The Chiropractic Report

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Professional Notes

Interexaminer Reliability – Leg Length Analysis

A new study from Holt, Russell et al. from the New Zealand College of Chiropractic illustrates how much training is necessary for skilful practice in the manual assessment and treatment of patients.

This was research into the reliability of functional leg length analysis by quick visual leg check as commonly used in chiropractic practice. Points are:

• 50 adult participants were checked for leg length inequality (LLI) in the prone straight leg and flexed knee positions by each of an experienced chiropractor (7 years fulltime practice routinely using the procedures on examination) and a final year student. Notably both had eight 45 minute combined training sessions, "spread over 16 weeks to allow the student examiner to practice the procedure when seeing patients".

• The study reports "good interexaminer reliability on all aspects of the leg length analysis protocol." Note however that "up until training session 5 agreement was

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Chiropractic Management of Children and Infants

A. Introduction

"WE STARTED SEEING DR. Hewitt about two months ago and my son has been transformed. In addition to helping with the torticollis, he is the happiest baby ever. He sleeps through the night, doesn't thrust his tongue, takes a bottle like a pro, hardly cries and smiles all the time. My only regret is that we didn't see Dr. Hewitt as soon as we were discharged from the hospital."

The above comment is from the mother of Carl (name changed to protect identity), a five-month-old twin referred by a physical therapist for chiropractic care for torticollis (wryneck or twisted neck) and plagiocephaly (flattening of the skull). Further problems found by chiropractic pediatric specialist Dr. Elise Hewitt of Portland, Oregon when she took the history were poor sleep, difficulty sucking from the bottle and severe irritability ("…my son always cried…never smiled and was generally unhappy all the time.").

Significant history included in utero constraint (Carl was lodged under his twin brother during pregnancy), birth by Caesarean section and 2 weeks in intensive care for dis-coordination of suck-swallow-breathing reflex.

Physical therapy starting at 6 weeks led to slight improvement in the torticollis. Chiropractic care was spinal adjustment/manipulation and craniosacral therapy twice weekly for 3 weeks and then 5 times over a 6 week period. Following treatment the head tilt was resolved and there was marked improvement in demeanour, ability to suck and sleep.

Carl's mother, like countless other parents of infants and children greatly assisted by chiropractic care, would not be impressed by critics who claim that such care is inappropriate because it is not yet proven effective by randomized controlled trials. Neither are most medical and other healthcare interventions – including the physical therapy that was the first treatment given to Carl.

Because there is much misunderstanding of chiropractic care of infants and children this issue of the Report provides a summary overview. We look at education, research and clinical practice – from uncontroversial areas such as treatment of back and neck pain in adolescents to areas less understood such as functional problems in newborn infants, management of children with asthma and ear infections, management of autistic and other special needs children and preventive care.

One incentive for addressing this subject now is the strident criticism of chiropractic pediatric care in the media in the United Kingdom at present. In an article in The Guardian newspaper during Chiropractic Awareness Week last year, an event sponsored by the British Chiropractic Association (BCA), science writer and journalist Simon Singh wrote: "The British Chiropractic Association claims that their members can help treat children with colic, sleeping and feeding problems, frequent ear infections, asthma and prolonged crying, even though there is not a jot of evidence. This organisation is the respectable face of the chiropractic profession and yet it happily promotes bogus treatments."

The BCA, accused of being deliberately dishonest, sued for libel and won in a High Court ruling on May 7, 2009. Many in the media have come to Singh's defence. This report will explain why the above mentioned claims of the BCA are legitimate, important for parents to hear, and supported by much more than a jot of evidence

Main Article *continued from page 1*

B. Education

2. All chiropractic colleges have courses in pediatrics in their core four to five year chiropractic degree program. These recognize the fact that children and infants are not just little adults. They have their own unique physiology, neuromusculoskeletal function, health problems and health potential. Many aspects of management, including manual assessment and treatment, require modification from techniques used for adult care.

Accordingly, all chiropractors are qualified to provide pediatric care. However, as in many other areas such as nutrition, orthopedics, radiology, rehabilitation and sports chiropractic, there is chiropractic post-graduate specialty training in pediatrics. Three levels exist:

a) **Certificate programs** – one year. These courses are given by professional organizations such as the International College of Chiropractic Pediatrics (ICCP) and the International Chiropractic Pediatric Association (ICPA), both based in the USA. The certificate programs are sometimes the first year of longer programs, such as:

b) **Diplomate programs**. These may be part-time two year programs (e.g. the ICCP program leading to a Diplomate in Clinical Chiropractic Pediatrics or DICCP) or three year programs (e.g. the 360-hour program given by post-graduate departments of chiropractic colleges – these typically have annual and final examinations after which candidates are eligible to sit the DICCP board exam – for details see http://icapediatrics.com/members-postgrad.php.

c) **Masters degree programs**. These are three to four year programs such as, for example, the Masters of Science in Advanced Professional Practice (Chiropractic Paediatrics) offered by the Anglo-European College of Chiropractic in Bournemouth, England (students receive a certificate after one year, a diploma after two years then finally a Masters degree – for details see www.aecc.ac.uk.)

3. Resources include both medical and chiropractic texts, leading chiropractic text books being *Chiropractic Pediatrics: A Clinical Handbook* by Australian Dr. Neil Davies[1] and *Pediatric Chiropractic* by Americans Dr. Claudia Anrig and Dr. Greg Plaugher [2]. A new text *Pediatric Integrative Medicine* edited by Andrew Weil MD of the University of Arizona and to be published in August includes a chapter *Pediatric Chiropractic* by Erickson and Hewitt[3] and discusses the clinical rationale for chiropractic treatment, frequency and duration of care, and the research evidence.

Continuing education is provided by professional organizations such as the Council on Chiropractic Pediatrics of each of the American Chiropractic Association (www.acapedscouncil.org) and the International Chiropractors' Association (www.capediatrics.com), and the ICPA (www.icpa4kids.org).

This year the ACA Council's Annual Symposium, to be held in St. Louis October 30 to November 1, comprises 12 hours in topics that include spinal adjusting, pediatric nutrition, pediatric radiology and an update on pediatric research (http://www.acatoday.org/Symposium/index.shtml)

Most large chiropractic conventions include pediatric lectures. At this year's World Federation of Chiropractic Congress in Montreal in May, Heiner Biedermann MD, a manual medicine expert from Cologne, Germany, and Jeanne Ohm DC, a chiropractic pediatric expert from the USA, presented lectures and then a joint technique workshop on manual examination and treatment of infants and young children.

C. Rationale for Chiropractic Care

4. The basis for chiropractic care, whatever the specific problems or conditions presented, is assessment and correction of restricted function in the spine and neuromusculoskeletal system. This central chiropractic clinical perspective is supported by advice on nutrition, posture, exercise and other aspects of daily living. In Carl's case, mentioned at the beginning, a newborn baby had asymmetrical development of the skull. This was a visible *structural* problem. But what caused it, how could it be corrected? A chiropractor looked for an underlining *functional* cause in the cervical spine. When that was corrected so was the *structural* problem.

A generation ago the German manual medicine specialist Gutmann reported the same thing – see the case report in Figure 1. Examined medically from a structural perspective the infant was seen to have asymmetrical development of the skull and face, and a corrective plaster cast was offered. Examined by Gutmann from a functional perspective – then and now rare in medical practice but the essence of chiropractic practice – spinal manipulation for joint fixation/dysfunction was offered and quickly solved the problem.

Biedermann, just mentioned as a speaker at the WFC Congress and also a manual medicine specialist from Germany, spoke specifically on *How the Functional Pathology of the Vertebral Spine Influences the Morphological Development in Children* and gave a similar example in his lecture notes:

"Even for professionals it is sometimes amazing to observe just how quickly a skull asymmetry can develop if the toddler cannot move its head freely. In a matter of weeks a flattened occipital region develops, often further accentuated by local loss of hair. In many cases the diagonal side of the face undergoes a similar reduction…

These morphological signs are often

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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 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.

interpreted as stand-alone problems and their functional base is questioned. A morphological finding is treated by morphological means, i.e. an orthesis to push the head into the desired symmetry. In the best case this superficial approach gets rid of the symptom of asymmetry without resolving the underlying functional problem; in the worst case additional stress is added to an already irritated structure".

"In any case the clinically relevant problem is not the – very visible - facial or cranial asymmetry but the impeded mobility of the upper cervical spine. A child with a unilaterally decreased range of movement has a high risk to encounter problems in various other areas not obviously connected with the cervical spine. As always morphology is more easily measured than function. This is one reason why the over-interpretation of morphological findings is more 'popular' – without being more effective"[4].

To summarize, the rationale for chiropractic management, for pediatric as for adult patients and whether for prevention or treatment of symptoms, is disturbed *function* in the neuromusculoskeletal system.

Take, for example, a young child with recurring ear infections (otitis media). Chiropractic treatment will not directly address a present infection, which may need to be resolved with antibiotics. However, it may address the root cause and prevent further infection and surgical intervention. Biedermann, offering a perspective which is exactly that of the chiropractic profession, observes:

"We no longer treat 'otitis media' with cervical manipulation but explain why an impaired function of the occipital/cervical junction irritates the autonomous regulation of the nasal passage and lowers the tonus of the oro-facial area, thus being the structural reason for the otitis observed. So the diagnosis in these cases is kinematic imbalances due to suboccipital strain, with fixed retroflexion of the head, mouth breathing and secondary otitis [4].

D. Scope of Practice

5. **Back Pain**. Since studies in Europe and North-America in the 1980s it has been clear that the initial onset of back pain is common in youth, with approximately 1 in 3 (27-33%) of teenagers having a history of back pain, and with a markedly accelerating incidence of low-back pain from about age 10. [5 6 7 8] As reported in the American Journal of Public Health back pain commences early in youth, "increases dramatically during the teenage years", and by adolescence "is a serious public health problem."[5]

In a study by Canadian chiropractors Mierau, Cassidy et al. and involving all pupils at one elementary school and one secondary school in Saskatchewan:

- 33.3% (45 of 135) of secondary school pupils (ages 12-17) had a history of low- back pain
- 22.8% (61 of 268) of elementary school pupils (ages 6-12) did also.

Mierau, Cassidy et al. also tested for the number of students who had sacroiliac dysfunction (lack of motion in the sacroiliac joint) since a number of studies had suggested that this is a common cause of low-back pain. Results were:

- Frequency of SI dysfunction was 29.9% in the elementary school pupils and 41.5% for secondary school pupils
- 83.1% of students with a history of low-back pain tested positive for SI dysfunction

Although most of the research has involved adult populations there is now good evidence that skilled spinal manipulation is effective for most patients with acute and chronic back pain, and this treatment approach is recommended in interdisciplinary and medical clinical guidelines.[9 10] Dr. Nancy Abram, a Canadian chiropractor and medical doctor writing in a previous issue of this Report, explains that in practice the results of spinal manipulative therapy for back pain have been "at least equally good with children" as with adults and in fact that…"children respond more readily and favourably than adults". Further, there is a major role for chiropractic care "in the area of prevention…critical assessment of spinal-mechanical integrity should be a part of every well child visit."[11]

6. **Leg Length Imbalance and Limping**. Dr. Abram gives the following example from her practice:

- 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 Caesarean delivery for breech 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 archi-

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Interexaminer Reliability – Leg Length Analysis

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often no better than chance between examiners," particularly for the prone flexed knee position. This illustrates why MDs and others should not expect to acquire manual therapy examination and treatment skills in short-term postgraduate courses.

This paper also provides a good description of leg length analysis and past research into examiner reliability. Note, however, that it acknowledges that functional LLI is still somewhat controversial and that "the challenge of demonstrating clinical usefulness of the procedure remains."

(Holt KR, Russell DG et al. (2009) Interexaminer Reliability of A Leg Length Analysis Procedure Among Novice and Experienced Practitioners, J Manipulative Physiol Ther 32:216-222).

Other Research Notes

1. **Australia and US – MD Treatment of LBP Under Attack**

Two recent papers in *Spine*, one from Australia and one from the US, challenge the quality of medical management of patients with low-back pain in general practice – reporting management that is inconsistent with best evidence and guidelines. The first reports surveys of 3830 general practitioners (GPs) in the states of Victoria and New South Wales in Australia. Interestingly, GPs who claim to have "a special interest in LBP" were more likely to believe that complete bed rest and avoidance of work is appropriate for acute low-back pain" and that "lumbar spine radiographs are useful."

As Buchbinder et al. point out, this is "despite increasing evidence that positive advice to stay active and continue or resume ordinary activities is more effective than rest" and despite evidence that "early investigation and specialist referral are unwarranted in the majority of cases." Noteworthy quotes include:

- "Back pain is the most common musculoskeletal reason for visiting the general practitioner" in Australia.
- "A self-reported special interest in LBP among general practitioners participating in this study was associated with back pain management beliefs that are contrary to the best available evidence . . . Taken together, these results provide strong evidence that poorer beliefs about management of back pain is driven by a special interest in LBP. These findings raise serious concerns about how back pain is currently being managed among general practitioners and those with a special interest in LBP".

(Buchbinder R, Staples M, Jolley D (2009) *Doctors With a Special Interest in Back Pain Have Poorer Knowledge About How to Treat Back Pain*, Spine 34(11):1218-1226)

The second study is from renowned American researchers Carey et al. from the University of North Carolina, Chapel Hill. It is titled *A Long Way to Go* to reflect its finding that there is much inappropriate care of patients with chronic LBP in the US. Points are:

This was a telephone survey of 732 non-institutionalized adults 21 years and older with chronic LBP – on average for 10 years. Chronic pain was defined as "symptoms lasting greater than three months or over 24 separate episodes of back or neck pain in the previous year" and the pain had to be "sufficiently impairing so as to interfere with the respondent's usual daily activities."

590 individuals sought care during the past year with most (76%) seeing a primary care MD, almost half seeing a orthopaedic or neurologic surgeon (42%) and approximately 3 in 10 seeing either a physical therapist (29.7%) or a doctor of chiropractic (26.9%).

Overall provider use and visits during the past year were described as "extremely common" – averaging 2.7 provider types per year and 21.2 visits.

Although these patients had had chronic LBP for many years, in the past year 36% received CT or MRI scans, and half of those (52%) received a second advanced imaging test within the year. Carey et al. conclude that tests and treatments given "often do not reflect the best evidence for effective treatment of this chronic and disabling condition." Treatments such as muscle relaxants, advanced imaging studies and physical methods such as traction, TENS units and corsets "seem to be substantially over-utilized". Similarly "we found very high utilization of narcotics."

However, some evidence-based treatments were clearly underutilized – examples given are exercise and depression treatment. From two questions asked 54% or over half of the patients had "a positive depression screen" and of those only 12% saw a psychiatrist or a psychologist and only 38% were taking antidepressant medications.

Carey et al. consider this study can be generalized from North Carolina to the US, and conclude that "concerted efforts by professional groups, insurers and health policy makers are needed to substantially change treatment patterns which currently result in poor distribution of healthcare resources for this common and disabling illness."

(Carey TD, Freburger, et al. (2009) *A Long Way to Go: Practice Patterns and Evidence in Chronic Low Back Pain Care,* Spine 34(7)):718-724).

2. **US – Predictors of Pain Improvement and Cost for LBP**

This new study by health economists and others looks at predictors of pain improvement and cost in each of medical and chiropractic management in patients with acute or chronic mechanical low-back pain. It is based upon a large sample – 2,872 patients attending practices of 111 primary care MDs and 60 DCs in Oregon during 1994-1996. Pain improvement and cost were assessed 3 months and 12 months after commencement of care.

Main predictors of pain improvement for both MD and DC patients were severity of baseline pain (single most important factor), pain radiating below the knee, physical health, and LBP chronicity. Similar clinical factors were also predictors of cost - for MDs pain below the knee and chronic LBP with co-morbidity, for DCs baseline severity of pain.

However, the most important predictor of cost for both MD care and DC care was availability of workers' compensation and/or other insurance. One can expect third party payors to notice

this. On the other hand Sharma et al. agree with earlier research that "it is unlikely that complementary and alternative medicine, including chiropractic, coverage has contributed substantially to the overall growth of national healthcare spending for LBP."

(Sharma R, Haas M, Stano M et al. (2009) *Determinants of Costs and Pain Improvement for Medical and Chiropractic Care of Low Back Pain*, J Manipulative Physiol Ther 32:252-261.)

World Notes (*Source: World Federation of Chiropractic*)

France: Dr. Philippe Fleuriau, President, Association française de chiropratique (AFC) reports that there are now 500 chiropractors in France and 511 students attending France's chiropractic college, l'Institut Franco-Européen de Chiropratique (IFEC), which has campuses in Paris and Toulouse.

This year marks the 25th anniversary of IFEC, 156 students are due to graduate, and this will bring the total number of IFEC graduates to 441.

The practice of chiropractic is recognized by law in France but not yet fully regulated—the AFC anticipates that the fully regulatory system will be in place by the end of the year.

Malaysia: Malaysian Chiropractic Association President, Dr. Vishwadeep Singh Sandhu and colleagues hosted the Asia Pacific Chiropractic Doctors' Federation Assembly in Kuala Lumpur on February 27, 2009—attended by delegates from Australia, Japan, Indonesia, Malaysia, the Philippines and Singapore. For some years there have been plans to establish a chiropractic school in Malaysia which, with Singapore, is one of the most stable countries in Southeast Asia in political and economic terms.

At present the only chiropractic schools accredited or applying for accreditation in Asia are in Japan (2) and South Korea. Present at the APCDF Assembly and reporting on a proposed school was Dr. Michael Haneline, formerly of Palmer Chiropractic College West in San Jose, California. He is leading development of the proposed course at the International Medical University at Bukit Jilil, which offers a wide range of health courses. Students will take a five year course (four years plus a one year clinical internship) leading to a BChiro degree and will receive much of their clinical training in IMU's teaching hospitals. IMU will seek to have the program accredited by CCE Australasia.

Netherlands: Sidney Rubinstein, DC PhD, a graduate of the Los Angeles College of Chiropractic, won the NCMIC Group's prestigious *Jerry McAndrews Memorial Research Award* at the annual Association of Chiropractic Colleges Research Agenda Conference meeting in Las Vegas in February. Criteria for the award include both quality and relevance to clinical practice. Dr. Rubinstein, from the Institute for Research and Extramural Medicine, VU University Medical Centre, Amsterdam, received the award for his ongoing work relative to adverse events following chiropractic care to the cervical spine. His most recently published paper in this field reviewed benefits and risks (July/August 2008, JMPT). In Las Vegas he presented results from a new survey of chiropractic practices in the Netherlands—this reported quite common, minor self-limiting adverse events but no serious ones, and is to be published in JMPT in due course.

New Zealand: Now that there is an established school in New Zealand, the profession is growing more rapidly. Currently there are 385 chiropractors in practice serving a population of four million, and New Zealand Chiropractic College President Dr. Brian Kelly advises that there are 83 students in the first year class at the school's larger new premises in Auckland. It is now 30 years since the famous New Zealand Commission of Inquiry into Chiropractic reported in 1979. This anniversary was celebrated at the NZ Chiropractors' Association Annual Convention in Auckland in May. It will also be one focal point of the annual meeting of the World Congress of Chiropractic Students, being held this year at the NZ Chiropractic College from August 20-25.

Philippines: Dr. Martin Camara of Manila, who was Medical Co-chair of the Philippines Olympic team in Beijing last year, has been appointed a member of the National Olympic Committee. Since 2006 he has also served on the Philippine Institute of Traditional and Alternative Health Care (PITAHC), a government agency preparing for formal recognition and regulation of a number of complementary healthcare professions including chiropractic.

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2 Anrig C, Plaugher G eds.(1998) *Pediatric Chiropractic* Williams and Wilkins, Baltimore MD.

3 Erickson K, Hewitt E, et al. (2009) *Pediatric Chiropractic* Chapter in Weil, A. *Pediatric Integrative Medicine*, Oxford University Press, Oxford. In press - publication date August.

4 Biedermann H (2009) *Phase Transitions: How the Functional Pathology of the Vertebral Spine Influences the Morphological Development of Children*, in proceedings of World Federation Chiropractic's 10th Biennial Conference, 18-21.

5 Olsen TL, Anderson RL et al. (1992) *The Epidemiology of Low-Back Pain in an Adolescent Population* Am J Public Health 82:606-608.

6 Mierau DL, Cassidy JD et al. (1984) *Sacroiliac Joint Dysfunction and Low-Back Pain in School Aged Children* J Manipulative Physiol Ther 7 (2):81-84.

7 Fairbanks J, Pynsent PB et al. (1984) *Influence of Anthropometric Factors and Joint Laxity in the Incidence of Adolescent Bank Pain* Spine 9:461-464.

8 Balague T, Dutoit G et al. (1988) *Low-Back Pain in Schoolchildren: An Epidemiological Study* Scand J Rehab Med 20:175-179.

9 Chou R, Qaseem A et al. (2007) *Diagnosis and Treatment of Low-Back Pain: A Joint Clinical Practice Guideline from the American College of Physicians and the American Pain Society*, Annals Int Med 147 (7): 478-491.

10 See European Guidelines for the Management of Acute and Chronic Low-back Pain at www.backpaineurope.org.

11 Abram N (1992) *The Importance of Chiropractic Care for Children*, in The Chiropractic Report 6(5): July 1992.

12 Gotlib A, Rupert R (2008) *Chiropractic Manipulation in Pediatric Health Conditions – An Updated Systematic Review* Chiropractic & Osteopathy 16(11): doi:10.1186/1746-1340-16-11.

13 Hawk C, Khorson R, Lisi A, et al. (2007) *Chiropractic Care for Nonmusculoskeletal Conditions: A Systematic Review with Implications for Whole Systems Research* J Alt Comp Med. 13(5): 491-512.

14 Wiberg JMM, Nordsteen J and Nilsson N (1999) *The Short-term Effect of Spinal Manipulation in the Treatment of Infantile Colic: A Randomized Controlled Trial with a Blinded Observer*. J Manipulative Physiol Ther 22:517-522.

15 Personal communication from Niels Nilsson DC, MD, PhD, December 1999

tecture 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.

7. **Infants and young children**. Dr. Elise Hewitt of Portland, Oregon, who currently serves as President of the American Chiropractic Association Pediatric Council, has a fulltime pediatric practice. Referrals come from nurses (including those specially trained as lactation consultants to help mothers with nursing problems – every hospital in Oregon has such consultants), pediatricians, other doctors of chiropractic, physical therapists, occupational therapists, naturopaths and midwives. Most common presenting complaints for her in 2007, in descending order from most common, were nursing dysfunction, wellness check-up, poor sleep, colic/irritability, torticollis/head tilt, birth trauma/intrauterine constraint, reflux, otitis media, and digestive issues.

See Figure 2 for case examples from her practise. These illustrate some of the typical pediatric cases seen by chiropractors and results achieved.

8. **Special Needs Children**. There is a long history of anecdotal evidence that chiropractic care, as part of an interdisciplinary team approach, can help children with special needs to live healthier and more productive lives. Such children are seldom seen in standard private practice – care is typically given in special centers, often on a complimentary basis. In the USA there are two centers that specialize in providing chiropractic and integrated care for children with severe disabilities – Oklahaven (www.chiropractic4kids.com) and the Kentuckiana Children's Center (www.kentuckiana.org). The mission of Kentuckiana, founded by Dr. Lorraine Golden in 1957, is to improve the lives of children through a foundation for healing providing integrative chiropractic care. Dr. Golden's vision, shared by current director Dr. Sharon Vallone, is "to make it possible for members of many healing arts to work harmoniously together with mutual respect for each other…extending their full and free cooperation for the welfare of special needs children". For an example of the type of care given at Kentuckiana see the case of an autistic child we will call Blake in Figure 3.

E. Research

9. Up to June 2007 there were 8 randomized controlled trials (RCTs) of chiropractic manipulation and/or chiropractic care for infants and children (asthma (2) enuresis (2) infantile colic (2) otitis media, jetlag), 3 observational studies (breastfeeding difficulties and autistic children), 177 descriptive studies/case reports and 31 conference abstracts (many conditions).

Although much of this research reports promising results in terms of both safety and effectiveness, most of the evidence comprises clinical experience and case reports rather than controlled observational and experimental research, and is therefore not scientifically strong. The RCTs are small, and mainly pilot studies. Therefore:

• Chiropractic researchers Gotlieb and Rupert, in a systematic review of this research, conclude that there is still only a low level of scientific evidence supporting the specific intervention of chiropractic manipulation for pediatric health conditions.[12]

• Hawk, Khorsan, Lisi et al., in a systematic review looking at

Figure 2: Case Examples

Dr. Elise Hewitt with patient

A. **Michael**: 2-month-old, referred by paediatrician and lactation consultant for decreased unilateral head rotation, nursing dysfunction (screamed when put on tummy "as if in severe discomfort")

Significant history: born via Caesarean section due to breech malposition. *Treatment*: treated with spinal adjusting and craniosacral therapy 5 times over a three week period. *Results*: at the end of the treatment period, head rotation was bilaterally symmetrical, nursing was efficient and pain-free for mother, and baby was able to lie prone with no discomfort.

Quote from mom: "After the first session, we noticed a difference right away – that same day Michael was squealing with joy and smiles when we put him on his stomach…Our nursing difficulties also improved…and he was soon able to look to both sides more easily. Each session with Dr. Hewitt was gentle and soothing to him, and Michael seemed to enjoy the adjustments as they were happening (he slept through half of the first session it was so gentle)."

B. **Libby**: 8-year-old, referred by mother's friend (a nurse) for 2-year history of chronic severe constipation, gastric reflux, abdominal pain and weight loss; also poor sleep, irritability, and multiple missed school days.

Significant history: had been to see head of gastroenterology at the Oregon Health Sciences University, taking laxatives and reflux medications at time of first visit. *Treatment*: treated with spinal adjusting, cranioasacral therapy and probiotics 7 times over a nine week period. *Result*: At end of treatment period, constipation had completely resolved, there was significant weight gain (return to normal weight) and significant improvement in demeanor and sleep.

Quote from mom: "Immediately (after the chiropractic treatment) the pain started getting better. After several visits, Libby was off all her laxatives and reflux meds. She began having normal bowel movements for the first time in two years. She gained 5 pounds in a month. She began to sleep. She returned to her bouncy, goofy self."

C. **Sally**: 5-year-old, referred by pediatrician (when asked for chiropractic referral by mother; in other words, not a spontaneous referral) for marked speech delay (skipped words, mixed up pronouns, poor enunciation, etc.) and obsessive thumb suck in autistic child.

Significant history: already receiving OT, weekly speech therapy and under care of naturopath. *Treatment*: treated with spinal adjusting and craniosacral therapy six times over an eight week period. *Result*: at end of treatment period, significant improvements in speech, significantly decreased drive to suck thumb, improved bowels and demeanor.

Quote from mom: "Sally went to bed early and slept very well. She woke up feeling great! She has been in a good mood all day and her language has improved! We had a whole conversation this morning about her favourite things…She has been playing "tea party" with her older sister and they are putting together a "play" for my birthday! Also, something got freed up in her bowels and she had a major movement today and then proceeded to tell us how much better she felt! I didn't know what to expect at our appointment but I was very, very impressed by it all"!

Figure 3: Kentuckiana Children's Centre – Blake's case

Blake was a 3-year-old male seen at Kentuckiana Children's Center (KCC). He had been diagnosed with autism by a developmental pediatrician. He was nonverbal, had global hypotonia, poor eye contact, delayed fine motor skills, oral defensiveness and chronic diarrhea as well as demonstrating frequent head banging (frustration) and "stimming" (excitability). He was being medicated daily with medications to assist his pulmonary and digestive systems as well as to prevent night-time seizure activity.

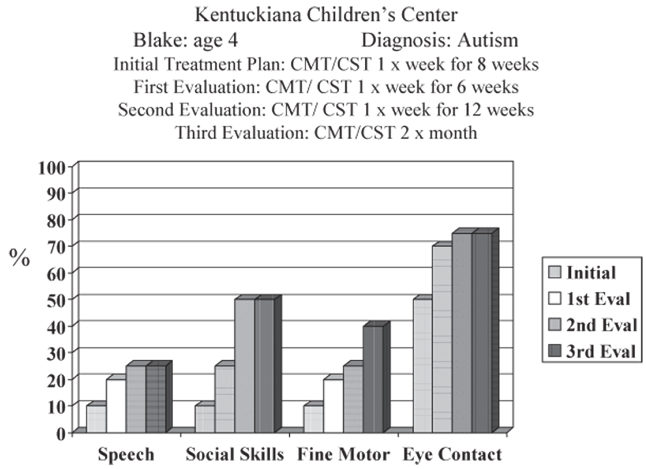
Blake's mother had an unremarkable pregnancy. She received a flu vaccine and antibiotics during her pregnancy (+ Strep B). Blake had mild jaundice after birth and was breastfed for five months with formula supplementation. His developmental milestones were on track although he failed to develop cross crawl patterns. He had had several ear infections treated with antibiotics and tympanostomy. He was diagnosed with reflux at 10 months. Blake had been developing neurotypically until the age of 16 months at which time he received routine vaccinations (MMR, 16 months and DTaP, 18 months). After the MMR, Blake experienced a progressive regression in expressive language. 30 hours after receiving the DTaP, he was hospitalized for three days in the intensive care unit for respiratory distress. Blake gradually lost fine motor and social skills and began to present with the typical attributes of autism.

Blake was referred to KCC for an evaluation and recommendations for treatment by his occupational therapist. Findings gathered through a complete history and review of records as well as physical and chiropractic exam indicated the need for further biomedical testing (i.e. food allergies (IgG), heavy metal toxicity, organic acids, etc). Chiropractic analysis revealed both cranial faults (frontal, occipital, parietal and temporal) and spinal subluxation (C5, sacrum).

After his initial examination, the care instituted at Kentuckiana Children's Center was planned by Dr. Rebekah Wittman and staff in conjunction with Blake's health care team which consisted of his pediatrician (gastroenterologist, allergist, neurologist), his occupational therapist, speech and language pathologist and an ABA therapist (Applied Behavioral Analysis). His treatment plan at KCC complemented his previous care plan by adding chiropractic manipulative therapy (CMT), craniosacral therapy, nutritional counseling and supplementation based on his lab findings. Blake also switched to an occupational therapist who had previously been a member of the KCC team for several years.

The chart illustrates the treatment plan and improvements noted during his 8 ½ months of care at KCC with progressive improvement and stabilization of speech, social skills, fine motor function and eye contact. The most pronounced improvement noted by his mother was that with regular care Blake's head banging and self stimming were greatly decreased and that his overall disposition was improved.

(From left) *Sharon Vallone DC, Chair, Kentuckiana Board of Directors, Jean Elizabeth, Executive Director, Rebekah Wittman DC, Clinical Director.*



safety and effectiveness more broadly – of the whole chiropractic clinical encounter rather than just manipulation/adjustive techniques – conclude that:

i) Adverse effects are "rare, transient and not severe".

ii) "Evidence from controlled studies and usual practice supports chiropractic care (the entire clinical encounter) as providing benefit to patients with asthma…and infantile colic"

iii) "Evidence is promising for potential benefit of manual procedures for children with otitis media."[13]

10. Clearly more research is needed. However, it is important to understand that this is equally the case for most medical and other treatments, and that in many cases the evidence for chiropractic management is as good as for medical management.

Take, for example, the Danish trial by Wiberg, Nordsteen and Nilsson[14] that compared chiropractic manipulation (as needed over a period of 2 weeks to remove joint restrictions) and standard medical management (dimethicone daily for 2 weeks) for 50 infants aged 2 to 10 weeks with infantile colic.

This trial reported that chiropractic management was both safe and significantly more effective than standard medical treatment. Dimethicone has been proved to decrease foam build-up in the gastro-intestinal tract, and for this reason it has been presumed to be useful for the treatment of infants with colic. However, a number of studies, including the trial referred to, have not been able to demonstrate that the medication is more effective than a sham or placebo pill.[15]

(Readers will be interested to know that this Danish trial performed by chiropractic and medical researchers affiliated with University of Southern Denmark and attracting much media attention when published in 1999, has led to a large increase in the number of infants being seen by chiropractors in practice in Denmark – not only from the public directly but also on medical referral and through recommendations to parents from health visitor nurses similar to those who took part in the trial. In Denmark the National Health Service provides

Figure 4: Clinical Pearls

From Elise Hewitt DC CST DICCP, Board Certified Pediatric Chiropractor, Portland, Oregon

Clues in history suggesting need for chiropractic care:

- In utero constraint (abnormal fetal position during part of pregnancy, presence of more than one fetus)
- Birth trauma (prolonged or precipitous labor, breech presentation, forceps or vacuum extraction, Caesarean section)
- Poor sleep (difficulty falling asleep, wakes easily or frequently)
- Nursing difficulties (refusal to nurse on one side, irritated or painful maternal nipples, prolonged feeding periods)
- Less than three bowel movements per day in infant
- Fussiness, irritability, colic, (cries whenever put down, needs to be held or bounced constantly)

Clues in the examination that point to the need for a chiropractic care:

- Hyperactive Moro (Startle) reflex
- Hypersensitive gag reflex
- Weak suck
- Decreased TMJ excursion
- Abnormal head posture
- Facial or cranial asymmetry

Chronic Otitis Media

- The occiput is often involved in cases of chronic otitis media. Make sure you check the atlanto-occipital junction as part of your normal spinal evaluation.
- If a child with chronic ear infections has not responded to manual care, consider a stool test to evaluate floral balance in the GI tract. Gastro-intestinal dysbiosis can cause a state of systemic inflammation. If the tissue at the opening of the Eustachian tube becomes inflamed, fluid becomes trapped in the middle ear cavity, creating a perfect medium for pathogenic growth leading to chronic ear infections.

Rotary Component Less Frequent

In neonates and young infants, joint restrictions in the lumbar spine tend to be in the posterior-to-anterior direction; rarely is there a rotary component until the child becomes upright and weight bearing.

mothers of newborns with health visitor nurses for counselling and advice. Infants were recruited for the trial by such nurses.)

F. Integrative Care

11. From the case examples and other information given in this Report it will be clear that a collaborative or integrative approach to pediatric care is often important. This is much more common now than in the past and is being promoted in North-America by organizations such as:

- The Integrative Pediatrics Council – www.integrativepeds.org. Membership is open to all health professionals. The website lists pediatric medicine integrative programs, other academic/hospital programs, conferences and much other information.
- The American Holistic Medical Association – www.holisticmedicine.org. Founded in 1978, the AHMA originally limited its membership to medical doctors but is now open to all licensed health professionals. Its Annual Conference in November 2009 has a pediatric track that includes a presentation on chiropractic pediatrics.

G. Conclusion

12. From this summary overview it is clear that chiropractic care has a significant role in the treatment of infants and children. Education, research and practice are developing in a normal, professional and responsible way. On one hand research evidence is not yet strong, on the other hand the profession itself is acknowledging this and leading the call for more funding for and performance of controlled research.

Some observers, like the journalist Singh in the UK, adopt a narrow view that chiropractic pediatric care is invalid until proven appropriate by RCTs. Others are more balanced. American pediatrician Helen Rodriguez-Trias MD, FAAP, a fellow of the American Academy of Pediatrics and Past-President of the American Public Health Association, writing a foreword to the text *Pediatric Chiropractic* in 1998, says:

"As in allopathic medicine, chiropractic care ranges from excellent to poor. And, as in allopathic medicine, we can only approach excellence by continuing study, practice, and research. Throughout my years in clinical pediatrics, I have been fortunate to associate with excellent clinicians among the chiropractors who treated my friends, my referred patients, and me."

"Chiropractic care for infants and children is now coming of age. The publication of this text climaxes the achievement of a body of knowledge and of a budding collaboration of pediatric chiropractors with allopathic pediatricians. There are tantalizing collaborative research results already, some in common conditions such as infantile colic and middle ear infections that have baffled pediatricians for decades. From such collaboration, without bias and in a true spirit of support for optimal health for children, we may achieve the knowledge base for the holistic pediatrics of the future."[2] TCR

References

1 Davies NJ (2000) *Chiropractic Pediatrics: A Clinical Handbook* Churchill Livingstone, Edinburgh.

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