisted of detuned diathermy and ultrasound). At 12 month follow-up, spinal manipulation/mobilization was almost 50% more effective than its closest competitor - physiotherapy - for the treatment of chronic pain and was clearly the most effective form of intervention between physical therapy, medication, home exercise booklet, and placebo. (53)

There are other randomized controlled trials that also demonstrate the efficacy of Chiropractic care as an intervention for chronic pain (62,55,49,57,64,78,79,50,56,51,60,61,45,58,63,52-54,59), but I believe I’ve made my case with the aforementioned 6 investigations.

EVIDENCE BASED TREATMENT GUIDELINES: The Mercy Guidelines .

The ‘Guidelines for Chiropractic Quality Assurance and Practice Parameters’ (aka: the Mercy Guidelines), which are the strongest evidence based chiropractic guidelines on the planet, also support the use of spinal manipulation as an intervention for the treatment of chronic spinal pain. More explicitly, the Mercy Guidelines state the following: “ *repeated use of passive care (chiropractic manipulation/modalities) is generally acceptable in the management of cases undergoing prolonged recovery (i.e., chronic pain)*” (75), “ *Patients with chronic disorders may require more treatment/care to resolve symptomatic episodes than do other categories of complaint .*” (76), and “ *Chronic Episode: Supportive care using passive therapy (spinal manipulation/modalities) may be necessary if repeated efforts to withdraw treatment/care result in significant deterioration of clinical status.*” (77)

MERCY IN SUPPORT OF CHRONIC PAIN: Flare-ups ONLY docs!

Page 125, Chapter 8 of the ‘Guidelines for Chiropractic Quality Assurance and Practice

Parameters' (aka: The Mercy Guidelines); Aspen publishers inc. 2005, unlike the ACOEM Guidelines, specifically addresses what type of treatment frequency is reasonably medically necessary to properly address "exacerbation of a chronic condition." More explicitly, Mercy states that following exacerbation of a chronic condition, 3 to 5 treatments per week should bring about "significant improvement" [of the exacerbation] within two weeks. For the next six to eight weeks, if necessary, a treatment frequency of 3 times per week should be sufficient to return the patient to pre-exacerbation level and free the patient from the need of professionally administered spinal manipulation and its associated therapies care. (74) This level of treatment frequency is also supported in a recent randomized controlled trial (67). All such "acute episodes" should be causatively investigated and reported upon by the PTP.

TENS UNIT SUPPORT:

I also recommend that the patient be provided a TENS that may be used to address acute flare-ups of symptomatology. In a randomized double-blind placebo-controlled trial, TENS has been demonstrated to be just as effective for relieving acute pain as prescription medication. More explicitly, in 1987 Ordog randomized 100 patients who were suffering acute pain into either a TENS group, a placebo group, or a prescription medication group (Tylenol with Codeine). The results confirmed that TENS was just as efficacious for treating acute pain as prescription Tylenol with Codeine. The senior author concluded by opining the following: "*TENS was approximately as effective as acetaminophen (300-600 mg) with codeine (30-60 mg) but had no side effects. Transcutaneous electrical nerve stimulators have been shown to be effective in the management of acute traumatic pain and may be indicated for patients who cannot be given medications.*" (400) The PTP should instruct the patient on how to use the TENS machine properly and safely.

Exercise and Functional Restoration :

The Exercise and Home Functional Restoration Program that I have recommended are strongly and overwhelmingly supported by the ACOEM guides (124-126), the Mercy Guidelines (127), and numerous, quality, randomized controlled investigations (144-161). I believe Dr. Deyo, MD and Weinstein, DO summed it up best in their landmark publication within the February 2001 publication of the New England Journal of Medicine (145) entitled "Low Back Pain": They stated, "*Back exercises are also not helpful in the acute phase (of back pain), although they are useful later for preventing recurrences and for treating chronic low back pain. (144,146-149)*" Another, more recent meta-analysis on the efficacy of exercise as an intervention for the treatment of chronic pain was made by Maher – 2004. He concluded, "*Exercise is one of the few clearly effective treatments for chronic low back pain. The four most recent systematic reviews of exercise have each concluded that exercise is an effective therapy for chronic low back pain.*" (171-174) [170]

I do not believe that this part of my recommendations should be challenged, for the

evidence is overwhelmingly supportive of such exercise based programs for the treatment and prevention of chronic pain; furthermore, the use of such exercise is clearly within the scope of Chiropractic (99).

APPORTIONMENT RESEARCH:

< [DJD](#) | [DDD](#) | [Spondylolysis / Spondylolisthesis](#) >

DEGENERATIVE JOINT DISEASE (DJD):

I believe Professor Nikolai Bogduk, MD, researcher, author, and two-time Volvo Award winner addressed the contention that Degenerative Joint disease (aka: DJD, spondylosis) was predictive of spine pain quite well by stating the following: “*Spondylosis, disc degeneration, facet degeneration or osteoarthritis are not legitimate diagnoses of the cause or source of back pain. The correlations with pain are either nil or poor. On plain films, spondylosis equally common in both symptomatic and asymptomatic individuals (507-514) and does not, therefore, constitute a diagnosis of the cause of pain.*” (500)

For example, in 1976 Torgerson et al. published one of the only prospective investigations into the radiographic findings of 387 symptomatic low back pain patients versus 217 asymptomatic patients (who were x-rayed because of kidney problems). The results demonstrated that spondylosis (aka: degenerative joint disease or DJD) was seen just as often in the symptomatic back pain patients as it was in the asymptomatic (no back pain) patients. More explicitly, 47% of the asymptomatic group had spondylosis, and 57% of the low-back pain patients had spondylosis. (507) This small difference was not statistically significant.

More recently, in 2001 Lee et al. demonstrated that endplate sclerosis (aka: spondylosis) was just as prevalent in symptomatic neck pain patients as it was in asymptomatic volunteers of the same age. They concluded, “*Our results suggest that the radiographic density of cervical vertebral end plates (spondylosis/sclerosis) correlates neither with neck pain nor with increasing age.*” (515)

In conclusion, I find no evidence of prior pre-existing impairment, work restriction, subjective factors of disability, or underlying disease or pathology that could have influenced the cause or degree of permanent impairment/disability described above. Therefore, based upon reasonable medical probability, apportionment is not indicated, and 100% of the permanent disability/impairment is attached to the industrial injury of 04/11/03.

DEGENERATIVE DISC DISEASE (DDD):

Finally, I would like to present the Volvo Award Winning and Young Investigator Award winning work of Dr. Norbert Boos et al. in hopes of shedding more light on

degenerative disc disease's role in 'predicting' the occurrence of future low back pain and disability:

In 1995 3-time Volvo Award winner, Dr. Norbert Boos, published a Volvo Award Winning investigation into the accuracy of MRI for predicting symptomatic disc herniation and disc degeneration (among other things). The set-up for this investigation was most ingenious: For the first time ever, a control group (an asymptomatic pain-free group of people) of 46 patients was 'matched' by sex, age, and occupational duties to a group of patients awaiting discectomy for disc herniation-associated back and leg pain. This group of asymptomatic (pain-free) people, all of whom had 'high-risk' occupations for the development of back pain, amazingly, demonstrated an extremely high prevalence of disc herniation (76%) and degenerative disc disease (86%) on MRI despite NEVER having complaints of low back pain before! (601) Therefore, the appearance of degenerative disc disease alone, as demonstrated in this award winning investigation, was NOT associated with pain or disability.

Boos, however, still was not done with the group of asymptomatic, high-risk, people, who all had disc degeneration and/or disc protrusion, and decided to follow them for 5 years to see if that asymptomatic disc degeneration and/or disc herniations eventually turned into a painful and/or disabling situation. The results were published in yet another award winning investigation (the Young Investigator Award 2001) and revealed that despite a worsening of the degenerative disc disease in 41% of the asymptomatic people, only 12% developed a temporary spell of low back pain and, even more amazingly, 0% became hospitalized or permanently disabled as a result of back pain! (602) Therefore, the appearance of degenerative disc disease alone, as demonstrated in this award winning investigation, was NOT associated or predictive of future pain or disability.

SPONDYLOLYSIS & SPONDYLOLISTHESIS:

It has long been known that spondylolysis/spondylolisthesis are seen just as frequently in asymptomatic people as they are in symptomatic people (501,512). More explicitly, in 1982 Libson and Dinari radiographically studied the occurrence rate (prevalence) of spondylolysis/spondylolisthesis in 936 asymptomatic and 662 symptomatic military soldiers concurrently. Over all, they found no difference between the two groups, i.e., 10% of the asymptomatic soldiers and 9% of the symptomatic soldiers had spondylolysis/spondylolisthesis. (501) This same prevalence percentage for spondylolysis/spondylolisthesis was found in Jensen's investigation into false positives on MRI in the asymptomatic population (512). The latter was the investigation that prompted Professor Nikolai Bogduk, MD, researcher, author, and two-time Volvo Award winner to proclaim within the Australasian Faculty of Musculoskeletal Medicine Guidelines that "*finding a pars defect on a plain film does not constitute establishing a diagnosis of the patient's pain.*" (500)

REFERENCES :

45) Van Tulder MW, Koes BW, Bouter LM. 'Conservative Treatment of Acute and Chronic Nonspecific Low Back Pain. A Systematic Review Of Randomized Controlled Trials Of The Most Common Interventions.' Spine 1997 Sep 15;22(18):2128-56 " *strong evidence also was found for the effectiveness of manipulation, back schools, and exercise therapy for chronic low back pain...*"

46) Anderson R, Meeker WC, Wirick BE, et al. 'A meta-analysis of clinical trials of spinal manipulation.' J Manipulative Physiol Ther. 1992 Mar-Apr;15(3):181-94. " *CONCLUSIONS: Spinal manipulative therapy proved to be consistently more effective in the treatment of low back pain than were any of the array of comparison treatments (including sham treatment). The analysis provided some suggestion that manipulation, as such, is more effective than mobilization, as such.*"

47) Spitzer WO, LeBlanc Fe, Dupuis M, eds. 'Scientific approach to the assessment and management of activity related spinal disorders.' Spine 1987; 7 (suppl):1-59 " *The Quebec Task Force regarded the randomized controlled trial to be the strongest scientific proof of the effectiveness of an intervention.*"

48) Van Tulder MW, BW Koes, LM Bouter. 'Conservative Treatment of Acute and Chronic Nonspecific Low Back Pain: A Systematic Review of Randomized Controlled Trials of the Most Common Interventions.' Spine 1997;22(18):2128-2156 " *the randomized controlled trial is generally accepted as the Paradigm of intervention research...*"

49) Giles LG, Muller R "Chronic spinal pain syndromes: a clinical pilot trial comparing acupuncture, a nonsteroidal anti-inflammatory drug, and spinal manipulation." J Manipulative Physiol Ther. 1999 Jul-Aug;22(6):376-81 " *in patients with chronic spinal pain syndromes spinal manipulation, if not contraindicated, results in greater improvement than acupuncture and medicine.*"

50) Muller R, Giles LG. 'Long-term follow-up of a randomized clinical trial assessing the efficacy of medication, acupuncture, and spinal manipulation for chronic mechanical spinal pain syndromes.' J Manipulative Physiol Ther. 2005 Jan;28(1):3-11. " *CONCLUSIONS: In patients with chronic spinal pain syndromes, spinal manipulation, if not contraindicated, may be the only treatment modality of the assessed regimens that provides broad and significant long-term benefit.*"

51) Hoving JL, Koes BW, de Vet HC, et al. 'Manual Therapy, Physical Therapy, or Continued Care by a General Practitioner for Patients with Neck Pain. A Randomized, Controlled Trial.' Ann Intern Med. 2002;136(10):713-22 " *CONCLUSION: In daily practice, manual therapy is a favorable treatment option for patients with neck pain compared with physical therapy or continued care by a general practitioner (medication).*" " *At 7 weeks, the success rates were 68.3% for manual therapy, 50.8% for physical therapy, and 35.9% for continued care. Statistically significant differences in pain intensity with manual therapy compared with continued care or physical therapy ranged from 0.9 to*

1.5 on a scale of 0 to 10. Disability scores also favored manual therapy, but the differences among groups were small. Manual therapy scored consistently better than the other two interventions on most outcome measures." <http://www.annals.org/cgi/reprint/136/10/713.pdf>

52) ** Koes BW, Bouter LM, et al. 'A blinded randomized clinical trial of manual therapy and physiotherapy for chronic back and neck complaints: physical outcome measures.' J Manipulative Physiol Ther. 1992 Jan;15(1):16-23. " *Manual therapy showed a faster and larger improvement in physical functioning compared to the other three therapies (physiotherapy, a general practitioner (medication), and placebo therapy).*"

53) Koes BW, Bouter LM 'Randomised clinical trial (with placebo) of manipulative therapy and physiotherapy for persistent back and neck complaints: results of one year follow up.' BMJ. 1992 Mar 7;304(6827):601-5. " *CONCLUSIONS--Manipulative therapy and physiotherapy are better than general practitioner (medication) and placebo treatment. Furthermore, manipulative therapy is slightly better than physiotherapy after 12 months.*"

54) Hoiriis KT, et al. 'A Randomized (Placebo-Controlled) clinical trial comparing chiropractic adjustments to muscle relaxants for subacute low back pain.' J Manipulative Physiol Ther. 2004;27(6):388-98. " *Chiropractic was more beneficial than placebo in reducing pain and more beneficial than either placebo or muscle relaxants in reducing Global Impression of Severity Scale.*"

55) Hemmila HM, et al. 'Long-term effectiveness of bone-setting, light exercise therapy, and physiotherapy for prolonged back pain: a randomized controlled trial.' J Manipulative Physiol Ther. 2002 Feb;25(2):99-104. " *CONCLUSIONS: Traditional bone-setting seemed more effective than exercise or physiotherapy on back pain and disability, even 1 year after therapy.*"

56) Giles LGF, Muller R. 'A Randomized Clinical Trial Comparing Medication Acupuncture and Spinal Manipulation.' Spine 2003;28(14):1490-1503 " *The results of this efficacy study said just that spinal manipulation, if not contraindicated, may be superior to needle acupuncture or medication for the successful treatment of patients with chronic spine pain syndrome...."*

57) Niemisto L, Lahtinen-Suopanki T, Rissanen P, Lindgren KA, Sarna S, Hurri H. "A randomized trial of combined manipulation, stabilizing exercises, and physician consultation compared to physician consultation alone for chronic low back pain." Spine 2003; 28(19):2185-91. "Conclusion: *The manipulative treatment with stabilizing exercises was more effective in reducing pain intensity and disability than the physician consultation (with educational booklet) alone. The present study showed that short, specific treatment programs with proper patient information may alter the course of chronic low back pain.*"

58) Triano JJ, McGregor M, Hondras MA, Brennan PC. 'Manipulative therapy versus

education programs in chronic low back pain.' Spine. 1995 Apr 15;20(8):948-55.
Conclusion: " *there appears to be clinical value to treatment according to a defined plan using manipulation even in low back pain exceeding 7 weeks' duration.* " "Greater improvement was noted in pain and activity tolerance in the manipulation group. Immediate benefit from pain relief continued to accrue after manipulation,"

59) Niemisto L, et al. "A randomized trial of combined manipulation, stabilizing exercises, and physician consultation compared to physician consultation alone for chronic low back pain." Spine. 2003 Oct 1;28(19):2185-91. " *The manipulative treatment with stabilizing exercises was more effective in reducing pain intensity and disability than the physician consultation alone (in a group of 204 chronic low back pain patients).*" " The present study showed that short, specific treatment programs with proper patient information may alter the course of chronic low back pain."

60) Meade TW, et al. 'Low back pain of mechanical origin: randomized comparison of chiropractic and hospital outpatient treatment.' BMJ. 1990 Jun 2;300(6737):1431-7.
"CONCLUSIONS: *For patients with low back pain in whom manipulation is not contraindicated chiropractic almost certainly confers worthwhile, long term benefit in comparison with hospital outpatient management. The benefit is seen mainly in those with chronic or severe pain.*"

61) Meade TW, et al. 'Randomized Comparison of Chiropractic and Hospital Outpatient Management for Low Back Pain: results from extended follow-up.' BMJ 1995; 311:349-51 " *At three years the results confirm the findings of an earlier report that when chiropractic or hospital therapists treat patients with low back pain as they would in day to day practice those treated by chiropractic derive more benefit and long term satisfaction than those treated by hospitals.*"

62) Aure OF, Nilsen JH, Vasseljen O. 'Manual therapy and exercise therapy in patients with chronic low back pain: a randomized, controlled trial with 1-year follow-up.' Spine 2003 28(6):525-31; discussion 531-2 Forty-nine patients were randomized into either an exercise group or a spinal manipulation group: " *CONCLUSIONS: ...manual therapy (aka: manipulation or mobilization) showed significantly greater improvement than exercise therapy in patients with chronic low back pain. The effects were reflected on all outcome measures, both on short and long-term follow-up (1 year).*" "Immediately after the 2-month treatment period, 67% in the manual therapy and 27% in the exercise therapy group had returned to work."

63) Hawk C, Azad A, Phongphua C, Long CR. 'Preliminary study of the effects of a placebo chiropractic treatment with sham adjustments.' J Manipulative Physiol Ther. 1999 Sep;22(7):436-43. " *RESULTS: Although VAS and GWBS scores improved with both treatments, a somewhat greater improvement occurred in most cases with the active treatment.*"

64) Evans R, Bronfort G, Nelson B, Goldsmith CH "Two-year follow-up of a randomized clinical trial of spinal manipulation and two types of exercise for patients with chronic

neck pain." Spine. 2002 Nov 1;27(21):2383-9. "CONCLUSION: *The results of this study demonstrate an advantage of spinal manipulation combined with low-tech rehabilitative exercise and MedX rehabilitative exercise versus spinal manipulation alone over two years and are similar in magnitude to those observed after one-year follow-up. These results suggest that treatments including supervised rehabilitative exercise should be considered for chronic neck pain sufferers.*"

65) Dabbs V, Lauretti WJ. 'A risk assessment of cervical manipulation vs. NSAIDs for the treatment of neck pain.' J Manipulative Physiol Ther. 1995 Oct;18(8):530-6. " *The best evidence indicates that cervical manipulation for neck pain is much safer than the use of NSAIDs, by as much as a factor of several hundred times. There is no evidence that indicates NSAID use is any more effective than cervical manipulation for neck pain.*"

66) Descarreaux M, et al. 'Efficacy of preventive spinal manipulation for chronic low-back pain and related disabilities: a preliminary study. 'J Manipulative Physiol Ther. 2004; 27(8):509-14. " CONCLUSIONS: *Intensive spinal manipulation is effective for the treatment of chronic low back pain. This experiment suggests that maintenance spinal manipulations after intensive manipulative care may be beneficial to patients to maintain subjective postintensive treatment disability levels.*"

67) Haas M, et al. 'Dose-response for chiropractic care of chronic low back pain.' Spine J. 2004; 4(5):574-83. " CONCLUSIONS: *There was a positive, clinically important effect of the number of chiropractic treatments for chronic low back pain on pain intensity and disability at 4 weeks. Relief was substantial for patients receiving care 3 to 4 times per week for 3 weeks.*"

68) Buchmann J, et al. 'Manual treatment effects to the upper cervical apophysial joints before, during, and after endotracheal anesthesia: a placebo-controlled comparison.' Am J Phys Med Rehabil. 2005; 84(4):251-7. "CONCLUSIONS: Both treatments (mobilization and manipulation) are superior to placebo."

74) Page 125, Chapter 8 of the 'Guidelines for Chiropractic Quality Assurance and Practice Parameters' (aka: The Mercy Guidelines); Aspen publishers inc. 2005: Section VI, Subsection E.

75) Chapter 8: Page 125: Guidelines for Chiropractic Quality Assurance and Practice Parameters" (aka: The Mercy Guidelines): "...repeated use of passive care (chiropractic manipulation & PT) is generally acceptable in the management of cases undergoing prolonged recovery."

76) Chapter 8: Page 120 – 121: Passive care - Guidelines for Chiropractic Quality Assurance and Practice Parameters" (aka: The Mercy Guidelines): " Patients with chronic disorders may require more treatment/care to resolve symptomatic episodes than do other categories of complaint."

77) Chapter 8: Page 125: Passive care - Guidelines for Chiropractic Quality Assurance and Practice Parameters (aka: The Mercy Guidelines): "Chronic Episode: Supportive care using passive therapy (spinal manipulation/modalities) may be necessary if repeated efforts to withdraw treatment/care result in significant deterioration of clinical status."

78) Hoving JL, Koes BW, de Vet HC, et al. "Manual therapy, physical therapy, or continued care by a general practitioner for patients with neck pain. A randomized, controlled trial." *Ann Intern Med.* 2002;136(10):713-22 "CONCLUSION: *In daily practice, manual therapy is a favorable treatment option for patients with neck pain compared with physical therapy or continued care by a general practitioner.*"

79) Goldby L, et al. "A randomized controlled trial investigating the efficacy of manual therapy, exercises to rehabilitate spinal stabilization and an education booklet in the conservative treatment of chronic low back pain." In: *Proceedings of International Federation of manipulative Therapists.* Perth, Australia: 2000

80) Bronfort G, et al. 'Efficacy of spinal manipulation and mobilization for low back pain and neck pain: a systematic review and best evidence synthesis.' *Spine J.* 2004 May-Jun;4(3):335-56 *After studying the results of 43 randomized controlled trial of spinal manipulation the authors concluded that for chronic pain, "There is limited to moderate evidence that spinal manipulative therapy is better than physical therapy and home back exercise in both the short and long term."* "There is moderate evidence that spinal manipulative therapy has an effect similar to an efficacious prescription nonsteroidal anti-inflammatory drug..." "CONCLUSIONS: *Our data synthesis suggests that recommendations can be made with some confidence regarding the use of SMT and/or MOB as a viable option for the treatment of both low back pain and NP.*"

99) Title 16 or California Code of Regulation, Article 1, Section 302, Subsection A, Paragraph 2 " *As part of a course of chiropractic treatment, a duly licensed chiropractor may use all necessary mechanical, hygienic, and sanitary measures incident to the care of the body, including, but not limited to, air, cold, diet, exercise, heat, light, massage, physical culture, rest, ultrasound, water, and physical therapy techniques...*"

100) Spitzer WO, LeBlanc Fe, Dupuis M, eds. 'Scientific approach to the assessment and management of activity related spinal disorders.' *Spine* 1987; 7 (suppl):1-59 " *The Quebec Task Force regarded the randomized controlled trial to be the strongest scientific proof of the effectiveness of an intervention.*"

101) Van Tulder MW, BW Koes, LM Bouter. 'Conservative Treatment of Acute and Chronic Nonspecific Low Back Pain: A Systematic Review of Randomized Controlled Trials of the Most Common Interventions.' *Spine* 1997;22(18):2128-2156 " *the randomized controlled trial is generally accepted as the Paradigm of intervention*

127) Chapter 8: Page 122 – 123 Treatment/Care Protocols; Exercise Training - Guidelines for Chiropractic Quality Assurance and Practice Parameters" (aka: The

Mercy Guidelines)

144) Frost H, Lamb SE, et al. 'A fitness program for patients with chronic low back pain: 2-year follow-up of a randomised controlled trial.' Pain 1998;75:273-9.

145) Deyo RA, Weinstein JN. 'Low Back Pain.' N Engl J Med 2001; 344(5):363-370

146) van Tulder MW, Koes BW, Bouter LM. 'Conservative treatment of acute and chronic nonspecific low back pain: a systematic review of randomized controlled trials of the most common interventions.' Spine 1997; 22:2128-56.

147) Malmivaara A, Häkkinen U, Aro T, et al. 'The treatment of acute low back pain — bed rest, exercises, or ordinary activity?' N Engl J Med 1995; 332:351-5.

148) Lahad A, Malter AD, Berg AO, Deyo RA. 'The effectiveness of four interventions for the prevention of low back pain.' JAMA 1994;272:1286-91.

149) Faas A, Chavannes AW, van Eijk JTM, Gubbels JW. 'A randomized, placebo-controlled trial of exercise therapy in patients with acute low back pain.' Spine 1993;18:1388-95.

150) Rainville J, et al. "the influence of intense exercise-based physical therapy program on back pain anticipated before and induced by physical activities." Spine J 2004; 4(2):176-83 QUOTE: "exercise exerts a positive influence on chronic back pain and disability."

151) Lee D. "Low back pain intervention: Conservative or Surgical?" J Surg Orthop Adv 2003;12(4):200-202 QUOTE: "conservative treatment must emphasize restoration and maintenance of functional movement."

152) Rainville J, et al. "Exercise as a treatment for Chronic Low Back Pain." Spine J 2004; 4(1): 106-115 QUOTE: "many have observed that exercise can lessen the behavioral, cognitive, affect and disability aspects of back pain syndromes."

153) Liddle et al. "Exercise and chronic lower back pain: what works?" Pain 2004; 107(1-2):176-90 QUOTE: "Despite the variety offered, exercise has a positive effect on Chronic Lower Back Pain patients, and results are largely maintained at follow-up."

154) Sung PS. "Multifidi muscle medium frequency before and after spinal stabilization exercise." Ach Phys Med Rehabil 2003; 84(9):1313-8 Quote: "A 4-week spinal stabilization exercise program significantly improved functional status in patients presenting with LBD."

155) O'Sullivan PB, et al. "Evaluation of specific stabilizing exercise in the treatment of chronic low back pain with radiologic diagnosis of spondylolysis or spondylolisthesis." Spine 1997; 22(24): 2959-67. "A "specific exercise" treatment approach appears more

effective than other commonly prescribed conservative treatment programs..."

156) Hides JA, et al. "Multifidus muscle recovery is not automatic after resolution of acute, first-episode low back pain." Spine 1996; 21:2763-9 "Muscle recovery was more rapid and more complete in patients in group 2 who received exercise therapy..."this was a randomized controlled study.

157) Hides JA, et al. "Long term effects of specific stabilizing exercises for first episode low back pain." Spine 2001;26:E243-8 "patients from the specific exercise group experienced fewer recurrences of LBP than patients from the control group"....At both one year and three year follow-up.

158) Goldby L, et al. "A randomized controlled trial investigating the efficacy of manual therapy, exercises to rehabilitate spinal stabilization and an education booklet in the conservative treatment of chronic low back pain.' In: Proceedings of International Federation of manipulative Therapists. Perth, Australia: 2000

159) Albright J. "Philadelphia Panel evidence-based clinical practice guidelines on selected rehabilitation interventions for low back pain." Phys Ther. 2001 ;81:1641-1674

160) Bekkering G et al. " KNGF-richtlijn Lage-rugpijn. Ned Tijdschr Fysiother, 2001 ;111(suppl):3

161) Spitzer W, et al. "Scientific approach to the assessment and management of activity-related spinal disorders: a monograph for clinicians: Report of the Quebec Task Force on Spinal Disorders." Spine 1987; 12(suppl):1-59

170) Maher CG. 'Effective physical treatment for chronic low back pain.' Orthop Clin N Am 2004;35:57-64

171) Maher C. et al. 'Prescription of activity for low back pain: what works?' Aust J Physiother 1999;45:121-32

172) Philadelphia Panel. Philadelphia panel evidence-based clinical practice guidelines on selected rehabilitation interventions for low back pain.' Phys Ther 2001; 81(10):1641-74

173) van Tulder M, et al. 'Exercise therapy for low back pain: a systematic review within the framework of the Cochrane collaboration back review group.' Spine 2000;25(21):2784-96

174) Bekkering G, et al. 'Dutch physiotherapy guidelines for low back pain.' Physiotherapy 2003;89(2):82-96

300) LC 4604.5(e) " For all injuries not covered by the American College of Occupational and Environmental Medicine's Occupational Medicine Practice

Guidelines or official utilization schedule after adoption pursuant to Section 5307.27, authorized treatment shall be in accordance with other evidence based medical treatment guidelines generally recognized by the national medical community and that are scientifically based.”

400) Ordog GJ. 'Transcutaneous electrical nerve stimulation versus oral analgesic: a randomized double-blind controlled study in acute traumatic pain.' Am J Emerg Med. 1987; 5(1):6-10. “ *TENS was approximately as effective as acetaminophen (300-600 mg) with codeine (30-60 mg) but had no side effects. Transcutaneous electrical nerve stimulators have been shown to be effective in the management of acute traumatic pain and may be indicated for patients who cannot be given medications.*”

500) Professor Nikolai Bogduk, MD, Multiple Volvo Award Winner 'Evidence-Based Clinical Guidelines For The Management Of Acute Low Back Pain' The Australasian Faculty of Musculoskeletal Medicine November 1999; Chapter 9

501) Libson E, Bloom RA, Dinari G. Symptomatic and asymptomatic spondylolysis and spondylolisthesis in young adults. Int Orthop 1982;6:259-261.

507. Torgerson WR, Dotter WE. Comparative roentgenographic study of the asymptomatic and symptomatic lumbar spine. J Bone Joint Surg 1976;58A:850-853.

508) Magora A, Schwartz A. Relation between the low back pain syndrome and x-ray findings. Scand J Rehabil Med 1976; 8:115-126.

509) Fullenlove TM, Williams AJ. comparative roentgen findings in symptomatic and asymptomatic backs. Radiology 1957; 68:572-574.

510) Splithoff CA. Lumbosacral junction: Roentgenographic comparison of patients with and without backaches. JAMA 1953; 152:1610-1613.

511) Witt I, Vestergaard A, Rosenklint A. A comparative analysis of x-ray findings of the lumbar spine in patients with and without lumbar pain. Spine 1984; 9:298-300.

512) Jensen MC, et al. “MRI imaging of the lumbar spine in people without back pain.” N Engl J Med – 1994; 331:369-373

513) Boden SD et al. “Abnormal magnetic resonance scans of the lumbar spine in asymptomatic subjects: A prospective investigation.” J Bone Joint Surg Am 1990; 72A:403-408

514) Boden SD et al. “Abnormal magnetic-resonance scans of the cervical spine in asymptomatic subjects. A prospective investigation.” J Bone Joint Surg Am. 1990 Sep;72(8):1178-84

515) Lee SW, et al. "Investigation of Vertebral Endplate Sclerosis." Skeletal Radiol 2001 Aug;30(8):454-9.




600) Masui T, et al. 'Natural History of Patients with Lumbar Disc Herniation Observed by Magnetic Resonance Imaging for Minimum 7 Year s.' J Spinal Disord Tech. 2005 Apr;18(2):121-126. " *Clinical outcome did not depend on the size of herniation or the grade of degeneration of the intervertebral disc in the minimum 7-year follow-up.*"

601) Boos N, Rieder R, et al. '95 Volvo Award in clinical sciences. The diagnostic accuracy of magnetic resonance imaging, work perception, and psychosocial factors in identifying symptomatic disc herniation s.' Spine. 1995 Dec 15;20(24):2613-25

602) Elfering A, Boos N, et al. 'A 5-Year Prospective MRI Study in Asymptomatic Individuals ' Spine 2002;27(2):125-134.

© Copyright 2002 – 2005 by Dr. Douglas M. Gillard DC - All rights reserved

< [TOP](#) | [HOME](#) >

		
Interested in a Management Degree? Request Free Information on Accredited Online Business Management Bachelor's & Master's Degrees. A New School Year Starts Everyday. www.ClassesUSA.com/OnlineDegrees		