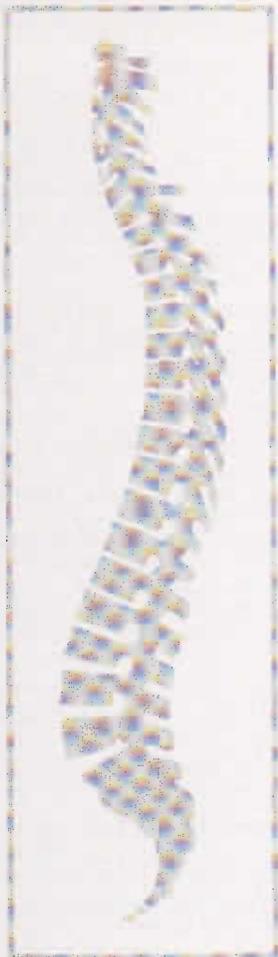


THE CHIROPRACTIC REPORT

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Professional Notes

NASS Includes DCs

The North American Spine Society (NASS) was founded in 1986, as a North American affiliate of the International Society for the Study of the Lumbar Spine. It was dominated by surgeons and expressly excluded chiropractic members.

In the intervening six years much has changed. Research has demonstrated that chiropractic manipulation has as important a role in the management of spinal problems as any other treatment approach, and professional associations such as the American Back Society, which bring together MDs, chiropractors, and all other professionals involved in spinal care, have developed a much greater membership and impact than bodies such as NASS.

As a result, at its recent annual meeting, NASS has opened its membership to chiropractors. Given NASS's extreme past conservatism, and its existing membership of most leading medical spinal researchers in North America, this represents a significant development.

NAAMM

The North American Academy of Musculoskeletal Medicine, which comprised MDs and DOs but did not admit chiropractors into membership, has folded. It was founded in the early 1960s. During the past 10 years it has struggled to keep its membership at around 250. This evidences the continuing frail interest in manipulation and manual care in North American medicine.

AAOM

The American Association of Orthopedic Medicine (AAOM) is the one remaining North American organization with an interest in manual care that excludes chiropractors from membership.

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Children and Infants

A. Introduction

1. A large new study of adolescent low-back pain in Pennsylvania,¹ published in the April 1992 issue of the American Journal of Public Health, and confirming other recent school-based studies in Canada,² England³ and Switzerland,⁴ concludes:

- "Low-back pain in adolescents is a serious public health problem."
- "Our results suggest that the initial onset and subsequent cost of low-back pain may in fact occur early in youth."

2. These studies document a clear need for greater attention to low-back pain in children. Steps taken should include:

- Education – about posture, lifestyle, appropriate exercise, and spinal anatomy and health. Children have always been forced to sit for long periods during schooling. Problems are compounded in this age of television slouch, computer static muscle loading, and reduced involvement in sports.
- Preventive care – with a focus on early correction of the joint and muscle dysfunction that, painless at first, leads in due course to back pain, headache, and other problems.

Preventive care is important for everyone. However, there is a particularly strong argument with pre-school children (in the years of greatest physical development, frequency of falls, and vulnerability to injury) and school children who, as the studies now show, have frequent back pain at a young age then sharply increasing reports of back pain from about age 10.

Such preventive care is advocated both by the chiropractic profession and medical experts experienced in manual care. Karel Lewit MD DSc, a Czech neurologist prominent in manual medicine in Europe, argues:

- In principle everyone should have preventive care to locate and treat "joint or segmental movement restrictions" because "we are convinced that they are a potential source of trouble" and because they "can be quickly and safely diagnosed as well as treated" by manipulation.
- In practice it is not practical to suggest preventive manipulative treatment for the whole population, but it is reasonable to plan this "for pre-school and school children. Our experience suggests that a check up once a year or even every other year would be sufficient . . . and would present an effective way of dealing with disturbed locomotor function at the very outset."⁵

3. Clinical experience, now supported by a significant body of research, is that children respond particularly well to manual treatment of spinal movement restrictions (dysfunction/

subluxation) and their diverse effects on related neurophysiology.

This relieves not only low-back and other spinal pain but also a wide variety of other disorders. These include functional disorders (e.g. respiratory and digestive problems) and lowered resistance to infection (e.g. especially to ear, nose and throat with infants and young children).

In former times there was little research and medical scepticism for such claims, but now basic and clinical science researchers in medicine and chiropractic are in agreement. Much more is known about the nervous system than 10 years ago, and about the pathways whereby manual correction of spinal problems may influence functions seemingly remote from the spine.

4. The government inquiry that investigated chiropractic management of children most thoroughly, in New Zealand in 1978/79, agreed that children with a wide variety of disorders responded successfully to chiropractic treatment. (See Figure 2). The Commission concluded that children should be viewed as a special population for chiropractic care and that government funding of chiropractic services should be at a substantially higher level for children than for adults.⁶

5. This Report reviews chiropractic management of children and features a guest editorial from Dr. Nancy Abram, who holds degrees in both chiropractic and medicine and lectures and practises in the field of pediatrics in Canada.

B. Low-back Pain in Children

6. The new study published in the American Journal of Public Health¹ is from researchers from the Department of Epidemiology, University of Pittsburgh. Details are:

- a) The study, part of an ongoing investigation of adolescent injuries generally, involved 1242 adolescents aged 11–17 from an urban school district in Pennsylvania. The great majority were between the ages of 12 and 15 – all were students in Grades 7–9.
- b) 30.4% reported a history of low-back pain, 22% within the previous 12 months.
- c) Of those who had experienced low-back pain one-third had activity limitations, and 1 in 4 had sought treatment.
- d) "There was a markedly accelerating incidence of low-back pain at about age 10, with a continuously increasing rate throughout adolescence."
- e) There was an equal incidence of back pain in boys (30.7%) and girls (30.0%).
- f) The researchers conclude that low-back pain commences early in youth, "increases

dramatically during the teenage years," and by adolescence "is a serious public health problem."

g) This research did not address the cause of back pain, and the students were not given physical examination. The history of low-back pain came from a structured questionnaire, a sample of which is published with the results.

7. Results confirm three studies during the 1980s: a) In 1984 Fairbanks et al³ reported that 26% of English school pupils had experienced low-back pain.

b) In Canada in 1984 Mierau, Cassidy et al² reported that 33.3% (45 of 135) of secondary school pupils (ages 12–17) had a history of low-back pain, and 22.8% (61 of 268) of elementary school pupils (ages 6–12). Overall 26.3% (106 out of 403) of the entire student population tested, (being the total role of one elementary and one secondary school in Saskatchewan) had a history of low-back pain.

c) In 1988 Balague et al⁴ reported that 27% of 1715 Swiss school pupils complained of low-back pain.

8. The study by Mierau, Cassidy et al, chiropractors, included physical examination of the children. They tested for:

- Sacroiliac dysfunction (lack of motion in the sacroiliac joint) since a number of studies have suggested that this is a common cause of low-back pain. (See the paper for description of methods, which were based on Gillet.)

- The number of students who had both SI dysfunction and back pain.

Results were:

a) Frequency of SI dysfunction was 29.9% (80 of 265) in the elementary school pupils and 41.5% (56 of 135) with secondary school pupils, 1 in 3 (33.5%) throughout.

b) Of the 108 (26.3%) students with a history of low-back pain, 88 (83.1%) tested positive for SI dysfunction.

The authors note a "high degree of association" between SI dysfunction/subluxation and low-back pain, which "suggests a relationship between SI dysfunction and LBP" given "the common clinical experience of obtaining symptomatic relief by SI manipulation."

C. Musculoskeletal Development in Infants

9. To illustrate the important role of spinal movement irregularities and fixations in the proper musculoskeletal development of infants and young children, and the potential effectiveness of biomechanical correction, see:

- Guest editorial from Dr. Abram and her case example.

- Case example from Gutmann (Figure 1). These are cases where there were significant developmental problems, no pain, and rapid correction of the difficulty with manipulation/

adjustment. One case involves sacroiliac dysfunction in a 3-year old, the other upper cervical spine dysfunction in a 7 month old baby.

D. Non-musculoskeletal Conditions

10. It is easy to understand how manipulation can prevent or help mechanical back pain and other problems relating to 'biomechanical' movement, balance, strength and development. And because back pain is such a major cause of disability and cost, successful response to manipulation has been studied extensively with adult populations.⁷ The same principles, with modified technique, apply to children.

For many, however, it may seem strange and improbable that manipulation/adjustment of spinal structures can affect function remote from the spine – for example in the digestive system, (e.g. colic and constipation) and the respiratory system (e.g. asthma and allergies).

11. To illustrate the clinical results that may be achieved:

a) Figure 2 gives case examples, verified and reported by a government commission, of successful chiropractic management of children with asthma and impaired hearing.

b) Figure 3 gives a case example from Gutmann, a German manual medicine specialist, of an 18 month boy with low resistance to ear, nose and throat infections, therapy resistive conjunctivitis, and sleeping difficulties.

c) The text below refers to clinical studies of manipulative treatment for infantile colic (a chiropractic study), bed wetting or enuresis (chiropractic) and tonsillitis (medical).

12. On what basis could chiropractic manipulation to correct spinal function affect such conditions? In summary, research has now demonstrated:

a) There are three major forms of spinal reflexes:

i) **Somatosomatic** (Greek: soma = body). Stimulus at one level of the soma or musculoskeletal system produces reflex activity or response in the nervous system elsewhere in the musculoskeletal system.

Everyone knows of the knee jerk reflex because it is so visible. This is a spinal somatosomatic reflex. A light tap on the knee tendon activates receptors in muscle associated with the tendon. The nerve fibers fire a message into the spinal cord which, within the spine and without involvement of the brain or any conscious control, fires a reflex response out to the muscle which contracts, jerking the lower limb.

Similarly, stimulus to the spinal structures and nerves, whether from abnormal joint or muscle tension or manipulative treatment to relieve it, causes various spinal reflex responses in the musculoskeletal system. Somatosomatic reflexes are particularly pronounced in infants.

Figure 1

Case Report – Musculoskeletal

From Gutmann, a German medical specialist, reviewing over 1000 cases of successful manipulative treatment of infants in "The Atlas Fixation Syndrome of the Baby and Infant," Gutmann G, *Manuelle Medizin* (1987) 25:5-10. Trans. Peters RE.

History: 7-month old male baby, normal birth. Since the eighth week of life asymmetrical development of the skull and, increasingly also, of the face. The baby lies only on the right side, even when attempting to get it to sleep and turning it during sleep into another position.

Orthopedic suspicion: Early scoliosis and hip dysplasia. A corrective plaster shell was planned, but rejected by parents. Findings: Skull flattened on right side, facial asymmetry, asymmetric gluteal folds, distortion of sacroiliac articulation.

Manual examination: atlas fixation.

Radiological examination: Right atlas displacement.

After manual thrust, with cooperation of treating orthopedist, immediate disappearance of the sacroiliac joint distortion. Three days later, report of the extremely happy mother that the child had slept peacefully, and in every possible body position. Baby was seen 3 weeks after adjustment: symmetric gluteal folds.

Two months after first manipulation received second atlas adjustment. No further developmental problems, skull becoming more symmetrical, facial asymmetry cannot be noticed any more.

ii) **Somatovisceral** (Latin: viscera = internal organs). Stimulus to the spinal structures and nerves produces reflex responses influencing function in the viscera. (e.g. in the digestive or respiratory systems.)

iii) **Viscerosomatic**. Opposite of the above. (e.g. digestive or respiratory dysfunctions such as colic or asthma, may cause reflex disturbance in the spine leading to muscle tension and joint fixation).

b) These reflexes, which are beyond voluntary control, are purposeful – they are not haphazard, *but exist to regulate function*.

c) They can be altered by spinal dysfunction (subluxation/ fixation). Korr PhD,⁹ did much of the basic clinical research showing that there may be prolonged nerve excitability, or reflex response or barrage, at levels of the spine with movement restriction. This is known as 'facilitation.'

d) Spinal manual care, including techniques of manipulation, mobilization and pressure point, influences spinal reflexes in two ways:

i) Directly, as reflex therapy, similar to acupuncture or electrical stimulation. It introduces a stimulus that produces a reflex response that interferes with and modifies current established reflex activity.

ii) Indirectly, by removing spinal joint and muscle dysfunction that produces abnormal levels of spinal reflex activity, such as facilitation.

To summarize this in the more technical language of Akio Sato MD PhD, a leading researcher from Tokyo:

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Guest Editorial – The Importance of Chiropractic Care for Children

By Nancy Abram DC MD

Dr. Nancy Abram is both a chiropractor and medical doctor who has been in practice in Hamilton, Ontario, Canada since 1980. She sees many children in her family practice, and lectures in pediatrics at the Canadian Memorial Chiropractic College, Toronto.

Traditionally chiropractic care has not held any age boundaries. Chiropractors routinely assess and treat children of all ages. Why? Should this be so, and what is the evidence?

Children are not little adults. They possess their own unique physiology, health problems, and health potential. It is well recognized that to increase the health of a population as a whole major efforts need to be directed to the pediatric population.¹ Chiropractors focus on proper spinal function with a view to treating spinal related problems and promoting overall health and well being. The goal of good spinal health should begin in childhood.

From a biological perspective we know that children's growing spines are subjected to a multitude of forces. Dunne and Clarren, in 'The Origin of Prenatal and Postnatal Deformities,'² discuss how the shape and growth of the musculoskeletal system are determined by a balanced interplay between the intrinsic properties of bone and soft tissue and by extrinsic biomechanical forces.

The three main forces are gravity, muscles pulling on bones and dynamic stress associated with movement. "An imbalance of either the intrinsic or extrinsic factors that shape the musculoskeletal system may result in bony, soft tissue, or joint deformity or combinations" and "increased muscle pull may also lead to joint realignment." Articular cartilage growth may be altered and tendons and ligaments may be stretched by these increased forces and joint realignments.

These forces can begin in utero secondary to extrinsic compressive forces such as increased abdominal tone in the primip, uterine abnormalities, fetal positioning and presentation.

Labour and delivery may further put the infant spine at risk. Human beings, having assumed an erect posture, have produced an extension of the lumbosacral spine which tilts the pelvis anteriorly. In the supine delivery position this is further exaggerated in the gravid female resulting in the pelvic inlet being at an obtuse angle to the spine.

To negotiate the pelvis the presenting part has to undertake an inverted S-shaped pathway. This can place considerable stress on the cervical spine. In addition during a more difficult occiput posterior delivery there is deflexion of the fetal head with the cervical spine acting as a fulcrum.³ Further traumas to the cervical spine may be induced during the delivery process as longitudinal traction and lateral flexion are applied.^{4,5}

The child's spine continues to be subjected to repeated extrinsic forces in the process of learning to walk – repeatedly falling on their bottoms, multitudes of childhood mishaps, sports related injuries and postural strains.

Do children get back pain? The literature has been sparse, and the traditional view has been that they do not. Back pain, it has been thought, is relatively

infrequent and where present usually indicates serious pathology.^{6,7} This data was gathered mainly from tertiary care centres (medical specialist consultations).

However, recent school-based research disagrees. In 1988 Balague et al surveyed 1,715 Swiss school children ages 7–17 and found that 46% had experienced back pain at some time in the past. Of these, 60% reported having pain in the low back or lumbar spine. There was a significant increase noted with increasing age. In addition they found a positive correlation between low back pain and age, female sex, time spent watching TV, smoking and competitive sports. Interestingly only 14% of those who had complaints sought treatment.⁸

Mierau and Cassidy (1984), questioned 403 children and adolescents and found that 22.8% of elementary school children and 33.3% of secondary school children complained of low back pain.⁹

Fairbank (1984),¹⁰ found that of 446 school children aged 13–17 years 26% gave a history of back pain when questioned.

Salminen (1984),¹¹ in his extensive study of postural defects in the adolescent back, found that of 370 school children ages 11, 13, 15, 17, that 19.7% complained of back and/or neck symptoms with girls reporting symptoms more often than boys and the occurrence of symptoms increased with age. Symptoms were most often localized to the low back and were most frequently associated with sitting or physical activities. (See main text for the new American study by Olsen et al.)

Accordingly, back pain of mechanical origin must now be recognized as an important clinical entity in children. Further research needs to be done to look at the children who have back pain and how many go on to experience problems in adulthood. Back pain causes significant morbidity in our society today. It is the most frequent cause of activity

limitation in persons under age 45 years and the third most frequent cause in the 45–64 year old group.¹² Spinal manipulative therapy has been shown to be effective for the treatment of back pain in adults.¹³ Empirically the results have been at least equally good with children. The experience of many chiropractors is that children respond more readily and favourably than adults.

Potentially there is a major role in the area of prevention through the assessment and treatment of children.

Critical assessment of spinal mechanical integrity should be a part of every well child visit, and chiropractors are primary contact spinal specialists with unique training and skills in this context.

In the text 'Health Promotion Throughout the Lifespan,' Edelman and Mandel define two areas of prevention. Primary prevention is "true prevention (which) precedes disease or dysfunction and is applied to a population generally considered both physically and emotionally healthy." Its purpose is "to decrease the vulnerability of the individual or population to illness or dysfunction."¹⁴ Chiropractors have a major role to play with children in the area of spinal health and postural education to enhance quality of life from the time of birth.

Secondary prevention "ranges from providing screening techniques and treating early stages of disease, to limiting disability by avoiding or delaying the consequences of advanced disease. Chiropractic also has a definitive role to play in the pediatric population in the area of secondary prevention – through comprehensive spinal screening and treatment of spinal dysfunction/subluxation to prevent future symptoms and complications.

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Case Report (Abram)

A 3 year old male was referred by his family doctor for chiropractic assessment of persistent painless limp with intoeing of the right leg.

History. He was the first born child, born by caesarian delivery for breach positioning. His birth weight was 9 pounds, 12 ounces. Asymmetry of leg alignment had been noted since birth. As he began to walk/run the parents became aware of the limping gait. The child was otherwise healthy.

Examination. On observation there was obvious intoeing of the right leg which was exacerbated with running. There was no evidence of metatarsus adductus or tibial torsion. Examination of the hips revealed increased internal rotation to 60 degrees on the right and marked limitation of abduction. There was shortening of the right leg with asymmetrical buttock creases. The right ilium was flexed and the right sacroiliac joint was locked.

Xrays of the pelvis and hips were taken to rule out congenital hip dislocation. Normal positioning and architecture of the hips was demonstrated. Flexion of the right ilium was noted.

Manipulation of the pelvis normalized all previously positive examination findings and a normal gait pattern was observed after one treatment.

*"Manipulation performed by chiropractors excites somatic afferent fibers in the musculoskeletal structures of the spine. These afferent excitations may, in turn, provoke reflex responses affecting skeletal muscle, autonomic, hormonal, and immunologic functions. An understanding of spinal reflex physiology is, therefore, fundamental to comprehending the effects of manipulation."*¹⁰

(For a full discussion of reflex physiology and clinical research on reflex function see chapters by Sato and Swensen DC MD PhD in Haldeman's 'Principles and Practice of Chiropractic.'¹⁰)

13. Two further points, commonly misunderstood, are vital to an understanding of chiropractic management of disorders apparently remote from the spine:

a) Specific conditions – such as asthma, colic, lowered resistance to ENT infections – are not the indication for chiropractic treatment. Many children will require medical management at the same time, or instead of, chiropractic care.

The purpose of chiropractic examination is to test for the presence of irregularities in spinal function – in vertebral ranges of motion and/or muscle tension or weakness. Chiropractors call such spinal lesions dysfunction or subluxation. No one seriously challenges that they have much more advanced training and skill in this field than anyone else. To quote the findings of the most thorough government inquiry, "chiropractors carry out spinal diagnosis and therapy at a sophisticated and refined level ... the responsibility for spinal manual therapy training, because of its specialized nature, should lie with the chiropractic profession."¹¹

A wide variety of specific conditions may be an indication for chiropractic examination, but chiropractic treatment is only indicated if spinal dysfunction/subluxation is present.

b) Where present, the spinal problem and its reflex effects are not necessarily the cause, the only cause, or primary cause of the symptoms. There are four possibilities, and chiropractic treatment can be expected to influence an internal disorder in the latter three.

i) The spinal problem is present but playing no significant role.

ii) The spine (locomotor system) is causing referred pain or other symptoms wrongly diagnosed as internal disorders (e.g. some 'colic' in infants).

iii) Visceral/internal dysfunction is causing reflex response in the spine (viscerosomatic reflex), resulting in spinal dysfunction that then amplifies the internal symptoms. (e.g. Breathing difficulties with asthma cause tension and loss of movement in the spine, which responds with somatovisceral reflexes that aggravate the respiratory problem). The spinal problem is a secondary cause. However, it may be important as 'the straw that breaks the camel's back' – the stimulus that makes the body unable to cope with an otherwise insignificant visceral disorder.

iv) The spinal movement dysfunction/fixation, through somatovisceral reflexes, is causing internal dysfunction and symptoms.

These appear to be the rational explanations of the clinical success experienced. The basic science research is now adequate. No one denies that much more clinical research is required, but let us now consider studies already performed.

Infantile Colic

14. 'Infantile colic' is a term used to describe persistent, often violent, crying for no apparent reason in otherwise healthy and thriving young infants. The distressed behaviour is believed to be a reaction to pain.¹² It is different from normal crying because distress does not stop when the infant's physiological needs are met. Colic begins at 1–4 weeks of age and usually ends spontaneously at 3–4 months of age. In the meantime, especially in moderate to severe cases which may involve uncontrollable crying for many hours by day and night every day, it is destructive to both infant and family and is a cause of parental violence to infants.^{13,14}

The source of pain remains unclear. Because of the high incidence of abnormal spinal joint function in colicky infants, and the now demonstrated link between spinal and digestive function through reflexes in the nervous system, chiropractors have postulated that spinal dysfunction/subluxation may be a significant cause of colic.

Figure 2

New Zealand Commission – Two Case Examples

Taken from 'Chiropractic in New Zealand,' Report of the Commission of Inquiry into Chiropractic, Chapter 32, Government Printer, Wellington, New Zealand, 1979.

In presenting these reports, in layperson's language, the Commission expressly discussed the dangers of accepting individual case reports (anecdotal evidence) – reliability of patient testimony, lack of comparison treatment, placebo, natural remission, and wrongful diagnosis.

These were cases judicially investigated by the Commission – with witnesses giving evidence on oath and subject to cross-examination on what they said and the health care records. The Commission concluded that such case reports cannot be decisive in a scientific sense, but comprise important and compelling evidence. (P.152). These are results that must be considered with an open mind, hopefully leading to cooperative chiropractic and medical management and further research.

Case 1 – Mr. R's son (Asthma)

One day Mr. R, a chiropractic patient who had suffered from a serious back problem for which he had obtained relief by chiropractic treatment, told his chiropractor that he was concerned about the condition of his son, not quite 2 years old, who was an asthmatic. The child was under medical specialist care, but he seemed to be getting worse. As Mr. R testified:

"By this time my son had developed a constant wheeze and was losing weight due to his inability to eat the right quantity of food, plus he was finding it very difficult to sleep at night due to the wheezing and shortness of breath."

Mr. R and his wife had to take it in turns sitting with the little boy throughout the night in case the child woke up and needed attention.

The chiropractor suggested that Mr. R bring the child in for examination. He did not promise a cure. Following examination, the chiropractor suggested the child might have had a fall at some time (which was the case) and adjusted the child's neck. Immediately there was a dramatic improvement. Mr. R described it as "miraculous." *"We didn't even get out of the waiting room and his constant wheeze, which was pretty bad, had almost disappeared." On the night of the first treatment the child had his first uninterrupted sleep for some considerable time."*

As we have said, Mr. R was intensively cross-examined, and we therefore had a full opportunity to assess what weight we could place on his evidence. The Commission was most impressed with him. It was clear that his son's instant response to the chiropractic treatment had left a deep impression on him. He did not expect any particular result, and that is why he spontaneously described the result as "miraculous." He was reliving the moment as he told us that.

It was put to Mr. R in cross-examination that his son's asthmatic condition could have relieved itself naturally, and (in effect) that the chiropractic treatment had nothing to do with it. Mr. R rejected that suggestion and so do we; we cannot accept that within minutes of the chiropractic treatment the boy's asthmatic symptoms remitted themselves purely by coincidence. We are driven to find that the major relief the child experienced within that short time was a direct result of the chiropractic treatment he received.

Case 2 – Mrs. D's Daughter (Hearing impairment)

Mrs D told us of chiropractic relief which had been given to her young daughter, who suffered from impaired hearing. Mrs. D and her husband took her to an ear, nose and throat specialist. The specialist thoroughly examined her and recommended surgery. Mrs. D was reluctant to agree to this course, and thought that chiropractic should at least be tried. Mrs D had been to a chiropractor before for a back complaint. She and her husband took the child to the chiropractor who examined her and adjusted her spine in the area of the neck.

Much to Mr. and Mrs D's surprise, the child was able to hear a whisper from across the room the following day. In Mrs D's words, recalling the child's previous condition, "that to me was miraculous." They took the child back to the ear, nose and throat specialist. The specialist tested the child. He found, to his surprise, that her hearing had improved to a level of 100/98. That was a remarkable change. Her hearing had become normal. He asked what the parents had been doing. They told him they had taken the child to the chiropractor and his response, according to Mrs D, was "Of course if you are going to do this sort of thing you might get temporary relief but you will have her back here within 6 months."

Mrs D told us that that prediction had fortunately proved incorrect. Her daughter "is now trained as a nurse and she has no problem. In fact, her hearing is a little bit too good sometimes." We have no reason to think, from seeing and hearing Mrs. D on the witness stand, that she was giving us other than an accurate and unemotional report.

15. Clinical experience of good results has now been confirmed in a multicenter prospective study by Klougart DC, Nilsson DC MD et al¹⁵ in which:

- a) The study population was 316 infants with moderate to severe colic – an average 5.2 hours of persistent crying per day.
- b) Criteria to be met for entry into the study included weight gain of at least 150 grams per week; behaviour during colic including motoric unrest, frequent flexing of the knees towards the abdomen and/or backward bending of the head and trunk; presence upon chiropractic examination of spinal functional disturbance; during colic inability to be comforted by various normal means, including cradling, change of diaper, offer of food or other comfort.

(253 of 569 failed to meet the entry criteria – i.e. precise diagnosis was important).

c) Treatment comprised spinal manual therapy to correct joint dysfunction/subluxation, but actual technique was left to the discretion of each individual chiropractor. As the investigators report, chiropractic treatment of infants follows the same principles as for adults, but with important modifications. Force is greatly decreased, the contact is usually one finger alone, and the adjustive thrust – if performed at all – is very modest. The manipulative ‘crack’ from the release of gas within the joint which usually marks the joint manipulation of adults is very rarely, if ever, heard. Treatment is no more trouble to the infant than basic physical examination.

d) Findings were:

i) Infants had a median age of two weeks at commencement of colic, a median age of 5.7 weeks at beginning of treatment.

ii) Prior to treatment the average time with colic was 5.2 hours per day, average number of episodes 2.5 per day. There was dramatic reduction in hours of colic occurring on the first day of treatment – reduced by more than half to 2.5 hours. There was then a pattern of continuous reduction to an average of 0.65 hours per day on day 14.

Average colic episodes per day were 2.5 at outset, 1.3 after one week, and 0.9 after two weeks.

iii) At 2 weeks, following an average number of 3 treatments, there was a success rate of 94% (colic stopped 60%, improved 34%). Of the balance of 6%, there was no significant change in 4%, and 2% were worse. On assessment at 4 weeks improvement was maintained.

A brief time span of 14 days was chosen so that the influence of spontaneous resolution of colic symptoms could properly be disregarded. (Average age of the infants at 2 week assessment in the study was only 7.7 weeks). There was a dramatic then consistent correlation between course of treatment and recovery. The researchers conclude that “standard chiropractic treatment constitutes an effective treatment of infantile colic.”

Bed wetting

16. Enuresis (bed wetting) is found in 20% of 4–5 year olds, twice as often in males as females, and produces great distress. Causes are unclear. Explanations include behavioural, biological and psychological reasons, and often there will be more than one cause.

There is great diversity in proposed treatments – which include

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periodic waking, fluid restriction, bell and pad, dry bed training, psychotherapy, hypnotherapy and chemotherapy. None is supported by substantial research.

Chiropractic claims of successful treatment of enuresis with spinal manipulation have been subjected to study by LeBoeuf DC et al¹⁶ in Australia:

a) The study population was 171 children between the ages of 4 and 15 who had no neurological pathology, a history of persistent bed wetting at night, and relevant spinal dysfunction/subluxation.

b) Treatment comprised chiropractic adjustment/manipulation. Parents did not change their approach at home (e.g. no reduced fluid intake) or use other concurrent therapies. They kept a diary of wet nights.

c) Over the study period and approximately eight treatment (exact duration and frequency are not reported):

i) The median number of wet nights fell from 7.0 per week (i.e. daily) to 4.0, which was statistically significant.

ii) 15.5% of children were ‘dry’ (1 wet night per week maximum) at the end of the study, and 25% were classified as successes.

d) Overall this represents moderate success only. It is marginally better than psychotherapy (10%) and periodic waking (11%), but less than some reports of bell and pad and dry bed training methods.¹⁷ Results suggest that spinal dysfunction may be a significant factor in some cases but not others, and that several factors contribute.

There are a number of limitations with the study. Firstly it was performed by chiropractic students in a college clinic environment, rather than by qualified practitioners in practice. Secondly it isolated and studied manual treatment alone – in chiropractic practice this is integrated with approaches such as fluid restriction, periodic waking and counselling in acknowledgement that most cases of enuresis involve a number of factors.

Tonsillitis

17. The above two studies are by chiropractors. Lewit, a neurologist who practises manual medicine, writes at length about ‘vertebrovisceral correlations’ in his recent text and describes a study¹⁸ performed by him after he had been “struck by the high incidence of chronic relapsing tonsillitis” amongst children he had examined for spinal disturbances.

a) The study comprised 76 children with chronic tonsillitis under the care of a throat specialist for whom “the most striking and constant clinical finding was movement restriction at the craniocervical junction” (i.e. in the top few cervical vertebrae beneath the skull). “70 of 76 children had dysfunction between the occiput and atlas.”

b) 25 of the children with upper cervical dysfunction had their tonsils removed by operation. 19 of these (76%) still suffered from movement restriction, which was later treated by manipulation. (i.e. In these cases spinal dysfunction persisted after the tonsils were gone).

c) 37 children were given manipulation, with results reviewed or followed up for five years. Of these 25 (67.6%) were cured of tonsillitis – with 18 there were no future problems at all, with 7 a relapse of movement restriction that required a later short course of manipulation.

d) Lewit concludes from his study: “... tonsillitis goes hand in hand with movement restriction in the craniocervical junction ... with little tendency to spontaneous recovery (and) with the danger of

Figure 3

Case Report – Lowered Resistance

From Gutmann, Gutmann G, ‘The Atlas Fixation Syndrome in the Baby and Infant,’ *Manuelle Medizin* 1987 25:5-10, Trans. Peters RE.

History: 18 month boy, normal birth. Early, recurring tonsillitis, frequent enteritis, therapy resistive conjunctivitis. The infant suffered often with colds, rhinitis, earache, and increasing sleeping problems. The infant was unable to remain in the sleeping position for prolonged periods and screamed during the night. One could not touch its neck without triggering marked defensive movements and screams apparently due to pain. As a baby he had fallen off the changing table several times, including a fortnight before the first fit.

Manual and radiological examination: Straightened cervical spine with kyphosis between C2 and C3. Atlas fixation with ventral flexion position and right lateral shirt movement.

Treatment: First manual thrust treatment of atlas. Immediately thereafter the child demanded to be put to bed and for the first time slept peacefully to the next morning. Previously disturbed appetite normalised completely. It was noted that the infant could run more securely and did not fall as frequently, which previously had been thought of as unchangeable impairment. Conjunctivitis cleared completely.

continued on page 6

permanently disturbed function in one of the most sensitive regions of the locomotor system. Our experience suggests that blockage at this level increases the susceptibility to recurrent tonsillitis."

D. Details of Management

18. Details of management are discussed in chiropractic texts, such as Swensen's chapter 'Pediatric Disorders' in Lawrence's 'Fundamentals of Chiropractic Diagnosis and Management.'¹⁹ For back pain, flexion headache and other musculoskeletal pain treatment is similar to that of adults, though with appropriately modified technique and reduced force. Basic points made by Swensen and others with respect to management of functional disorders separate from the spine except for linkage through the nervous system, are:

- a) With children there needs to be a particular accent on careful diagnosis to identify those requiring referral for medical care.
- For example 10% of children with sore throat (pharyngitis) and tonsillitis have streptococcal infections. These obviously require medical management, including use of antibiotics.
- b) Where feasible, as is increasingly the case, there should be cooperative chiropractic and medical management. For example, pediatricians agree that 90% of children with sore throats should not receive prescription drugs or surgery – they require conservative treatment.¹⁹ Lewit, above, illustrates the important role of chiropractic in such conservative care. However, there may be more than one cause. The patient's interest will be best served if chiropractic and medical doctors cooperate and acknowledge their complementary skills and different scopes of practice.
- c) Chiropractic management should frequently involve a number of complementary treatment approaches.

With pharyngitis, for example, Swensen suggests light adjustment/manipulation to areas of joint movement restriction commonly in the cervical spine, soft tissue manipulation to relax paravertebral muscle and drain lymphatic fluid mechanically, lymphatic pump, and home instruction (e.g. gargling with sodium chloride salt solution, use of humidifier, keeping the neck warm, etc.).

E. Conclusion

19. Current research suggests that spinal health is particularly important for children. This applies from infancy, and extends far

beyond back pain to prevention and general health. The fact that chiropractic management is conservative and safe, making no use of drug therapy or surgery, will be attractive to many parents.

In short it is often sensible to have children under both chiropractic and medical care. Parents should seek professionals who are able to admit their limitations, cooperate with each other, and place the interests of their mutual patients first.

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Professional Notes: *continued from page 1*

The AAOM was formed in 1983 for MDs and DOs with an interest in orthopedic medicine, principally injection techniques, including prolotherapy, and manual therapy. MDs and DOs are full members. PTs are affiliate members without vote.

There are currently about 350 members and, according to executive members there is "ongoing debate" on whether membership should be opened to chiropractors. AAOM members have been active in development of the first interdisciplinary world congress on 'Low Back Pain and the Sacroiliac Joint,' San Diego Convention Center, California, November 5-6, 1992 which has chiropractors on the program. (For further information on this meeting call in *North America*: Office of Continuing Education, University of California, San Diego School of Medicine, Tel: (619) 534-3940, Fax (619) 534-7672. In *Europe*: European Conference Organizers, POB 25327, 3001 HH Rotterdam, The Netherlands, Tel: 31-0-10-4133287, Fax: 31-0-10-4147988).

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Journal of Orthopedic Medicine

Following the recent closure of Springer-Verlag's Journal of Manual Medicine for lack of medical support, the Journal of Orthopedic Medicine becomes the only publication in English by the medical profession devoted to manual or orthopedic medicine.

It is the joint publication of the AAOM and its two equivalent organizations in the United Kingdom – the Institute of Orthopedic Medicine (for MDs) and the Society of Orthopedic Medicine (for PTs). The Journal is edited and produced by Richard Ellis MD, Department of Rehabilitation, Salisbury General Infirmary, Salisbury, England.