The Chiropractic Report

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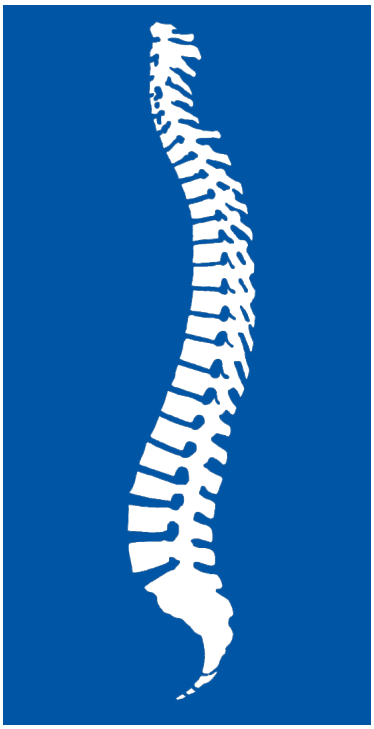

The Profession Advances in 2010

Review of an Impressive Year

A. Introduction

NOTWITHSTANDING THE DAILY challenges of increased administration and change that are a burden to all health professionals today, and notwithstanding specific setbacks in the UK and a few other countries, 2010 has been an outstanding year for the chiropractic profession. For example:

• There is new legislation to recognize and regulate the profession in France and Israel – chiropractic is now established in over 90 countries and all world regions.

• First new schools of chiropractic have opened in major universities in Chile (Central University, Santiago), Malaysia (International Medical University, Kuala Lumpur) and Switzerland (University of Zurich).

• Research capacity and achievement have finally reached an impressive level, particularly in Europe and North America, providing the necessary foundation for future growth and success.

• In the US new models of spine care based upon the integration of chiropractic and medical services have been established and proven clinically and financially successful.

• Chiropractors have been appointed to important policy positions by governments and in the Bone and Joint Decades and the World Health Organization. In the US, for example, Dr. Christine Goertz, Vice-Chancellor for Research and Health Policy, Palmer College of Chiropractic has been appointed to the 21 member Board for the Patient-Centered Outcome Research Institute (PCORI), the key policy group for implementation of President Obama's new national health care plan. Dr. Deborah Kopansky-Giles of the Canadian Memorial Chiropractic College in Toronto has recently been appointed to the 18 person International Coordinating Committee for the WHO-sponsored Bone and Joint Decades.

• Dr. Scott Haldeman of Los Angeles, President, World Spine Care (WSC) and Dr. Molly Robinson of WHO in Geneva are chiropractic leaders of a new multidisciplinary initiative that promises to bring a full range of ongoing volunteer spine care to patients in various countries with no such healthcare services. All arrangements are in place to begin WSC's Shoshong Project in Botswana in January.

• For the first time a team of sports chiropractors was part of the host services sports medicine team, and therefore available to all athletes, at an Olympic Games – the February Winter Olympics in Vancouver. This proved a success, and similar arrangements have subsequently been made for the Pan American Games in Guadalajara, Mexico in October 2011 and the London Summer Olympics in 2012.

2. A generation ago, in 1990, the medical world still regarded spinal manipulation, the central feature of chiropractic practice, as unproven and inappropriate for patients with back pain – let alone any other condition. There was therefore little basis for clinical cooperation between the medical and chiropractic professions – quite apart from political and other complications. In the intervening years spinal manipulation has been established by research and clinical guidelines as a first line approach to management of most patients with acute and chronic back pain. In 2010 there has been an interesting endpoint to this new acceptance of chiropractic manipulation.

At the annual meeting of the North American Spine Society (NASS) held in Orlando last month, Canadian chiropractor and medical researcher Paul Bishop, DC, MD, PhD, and his co-authors

Erratum

Because of a printing error in the September issue of this Report the first 2 references were deleted. They are:

1. Frykholm R. (1972) *Cervical Migraine: The Clinical Picture.* In: Hirsch C, Zotterman Y, eds. Cervical Pain. Oxford England: Pergammon Press, 13-16.

2. McCrory DC, Penzien DB et al. (2001) *Evidence Report : Behavioral and Physical Treatments for Tension-Type and Cervicogenic Headache,* Des Moines, Iowa, Foundation for Chiropractic Education and Research. Product No. 2085.

were awarded the 2010 Outstanding Paper Award for Medical and Interventional Science for a paper titled *The Hospital-Based Interventions Research Outcomes (CHIRO) Study: A Randomized Controlled Trial on the Effectiveness of Clinical Practice Guidelines in the Medical and Chiropractic Management of Patients with Acute Mechanical Lower Back Pain*[1].

This study compared two protocols for the management of patients with acute low-back pain – usual family physician-directed care and care according to current clinical practice guidelines (reassurance and avoidance of passive treatments; acetaminophen; four weeks of lumbar chiropractic spinal manipulative therapy). The guidelines-based treatment was associated with significantly greater improvement.

Accordingly here we have the leading organization for North American spine specialists awarding its prize to chiropractic and medical researchers reporting a randomized controlled trial demonstrating the value of management of back pain patients where a central component was chiropractic adjustment or manipulation. Perhaps this, as much as any other fact, illustrates why this has been such a good year for the profession.

3. In this issue of The Chiropractic Report we review the quiet and solid continuing progress of the profession to international maturity and acceptance – acceptance not only by patients but by all other stakeholders in the mainstream healthcare system. Our focus is the growing infrastructure of the profession, including its research achievements.

Yes, there are noisy and tiresome critics of the profession who misrepresent and disregard the evidence. If you practice in New Jersey you have this year lived through a public campaign and legislative hearings alleging chiropractic cervical adjustment is dangerous and should be banned. At these hearings the bluster of longtime critic Dr. Murray Katz was undermined by the superior science and credibility of the foremost chiropractic witness, Dr. David Cassidy from the University of Toronto.

If you practice in the UK there was similar noise from Dr. Edzard Ernst. Internationally there was dismay when his latest online article generated media and public attention through a posting on MedScape. However an incisive letter of response from Dr. Stephen Perle from the University of Bridgeport, Connecticut and colleagues about to be published will expose the severe shortcomings of Ernst's work, and of his claims to be an objective observer.

As past history demonstrates these efforts to malign the profession are temporary and passing inconveniences as the profession continues to build upon its now strong contribution to the well-being of patients and public health.

B. International Organizations

4. Sustained development and success of any profession in this era requires effective international organization. This year the chiropractic profession has made significant advances in this area:

(a) **World Federation of Chiropractic (WFC)** – www.wfc.org. The WFC, in partnership with chiropractic educational institutions worldwide, held a 6th Biennial Education Conference in Spain from October 13-16. Attended by 110 educational leaders from 26 schools/institutions in 12 countries, it addressed improved clinical education to meet the needs of a new era – features of which are collaboration, integration, evidence-informed best practices, patient safety, accountability and a variety of practice environments and career choices. Participants heard many examples of broader clinical training in hospitals and other multidisciplinary facilities in many countries. In South Africa and several European countries graduates complete a postgraduate clinical year before receiving full license/authorization for independent practice.

(b) **International Federation of Sports Chiropractic (FICS) –** www.fics-sport.org**.** After 3 years of major reorganization and development FICS has become a strong force for progress in the important field of sports chiropractic. Importance arises not only because of the status of sports in contemporary society but also from the model of care in sports chiropractic. This is threefold – first and foremost improved function/performance enhancement, then injury prevention, and then injury management. Further, sports chiropractic practice is often collaborative as part of the wider sports medicine team.

To see the impressive impact and activities of FICS and its members in 2010 see issues of the quarterly FICS News under Publications at the website.

(c) **European Chiropractors' Union** (ECU – www.ecunion.eu). The ECU, founded in 1932 and representing national associations and the advancement of chiropractic in Europe, is the most established regional organization in the profession. It is building strong infrastructure for the future of chiropractic in an influential world region. This includes funding support for new schools and for affiliates such as the European Academy of Chiropractic (EAC – governing postgraduate education and the research agenda in Europe) and the European Council on Chiropractic Education (ECCE – the accreditation agency for chiropractic educational programs).

In 2010 important developments led by the ECU, which may appear remote to

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clinicians but which greatly strengthen the profession, include:

• Successful growth of the model of chiropractic education in public universities funded by government and with all graduates having a masters degree. This places chiropractic on a similar basis to other professions in Europe and facilitates progress to a PhD for those seeking a career in research. Students graduate without significant debt.

• A process for independent assessment and recognition of chiropractic education and practice standards by CEN, the European standards organization affiliated with the International Standards Organization (ISO).

• A process for independent assessment and recognition of the ECCE and its accreditation standards by the European Network for Quality Assurance in Higher Education (ENQA – www.enqa.eu). ENQA's members include the national agencies for quality assurance in higher education in most European countries. A final report has been submitted. It is recognition by respected organizations such as ENQA, CEN and WHO that paves the way to broader acceptance and cultural authority for the profession.

(d) **Eastern Mediterranean and Middle Eastern Chiropractic Federation** (EMMECF). Chiropractic has grown in the Middle East in recent years. As a product of this the EMMECF was formed on April 25, 2010 at a meeting in Jordan at the Jordan University of Science and Technology (JUST) attended by chiropractors from 10 countries in the region – Cyprus, Egypt, Iran, Jordan, Lebanon, Palestine, Saudi Arabia, Syria, Turkey and the United Arab Emirates.

This was during a successful interdisciplinary spine care conference hosted by JUST's Faculty of Medicine and featuring presentations by prominent chiropractic scientists Dr. Scott Haldeman, Chairman, BJD Neck Pain Task Force (on the task force's report and its new model of neck pain and its management) and Dr. John Triano, Dean of Research and postgraduate studies, Canadian Memorial Chiropractic College (on management of back pain and the biomechanical effects of spinal manipulation). One goal of the EMMECF, whose President is Dr. Stathis Papadopoulos of Cyprus, is to support the formation of the first school of chiropractic in the Middle East, the only world region without chiropractic education.

(e) **Other Regional Organizations**. These include the Latin American Federation of Chiropractic (FLAQ – www.flaq.org) led by President, Dr. Carlos Ayres from Peru and Executive Director, Dr. Sira Borges from Brazil, and the Asian Pacific Chiropractic Doctors' Federation (APCDF) whose President is Dr. Janet Ruth Sosna of Singapore.

FLAQ is coordinating the rapid growth of the profession in Latin America. Twenty years ago there were fewer than 100 chiropractors in the region and no educational programs. Today there are five university-based schools – in Brazil (2), Chile (1) and Mexico (2). In Brazil there are 550 chiropractors and 750 students in two university programs. The Chilean school, at the Central University, Santiago opened this year. A further 3 schools are scheduled to open next year – one more in each of Brazil, Chile and Mexico. To control standards FLAQ has an education committee currently developing a Latin American council on chiropractic education, which is being assisted by leaders from CCEs in other world regions.

C. Research Capacity

5. In the future 2010 may well be seen as the year the profession can first claim to have achieved mature and impressive research capacity. This is in terms of the number of qualified researchers, first adequate access to funding and research opportunities, and sound structural support for the further development of research. For example:

(a) **Denmark.** In Denmark the Danish Chiropractors' Association (DCA), the University of Southern Denmark

Dr. Henrik Wulff Christensen, Director and Head of Research, NIKKB (left), *with fellow researchers Dr. Lise Hestbaek, Dr. Alice Kongsted and Dr. Mette Jensen Stochkendahl.*

(From left) *Dr. Peter Kryger-Baggesen, President, Danish Chiropractors' Association, Dr. Jan Hartvigsen, Head of Research Unit for Clinical Biomechanics, University of Southern Denmark, Dr. Charlotte Leboeuf-Yde, Research Professor, USD, and Dr. Henrik Wulff Christensen, Director and Head of Research, NIKKB.*

(USD – with its chiropractic program led by Henrik Hein Lauridsen, DC, PhD, the associated Research Unit led by Jan Hartvigsen, DC, PhD and the associated clinic at the Funen Hospital led by Søren O'Neill, DC, PhD), and the Nordic Institute of Chiropractic and Clinical Biomechanics (NIKKB – led by Henrik Wulff Christensen, DC, MD, PhD) have together prepared an extensive research agenda for 2010-2015. This is under the title *Clinical Locomotion Science* and covers research into disorders of the musculoskeletal system.

The USD Research Unit mentioned has 7 DC PhDs and 8 PhD students, and links to chiropractic researchers and their universities in Canada and the US (see more in Para 7e and Table 2).

(b) **Canada.** In Canada, just like the DCA in Denmark, the Canadian Chiropractic Association (CCA) is providing strong support for the development of research capacity. Canada currently has 32 DC PhDs, 15 of whom are in fulltime research, and has another 15 chiropractors studying for PhDs. Under a partnership between the CCA affiliate the Canadian Chiropractic Research Foundation (CCRF) and the federal government's Canadian National Institutes of Research (CNIR) 9 chiropractic research chairs have been established at leading universities across the country, the most recent being Dr. Stephen Passmore at the University of Manitoba in September. See details in Table 1. Another 3 chairs or professorships, are in development.

Importantly, the Canadian Memorial Chiropractic College (CMCC) in Toronto, which has graduated more of the profession's research scientists

internationally than any other school, has strong research capacity of its own. This is led by senior researchers such as John Triano, DC, PhD (biomechanics), Brian Budgell, DC, PhD (somatovisceral relations and neuroscience), Silvano Mior, DC, PhD (health services) and Howard Vernon, DC, PhD (clinical research/cervical spine). CMCC's core research agenda is mechanobiology – a research area fundamental to chiropractic principles and practice and seeking to understand the impact of function/dysfunction on structure, from the level of observable clinical effects down to the level of neurophysiology and cellular effects.

(c) **USA.** In the US the American Chiropractic Association (ACA) has been a prime mover behind the introduction of chiropractic services in Veterans' Administration (VA) hospitals throughout the country since 2002. These are affiliated with medical schools, with the majority of medical students in the US receiving their clinical training in VA hospitals. This initiative is now producing consistent and growing research capacity.

This year's annual Research Agenda Conference, sponsored by the Association of Chiropractic Colleges (ACC) and held in Las Vegas in March, demonstrated the increased research capacity and output of the profession in the US. This is fueled by significant new research funding in grants from the US National Institutes of Health (NIH). Individual colleges, such as Northwestern Health Sciences University, Palmer College of Chiropractic and the University of Western States, now have mature and impressive research departments.

Research capacity is also growing steadily in Australia, the UK and other countries. In summary, internationally the profession has demonstrated commitment to research and now has a coordinated and credible research capacity when measured by the highest standards.

D. Research Output

6. **Journals.** Chiropractic research is now published in many medical and other health science journals. The flagship peer-reviewed journal for the profession since 1978, now fully indexed, has been the Journal of Manipulative and Physiological Therapeutics (JMPT) is currently edited by Claire Johnson, DC, MSEd.

A significant development this year relates to BioMed Central's open access journal Chiropractic and Osteopathy. BMC, based in the UK, has 207 peer-reviewed online journals. They allow authors much more rapid publication than traditional print journals and have quickly established a good reputation for quality. From January 2011 Chiropractic and Osteopathy will be renamed Chiropractic and Manual Therapies. This is pursuant to an agreement between BMC and the Chiropractic and Osteopathy College of Australasia (COCA) and the European Academy of Chiropractic (EAC). This gives the profession a much stronger second journal soon to be indexed. Expect to see an increased volume of good quality chiropractic research in this journal from next year.

7. **Selected Research from 2010.** Here is a representative sample of research published or currently underway in 2010.

(a) **Basic Sciences - Biomechanics.** Gregory Kawchuk, DC, PhD and colleagues from the University of Alberta in Canada, have this year produced the first study to identify which specific spinal tissues are affected by (or "loaded in response to", to use the precise language of biomechanics) joint manipulation and mobilization[2]. This is important because most back pain is considered mechanical in nature and manipulation and mobilization are mechanical treatments. Understanding how loads are carried in spinal tissues should provide insights on how mechanically-based treatments work – and, further than that, the causes of back pain.

Such a study requires sophisticated laboratory tests – such measurements cannot be made in vivo. Kawchuk et al. used a robot-based serial dissection technique as follows:

- Manipulation and mobilization were performed by an experienced clinician and applied to the skin of the left transverse process at L3 on the spines of 9 porcine cadavers. The exact kinematic response at L3-L4 was captured, so that it could be replayed by a parallel robot
- L3-L4 specimens were then isolated and experimentally mounted. Specific spinal tissues in the specimens (e.g. left intertransverse ligament; left facet capsule; left facet joint; intervertebral disc) were then removed one by one in serial form as the original kinematic pathway in response to manipulation or mobilization was replayed by the robot. The changes in forces and moments following each tissue removal were considered those that were applied to that tissue during manual therapy.

Kawchuk et al. report that the intervertebral disc experiences

the greatest forces and moments arising from manipulation and mobilization. They suggest that this may explain why some patients have a better response to manual therapy than others – these may be the patients where the main mechanical problem and cause of back pain relates to those specific tissues most effected by manual therapy – including the intervetrebral disc. This is simply one study in an ongoing line of research. Future studies, for example, can attempt to alter specific aspects of manual therapy (e.g. application site and angle) to determine if this can purposefully change largest forces and moments to other tissues. Kawchuk et al. acknowledge that the manual therapies they are testing may also achieve their effects through other tissue systems not represented in their model – for example muscular and neurologic.

(b) **Clinical Sciences – Spinal Pain.** The great majority of chiropractic patients have a primary complaint of back pain, neck pain or headache. Following the 2008 report of the Bone and Joint Decade 2000-2010 Task Force on Neck Pain and its Associated Disorders[3,4] the current evidence is that skilled spinal manipulation and mobilization in particular, and management based on patient motivation, manual treatments and exercise in general, are as safe, effective and appropriate as any other treatment approach for most patients with these spinal pain complaints – mainly patients with mechanical dysfunction and without red flags for pathology. However important additions to the evidence-base this year include:

• **Back pain.** The prize-winning new randomized controlled trial (RCT) by Bishop et al. from Canada already mentioned (Para 2)[1].

• **Headache**. The US trial from Mitchell Haas, DC, Adele Spegman, PhD, RN et al.[5], funded by the National Institutes of Health (NIH) and reporting the effectiveness of chiropractic spinal manipulative therapy (CSMT), in comparison with the hands-on placebo of light massage, for patients with cervicogenic headache (CGH). CSMT patients, many of whom had diagnoses of migraine as well as CGH, had significantly better results in terms of reduced severity and frequency of headaches and reduced use of OTC medication.

• **Safety**. In all of the published clinical trials of neck manipulation there has never been a single case of serious harm to a patient. There is quite frequent minor soft tissue discomfort for up to 48 hours, similar in nature and duration to discomfort from commencing exercises. An unresolved issue has been whether there is more discomfort after manipulation than mobilization.

A new trial from Leaver, Maher et al. from Australia[6] finally provides data on this issue. The authors are physiotherapists, but manipulation and mobilization in the trial were provided by chiropractors, osteopaths and physiotherapists. In this study 182 patients with up to 3 months of non-specific neck pain and receiving care without manual therapy (medication, advice and motivation, for some exer-

Table 1.

Research Chairs / Professorships

Dr. Greg Kawchuk DC, PhD
Canada Research Chair in Spinal Function
Associate Professor
Faculty of Rehabilitation Medicine
Spinal Function Laboratory
University of Alberta

Dr. Mark Erwin DC, PhD
CCRF Scientist in Disc Biology
Assistant Professor
Department of Surgery
Faculty of Medicine
University of Toronto

Dr. Jean-Sébastien Blouin DC, PhD
CCRF Professorship in Spine Biomechanics and Human Neurophysiology
CCRF/CIHR Chiropractic Research Chair
Michael Smith Foundation for Health Research Scholar Award
School of Human Kinetics
Faculty of Education
University of British Columbia

Dr. Martin Descarreaux DC, PhD
Titulaire de la Chaire de Recherche en Chiropratique FRCQ - Système Platinum
Associate Professor
Département de Chiropratique
Université du Québec à Trois-Rivières

Dr. Jason Busse DC, PhD
CCRF/CIHR Chiropractic Research Chair
Assistant Professor
Department of Clinical Epidemiology & Biostatistics
Faculty of Health Sciences
Institute for Work & Health
McMaster University

Dr. Jill Hayden DC, PhD
CCRF/CIHR Chiropractic Research Chair
Assistant Professor
Department of Community Health and Epidemiology
Faculty of Medicine
Dalhousie University

Dr. John Srbely DC, PhD
CCRF Professorship in Spine Mechanics and Human Neurophysiology
Assistant Professor
College of Biological Sciences
Department of Human Health and Nutritional Sciences
University of Guelph

Dr. Steven Passmore DC
CCRF Professorship in Spine Biomechanics and Neurophysiology
Assistant Professor
School of Medical Rehabilitation
Faculty of Medicine
University of Manitoba

DECEMBER
2010

Dr. xxxxx DC, PhD
CCRF Professorship in Rehabilitation Epidemiology
Assistant Professor
Faculty of Medicine
McGill University

Dr. Paul Bruno DC, PhD
CCRF Research Chair in Neuromusculoskeletal Health
Assistant Professor
Faculty of Kinesiology and Health Studies
University of Regina

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cise programs) were randomly assigned to groups receiving either manipulation or mobilization – 4 treatments over a 2 week period.

Patients in both groups experienced return to normal activity (average of 3 weeks) and recovery from quite high baseline pain scores (6-7 weeks) on a similar basis with either manipulation or mobilization. There were no serious adverse events. Notably, there were no significant differences in the incidence of minor discomfort/adverse effects between those treated with manipulation and those treated with mobilization.

(c) **Clinical Sciences – Other Conditions**. Important research on other conditions with a spinal component is underway and/or completed and accepted for publication. Examples are:

• **Hypertension.** In 2007 in a pilot trial with 50 patients Bakris et al. from the Rush University Hypertension Center in Chicago, reported that chiropractic upper cervical adjustment was effective in significantly lowering blood pressure in patients with Stage I hypertension and a malpositioned atlas vertebra[7]. They called for a larger trial to confirm these results. That trial is now underway led by Christine Goertz, DC, PhD of Palmer College.

• **Acute chest pain.** In Denmark Henrik Wulff Christensen, DC, MD, PhD and colleagues have been developing diagnostic and treatment protocols for patients with cervicothoracic angina – the 1 in 5 (18%) patients thought to have angina pectoris but in fact having referred pain from the cervicothoracic spine. In 2005 they published promising preliminary results from chiropractic assessment and treatment of a series of patients from the Department of Cardiology, University of Southern Denmark[8,9] – and called for RCTs.

A first trial, led by Mette Jensen Stochkendahl, DC PhD from Christensen's team at the NIKKB, has now been completed and submitted for publication.

(d) **Clinical Sciences – Prevention**. From the perspective of many chiropractors perhaps the single most exciting new RCT published this year was by Australian chiropractic researchers Hoskins and Pollard reporting a significant reduction in hamstring injuries, lower limb muscle strains and non-contact knee injuries when chiropractic services were added to existing sports medicine services for elite football players in the Australian Football League.[10] This was a trial supporting the role of chiropractic care in improving function to prevent pain and injury, and doing this by addressing dysfunction in related but distant areas of the neuromusculoskeletal system.

For a full season 60 players in 2 teams were randomly assigned to one of two groups:

i **Control group.** Subjects received what was considered current best medical and sports science management as directed by club medical staff including medication, manipulative physiotherapy, massage, strength and conditioning and rehabilitation exercises. There was no limitation in the number or type of treatments and no influence from the study authors. This was the usual care they would have been receiving if there had been no research project.

ii **Intervention group.** Subjects received the same best management as the control group, but in addition chiropractic management including:

• Treatment as determined appropriate on an individual patient basis.

• One or more of joint manipulation (HVLA – high-velocity low-amplitude), joint mobilization (passive movement without thrust and within normal range of motion) and soft-tissue therapies.

• Directed to the spine, pelvis and extremity.

• Minimum duration and frequency of treatment of 1 treatment per week for 6 weeks (Phase 1 – the late pre-season period where pre-season matches were played) followed by 1 treatment per fortnight for 3 months then 1 treatment per month for 3 months – the remainder of the season (Phase 2).

On the average treatment visit manipulation and/or mobilization was directed at 4 of the 5

Table 2. USD Research Unit of Clinical Biomechanics – Ongoing Research Projects August 2010

Can spine tests in children predict who develops spine pain?	Lise Hestback
Consequences of spinal pain studying 34,902 Danish twins aged 20-71 years.	Charlotte-Leboeuf-Yde
The prevalence of angina and associations with spinal pain.	Rene Fejer
DANCOS musculoskeletal study – relationship between musculoskeletal complaints and seeking of health care, hospitalizations and surgery over time since 1991	Jan Hartvigsen
Danish National Birth Cohort – identification of early risk factors for back and neck pain	Lise Hestbaek
Back on Funen – a study of ongoing associations between physical and biological tests, MRI and the course of low-back pain in adolescents and adults	Per Kjaer
Body culture and well-being in the kindergarten – the relationship between physical activity and well-being in 300-400 children	Anette Boye Kock
Lumbar spinal muscle mass, fat content and low-back pain – RCT comparing exercise types	Gert Bronfort
Good vibrations. Can vibrations be used to distinguish between structural states of the lumbar spine? Using twins from Danish Twin Registry	Greg Kawchuk
Contractile abilities of the upper trapezius muscle in persons with neck pain and myofascial trigger points	Corrie Myburgh
Relationship between 3D spinal motion and low-back pain	Rune Mieritz
Chiropractic treatment of babies with infantile colic – RCT	Lise Hestbaek
Osteothritis of the hip – diagnosis and manual treatment	Erik Poulsen
Musculoskeletal chest pain – diagnosis and manual treatment – RCT	Mette Jensen Stochkendahl
The influence of different mattresses and pillows on back and neck pain and on sleep quality	Maria Cecilie Vonsild
An RCT on fear-reducing information or individual symptom-based physical exercises and chronic LBP	Pia Havn Sørensen
A multi-method RCT of chiropractic and exercise for elderly with neck pain	Michele Maiers
A multi-method RCT for evaluating spinal manipulation and exercise for chronic neck pain	Roni Evans
Back pain questionnaire for use in children	Henrik Hein Lauridsen
Chiropractor's role in the public health care sector	Corrie Myburgh

treatment areas – thoracic spine, knee, hip, lumbar spine and sacroiliac joint. However overall the slight majority of treatment (53%) was soft-tissue techniques – principally to the gluteal region and lumbar spine, but also to the hip flexors, knee and posterior thigh. Overall treatment was predominately directed at areas non-local to the hamstrings. The primary outcome measure adopted was the number of games missed due to injury, the measure used in the AFL Injury Surveillance System. Secondary outcome measures included the short form McGill Pain Questionnaire for low-back pain and the 39 item Health Status Questionnaire. Those in the chiropractic or intervention group had significantly fewer injuries and games lost. Exact figures were:

- Lower limb muscle strain – intervention group 4 missed matches, control group 21 missed matches
- Hamstring injuries – intervention group 4 missed matches, control group 14 missed matches
- Non-contact knee injury - intervention group 1 missed match, control group 24 missed matches

(e) **Research Begun.** At least as important as chiropractic research published in 2010 is the increased volume of research underway as a result of the profession's growth in research capacity. Table 2 lists ongoing research projects at the University of Southern Denmark (USD).

In the first, a 2-year longitudinal study for which principal investigator is Lise Hestbaek, DC, PhD, 1,300 5th and 6th grade school children are being examined by experienced chiropractors using motion and pain provoking tests, as well as tests for back muscle endurance, in order to evaluate whether these tests are able to predict who develops pain and consequences of pain in the spine.

Hestbaek's related study with the Danish National Birth Cohort has comprehensive ongoing questionnaire and interview data on children born in 1998-2001, the oldest of whom are now 11 years old, and questions on back and neck pain are providing extensive possibilities for identification of early risk factors.

Denmark alone is producing more chiropractic research in 2010 than the whole profession worldwide 10 years ago. The same can be said for Canada or the USA. Many other countries are contributing – and this includes the work of a new generation of young practicing chiropractors publishing their clinical results.

Take for example Andre Didriksen, DC of Norway, in private practice in the small city of Fjorde but also invited into the Orthopedic Department of the Central Hospital of Sogn and Fjordane in Fjorde because of the initiative of the Norwegian government to increase the use of chiropractors to treat patients with neuromusculoskeletal dysfunctions. In 2007 Didriksen and orthopedic consultant Jan Roar Orlin, MD, PhD published successful results of chiropractic management of 44 consecutive patients from the Orthopedic Department with lumbopelvic fixation and sciatica[11].

This led to referral of 46 consecutive patients from the Ear, Nose and Throat Department with a variety of ENT diagnoses (e.g. tinnitus, dizziness, suspected sinusitis), no obvious signs of relevant pathology, and possible articular or muscular problems in the neck or jaw. Under chiropractic management many patients were found to have neck/jaw dysfunctions and compensatory lower cervical/upper thoracic problems. Forty of 46 (87%) benefitted from treatment and there was "a clear reduction in sick leave among the patients compared with conventional medical treatment". The paper describing this case series, by Didriksen and referring specialist Helge Hagen, MD is about to be published in the UK chiropractic journal Clinical Chiropractic[12].

E. World Spine Care – The Shoshong Project

8. The chiropractic profession has grown and flourished over the past 115 years, at first independently and today within mainstream healthcare systems, because of its expertise and reputation in the area of spine care – a field in which the medical profession has admitted its limitations[13]. If the profes-

sion is to move to more widespread acceptance it must not only produce its own science and body of research but also be an integrated partner with other professions and a leader in spine care.

This was seen in the BJD Neck Pain Task Force and its report in 2008[3,4]. In 2010 this is being illustrated with even more potential impact in the development of World Spine Care (WSC). We conclude this review of 2010 with summary comment on that.

WHO has determined that spinal disorders are one of the most serious debilitating health problems in rural communities in the developing world[14]. Research has found lower back pain in up to 72% of adults in Africa, as measured on an annual basis. The result is physical and mental distress, as well as devastating economic impacts, in populations reliant on manual labour for survival. This crippling medical issue has received very little international attention to date. There is virtually no spinal care of any kind available to these populations.

WSC, launched to fill this gap, is a multinational not-for-profit corporation, bringing together the full spectrum of health care professionals involved in spinal health – doctors, surgeons, chiropractors, and physiotherapists. It focuses on providing evidence-based, culturally-integrated prevention, assessment, and treatment of spinal disorders in the developing world. Its President is Scott Haldman, DC, MD, PhD. Its contact at the Bone and Joint Decades is Deborah Kopansky-Giles, DC, MSc, FCCS and its contact at WHO is Molly Meri Robinson, DC.

After appropriate agreements reached this year with government and other parties, WSC is launching its first pilot project in the rural village of Shoshong, Botswana in January. This will pioneer a clinical model for the care of spinal disorders in the developing world involving front-line work by volunteer chiropractors and physiotherapists, with surgical and other secondary care available as needed from visiting voluntary specialists. There will be a focus on 3 activities:

- The implementation of a universal clinical protocol for the screening, assessment, and management of spinal disorders in the general population
- The implementation of an associated culturally-appropriate front-line worker training program
- The study of musculoskeletal disorders presenting in people living with HIV/AIDS

The primary outcome of this project will be a model of care that is generalizable throughout developing and underserved communities worldwide. Simultaneously, this program will develop a significant local capacity in spine care, entrenching positive project outcomes in Botswana in a sustainable manner. A total project budget of $1.6M will fund the establishment of the spinal clinic in Shoshong, the preliminary epidemiological study and funds for operation of the clinic for the first 4 years of operation. TCR

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