Is chiropractic care helpful for children?

What percent of children with low back pain get relief from chiropractic care?

92%

Data taken from:


Institute for Work and Health, Toronto, Ontario, Canada, and Department of Health Policy, Management, and Evaluation, Clinical Epidemiology, University of Toronto, Toronto, Ontario, Canada., Canadian Memorial Chiropractic College, Toronto, Ontario, Canada., Department of Community Health Sciences, University of Calgary, Calgary, Alberta, Canada.

Study background (a prospective cohort study): 143 Canadian chiropractors were randomly chosen to participate in the study (tx at least 2 ped's/wk, in practice for at least 5 yrs (13 yrs, avg.)). A max of 5 consecutive pediatric cases per chiropractor was accepted into the study (4-18 yoa; a new episode of "mechanical" LBP not previously tx'd by a DC (LBP = pain between lower border of buttocks and the lower border of the posterior ribs)). Pts were followed until discharged, referred, or until they discontinued care. They were assessed at ea. visit.

Pt characteristics (54 pts from 15 DC's):
1) General:
   13 yoa, avg., 57% male, DC tx in the past - 60%, hx of LBP - 40%, non-DC tx for this episode - 26%;
2) Symptoms:
   a) sx duration: < 3 wks - 61%, >12 wks - 24%;
   b) hx of trauma at onset - 46%;
   c) sx changes since onset: worse - 32%, no change - 50%, better - 19%;
   d) presence of leg pain - 17%;
   e) avg. pain (0-10 VAS) - 5.6;
3) Lumbar exam:
   • spinal subluxation noted - 98%,
   • pain repro w/ orthopedic testing - 85%,
   • ROM limitation - 79%,
   • x-rays taken - 9%;
4) Diagnosis:
   • lumbar joint dysfunction/syndrome - 50%,
   • SI dysfunction/syndrome - 31%,
   • muscle strain - 6%;
5) Treatment:
   a) techniques: manipulation - 95%, other manual therapy (TPT, mob., etc.) - 43%, modalities - 11%;
   b) tx parameters: # of visits - 5 (median); tx duration - 22 days (median).

Results:
1) DC participation: 38% (55) of the DC's participated, 32% were ineligible, & 30% didn't respond;
2) Pt response (used a 5-pt Likert scale; 1 = worse, 2 = same, 3 = improved, 4 = much improved, 5 = resolved):
   a) % of pts who got better:
      • "improved" - 92.3%, "much improved" - 78.9%, "resolved" - 47.2%;
   b) % of pts who were "much improved" at the following time points:
      • 7 days - 40%, 30 days - 82%, 45 days - 87%;
   c) median time to "much improved" - 16 days.

Conclusion: "...pediatric patients with LBP do respond positively to chiropractic treatment. "Patients responded favorably to chiropractic management, and there were no reported complications."
"Bed-wetting" resolves for most children after an average of 3 chiropractic treatments.


Sixty-four percent of children with chronic bed-wetting have complete resolution of all their symptoms after an average of 3 chiropractic treatments.
Chiropractic treatment for primary nocturnal enuresis: a case series of 33 consecutive patients.
Chiropractie Deventer, Deventer, The Netherlands.

Study background (retrospective review): 33 consecutive pts were studied (8 yoa, avg./79% male). Were seen at 2 DC clinics (in SE Australia) over a 3-yr period. tx'ing DC's were Pediatric Masters graduates (or in the last yr of the program). All pts had primary nocturnal enuresis (PNE), which is "involuntary voiding of urine during sleep at least twice per week in children 5 years and older". None were consistently dry at night for at least the last 6 mths (wet the bed 1x/night, avg., during 2-wk baseline observation period). All were tx'd w/ the "Neurolmpulse Protocol": 1) evaluation component: "includes the spine, extremities, front of body structures, the cranial vault, and muscle compartment syndromes"; "kKinesiological and neurological post-adjustive evaluation is routinely carried out to demonstrate correction or otherwise of the subluxation complex"; 2) tx description: technique is "based on the generation of impulse using a combination of sustained light force and high-acceleration, low-amplitude thrust; these methods "draw their underlying principles from toggle recoil and Logan Basic techniques; 3) tx frequency: 1x every 2 wks for 1 mth, monthly thereafter ("dependent upon the neurological deficit"). Results: 1) avg. # of txs - 3; 2) avg. # of wet nights (over the last 2 wks): baseline - 13.8, 3 mths - 8.3, 6 mths - 5.9, 9 mths - 5, 12 mths - 4.7; 3) % of pts who had resolution of PNE: 67% (22/33; 21 had full resolution w/ no bed-wetting episodes, and 1 had near-full resolution w/ no more than 1 episode/wk; took an avg. of 5 mths); 4) bed-wetting episodes broken down by response (avg. # over the last 2 wks): a) respondents (22 pts): baseline - 13.7, 3 mths - 5.4, 6 mths - 1.7, 9 mths - .4, 12 mths - .1; b) non-respondents (11 pts): baseline - 14, 3 mths - 14, 6 mths - 13.9, 9 mths - 13.8, 12 mths - 13.6. Conclusion: "This study provides an indication for possible effectiveness of chiropractic treatment in patients with PNE." The 67% resolution rate "is considerably greater than that of natural history..." ("the natural response rate of 15%”). Technique info: www.neuroimpulse.com
Can manual therapy help babies suffering from colic?

Average decrease in colic symptoms (inconsolable crying) after receiving just four manual therapy sessions.

63%

Data taken from:
A preliminary assessment of the impact of cranial osteopathy for the relief of infantile colic.
Churchdown Osteopaths, 102 Chosen Drive, Churchdown, Gloucestershire GL3 2QU, UK. hayden695@btinternet.com
Infantile colic improves by over 60% with just 4 sessions of manual therapy.

A preliminary assessment of the impact of cranial osteopathy for the relief of infantile colic.

Churchdown Osteopaths, 102 Chosen Drive, Churchdown, Gloucestershire GL3 2QU, UK.
hayden695@btinternet.com

Study background: 28 infants were studied (75% male/45 days old, avg.). All had colic per the author’s definition (“at least 90 min of inconsolable crying for 24h on 5 out of the previous 7 days”, normal behavior the rest of the time). They were randomly assigned to 1 of 2 tx groups (both groups were seen 1x/wk for 1 mth, 30 min’s/visit, the same DO provided all care, parents were aware of group assignment): 1) osteopathic cranial manipulation: individualized to ea. pt, “involved standard cranial osteopathic techniques”; 2) control: same amount of time was spent w/ control pts, but there was “no physical intervention”, “parents were able to ask questions, discuss their problems and receive counseling from the osteopath”. Results: 1) drop-outs: tx – none, control – 14% (2/14; 1 – d/t pneumonia, 1 – “deteriorating colic condition); 2) change in hours of colicky crying per day: a) after 2 wks: control – 5% worse (from 2.1 to 2.2), tx – 21% better (2.4 to 1.9); b) after 4 wks: control – 24% better (2.1 to 1.6), tx – 63% better (2.4 to .9;ss). Conclusion: “This study provides evidence to suggest a beneficial effect of cranial osteopathic manipulation for infants suffering from infantile colic.” “The positive trends...warrant further investigation utilizing a double-blind technique.”
Does chiropractic provide long-term benefits for colic?

When checked 2-3 years post-colic, what percent of toddlers have more than 3 temper tantrums per day?

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<th>No chiropractic care</th>
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<td>Data taken from:</td>
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<td>Advanced Professional Practice Chiropractic Paediatrics, Bournemouth University, Bournemouth, UK. <a href="mailto:jmiller@aecc.ac.uk">jmiller@aecc.ac.uk</a></td>
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Does chiropractic provide long-term benefits for colic?

When checked 2-3 years post-colic, what percent of toddlers are typically able to fall asleep in less than 20 minutes?

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<td>78%</td>
<td>38%</td>
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Data taken from:

Long-term effects of infant colic: a survey comparison of chiropractic treatment and nontreatment groups.
Advanced Professional Practice Chiropractic Paediatrics, Bournemouth University, Bournemouth, UK. jmiller@aecc.ac.uk
Does chiropractic provide long-term benefits for colic?

When checked 2-3 years post-colic, what percent of toddlers are typically able to sleep through the night?

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Data taken from:
Long-term effects of infant colic: a survey comparison of chiropractic treatment and nontreatment groups.
Advanced Professional Practice Chiropractic Paediatrics, Bournemouth University, Bournemouth, UK. j.miller@aacc.ac.uk
Long-term effects of infant colic: a survey comparison of chiropractic treatment and nontreatment groups.  
Advanced Professional Practice Chiropractic Paediatrics, Bournemouth University, Bournemouth, UK.  
jmiller@aecc.ac.uk  

Study background: 228 post-colic toddlers were studied. All had colic remit before 12 wks of age. 117 had r/c DC care at the Anglo-European College of Chiropractic (Bournemouth, England) consisting of “low-force chiropractic manual therapy”. The other 111 had not r/c DC care (they were from 4 daycare centers, and were “in the same age group” as the DC pts). The parents were sent a survey when child was between 2-3 yoa. Results: 1) response rate: DC pts – 42%, no-DC pts – 53%; 2) % w/ temper tantrums: a) rare/never: DC pts – 60%, no-DC pts – 27%; b) >3 per day: DC pts – 10%, no-DC pts – 37%; 3) time to fall asleep (> 20 min’s): DC pts – 22%, no-DC pts – 62%; 4) sleeps through the night: DC pts – 68%, no-DC pts – 33%. Conclusion: “...late effects of colic are fewer in toddlers who had been treated with chiropractic care as infants...”
Is manual therapy helpful for children with ear infections?

Over a 6 month period, what percent of children with recurrent ear infections go on to require ear surgery ("tubes")?

- Children who receive medical care + manual therapy: 4%
- Children who receive just medical care: 25%

Data taken from:
The use of osteopathic manipulative treatment as adjuvant therapy in children with recurrent acute otitis media.
Departments of Pediatrics and Family Medicine, Oklahoma State University Center for Health Sciences, Tulsa.
The use of osteopathic manipulative treatment as adjuvant therapy in children with recurrent acute otitis media.


Departments of Pediatrics and Family Medicine, Oklahoma State University Center for Health Sciences, Tulsa.

Study background: Study took place from 2/99 - 7/01. Subjects were pts of pediatricians. 76 recurrent acute otitis media (AOM) pts were studied (a 6-mth study). Definition of AOM: inflammatory changes of the middle ear (diffuse opaque redness, bulging, or pus behind the tympanic membrane), at least 1 of 3 systemic sx (irritability, fever, or otalgia), and clearing of sx for at least 2 wks between episodes. Inclusion criteria: 6 mths - 6 yoa (23 mths old, avg.), recurrent AOM episodes (3 in the past 6 mths or 4 in the past yr). Exclusion criteria: No prior manipulation (DC or DO) and No previous ear surgery.

The pts were randomly assigned to 2 tx groups (randomized was stratified 60:40 in favor of the PED group in anticipation of more drop-outs; both groups received 9 visits/txs over 6 mths - 3 weekly, 3 biweekly, and 3 monthly):
1) Routine pediatric care (PED): Whatever the pediatrician thought was appropriate, including antibiotics, surgery referral, etc. The pediatrician was blinded to pt group assignment;
2) Routine pediatric care + osteopathic manipulative treatment (OMT): Pediatric care as above + OMT. Osteopathic txs lasted 15-25 min's, "treatments were gentle techniques on areas of restriction" (articulation, myofascial release, positional release technique, strain-counterstrain, etc.). "No high-velocity (popping) techniques were used". The entire body was tx'd "with attention to the head and neck". The OMT physician was unaware of the pt's clinical course or the pediatrician's recommendations (episodes of AOM, use of antibiotics, and surgical referrals).

Results:
1) Follow-up rate (all drop-outs were d/t loss of continuity of care or inconvenience of the 6-mth study):
   • PED - 71% (32/45),
   • OMT - 81% (25/31);
2) Avg. # of AOM episodes per mth (6 mths before start of study vs. 6-mth study period):
   • PED - 47% decrease (from .51 to .27),
   • OMT - 69% decrease (.61 to .19; ss superior to PED);
3) Avg. # of antibiotic prescriptions per mth (6 mths before start of study vs. 6-mth study period):
   • PED - 39% decrease (.69 to .42),
   • OMT - 62% decrease (.79 to .30; ns superior to PED);
4) % of pts who received surgery ("tubes"):
   • PED - 25% (8/32),
   • OMT - 4% (1/25; ss superior to PED).

Conclusion: There is "a potential benefit of osteopathic manipulative treatment as adjuvant therapy in children with recurrent AOM". OMT "may prevent or decrease surgical intervention or antibiotic overuse."

Theory: "The [auditory] tube is vulnerable to extrinsic compression". It's patency "may be amenable to OMT".

Comments: "The parents knew the child's treatment group"
Is Chiropractic Care Effective For Colic?

Percent decrease in daily crying hours within the first 7 days of medical or chiropractic treatment

Data taken from:
The short-term effect of spinal manipulation in the treatment of infantile colic: a randomized controlled clinical trial with a blinded observer.
Center for Biomechanics, Odense University, Denmark.
The short-term effect of spinal manipulation in the treatment of infantile colic: a randomized controlled clinical trial with a blinded observer.

Center for Biomechanics, Odense University, Denmark.

Background: 25% of infants get colic, which is defined as "unexplainable and uncontrollable crying in babies 0 to 3 months old..." (3 hrs/day, more than 3 days/wk, for 3 wks or more).

Study background: 50 infants 2-10 wks of age w/ 3+ hrs of crying 5 of the 7 previous days were studied.

They were randomized into 2 tx groups:
1) chiropractic manipulation (3-5 txs over 2 wks) consisting of fingertip manip./mob. w/ specific light pressure primarily of the upper/mid-thoracic spine;
2) dimethicone (which is supposed to dissipate intestinal gas) daily for 2 wks.

Results (% decrease in daily hours of crying):
1) Days 4-7:
   a) dimethicone - 29% improvement (from 3.4 to 2.4),
   b) manipulation - **62% improvement** (3.9 to 1.5);
2) Days 8-11:
   a) dimethicone - no further change,
   b) manipulation - **69% improvement** (3.9 to 1.2);
3) Days 12-15:
   There were too many dropouts to allow statistical analysis (9 in the dimethicone group, most of whom were getting worse, compared to 0 dropouts in the manipulation group).

Conclusion: "Spinal manipulation has a positive short-term effect on infantile colic." Is colic a visceral or musculoskeletal disorder? "This study does not address this issue."
Over 80% of patients with indigestion (dyspepsia) improve with chiropractic care.


Eighty-three percent of patients suffering from chronic indigestion note less frequent symptoms following chiropractic care.
Chiropractic manual intervention in chronic adult dyspepsia: A pilot study
Yeovil Chiropractic Clinic, 142 Sherborne Road, Yeovil, Somerset BA21 4HQ, UK

Study background: 83 consecutive dyspepsia pts (65% female/42 yoa, avg.) presenting to a private DC clinic over a 12-mth timeframe were studied. All had chronic sx for at least 2 yrs. Dyspepsia was defined as “pain of digestive origin in the central chest or epigastric area”. None had known gastric pathology. Treatment description (2-4 txs; 2.3, on avg.): 1) techniques: a) spinal manipulation: diversified, Activator, and SOT; b) soft-tissue: ischaemic compression and dry needling of trigger points, and neurolymphatic drainage; 2) areas of special focus: a) C3-5 – origin of the phrenic nerve (supplies motor nerves to diaphragm); b) T5-L2 – levels of diaphragmatic insertion; c) psoas mm – insert into the crura of the diaphragm (the tendinous attachments of the diaphragm to the vertebral column). Results (3 mths after last tx; ss): 1) % w/ a decrease in sx severity – 71% (% w/ “severe” to “disabling” sx: at baseline – 43%, at follow-up – 6%); 2) % w/ a decrease in sx frequency – 83% (% w/ “frequent” {2-6x/wk} or “daily” sx: at baseline – 57%, at follow-up – 13%); 3) % w/ an improvement in medication usage (downgraded the class and/or frequency of drug use) – 45% (% taking no medications: at baseline – 4%, at follow-up – 35%). Conclusion: “...chiropractic management can have a highly significant positive impact on dyspeptic symptoms...” “Interestingly, no patients reported a worsening of symptoms during treatment.” Primary theory: “altered diaphragmatic function” = altered lower esophageal sphincter function = dyspepsia
Is chiropractic care effective for high blood pressure?

Average improvement in hypertension after a course of chiropractic care

Pre-treatment | Post-treatment
---|---
147/93 | 130/82

Data taken from:
Atlas vertebra realignment and achievement of arterial pressure goal in hypertensive patients: a pilot study.
Department of Preventive Medicine, Rush University Hypertension Center, Chicago, IL, USA.
Atlas vertebra realignment and achievement of arterial pressure goal in hypertensive patients: a pilot study.


Department of Preventive Medicine, Rush University Hypertension Center, Chicago, IL, USA.

gbakris@earthlink.net

Study background (DB, PC, RCT): Study took place 9/04 – 2/05. 50 pts were studied (53 yoa, avg./70% male). All had documented stage-1 hypertension (systolic 140-159, diastolic 90-99). 48% were taking BP medication (BP meds were not allowed during the study period, and there was a 2-wk “no BP meds” washout period before tx began). All also had atlas misalignment per supine leg-length check protocol (misalignment = disparity in leg-lengths {comparing heel positions}, which changes when pt turns his/her head left or right; normal = “heels that appear parallel to one another”, or heels “that remain static on head-turning”). They were randomly assigned to 1 of 2 tx groups (pts were seen weekly for 8 wks):

1) NUCCA (National Upper-Cervical Chiropractic Association) tx: a) pre-tx examination: supine leg-length check for atlas misalignment, paracervical skin temperature analysis, postural analysis (w/ Anatometer), and 3-view craniocervical radiographs (to measure atlas misalignment); b) tx description: pt positioned on a low side-posture table, then “a series of precise, subtle, external nudges [from the Dr] causes Atlas to recoil into normalized alignment...” (Dr’s contact is pisiform on atlas TVP); c) post-tx examination: same as above (except for the x-rays); 2) placebo: same procedures as for the NUCCA pts, except Dr intentionally misplaced his pisiform contact (pisiform was not placed on atlas TVP).

Results (change in blood pressure; Note: “Eighty-five percent of treatment group required only 1 intervention {remained in Atlas alignment}...”): 1) placebo: baseline – 145/91, after 8 wks – 142/89 (a drop of 3/2); 2) NUCCA (ss): baseline – 147/93, after 8 wks – 130/82 (a drop of 17/11). Conclusion: “...restoration of Atlas alignment is associated with marked and sustained reductions in BP...” The results “cannot be generalized until confirmed in a larger trial, which is being planned.” “There were no adverse effects to report during this short-term study.” Other changes (baseline vs. 8 wks later): 1) Anatometer: a) pelvic distortion – frontal plane: placebo – 3.8 degrees to 3.7 degrees, NUCCA – 3.6 to .04 (ss); b) pelvic distortion – transverse plane: placebo – 1.4 to 1.3, NUCCA – 2.0 to .3 (ss); c) lateral displacement of C7: placebo - .6” to .5”, NUCCA – 1.0 to .04 (ss); d) % of weight differential: placebo – 5.5% to 4.3%, NUCCA – 6.8% to 3.4%; 2) x-ray measures of atlas position (in degrees): a) lateral displacement: placebo – 1.86 to 1.80, NUCCA – 2.17 to .22 (ss); b) rotational displacement: placebo – 1.5 to 1.42, NUCCA – 1.29 to .24 (ss). Technique info: www.nucca.org.
Can Chiropractic Care Be Helpful For Elevated Blood Pressure?

**Average drop in systolic blood pressure after a single chiropractic treatment**

Data taken from:
Significant changes in systolic blood pressure post vectored upper cervical adjustment vs resting control groups: A possible effect of the cervicosympathetic and/or pressor reflex.
Knutson GA. J Manipulative Physiol Ther 2001 Feb;24(2):101-109
Private Practice of Chiropractic, Bloomington, Ind.
Significant changes in systolic blood pressure post vectored upper cervical adjustment vs resting control groups: A possible effect of the cervicosympathetic and/or pressor reflex.

Knutson GA. J Manipulative Physiol Ther 2001 Feb;24(2):101-109

Private Practice of Chiropractic, Bloomington, Ind.

Study #1

Study background: 80 subjects were studied (54 yoa, avg.) - 40 established pts w/ "signs of upper cervical subluxation/dysfunction" (they had "postural distortion" when assessed for pelvic rotation, leg/foot rotation, & supine leg-length) and 40 established pts w/o such signs. All underwent a pre-tx BP check (sitting) w/ a digital BP cuff/reader (model 82T from Omron Healthcare - accurate to +/- 3mm Hg).

Tx descriptions: 1) Tx - pt lied on side and received a "specific upper cervical vectored technique" (previous x-ray indicated proper vector); 2) Control - pt lied on side for a few seconds. All underwent a post-tx BP check (sitting) after resting supine for 2 min's.

Results:
1) decrease in systolic reading: tx - 10.3 mm (from 140.7 to 130.4), control - .5 mm (from 124.0 to 123.5). The diff. between the 2 groups was ss. Also, "the decrease in systolic BP [was larger] for higher starting systolic pressures"; 2) greater age = greater change - <55 yoa = 7.6 mm decrease, >55 yoa = 13.8 mm decrease. There was no ss change in the diastolic reading.

Study #2

Study background: 30 established pts w/ "signs of upper cervical subluxation/dysfunction" underwent testing/tx.

Tx description: a) BP taken sitting; b) rest supine 2 min's; c) BP taken sitting; d) tx (as described in previous paragraph); e) rest supine 2 min's; f) BP taken sitting.

Results:
1) general - pre-rest BP = 133.1, post-rest BP = 133.6, post-tx BP = 122.7 (dropped by 10.9 - ss); 2) results based on age - age <55 yoa = 7.8 mm decrease, age >55 yoa = 14.9 mm decrease.

Conclusion: A "vectored atlas adjustment...significantly lowers systolic BP..." "no conclusions can be drawn as to any general positive health effects of lowering BP." "these studies did not examine the long-term effects..."

Comments: Why did BP decrease? 1) "likely due to stimulation or normalization of upper cervical muscle spindle/GTO output", which stimulates cervicosympathetic reflexes, which have been shown to decrease BP, or 2) a reduced pressor reflex - an upper c/s adjustment can reduce postural distortions, postural distortions=increased mm contractions=BP must increase (to supply the contracting mm). This is the pressor reflex.

Other: "The lack of blinding of the subjects leaves open the possibility [of] a placebo effect."