# Chiropractic care for children: Controversies and issues

Canadian Paediatric Society

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The demand for alternative and complementary therapies is increasing. This patient-led trend creates new challenges for physicians because parents may already be integrating or considering the use of alternative therapies in the treatment of their children. Therefore, it is vital that physicians are knowledgeable about the various types and the most commonly used treatments of this kind. The present paper discusses chiropractic care for children, reviews the current literature and provides a practical approach for the physician whose paediatric patient is already using or is interested in using chiropractic.

## GENERAL BACKGROUND

### A history of chiropractic

Although spinal manipulation has been used as a treatment since the times of ancient Greece, chiropractic is a relatively recent discipline that was established in 1895. It evolved from 'energetic' healing traditions that were current at that time in an eclectic American medical practice. This practice evolved in an era when patients were seeking a drugless alternative to potentially toxic conventional drugs (1). DD Palmer, an American magnetic healer, believed that diseases are often caused by subluxations of the vertebrae, which, in turn, lead to an interruption of nervous impulses; and that the correction of these subluxations allows the body to heal itself. This is still a central tenet of chiropractic.

In 1997, the Association of Chiropractic Colleges, representing 16 North American chiropractic colleges, reached a consensus that stated:

> *Chiropractic is concerned with the preservation and restoration of health, and focuses particular attention on the subluxation. A subluxation is a complex of functional and or pathological articular changes that compromise neural integrity and may influence organ system function and general health. (2)*

In North America, chiropractic is the most established discipline considered to be alternative by practitioners of conventional medicine (3). Chiropractors in the United States have become the third largest group of health care professionals (after physicians and dentists) who have primary contact with patients (4). Approximately 5000 chiropractors and 56,000 physicians are licensed in Canada (personal communication, Canadian Medical Association [Betty Green, Southam Group, November 9, 2000]) (5). In the United States, there are 70,000 chiropractors and 778,000 physicians (6). Every year, there are over 4000 chiropractic graduates from 30 educational institutions, and with increasing enrolment, the number of American chiropractors is projected to rise to 145,000 by 2015 (7).

### Chiropractic philosophy

During the evolution of chiropractic, different schools of thought and practice have emerged. There is a continuing debate both within and outside the chiropractic profession about whether chiropractic should be considered to be a nonsurgical musculoskeletal discipline or a broadly based alternative to conventional medicine (8). Chiropractors agree, however, that the primary purpose of chiropractic is to improve health by adjusting the spine and using other natural means to stimulate the body's innate recuperative power by way of the nervous system (9). They also believe that a musculoskeletal problem must be identified before treatment is provided (10).

One framework that helps to clarify the disparate chiropractic philosophies has been proposed by Biggs et al (11). The conservative chiropractic philosophy emphasizes the scientific validation of chiropractic concepts and methods. In general, chiropractors who adhere to this philosophy have a narrow scope of practice that is restricted to treating musculoskeletal conditions. They are in the minority. In the 1997 Canadian survey conducted by Biggs et al (11), only 19% of respondents held the conservative viewpoint. The liberal philosophy accepts the perspective that chiropractic is not limited to treating only musculoskeletal conditions but encompasses a broad range of practices. The Biggs et al survey (11) found that 22% of respondents shared this viewpoint. However, a 59% majority were moderates (ie, they

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positioned themselves between the two poles). Irrespective of a particular philosophy, 74% of chiropractors believed that they should not be limited to treating only musculoskeletal conditions. A recent survey of chiropractors in the United States confirmed that most respondents considered chiropractic to be a complete system of healing rather than therapeutic techniques (12). Biggs et al (11) also revealed that there was no uniform distribution of opinions across Canada. For example, Quebec had the highest proportion of chiropractors espousing a liberal philosophy, whereas Saskatchewan had the most conservative practitioners, with the practitioners in the other provinces situated between the two philosophies.

**Chiropractic and its use in children**

Chiropractic use in Canadian adults is strongly correlated with place of residence (13). For provinces in which adult chiropractic is used frequently, treatment of children younger than 18 years of age is also more common. The exception is Quebec, where chiropractic is not used as often as in the western provinces, but the treatment of children younger than age 18 years is more common than in any other region (13,14).

A cross-sectional survey of 1200 Canadian chiropractors revealed that almost all respondents treated patients younger than 18 years of age (14). Forty-five per cent of respondents indicated that they had received formal postgraduate paediatric chiropractic training via seminars or courses. Seventy-one per cent of chiropractors stated that they had received informal training in the care of children through reading journals, attending conferences or personal communication with colleagues. Most respondents desired more training.

A Boston study (15) of chiropractic care used by children found that it is often inconsistent with recommended medical guidelines. Chiropractors may give advice on diet, immunizations and general health, and may also sell herbal remedies and homeopathic preparations (12,15,16).

Physicians may assume that patients use chiropractic mainly for musculoskeletal problems and that treatment for other conditions is rare. However, a recent survey of chiropractors in the United States, Canada and Australia found that 10% of the chief complaints presented to a chiropractor were nonmusculoskeletal in nature (16). The American Chiropractic Association quotes similar figures (17). In children, chiropractic is also commonly used as primary or adjunctive therapy for nonmusculoskeletal conditions such as colic, enuresis, asthma, recurrent otitis media, cancer and illness prevention (14,18,19). According to a study done in Alberta (10) on chiropractors' beliefs, most respondents believed that they should play a role – albeit a role secondary to physicians – in the treatment of nonmusculoskeletal health problems in children. A Canada-wide survey (14) of chiropractic care of children younger than age 18 years found that, overall, musculoskeletal conditions accounted for 40% of visits, prevention 24%, headaches 7%, otitis media 5% and various other conditions 23%. Prevention accounted for a large proportion of visits for children younger than age four years, with treatment for musculoskeletal conditions increasing with age. Chiropractors in Quebec were the most likely to provide preventive care and those in Atlantic Canada were the least likely to do so. Spinal manipulation was, by far, the most common form of therapy provided, followed by exercises, soft tissue treatment, and postural and nutritional counselling.

## CONTROVERSIES

**Scientific evidence**

Physicians question whether chiropractic is effective in treating the variety of conditions for which it is used. Koes et al (20), after conducting a review of systematic randomized clinical trials and taking into account methodological rigour, found insufficient evidence to prove that spinal manipulation is useful for treating either acute or chronic low back pain. Other studies, however, suggest that manipulation may be effective for acute low back pain in adults, but its effectiveness has not been proven in patients with chronic symptoms (21-23). No studies have been published on chiropractic treatment of back pain in a paediatric population.

Systematic reviews of the literature and expert panels suggest that cervical manipulation or mobilization may provide some short term relief for certain individuals with subacute or chronic neck pain (24,25). However, neither the efficacy of manipulation relative to that of other therapies nor the cost effectiveness has been established for these types of problems (4,26). The evidence to support manipulation for conditions such as migraine is even less compelling (26). Once again, there are no specific, well-documented data for the paediatric age group.

One of the few studies to be published in the medical literature on chiropractic therapy in children was conducted by Balon et al (27) and involved children with stable asthma who were treated with active or simulated chiropractic as an adjunct to medical therapy. The researchers did not find any improvement in the symptoms of asthma, pulmonary function tests or quality of life between the two groups. The authors state that "In children with mild or moderate asthma the addition of chiropractic spinal manipulation to usual medical care provided no benefit" (27). A recent review of randomized trials of manual therapy for asthma in both adults and children confirmed that there is insufficient evidence to support the use of manual therapy in asthma (28).

Some chiropractors do not believe that controlled clinical trials are the best way to validate their methods (11). Anecdotal evidence may be thought to be sufficient proof of efficacy. As well, the amount of research conducted in chiropractic institutions is small compared with medical establishments (29). Poorly designed trials and the lack of reproducibility pose other problems (30). To address some of these issues, agencies that promote chiropractic care research have been established and include the Consortial Center for Chiropractic Research (established in 1998 in

the United States), the Canadian Chiropractic Association (CCA) and the Canadian Memorial Chiropractic College (26,<www.cmcc.ca>).

Another concern identified by physicians is the wide variety of paediatric conditions treated by chiropractic. Colic is one such example. Although a self-limiting condition, colic causes a lot of distress for parents who may seek the help of a chiropractor to treat their infant. In a recent study (31) on the treatment of colic by using chiropractic, the authors conducted a randomized controlled trial that compared drug therapy (dicyclomine hydrochloride) with spinal manipulation and found improvement with manipulation. Unfortunately, despite adhering to a sound methodology, the two study groups could not be compared because treatment was not blind, and the chiropractor-treated group had more interactions between chiropractors and the parents and baby during the treatment sessions (30). A collaborative study performed by paediatricians and a chiropractor of 86 infants in a randomized, blinded and placebo controlled trial of colic treated by spinal manipulation found that chiropractic manipulation was no more effective than placebo (32).

The ability to adequately define and, subsequently, to evaluate improvement in several paediatric illnesses is problematic for physicians and even more problematic for chiropractors who do not have equivalent training in medical diagnosis (33).

**Chiropractors and immunizations**

Chiropractors may also give advice on immunizations. A survey (34) of attitudes toward vaccination among American chiropractors found that one-third of 117 respondents (36% response rate) believed that there was no scientific proof that immunization prevents disease, that immunization has not substantially changed the incidence of any major infectious disease and that immunizations cause more disease than they prevent. The official policy of the American Chiropractic Association states that "...the use of vaccines is not without risk..." and, therefore, it supports the conscience clause in compulsory vaccination laws (35). The CCA is more in line with the prevailing medical opinion, and states:

> *The CCA accepts vaccination as a cost-effective and clinically efficient public health preventive procedure for certain viral and microbial diseases, as demonstrated by the scientific community. (36)*

However, not all chiropractors agree, and some may be influenced by the free distribution of chiropractic newsletters that sometimes present erroneous antivaccination information. A complete discussion on chiropractic and immunization can be found in a recent article in *Pediatrics* (29).

**The safety of chiropractic in paediatrics**

In adults, after chiropractic manipulation, minor complications, such as mild pain or discomfort, slight headache or fatigue, are quite common, but are usually transient (21,37). However, several reports have been published on major neurological complications in adults resulting from cervical manipulation. These complications consist primarily of vertebrobasilar accidents that occur, particularly after cervical rotation to the upper neck is performed (38-40). The published incidence is low; estimates place the risk of injuries due to cervical manipulation in the order of one to four cases per million cervical manipulations (39,41). These figures are considered to be conservative (38,42,43). Part of the reason may be the understandable reluctance of therapists involved in neck manipulations to report adverse effects and the lack of awareness of vertebrobasilar accidents manifesting as other neurological symptoms such as acute neck pain (44,45). A recent Canadian study (5) reviewed malpractice claims for stroke following chiropractic manipulation in adults, and concluded that the risk is only one in 5.85 million manipulations. However, the use of malpractice claims is unlikely to lead to an accurate estimate of the risk of stroke (26).

The Canadian Stroke Consortium is collecting detailed information on cases of dissection of the cervical arteries, which is the most common cause of stroke in patients aged 45 years or younger (44,45). About 25% of all traumatic dissections were associated with neck manipulation (45). None of the patients were younger than 18 years of age. Another recent study that was conducted in Ontario and involved adults younger than 45 years of age (no lower age limit is mentioned), found that patients with vertebrobasilar ischemia are five times more likely than control subjects to have visited a chiropractor within a week of the event (46). Unfortunately, the practitioner cannot reliably assess the risk for any particular patient undergoing manipulation either by using clinical risk factors or by premanipulative positional testing (24,46,47). In children, there has been one case report of vertebrobasilar occlusion in a seven-year-old following gymnastics and repeated chiropractic manipulations of the cervical spine (48). Because chiropractors treat headache and neck pain in children and youth, a history of neck manipulation should be ascertained in any paediatric patient presenting with signs of stroke.

Reports of other paediatric complications are few (49,50). Of greater concern is the possibility that chiropractors may attempt to treat acute paediatric conditions, leading to a delay in appropriate medical therapy or, less commonly, the refusal of families to seek conventional treatment (15,51).

## CHIROPRACTIC: ISSUES FOR THE PHYSICIAN

Some chiropractors actively promote themselves as primary health care providers and encourage spinal manipulation as a way to maintain wellness (9,52**).** They may advise that birth is a traumatic event for the spine and may be a primary cause of illness in children, and, therefore, recommend chiropractic realignment for the newborn infant (35). Paediatric treatment may be offered initially without cost, when parents

visit a chiropractor for themselves. Although parents use alternative medicine for a variety of reasons, they may consult a chiropractor because of word of mouth referrals, fear of side effects of conventional treatments, willingness to try anything to help their child and the presence of a chronic illness (18,19,53).

Although families may use chiropractic for their children, many will not spontaneously disclose this information to their physician. In a study (18) conducted in a Montreal, Quebec paediatric outpatient department, less than 50% of parents told their doctor about using alternative therapies, and similar results have been described in other paediatric populations (53,54). This reluctance to disclose information may be due, in part, to the parents' expectation of a negative reaction from their doctor. The basis for obtaining and maintaining good communication is a nonjudgmental attitude on the part of the physician. Parents will often welcome the opportunity to share their opinions with their physician, provided that the dialogue is conducted in a respectful manner.

The physician should routinely ask families about complementary and alternative therapies or products that their child may be using. When the parents disclose that they have been taking the child to a chiropractor, one should inquire whether neck manipulations or forceful thrusts have been used, and if herbal or homeopathic preparations have been given. It is important to know the conditions for which the parent has used chiropractic for the child, the frequency of visits and the motivation for seeking chiropractic care. The parents' and, if age-appropriate, the child's opinion about the perceived benefit of the treatment should be sought.

All questions arising about the risks and benefits of immunization must always be discussed. If it is established that a chiropractor has negatively influenced a decision, it can then be pointed out that the CCA accepts and endorses vaccination (36).

On occasion, while receiving chiropractic care, a child's conventional medical treatment may become disrupted, either from the parent's own desire or based on the advice of a chiropractor. In this situation, a full inquiry into parental motives for this decision needs to be undertaken, their concerns addressed and appropriate information given about the child's condition.

Parents may at times request radiographic examinations that are suggested by their chiropractor. This issue is very contentious. For example, the College of Alberta Radiologists in 1998 passed a resolution that no longer endorsed x-rays for children that were prescribed by a chiropractor (55). Parents should be made aware that there is a lack of substantiated evidence for the theory of subluxated vertebrae as the causality for illness in children, and x-rays taken for this purpose expose the child to unnecessary radiation (56).

## CONCLUSIONS

Chiropractic treatment for children and adolescents is not uncommon. Open and honest discussions with families using or planning to use chiropractic for their children will, hopefully, bring about a rational use of this treatment in selected musculoskeletal conditions for which there is proof of efficacy, and enable parents to make informed choices about this form of therapy. Further, well-designed studies are needed to evaluate the chiropractic belief that musculoskeletal dysfunctions can be located and treated in children with nonmusculoskeletal conditions (10). Ideally, collaborative evidence-based research into chiropractic care for diverse paediatric conditions should define those patients best suited for chiropractic therapy.

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The recommendations in this statement do not indicate an exclusive course of treatment or procedure to be followed. Variations, taking into account individual circumstances, may be appropriate.
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