Chronic LBP: Spinal manipulation vs. back school vs. PT

Average decrease in pain 3 months after a short course of treatment.

<table>
<thead>
<tr>
<th>Treatment</th>
<th>Decrease in Pain (%)</th>
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<tbody>
<tr>
<td>Physical Therapy</td>
<td>25%</td>
</tr>
<tr>
<td>Back School</td>
<td>30%</td>
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<tr>
<td>Spinal Manipulation</td>
<td>77%</td>
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</table>

Data taken from:
Chronic LBP: Spinal manipulation is 3x more effective than physical therapy.


Three months after undergoing a short course of care, spinal manipulation patients note a 77% reduction in pain compared to 25% for physical therapy patients.
Spinal manipulation compared with back school and with individually delivered physiotherapy for the treatment of chronic low back pain: a randomized trial with one-year follow-up.


Fondazione Don Carlo Gnocchi, Scientific Institute, Florence, Italy.

Study background: study took place in a hospital outpatient rehab dept. in Florence, Italy. Pts were recruited into study between 2/02-10/06. 210 LBP pts were studied (67% female/59 yoa, avg.). All had chronic, non-specific LBP (sx “often” or “always” over last 6 mths). They were randomly assigned to 1 of 3 tx groups (all r/c an evidence-based, pt education booklet that covered anatomy, biomechanics, optimal postures, ergonomics, advice to stay active, etc.): 1) back school (BS; given by PT’s w/ at least 5 yrs exp.; 8 pts/class): 15 one-hour sessions (5d/wk for 3 wks; 5 sessions on A&P, reassurance of benign nature, ergonomics; 10 sessions on relaxation techniques, postural and respiratory ex’s, individually-tailored back ex’s); 2) individualized PT (given by PT’s w/ at least 5 yrs exp.): 15 one-hour sessions (5d/wk for 3 wks; passive and assisted mobilization, a range of active ex’s, massage/soft-tissue work, PNF; “emphasis on patient education and active treatment”); 3) spinal manipulation (SMT; given by physiatrists w/ at least 5 yrs exp.): 4-6 twenty-minute sessions (1x/wk over 4-6 wks; goal was to restored “the physiological movement in the dysfunctional vertebral segments”; “consisted of vertebral direct and indirect mobilization and manipulation” “with associated soft-tissue manipulation, as needed”; whole spine was assessed/tx’d). Results: 1) drop-outs - 2% (BS - 2, PT - 2, SMT - 1); 2) compliance: all attended at least 80% of their scheduled txs; 3) % decrease in pain score (pain was rated on a 0-6 scale; 0 = no pain, 6 = almost unbearable pain): a) after last tx: BS - 50% (from 2 to 1), PT - 55% (2 to .9), SMT - 45% (2.2 to 1.2; ns); b) 3 mths later: BS - 30% (2 to 1.4), PT - 25% (2 to 1.5), SMT - 77% (2.2 to .5; ss); c) 12 mths later: BS - 35% (2 to 1.3), PT - 20% (2 to 1.6), SMT - 68% (2.2 to .7; ss); 4) % improvement in function (RMDQ): a) after last tx: BS - 38% (9.5 to 5.9), PT - 45% (9.7 to 5.3), SMT - 81% (8.4 to 1.6; ss); b) 3 mths later: BS - 44% (9.5 to 5.3), PT - 44% (9.7 to 5.4), SMT - 74% (8.4 to 2.2; ss); c) 12 mths later: BS - 44% (9.5 to 5.3), PT - 41% (9.7 to 5.7), SMT - 70% (8.4 to 2.5; ss); 5) % of pts w/ “frequent” LBP (“frequent” was undefined by authors): a) 3 mths later: BS - 31%, PT - 50%, SMT - 8% (ss); b) 12 mths later: BS - 35%, PT - 50%, SMT - 13% (ss); 6) % of pts w/ LBP-related use of drugs: a) 3 mths later: BS - 25%, PT - 29%, SMT - 12% (ss); b) 12 mths later: BS - 28%, PT - 32%, SMT - 12% (ss); 7) % of pts who received further tx: a) 3 mths later: BS - 16%, PT - 9%, SMT - 29%; b) 12 mths later: BS - 20%, PT - 12%, SMT - 58% (ss; note: 83% of them sought SMT). Conclusion: “Spinal manipulation provided more functional improvement than either physiotherapy intervention, at discharge and across all follow-ups.” “Further, pain relief at follow-ups was also significantly more relevant in spinal manipulation patients.” “Low back pain recurrences and reduction of pain-related use of drugs were also most striking for the spinal manipulation group.”
Chronic spine pain: Chiropractic vs. medication vs. acupuncture

Percent of chronic spine pain patients who are completely free of symptoms after 2-5 weeks of treatment

- Medication: 2.5%
- Acupuncture: 3.1%
- Chiropractic: 24.0%

Data taken from:
Chronic Spinal Pain: A Randomized Clinical Trial Comparing Medication, Acupuncture, and Spinal Manipulation.
National Unit for Multidisciplinary Studies of Spinal Pain, The University of Queensland, The Townsville Hospital, Townsville, Queensland, and the dagger School of Public Health and Tropical Medicine, James Cook University, Townsville, Queensland, Australia.
Chiropractic is nearly 10x more effective than medication for chronic spine pain.


After 2-5 weeks of care, nearly 10x more chiropractic patients are completely symptom-free compared to medication patients.
Chronic Spinal Pain: A Randomized Clinical Trial Comparing Medication, Acupuncture, and Spinal Manipulation.
National Unit for Multidisciplinary Studies of Spinal Pain, The University of Queensland, The Townsville Hospital, Townsville, Queensland, and the dagger School of Public Health and Tropical Medicine, James Cook University, Townsville, Queensland, Australia.

**Study background:** Study took place from 2/01 - 10/01 at a public hospital’s outpatient multidisciplinary spinal pain unit. 115 chronic spinal pain pts (55% male, avg. age - authors don’t say) were enrolled for the study. **Inclusion criteria:** mechanical back and/or neck pain, 13+ wks of sx (6 yrs, avg.). **Exclusion criteria:** sig. pathology on x-ray (spondylo, severe OA, etc.), nerve root involvement, previous spine surgery. All pts were examined initially by a sportsmedicine MD to ensure study eligibility.

**They were randomly assigned to 1 of 3 txs** (allowed 2x/wk txs for 9 wks, 20 min’s per tx):
1) Medication: Pts were told a “promising ‘new’ medication would be tried” (the goal was to try a med the pt had not tried before). The MD chose one of the following meds for ea. pt (listed in order of preference) - Celebrex (200-400 mg/day), Vioxx (12.5-25 mg/day), acetaminophen (up to 4g/day). No other tx was provided;
2) Needle acupuncture: Tx was given by 1 of 2 licensed acupuncturists. 8-10 local points in the area of pain were tx’d (needles placed 20-50 mm deep), and approx. 5 corresponding remote points were also tx’d (needles place 5 mm deep). Needles were “agitated” every 5 min’s by turning or flicking them. No other tx was provided;
3) Chiropractic spinal manipulation: HVLA manipulation “to the spinal level of involvement”. No other tx was provided.

**Results** (pts were followed-up at 2, 5, and 9 wks after the start of the study):

1) **General**
   a) 9-wk follow-up rate - 91% (105/115);
   b) % of pts who did not pursue tx at all: meds - 3/43, acu - 4/36, DC - 3/38;
   c) % of pts who crossed over to another tx during the 9-wk tx period: meds - 45% (18/40; 11 d/t no tx effect, 7 d/t side effects), acu - 31% (10/32; 10 d/t no tx effect), DC - 24% (8/33; 8 d/t no tx effect);

2) % of pts who became asymptomatic:
   a) after 2-5 wks of tx: meds - 2.5% (1/40), acu - 3.1% (1/32), DC - 24% (8/33; ss superior to the other 2 groups);
   b) after 9 wks of tx: meds - 5% (2/40), acu - 9.4% (3/32), DC - 27.3% (9/33; ss superior to the other 2 groups);

3) **Pain and disability scales** (after 9 wks; results for all 105 pts, including those who crossed over to another tx; #’s are medians - means weren’t provided):
   a) % change in back pain (on 0-10 VAS): meds - none (from 5 to 5), acu - 33% better (6 to 4), DC - 40% better (5 to 3);
   b) % change in neck pain (on 0-10 VAS): meds - 20% worse (5 to 6), acu - 50% better (6 to 3), DC - 50% better (6 to 3);
   c) % change in Oswestry: meds - none (32 to 32), acu - 11% better (27 to 24), DC - 50% better (24 to 12);
   d) % change in neck disability index (NDI): meds - 11% better (47 to 42), acu - 22% better (36 to 28), DC - 35% better (26 to 17).

**Conclusion:** “... in patients with chronic spinal pain, manipulation, if not contraindicated, results in greater short-term improvement than acupuncture or medication.” “Spinal manipulation appears to provide the best short-term benefit for some patients with chronic spinal pain syndrome” ("...except for those with neck pain").

**Comments:** The DC pts had more chronic sx: meds - 4.5 yrs, avg., acu - 6.4 yrs, avg., DC - 8.3 yrs, avg. ("...it is notable that manipulation...achieved asymptomatic status for every fourth patient").

**Other:** FYI, the pain and disability scales results for the 66% of pts (69/105) who did not cross over to another tx during the 9-wk study are as follows: a) % change in back pain (on 0-10 VAS): meds - none (from 5 to 5), acu - 17% worse (6 to 7), DC - 50% better (6 to 3); b) % change in neck pain (on 0-10 VAS): meds - 20% worse (5 to 6), acu - 33% better (6 to 4), DC - 17% better (6 to 5); c) % change in Oswestry: meds - none (32 to 32), acu - 13% better (30 to 26), DC - 36% better (22 to 14); d) % change in neck disability index (NDI): meds - 11% better (47 to 42), acu - 19% better (37 to 30), DC - 21% better (28 to 22).
Chiropractic LBP patients require nearly 70% less follow-up care compared to PT patients.

After receiving the same number of treatments for low back pain initially, chiropractic patients require 66% fewer follow-up treatments compared to patients who receive physical therapy (PT).
Amount of health care and self-care following a randomized clinical trial comparing flexion-distraction with exercise program for chronic low back pain.

Department of Research, National University of Health Sciences, Lombard IL, USA. jcambron@nuhs.edu.

Study background: 235 consecutive new CLBP pts were studied (63% male/41 yoa, avg.). They were randomly assigned to 1 of 2 txs (4 wks of tx, tx'd 2-4x/wk, ea. tx lasted 30-45 min's): 1) DC: flexion-distraction “lasted between 3 and 6 min”, “…also received modalities such as ultrasound and cryotherapy.”; 2) exercise (administered by licensed PT’s): stabilizing exercises (“abdominal hollowing” protocols), flexion or extension exercises, flexibility exercises, “modalities such as ultrasound and cryotherapy”, cardiovascular exercises (CV), McKenzie exercises for pts w/ sx below the knee, upper and lower extremity weight training, and lumbar extension training. Post-tx advice: After their 4 wks of tx ended, pts were “instructed that they were free to pursue any form of health care for low back pain…”; they were then telephoned weekly & asked about any care they had received.

   a) % decrease in pain (0-100 VAS): exercise pts – 42% (from 36 to 21), DC pts – 61% (38 to 15;ss);
   b) “…those with radiculopathy improved most with FD”: no radiculopathy (156 pts): exercise – 17 (47% - ?; no starting VAS provided), DC – 22 (58% - ?; no starting VAS provided); radiculopathy (38 pts): exercise – 11 (31% - ?; no starting VAS provided), DC – 26 (68% - ?; no starting VAS provided;ss);
2) which of pts who sought LBP tx during the one-year follow-up period (one-year follow-up rate – 81% {191/235}; exercise pts – 75% {84/112}, DC pts – 87% {107/123}; 81% of pts completed at least 75% of the phone surveys):
   a) exercise pts – 54% (45/84; 6 visits on avg.; GP/internist – 33% {28/84}, chiropractor – 18% {15/84}, orthoped - 10% {8/84}, massage -8% {7/84});
   b) DC pts – 38% (41/107, ss; 2 visits on avg.; GP/internist – 24% {26/107}, chiropractor – 12% {13/107}, orthoped – 2% {2/107}, massage – 1% {1/107}).

Conclusion: “…participants previously assigned to physical therapy attended significantly more health care visits than those participants who received chiropractic…” the exercise pts also attended “a significantly higher number of visits to any provider.”
Chiropractic LBP patients have 10x the functional gains of medical LBP patients.


After receiving a short course of treatment for low back pain, chiropractic patients note a 47% improvement in function compared to just a 4% improvement for medical patients.
A randomized controlled trial comparing 2 types of spinal manipulation and minimal conservative medical care for adults 55 years and older with subacute or chronic low back pain.


Palmer Center for Chiropractic Research, Davenport, Iowa 52803, USA. maria.hondras@palmer.edu

Study background: Study (and all tx) took place at Palmer's research clinic in Davenport, IA. Pts were recruited via advertising (newspaper, radio, etc). 240 pts were studied (56% male/63 yrs avg.). **Inclusion criteria:** At least 55 yrs, non-specific LBP of at least 1 mth duration (13 yrs, avg.), and no SMT in last mth (83% had "past use of chiropractic"). They were randomly assigned to 1 of 3 tx groups (2:2:1 stratification; 4 DC's provided all SMT (ea. had at least 6 yrs experience); 1 neurologist provided all MD care (10 yrs experience)): 

1) diversified (side-posture): "The intent of the SM was to isolate one or more vertebral segments", limited to T12-L5 and SI's (no restrx on # of levels or side of manipulation), 12 txs max over 6 wks (3x/wk for 2 wks, 2x/wk for 2 wks, 1x/wk for 2 wks); 
2) Cox (flexion-distraction): as above, but w/ Cox technique instead of diversified, "up to 15 slow repetitions of flexion..."; 
3) minimal medical care: medications, "optimization of activities of daily living, at least 3 visits over 6 wks (first wk, third wk, and sixth wk); All pts also r/c home exercise training/advice (a 30-minute instruction session at wk #3; # of sets/reps individualized to ea. pt's ability): a) an aerobic program (walking, bicycling, etc.); b) low back stretching and strengthening exercises (flutter kick, buttocks pinch, pillow squeeze, cat stretch, pelvic tilt, press up extension, and double knee to chest). Results: **1) general:** a) follow-up rates: diversified – 93-98%, Cox – 90-92%, medical – 59-76%;
   b) side effects ("There were no serious adverse events"): diversified – 10% of pts (mostly low back soreness or stiffness), Cox – 6% of pts (mostly low back soreness or stiffness), medical – 8% of pts (skin rash, leg cramps & chest pain, HA and shortness of breath, slurred speech; note: the great majority of the prescriptions were for Celebrex); **2) % improvement in Roland Morris Disability questionnaire** (24 questions on function; 0 = no disability, 24 = max disability): a) after 6 wks: medical – 28% (from 5.7 to 4.1), diversified – 42% (6.6 to 3.8), Cox – 44% (6.6 to 3.7); b) after 12 wks: medical – 4% (5.7 to 5.5), diversified – 37% (6.5 to 4.1), Cox – 47% (6.6 to 3.5; ss superior to medical); c) after 24 wks: medical – 7% (5.7 to 5.3), diversified – 38% (6.5 to 4.0), Cox – 47% (6.6 to 3.5; ss superior to medical); 
   **3) % decrease in avg. LBP during the last wk** (0-100 VAS): a) after 6 wks: medical – 38% (42 to 26), diversified – 48% (42 to 22), Cox – 49% (43 to 22); b) at 12 and 24 wks: data not collected. **Conclusion:** "Biomechanically distinct forms of SM did not lead to different outcomes in older LBP patients..." "Patients who received either form of SM [spinal manipulation] had improvements on average in functional status...over those who received MCMC [minimal conservative medical care]". The differences in outcomes (MD vs DC) were considered “clinically important differences in functional status”
The reinjury rate is over 50% higher for physical therapy and medical LBP patients compared to chiropractic patients.

Health maintenance care in work-related low back pain and its association with disability recurrence.

Center for Disability Research at the Liberty Mutual Research Institute for Safety, Hopkinton, MA, USA.

Background: Authors wanted to see if DC maintenance care effects future disability episodes for workers' compensation pts w/ LBP. Authors use the term “health maintenance care” (“Health maintenance care is a clinical intervention approach though to prevent recurrent episodes of LBP.” It is “predominantly and explicitly recommended by chiropractors...”). Study background (retrospective review): 894 non-specific LBP workers’ compensation cases were reviewed (41 yoa (median)/68% male):
1) “sprain or strain” cases from Liberty Mutual Ins (from IL, MA, MD, NH, NY, TX, and WI; states where claimants can choose provider); 2) included claims filed 1/06-12/06; 3) ea. case was followed for 12 mths after first episode of disability.
Inclusion criteria: 1) no WC claims in prior yr (to ensure cases were “new”); 2) disability had to begin w/in 7 days of injury (to help ensure cases were somewhat similar in severity); 3) r/c at least 4 PT or DC txs while on disability; 4) initial injury resulted in paid “temporary total disability” lasting at least 7 days (d/t some states not allowing paid disability unless lasts 7 or more days);
5) back to work for at least 14 days before suffering a subsequent disability episode (7 days or less = not truly recovered from previous episode; 8-14 days = not enough time to discern an actual pattern of service utilization); 6) subsequent disability episodes were defined as “the resumption of at least 15 consecutive days of temporary total disability payments”. Whomever pts sought more than 50% of their care from was designated as their “provider type” (MD, PT, or DC). Results: 1) general: a) avg. duration of initial disability episode (in days): MD - 141, PT - 74, DC - 56; b) most commonly used provider types: i) during temporary total disability (“curative” tx): PT - 48%, DC - 27%, MD - 11%; ii) after return to work (“health maintenance care” tx): MD - 31%, PT - 24%, DC - 21%; c) avg. weekly medical costs: i) during temporary total disability: MD - $643, PT - $452, DC - $368; ii) after return to work: PT - $129, MD - $87, DC - $48; d) % of pts who underwent surgery: MD - 15%, PT - 2%, DC - 1%; 2) % of pts w/ who suffered a subsequent (“recurrent”) disability: a) provider type during temporary total disability: MD - 15.7%, PT - 12.2%, DC - 6.2%; b) provider type during “health maintenance care”: MD - 12.5%, PT - 16.9%, DC - 6.5%, no tx - 5.5%; 3) hazard ratios of disability recurrence (after controlling for demographic, severity, and comorbidity factors): PT - 2, MD - 1.6, untreated - 1.2, DC - 1 (the rate of disability recurrence is 2x higher in PT pts and 1.6x higher in MD pts.

Conclusion: “...patients suffering nonspecific work-related LBP who received health services mostly or only from a chiropractor had a lower risk of recurrent disability than the risk of any other provider type.” “This clear trend deserves some attention...” “In work-related nonspecific LBP, the use of health maintenance care provided by physical therapist or physician services was associated with a higher disability recurrence than in chiropractic services...” “...our findings seem to support the use of chiropractor services...”
LBP patients who undergo chiropractic care have 60% fewer days of missed work compared to medical patients.

Chiropractic care for disabling LBP is over 40% less expensive than medical care.

Is manipulation more effective than mobilization for LBP?

Percent of patients with a successful outcome after 1 week of care

Data taken from:
Comparison of the Effectiveness of Three Manual Physical Therapy Techniques in a Subgroup of Patients With Low Back Pain Who Satisfy a Clinical Prediction Rule: A Randomized Clinical Trial.
From the Department of Physical Therapy, Franklin Pierce University, Concord, NH; Rehabilitation Services, Concord Hospital, Concord, NH.
Is manipulation more effective than mobilization for LBP?

![Chart showing percent of patients with successful outcome after 1 month of care]

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Comparison of the Effectiveness of Three Manual Physical Therapy Techniques in a Subgroup of Patients With Low Back Pain Who Satisfy a Clinical Prediction Rule: A Randomized Clinical Trial.


From the Department of Physical Therapy, Franklin Pierce University, Concord, NH; Rehabilitation Services, Concord Hospital, Concord, NH.

Study background (RCT): Took place 6/05 - 9/07. 112 pts were studied (40 yo, avg.; 49% female). All had mechanical LBP (w/ or w/o leg sx, but no neuro abn's), 50d of sx, on avg., Oswestry Disability Questionnaire (ODQ) > 25%, positive "clinical prediction rule" for spinal manipulation (at least 4 out of 5 of the following had to be true for ea. pt: < 16d sx duration, no sx below knee, FABQW score < 19 pts, at least 1 hypomobile lumbar spine segment, at least 1 hip w/ > 35 degrees of int. rot. They were randomly assigned to 1 of 3 txs (2 manual therapy sessions during first wk and 5 in-office exercise sessions {2x during first wk, 1x/wk for the following 3 wks}): 1) Maitland mobilization: P-A mobilization (midline), 1-3 oscillations/second for 60s (repeat 1x), applied to L4 and L5; 2) supine side-posture: see description in indented paragraph below; 3) side-posture: painful side “up” (if no cavitation, try again; if still no cavitation, repeat on opposite side).

Exercise description (ex's were also done daily at home): 1) first wk: “supine pelvic tilt range of motion exercise”, 10 rep's, 3-4x/day; 2) weeks 2-4: a) “supine pelvic tilt range of motion exercise” (as above); b) a “low-stress aerobic and lumbar spine strengthening program”: 10 min's on stationary bike or treadmill, ex's targeting the lumbar stabilizers (crunches, side-bridge, cross-crawl, etc.), r/c an exercise booklet and rx'd to do home ex's 1x/day on non-tx days, advised to stay active.

Results (pts evaluated by blinded examiner): 1) % of pts w/ a successful outcome (successful outcome = at least 50% decrease in ODQ): a) after 1 wk of tx: mobilization – 8% (ss), supine SP – 54%, side-posture – 53%; b) after 4 wks of tx: mobilization – 20% (ss), supine SP – 87%, side-posture – 82%; c) after 6 mths: mobilization – 68% (ss), supine SP – 92%, side-posture – 90%; 2) % improvement in ODQ: a) after 1 wk of tx: mobilization – 21% (from 34% to 27%;ss), supine SP – 57% (35% to 15%), side-posture – 51% (37% to 18%); b) after 4 wks of tx: mobilization – 44% (34% to 19%;ss), supine SP – 71% (35% to 10%), side-posture – 68% (37% to 12%); c) after 6 mths: mobilization – 50% (34% to 17%;ss), supine SP – 69% (35% to 11%), side-posture – 73% (37% to 10%); 3) % decrease in pain (0-10 NPRS): a) after 1 wk of tx: mobilization – 22% (from 5.1 to 4;ss), supine SP – 63% (5.4 to 2), side-posture – 48% (5.2 to 2.7); b) after 4 wks of tx: mobilization – 41% (5.1 to 3;ss), supine SP – 76% (5.4 to 1.3), side-posture – 65% (5.2 to 1.8); c) after 6 mths: mobilization – 67% (5.1 to 1.7;ns), supine SP – 80% (5.4 to 1.1), side-posture – 77% (5.2 to 1.2). Conclusion: “Significant differences [existed] between the thrust manipulation and the non-thrust manipulation groups at 1 week and 4 weeks.” Side effects: 1) % of pts who suffered an adverse reaction (all began w/in 4 hrs and all resolved w/in 48 hrs): mobilization – 27%, supine SP – 24%, side-posture – 24%; 2) types of adverse reactions: a) aggravation of sx: mobilization – 75%, supine SP – 60%, side-posture – 44%; b) stiffness: mobilization – 17%, supine SP – 27%, side-posture – 33%.
Chiropractic care cuts chronic spine pain by over 80% within 8 treatments.

Clinical Chiropractic 2004 Sep;7(3):114-119

A study of chronic spine pain patients has found that chiropractic care decreases symptoms by an average of 84% within 8 treatments.
Effects of chiropractic care on spinal symptomatology among professional drivers: a pilot study.
Anglo-European College of Chiropractic-Teaching Clinic, 13-15 Parkwood Road, Bournemouth BH52DF, UK.

Study background: 20 truck drivers (95% male/48 yoa, avg.) were studied from 8/01-1/02. They were voluntarily recruited from a local trucking co. (responded to an invitation letter). All tx was paid for by trucking co. (up to 8 visits). All pts had at least 1 spinal complaint: "low back was the most frequently involved area"; 1.7 sites of sx, avg. (C-T-L-P); 31 wks of sx, avg. Pts were tx'd by 1 of 2 DC interns from Anglo-European College of Chiropractic. Tx was tailored to ea. individual pt. Results: 1) avg. # of txs: 7.6 txs, on avg.; 2) avg. satisfaction score (0-100 VAS; 0 = none, 100 = maximum satisfaction): 92%; 3) avg. decrease in pain (0-100 VAS; ss): 84% (no before/after VAS scores provided by authors); 4) spinal sick days/per subject (ss): 6-mth period one yr before study - 1.55, 6-mth study period -.16 (90% decrease); 5) estimated lost wages d/t absenteeism: 6-mth period one yr before study - $5170, 6-mth study period - $530 (90% decrease). Conclusion: "Both objective and subjective outcomes demonstrate a positive outcome for the cohort in response to chiropractic..." ("...marked improvement in the presenting complaints...", "...high levels of patient satisfaction", "...absenteeism related to spinal pain significantly reduced...").
Spinal manipulation is nearly 4x more effective than exercise for LBP.


After one week of treatment, only 12% of exercise patients are better by at least half compared to 44% of spinal manipulation patients.
A clinical prediction rule to identify patients with low back pain most likely to benefit from spinal manipulation: a validation study.


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Study background: Study took place 3/02-3/03 at 8 different PT clinics in the USA. 131 mechanical LBP pts (34 yoa, avg./42% female) were studied. They had 27 days of sx, on avg., an avg. VAS of 5.8/10, and an Oswestry score of at least 30%. 68% also had a hx of LBP. All pts were assessed for the 5 “Clinical Prediction Rule” (CPR) criteria (a positive CPR = at least 4 criteria present): 1) current episode duration <16 days; 2) no sx below knee; 3) FABQ (Fear Avoidance Beliefs Questionnaire) work subscale score <19 points; 4) at least 1 hypomobile lumbar segment (used P-A spring testing over the spinous processes); 5) at least 1 hip w/ >35 degrees of internal rotation. They were randomly assigned to 1 of 2 tx groups (tx provided by 14 PT’s at 8 different clinics: 1) Exercise: a) description: a “low-stress aerobic and lumbar spine strengthening program” - 10 min’s on stationary bike or treadmill, ex’s targeted the lumbar stabilizers (crunches, side-bridge, cross-crawl, etc.), ic an exercise booklet (authors don’t say which booklet), nx’d to do home ex’s 1x/day on non-tx days, advised to stay active; b) in-office tx frequency: 2x/wk for 1 wk, 1x/wk for 3 wks; 2) Exercise + SMT: a) exercise - same as the other group (NOTE: only ic a ROM exercise during first 2 tx sessions); b) “supine side-posture” spinal manipulation (SMT) - see description in indented paragraph below. Results: A) % of pts w/ a “+” CPR (Clinical Prediction Rule): exercise pts – 39% (24/61), SMT pts – 33% (23/70); B) % of pts w/ “tx success” (defined as at least 50% improvement on Oswestry score): 1) 1 wk (ss): exercise - 12% (7/61), SMT - 44% (31/70); 2) 4 wks (ss): exercise - 36% (22/61), SMT - 63% (44/70); 3) 6 mths: no data; C) % change in Oswestry score: 1) 1 wk: a) exercise: “+” CPR - 20% better (from 41 to 33), “+” CPR - 17% better (42 to 35); b) SMT: “-” CPR - 25% better (40 to 30), “+” CPR - 67% better (46 to 15; ss superior to all groups); 2) 4 wks: a) exercise: “-” CPR - 29% better (41 to 29), “+” CPR - 48% better (42 to 22); b) SMT: “-” CPR - 43% better (40 to 23), “+” CPR - 83% better (46 to 8; ss superior to all groups); 3) 6 mths: a) exercise: “-” CPR - 34% better (41 to 27), “+” CPR - 52% better (42 to 20); b) SMT: “-” CPR - 55% better (40 to 18), “+” CPR - 83% better (46 to 8; ss superior to all groups); D) Likelihood of SMT tx success within 1 wk: “+” CPR (ss) “tx 92%”, “-” CPR “tx 7%”. Conclusion: “The spinal manipulation clinical prediction rule can be used to improve decision making for patients with low back pain.”

Comments: A) Drop-out rates: a) 1 wk (ss): exercise - 10% (6/61), SMT - none (0/70); b) 4 wks (ss): exercise - 16% (10/61), SMT - 3% (2/70); c) 6 mths: exercise - 34% (21/61), SMT - 26% (18/70); B) Other results (at 6 mths): 1) % using meds for LBP in the last week (ss): exercise - 60% (“-” CPR - 71%, “+” CPR - 44%); SMT - 37% (“-” CPR - 41%, “+” CPR - 28%); 2) % presently seeking tx for LBP (ss): exercise - 43% (“-” CPR - 42%, “+” CPR - 44%); SMT - 12% (“-” CPR - 12%, “+” CPR - 11%); ss superior to “+” CPR exercise); 3) % missing work in last 6 wks d/t LBP (ss): exercise - 25% (“-” CPR - 25%, “+” CPR - 25%); SMT - 10% (“-” CPR - 12%, “+” CPR - 6%).

“Supine side-posture” manipulation of the lumbar spine:
(description of the technique being used to manipulate the right lower back)
1) Dr. stands opposite the side to be manipulated:
   - stand on the left side of the pt
2) Pt supine:
   - legs straight
   - hands clasped together behind neck
3) Pt is passively side-bent away from the Dr.
4) Pt’s torso is passively rotated toward Dr.:
   - Dr. uses right hand on back of pt’s right shoulder to rotate pt
   - Dr. places left hand on pt’s right ASIS
5) Thrust description:
   - Dr.’s left hand delivers a “quick posterior and inferior thrust” through the pt’s right ASIS
6) If there was no cavitation:
   - Procedure was tried a 2nd time on the same side
   - If there was still no cavitation, then procedure was tried on opposite side (2x max)
For chronic LBP patients, chiropractic "maintenance care" cuts acute flare-ups in half.


Over the course of 9 months, chronic LBP patients who receive regular chiropractic care (1 treatment every 3 weeks) note over 50% fewer significantly painful LBP episodes.
Efficacy of preventive spinal manipulation for chronic low-back pain and related disabilities: a preliminary study.

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Study background: 30 CLBP pts were studied (42 yoa, avg./80% male). All had nonspecific LBP (chronic or recurrent sx) for at least 6 mths (6 yrs, avg.). They were recruited through newspaper ads. They were randomly assigned to 1 of 2 txs (everybody received 12 DC txs over 4 wks as baseline SMT; only side-posture SMT of lumbopelvic spine; "no complementary treatment or patient education"; care provided by 2 different DC’s): 1) control: no further DC care; 2) maintenance care (MC): DC care as described above 1x/3wks for 9 mths.

Results:
1) after baseline SMT: a) % change in pain (0-100 VAS): control - 60% better (from 30 to 12), MC - 60% better (from 40 to 16); b) % change in Oswestry score: control - 26% better (from 34% to 25%), MC - 30% better (33% to 23%); 2) 9 mths later: a) % change in pain (0-100 VAS;ns): control - 37% better (30 to 19), MC - 55% better (40 to 18); b) % change in Oswestry (ss): 6% better (34% to 32%), 52% better (33% to 16%); 3) # of significant painful episodes (>=50/100 VAS): a) during 1st mth of care (ns): control - 5/pt, MC - 4/pt; b) during 9-mth follow-up period (ss): control - 17/pt, MC - 8/pt. Conclusion: "...LBP and disability scores are reduced after spinal manipulation." “This experiment suggests that maintenance spinal manipulations after intensive manipulative care may be beneficial..."
Chiropractic care is over 50% more effective for LBP than muscle relaxants


Following 2 weeks of treatment, chiropractic patients have more than a 50% greater decrease in LBP compared to patients treated with muscle relaxants.
A randomized clinical trial comparing chiropractic adjustments to muscle relaxants for subacute low back pain.


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Study background (DB, PC, RCT): 192 subacute, uncomplicated LBP pts (57% male/42yoa, avg.) were recruited via advertisements (TV, radio, etc.) for a study at Life University in Atlanta, GA. 40% had tried DC care and 23% had tried medication previously. All had 2-6 wks LBP duration (3.7 wks, avg.). Their LBP was “uncomplicated”: no surgery, fractures, disk herniation, litigation, pregnancy, vascular disease, neck pain, previous LBP w/in 18 mths, etc. They were randomly assigned to 1 of 3 tx groups (tx period was 2 wks, 8 DC visits, all received acetaminophen as a rescue medication):

1) Chiropractic adjustments + placebo medication: Baseline exam included C/L X-rays (used for “chiropractic radiographic analysis to provide specific spinal adjustments”); a) adjustment description: DC care “was tailored to each subject’s needs”, and “included both upper cervical and lumbar, sacral, or pelvic adjustments”. Grostic technique was used for the atlas adjustment (used a handheld instrument from KME Enterprises, Atlanta, GA) and drop-table technique (pt prone or side-lying) was used for the remainder of the adjustments; b) placebo medication: Same protocols as for real medication (see below), except inert capsules were used;

2) MM relaxants + sham adjustments: a) mm relaxants: Flexeril (cyclobenzaprine, 5mg; 2 capsules at bedtime), Soma (carisoprodol, 350mg; 2 capsules, 3x/day), and Robaxin (methocarbamol, 750mg; used only if there were excessive side-effects from the other 2 meds); b) sham adjustments: “designed to mimic chiropractic adjustments with respect to dialogue, visit length, and physical contact”, only light pressures were used — no thrusts, for the atlas, the adjusting instrument was placed over the mastoid;

3) Placebo medication + sham adjustments. Results: 1) follow-up rate — 76% (146/192; DC — 74%, MD — 68%, sham — 75%); 2) % change in pain (0-10 VAS): a) 2 wks: sham — 16% better (from 3.8 to 3.2), meds — 31% better (3.9 to 2.7), DC — 47% better (4.5 to 2.4; ss superior to sham only); b) 4 wks: sham — 42% better (3.8 to 2.2), meds — 44% better (3.9 to 2.2), DC — 62% better (4.5 to 1.7; ss superior to sham only); 3) % change in Oswestry: a) 2 wks: sham — 24% better (25 to 19), meds — 26% better (23 to 17), DC — 32% better (25 to 17); b) 4 wks: sham — 36% better (25 to 16), meds — 30% better (23 to 16), DC — 52% better (25 to 12). Conclusion: “Chiropractic was more beneficial than placebo in reducing pain..."
Is spinal manipulation more effective than spine injections for chronic sciatica (leg pain)?

After 2 weeks of care, how much more relief do spinal manipulation patients have compared to disc injection patients?

82%
More Relief

Data taken from:
Single-blind randomised controlled trial of chemonucleolysis and manipulation in the treatment of symptomatic lumbar disc herniation.
Spinal Research Unit, University of Huddersfield, UK.
Single-blind randomised controlled trial of chemonucleolysis and manipulation in the treatment of symptomatic lumbar disc herniation.


Spinal Research Unit, University of Huddersfield, UK.

Background: Chemonucleolysis uses a chymopapain injection into the nucleus to break down and shrink the nucleus pulposis. While it is more effective than placebo, it is generally thought to be less effective than discectomy, but "2 years after surgery the CN treated patients were significantly better with respect to Oswestry score, back pain and leg pain recurrence." (Chemonucleolysis and automated percutaneous discectomy--a prospective randomized comparison. Krugluger J, Knahr K. Int Orthop 2000;24(3):167-9. Orthop Spital Wien-Speising, Vienna, Austria.) How would it compare in a randomized trial with spinal manipulation?

Study background: 40 sciatica pts (42 yoa, avg., avg. of 30 wks of unilaterial, unrelenting sciatica, + SLR, "unequivocal evidence of single level, non-sequestered lumbar disc herniation" on CT or MRI, and no previous manipulation or chemonucleolysis) were studied.

They were randomly assigned to:
1) osteopathic lumbar manipulation (SMT): side-posture HVLA manipulation, mobilization, & soft-tissue stretching (lumbar spine & gluts), 15 minute sessions, avg. of 11 tx's over 3 mths;
2) chemonucleolysis (CN): a single injection of 2ml of chymopapain, disc level confirmed w/ discogram.

Results:
1) leg pain:
   a) SMT:
      - baseline - 4/7,
      - 2 wks - 3.2 (20% less),
      - 6 wks - 2.68 (33% less),
      - 1 yr - 2.13 (47% less);
   b) CN:
      - baseline - 3.65/7,
      - 2 wks - 3.26 (11% less),
      - 6 wks - 2.72 (25% less),
      - 1 yr - 2.27 (38% less);

2) back pain:
   a) SMT:
      - baseline - 3.79/7,
      - 2 wks - 3.16 (17% less),
      - 6 wks - 1.66 (19% less),
      - 1 yr - 2.27 (40% less);
   b) CN:
      - baseline - 4.05/7,
      - 2 wks - 4.00 (1% less),
      - 6 wks - 3.58 (12% less),
      - 1 yr - 2.87 (29% less);

Conclusion: "Manipulation can thus be considered an effective option for treatment of symptomatic lumbar disc herniation."

Comments: What about tx failures? SMT - 5, CN - 4. What about cost of tx? "There was an overall crude cost saving from manipulation..." ($430 cheaper per pt than chemonucleolysis). What about the safety of SMT? "...no evidence was found to question its safety."

Bonus note comments: The "82%" number is the relative difference in leg pain improvement between the 2 tx groups at the 2-wk follow-up point (the 20% SMT improvement is "82%" greater than the 11% CN improvement).