



Dr. Chris Martin, DC

CCA Research Committee Membership

Dr. Chris Martin (BC) – Chair
Dr. Rob Allaby (NB)
Dr. Eric Jackson (ON)

CCA Mission Statement

The CCA Research Committee is guided by the Mission Statement and endeavours to insure that all committee activity is consistent with and enhances the Association's Mission of "Helping Canadians live healthier lives by:

- 1) informing the public about the benefits of chiropractic care,

- 2) promoting the integration of chiropractic into the health care system, and
- 3) **facilitating chiropractic research"**

Committee Update

As the recently elected Chair of the CCA Research Committee I am pleased to update you on our most current activities.

The CCA Strategic Plan and Objectives call for the following activities to be undertaken by the Research Committee and we are clearly meeting these targets:

1. establish a Research Agenda,
2. secure additional funding for research,
3. disseminate research,
4. promote a research culture, and
5. develop an electronic data gathering mechanism for practitioner driven research.

Meeting Update

The Canadian Chiropractic Association (CCA) Research Committee met on February 23, 2002 in Toronto and worked through a lengthy agenda packed with initiatives and activities which are all directed at bringing benefit to the health of Canadians. The Committee welcomed an excellent presentation by Dr. Greg Kawchuk DC, PhD, Canada's 1st Chiropractic Research Chair. We are set to meet again on the October 4–5, 2002 weekend during our 3rd Research Symposium.

The CCA's research activities are aimed at raising the profile of chiropractic research in Canada and fostering growing positive relationships with both the government and the public. We are about to facilitate our 3rd "world class" scientific research symposium, and all 5000 CCA members are invited to attend this major upcoming event. As you read on, you will realize that there is a lot of research activity that will enable our profession to fully integrate with Canada's health care system.

What twenty initiatives have been accomplished to date?

Did you know that:

- 1 The CCA mission statement was revised following a strategic planning session to *reflect our true role in Canada's health care system.*

- 2 The CCA has created Canada's first Chiropractic Research Chair in a university setting and has funded Dr. Greg Kawchuk DC, PhD in a faculty appointment at the University of Calgary for a FIVE-YEAR period with over \$430,000 to start.
kawchuk@ucalgary.ca
- 3 Chiropractic researchers are in the database of the CIHR's Institute of Musculoskeletal Health and Arthritis.
- 4 The CCA has funded an international multidisciplinary workshop of 30 leading chiropractic researchers to frame our Chiropractic Research Agenda and better position the profession with Health Canada and the health care needs of Canadians.
- 5 The Research Agenda Report *to date* is published in the June issue of the JCCA. This Report will be further refined at the upcoming Research Agenda Workshop of the Consortium of Canadian Chiropractic Research Centers in October, just after the Research Symposium.
www.jcca-online.org
- 6 The CCA is committed to consulting with the CCA membership at large in a wider consultative process in an effort to provide an opportunity for all of our members to help set the association's final research agenda for the next ten year period. The CCA Research Committee will be calling for your submissions prior to making recommendations to the CCA Board of Governors.
- 7 Dr. James Dickey PhD from the Department of Human Biology at the University of Guelph in Ontario is a member of the Consortium of Canadian Chiropractic Researcher Centers.
jdickey@uoguelph.ca
- 8 The CCA has created two awards: the CCA Research Career Award and the CCA Young Investigators Award.
- 9 The CCA Research Bulletin is distributed to a wide research audience and is well received and is available on the CCA website.
www.ccachiro.org
- 10 The CCA promotes and disseminates chiropractic research in the JCCA, the only scientific scholarly chiropractic publication in Canada. Published papers may be downloaded free of any charges.
www.jcca-online.org
- 11 The CCA has partnered with the Canadian Institutes of Health Research in three separate agreements (in excess of \$750,000) which have supported a doctoral award, three fellowship awards and a Research Chair award, and that all of our chiropractic researchers hurdled the stringent CIHR peer review process which speaks volumes for the caliber of our researchers and credibility of our profession.
www.cihr.ca
- 12 The CCA partnered with the British Columbia College of Chiropractors and the CIHR in support of Dr. Jeffrey Quon DC of Vancouver, British Columbia who was awarded a prestigious 3-year training Fellowship which provides \$145,500 over three years. quon@interchange.ubc.ca This is the first time a chiropractic licensing body has directly supported a chiropractic researcher. Health licensing bodies have a statutory mandate to protect the public interest and what better way than to support chiropractic researchers.
www.bcchiro.com
- 13 The CCA recently participated in a round table on research collaboration sponsored by the Institute for Neurosciences, Mental Health and Addiction of the CIHR. Many organizations are anxious to collaborate with the chiropractic discipline.
- 14 The CCA facilitated the Quebec Chiropractic Foundation to partner with the CIHR to support Dr. Jean-Sebastien Blouin in a 3-year Fellowship award at Laval University. He is a PhD candidate.
- 15 The CCA has facilitated several outstanding keynote speakers at the 3rd Research Symposium: Dr. Arne Ohllson MD and Dr. Kathy Clark PhD, the Co-Directors of the Cochrane Collaboration. Dr. Mark Bisby PhD, Vice President CIHR and Dr. Greg Kawchuk DC, PhD Canada's 1st Chiropractic Research Chair.
- 16 The CCA recently attended the CIHR Workshop on Disability Models and Disability Statistics in Canada sponsored by the Institute of Musculoskeletal Health and Arthritis.
- 17 The CCA has now become an Affiliate Member Organization of the Cochrane Collaboration. The Cochrane Back Group is of immediate relevance to the CCA and is based at the University of Toronto. There are currently about 1700 systematic reviews at Cochrane which are updated regularly.
www.cochrane.org
- 18 The CCA is exploring opportunities to create additional university based Chiropractic Research Chairs and made a submission to the CIHR Research Planning and Priorities Committee. The Committee overwhelmingly approved a proposal to continue the Health Research Partnership Fund.
- 19 The CCA has facilitated the Consortium of Canadian Chiropractic Research Centers. Dr. Howard Vernon is the Chair.
hvernon@cmcc.ca
- 20 The CCA has built our profession's intellectual capacity by building *relationships* with federal agencies, research organizations, relationships based on trust and credibility. Investing in *people* has paid off and will provide the mechanism to fully integrate our knowledge into Canada's health care system.

CCA Joins the Canadian Cochrane Network and Center (CCN/C)

The Canadian Chiropractic Association was recently invited to become an affiliate organization of the prestigious Canadian Cochrane Network and Center.

The Cochrane Collaboration established in the UK in 1992 is an international organization and now has 14 national centers globally. Its mission is to prepare, maintain and promote the accessibility of systematic reviews of the effects of health care interventions. The Canadian Center is located at McMaster University in Hamilton and Dr. Arne Ohlsson is the Director. There are 16 Cochrane Network sites located in health sciences centers throughout Canada which assist the national office in producing reviews, conducting workshops, identifying priority areas and promoting the dissemination of findings.

Completed reviews are placed on the Cochrane Database of Systematic Reviews and are available from the Cochrane Library. There are approximately 1700 reviews completed or in progress and they are regularly amended.

The Cochrane Back Review Group based in Canada, is obviously directly related to the interests of our profession. The CCN/C expressed their eagerness to work collaboratively with the CCA. The CCA will provide advice to the CCN/C on its strategic directions.

www.cochrane.org

CCA Research Career Award Announcement

The goal of this award is to recognize outstanding contribution to research on chiropractic topics and to advance the discipline of chiropractic. Eligible individuals will have contributed substantially during their professional career to chiropractic research topics as a.) researchers, or as b.) facilitators of chiropractic research. This is a career award given to both chiropractors and non-chiropractors. Those not eligible include members of the CCA Research Committee, CCRF Board and CCA Board.

The Chair of the CCA Research Committee invites nominations which must include:

- 1 a letter of nomination outlining the specific contribution,
- 2 a short CV of the nominee, and
- 3 a letter from the nominee stating that he/she is prepared to accept the award at the CCA Annual Meeting.

Please forward nominations by September 9, 2002 to:

Dr. Chris Martin DC
Chair, CCA Research Committee
Canadian Chiropractic Association
1396 Eglinton Avenue West
Toronto, Ontario M6C 2E4
gmartin@telus.net

CCA Young Investigators Award

This award recognizes young researchers working in the field of chiropractic and is given for a paper submitted to the Research Symposium that has not yet been published, or for a recently published paper. The investigator has not had his/her degree longer than two years before submitting the work. The award acknowledges scientific achievement and has a monetary benefit. Contact Dr. Allan Gotlib, CCA Research Programs algotlib@ccachiro.org or Dr. Greg Kawchuk, Chair of the Scientific Jury.

kawchuk@ucalgary.ca

CCRF Service Awards

On May 25, 2002 both Dr. Ron Carter, Chair of the Fund Raising Committee and Dr. Benno Nigg, Secretary, were presented with CCRF Service Awards for their exemplary, dedicated and selfless service to the chiropractic profession in Canada. The Canadian Chiropractic Research Foundation acknowledges with profound appreciation their devoted service which has facilitated the growth of chiropractic research in Canada. Both served as Directors of the Foundation for the past three years.

La Fondation Chiropratique du Québec

The Fondation Chiropratique du Québec, with the assistance of the CCA, has also established a partnership in support of a training award in the neurophysiology area within Quebec's university system. Dr. Jean-Sebastien Blouin DC, MSc, a PhD candidate, has received this prestigious 3-year Fellowship. Congratulations to Dr. Guy Beauchamp and his Board members.

In addition, the Foundation with the help of its 200 members and corporate donors was able to support the research team of Dr. Jean Boucher PhD of UQAM working on "the effect of the chiropractic adjustment at the level of the central nervous system", and Dr. Christian Linar of UQTR who is working on the effect of the chiropractic adjustment upon the molecular marker in the gastro-intestinal tract.

www.fcq.qc.ca

Consortium of Canadian Chiropractic Research Centers (CCCRC)

Symposium

The CCA will facilitate the 3rd symposium by sponsoring the event in concert with the Consortium that will once again be host. The Call for Abstracts has generated a substantial number of submissions. Consortial members will be presenting their latest research. Contact Dr. Howard Vernon DC, who is the convenor, at hvern@cmcc.ca for early information regarding the symposium scheduled for October 2002 in Toronto. Don't miss this essential symposium.

Advancing Researchers

New PhD's

Dr. Pierre Côté DC, MSc, FCCS(C), PhD, University of Toronto, Associate Scientist, Institute for Work and Health.
pcote@iwh.on.ca

PhD candidates

Dr. Howard Vernon DC, FCCS(C), University of Glamorgan, School of Applied Sciences, Cardiff, Wales, United Kingdom.
hvernon@cmcc.ca

Dr. Carlo Ammendolia DC, MSc University of Toronto, Institute of Medical Sciences.
ammendol@sympatico.ca

Dr. Jeff Quon DC, MHSc, University of British Columbia.
quon@interchange.ubc.ca

Dr. Jill Hayden DC
University of Toronto
jhayden@iwh.on.ca

Dr. Jean-Sebastien Blouin DC, MSc
Université Laval
jsblouin@kin.msp.ulaval.ca

Dr. Bruce Symons DC, MSc
University of Calgary
bruce@kin.ucalgary.ca

Dr. Mark Erwin DC, MSc
University of Toronto
Mark.Erwin@utoronto.ca

Dr. Martin Descarreaux DC, MSc
Laval University
martin.descarreaux@kin.msp.ulaval.ca

Dr. Shari Langdon DC
University of Calgary
outclimbing@hotmail.com

New Master's

Dr. Justin Marcotte DC, MSc
Université du Québec à Trois-Rivières
justin_marcotte@uqtr.quebec.ca

Masters candidates

Dr. François Hains DC,
University of Montreal
fhainsdc@videotron.ca

Dr. Gabrielle van der Velde DC
University of Toronto
gabrielle.vandervelde@utoronto.ca

Dr. Drew Oliphant DC, FCCO(C)
Royal Melbourne University (Austr) and
Southern California University of Health Sciences
dr-o-chiro@shaw.ca

Dr. Jason Busse DC, MSc
McMaster University
j.busse@utoronto.ca

Dr. Mark Pitcher DC
Memorial University of Newfoundland
mpitcher@avint.net

Dr. Sean Renshaw DC
University of Calgary
crakbax@hotmail.com

Congratulations to these clinicians who continue to make extraordinary commitments to our profession and are our profession's future researchers.

National Research Fund

I want to thank all of the provinces and in particular, Alberta, British Columbia, Saskatchewan and New Brunswick, for their continued support of the CCA with their substantial contributions to the program. The CCA in concert with the CCRF, uses these funds and those of other stakeholders, to leverage significant opportunities. Our goal of building research capacity through strategic relationships such as the historic partnerships with the CIHR will better position chiropractic research and researchers and ensure long term growth and professional survival. I invite all Canadian chiropractors to become members of the CCRF. Your \$125.00 membership fee supports so many worthy projects and is vital to our profession's goals. Become a part of this vital initiative!

Dr. Paul Bishop DC, MD, PhD Update

Dr. Paul Bishop is a Clinical Assistant Professor of Orthopaedics in the Division of Spine, at the University of British Columbia. He is the Director of Outpatient Clinics in the Combined

Neurosurgical and Orthopaedic Spine Program (CNOSP) located at Vancouver General Hospital. CNOSP / VGH is a clinical teaching, tertiary care hospital and is based on the “centre for excellence” principle. It includes a Spinal Cord Intensive Care Unit, a Spine-dedicated surgical ward and an Ambulatory Clinic, all of which service the entire Province of B.C. The medical and surgical staff also includes four orthopaedic spine fellowship qualified surgeons, two neurosurgeons, a rheumatologist, a specialist in physical medicine and other sessional physicians. The CNOSP manages the full spectrum of surgical spine cases (e.g. acute spinal cord injury, reconstructive spine surgery, deformity surgery and disc surgery) and through its affiliation with the B.C. Cancer Agency, manages the majority of the Province’s complex spinal tumor cases. The Outpatient Clinic Program is comprised of a number of disease specific clinics (e.g. acute disc, acute spinal pain, acute neck, spinal stenosis and chronic pain). CNOSP also has a productive research division comprised of physicians and surgeons with cross training at the MSc and / or PhD level in basic science and clinical science research. In addition, the Federal and B.C. Provincial Governments along with the Rick Hansen Foundation, have recently announced an award of \$33 million to build the first Spine Institute in Canada, at the Vancouver General Hospital. This facility will house the International Collaboration on Repair Discoveries (ICORD) and all the existing CNOSP programs.

Dr. Bishop’s current recent research includes:

1 The project entitled “Outcome evaluation of the management of lumbar disc protrusion causing sciatica” is a prospective cohort study. The primary question was, do patients with lumbar disc protrusions causing radiculopathy have a significant improvement in their disease-specific health-related quality of life (HRQOL) as assessed by the Neurogenic Symptom Scale of the North American Spine Society (NASS) Instrument at six months postoperatively? Between November 1999 and April 2000, 110 patients who were booked for a lumbar discectomy at Vancouver Hospital were identified and met the inclusion criteria. 82% completed the pre-operative NASS Instrument. Results showed an increase of 39 points on the NASS Neurogenic Symptom Scale. These improvements are clinically significant based on the literature which states that a 20% increase on the NASS scales constitutes a clinically significant difference. It was concluded that it is valuable to include disease specific HRQOL measures in the evaluation of medical/surgical interventions. *Co-investigators include Fisher, Fairholm, Dvorak, Wing, Wright, and Robens-Paradise. Funded by the Regional Evaluation of Surgical Indications & Outcomes (RESIO) and*

presented at the North American Spine Society Meeting, October, 2001.

2 The project entitled “Implementation of clinical practice guidelines in Worker’s Compensation Board patients with acute mechanical back pain: a prospective randomized trial” assessed the degree to which the patterns of practice of primary care physicians in managing the WCB patients are in compliance with current practice guidelines and also determined whether providing family physicians and their patients with the guidelines would alter the degree of adherence. 724 patients with non-radicular lower back pain of less than 2 weeks duration and accepted WCB claims were randomized into 5 groups. Primary care physicians in the control group demonstrated a high degree of compliance with the recommended history taking, physical examination procedures and imaging guidelines, but were in poor compliance with the guideline-recommended treatments. Providing physicians and/or patients with a single information package (i.e. groups 1 and 2) did not result in any significant improvement in compliance. Information provided at 3 separate intervals (group 3) improved compliance with some recommended treatments such as exercise, medications, less use of bed rest and passive physiotherapy, but not others including recommendation for spinal manipulation, work modification and return to normal activity. No added benefit was observed when providing patients with an information package (group 4). In the last eight years, twelve countries have published evidence-based guidelines to assist primary care physicians in the management of acute and chronic lower back pain. This study demonstrated that providing family physicians with information about these guidelines does not significantly alter their patterns of practice. Therefore, alternate strategies need to be developed for improving physician compliance with clinical practice guidelines for treatment of WCB patients with acute lower back pain. *Co-investigators include Wing and Badii. Funded by the Worker’s Compensation Board of B.C. Accepted for presentation at the North American Spine Society Meeting, October, 2002.*

Studies/Projects Underway

In the following pages you will quickly see that the level of research activity has increased tremendously and that both the quantity and quality of our research efforts spans all pillars of health research.

Cassidy

“WHO Collaborating Center Task Force on Neck Pain and Its Associated Disorders” – a \$3 million 5-year project – will complete a systematic review of the scientific literature, com-

plete original research on the risks associated with treatment of neck pain with NSAIDs and manipulation of the cervical spine, complete original research using decision analysis to examine cost-effectiveness and patient preference, and produce a Best Evidence Synthesis which addresses risk and prevention, diagnosis, prognosis and treatment risk and benefits, based on best available scientific evidence. Co-investigators include Haldeman, Nygren, Schubert, Carroll, Côté, Peloso, Hurwitz, Nordin, Bombardier, Maetzel, Salmi, Dvorak, Bogduk and Hogg-Johnson. Contact Dr. David Cassidy DC, PhD at the University of Alberta for further information.
dcassidy@ualberta.ca

Vernon

Dr. Howard Vernon DC at the Canadian Memorial Chiropractic College in Toronto is the Principal Investigator in a \$1 million research grant from the Ontario Ministry of Health and Long-Term Care to undertake a 3-year randomized clinical trial comparing chiropractic and medical treatments for tension headache. This is a randomized, double-blind, controlled clinical trial with a sample size of 350 patients. Co-investigators include Dr. Gwen Jansz (St. Michael's Hospital), Dr. Cam McDermaid (CMCC) and Dr. Charles Goldsmith (McMaster University). Contact Dr. Vernon for further information.
hvernon@cmcc.ca

McMorland/Suter/Verhoef/Hurlbert

This pilot study will assess feasibility and test the methodology of a randomized, controlled, double-blinded study which will investigate whether chiropractic care for patients suffering low back pain and leg pain secondary to lumbar herniated disc will improve patient outcome and reduce treatment costs compared to back surgery. The primary outcomes in this study are low back disability, pain, direct health care costs and health care utilization. For further information contact Dr. Gord McMorland.
gmmorland@telusplanet.net

McMorland/Suter

The project "Alterations in muscle activation during the gait cycle in patients with pelvic or lower extremity injury" analyzes the temporal relationship of muscle activation of the torso, hip and lower extremity musculature during normal walking in patients presenting with a variety of pelvic or lower extremity injuries. Preliminary data suggest a consistent alteration in muscle activation patterns independent of injury. Quantification (measurement) of the body's adaptation to various injuries can yield important information leading to better treatment intervention and rehabilitation strategies.
gmmorland@telusplanet.net

McMorland/Suter

"Alterations in kinematics of the upper extremities, shoulder girdle, pelvis, and lower extremities in patients with pelvic or lower extremity injury" analyzed the kinematic relationship of the upper extremities, shoulder girdle, pelvis, and lower extremities during normal walking in patients presenting with a variety of pelvic or lower extremity injuries.

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McMorland/Suter

The project "Decrease in elbow flexor inhibition after cervical spine manipulation in patients with chronic Whiplash Associated Disorder" measured functional capacity and subjective pain in patients with whiplash associated disorders (WAD) before and after manipulation of the cervical spine. Despite the high prevalence of chronic Whiplash Associated Disorder (WAD), there is little consensus on the most effective treatment for chronic neck pain. One hindrance in evaluating the efficacy of treatment programs is the lack of objective outcome measures to quantify WAD injuries. Functional capacity was assessed objectively using cervical spine range of motion as well as upper extremity muscle activation. Subjective pain was assessed using visual analogue scales, neck pain-related disability scoring as well as pressure pain thresholds (pressure dolorimetry) in the cervical and upper thoracic region. Patients showed significant inhibition in their biceps muscles. CROM was restricted laterally, and increased pressure pain sensitivity was evident. After cervical spine manipulation, an immediate and significant reduction in biceps inhibition and an increase in biceps force occurred. CROM and pressure pain thresholds also increased. Patients with chronic WAD showed significant deficits in biceps activation. Spinal manipulation improved muscle function, CROM and pain sensitivity, and might therefore be a valuable modality for treating patients with chronic WAD. Evaluation of treatment programs for chronic WAD have been hampered by the lack of objective outcome measures. Using the interpolated twitch technique to measure elbow flexor inhibition may provide more quantifiable information on the long-term dysfunction related to WAD.

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McMorland/Injeyan/Russell/Verhoef

The project "Response rates for chiropractic surveys" examines the response rates in published studies that have surveyed chiropractors by mail and/or telephone, and will explore correlates of the response rates by undertaking secondary analysis of data obtained from a systematic review of the published literature. Multiple data-bases will be searched for published surveys of chiropractors. Survey research is often conducted to obtain estimates of the prevalence of attitudes, beliefs and behaviors of

health service providers, and may have implications in terms of training, practice, education and allocation of health care resources. Many of the published studies that have surveyed chiropractors have very low response rates, thus the validity of their findings may be questioned. The results of this study will be useful to all researchers who wish to survey chiropractors in the future by identifying elements of study design that are important in the achievement of high response rates, important to obtaining unbiased data. Our findings may also lead to recommendations for standards for the description of methods in the published literature.

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Côté

The project "The Arizona State University Healthy Back Study: A study of the cost effectiveness of chiropractic versus medical care in returning injured workers with occupational low back pain to work" is a cohort study of injured workers from four large employers in the United States and involved prospective collection of low back pain severity data and health outcomes for up to six months after return to work and linkage of survey data to workers' compensation insurance claim data. Co-investigators are Johnson, Baldwin, and Frank. Funding agency is the National Chiropractic Mutual Insurance Company. Dr. Côté is Associate Scientist at the Institute for Work & Health.

pcote@iwh.on.ca

Côté

The project "The epidemiology and primary care utilisation for occupational neck pain in Ontario" will create a valid methodology to define and identify occupational neck pain (ONP) claims in the WSIB databases, determine the prevalence and incidence of ONP claims in Ontario, determine the administrative course of ONP claims and identify the predictors of duration of wage replacement benefits in a cohort of injured workers who made a claim to the Ontario WSIB in 1997–1998, describe the health care utilization of claimants with ONP one-year before and two years after their injury, and determine whether the implementation of the *Workplace Safety and Insurance Act (Bill 99, 1998)* was associated with a change in the administrative course and health care utilisation for ONP claims in Ontario. The study design employs a historical cohort study with data being obtained by linking claims data from the Ontario WSIB and the Ontario Ministry of Health. The study base includes all injured workers who made a claim to the WSIB between January 1, 1997 and December 31, 1998. Funding (\$139,950) is from the Ontario Ministry of Health and Long Term Care/Ontario Chiropractic Association.

pcote@iwh.on.ca

Côté

The project entitled "Is the choice of care provider associated with health outcomes after whiplash?: A study of whiplash in a cohort of traffic injury claimants in Saskatchewan": 1. will determine whether a specific pattern of visit to medical doctors, chiropractors or specialists is associated with faster time-to-recovery from acute whiplash injuries under tort and no-fault insurance systems, 2. will update the systematic review published by the Quebec Task Force on Whiplash-Associated Disorders, and will propose a conceptual framework to conduct systematic reviews on the prognosis of whiplash, 3. will determine if neck pain intensity, physical functioning and depressive symptoms are associated with time-to-claim-closure after whiplash and will determine if the strength of association varies with insurance systems, 4. will provide researchers with a framework that assists them in deciding whether or not informed consent is necessary before conducting record linkages using secondary data. A historical population-based cohort design was selected. The data was obtained by linking data from three sources: 1) the Population-based Inception Cohort Study of Traffic Injury in Saskatchewan; 2) the Saskatchewan Government Insurance Company (SGI) claimant database; and 3) Saskatchewan Health Care Utilization databases.

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Herzog/Symons

The project "Vertebral Artery mechanics during neck manipulative treatments" will quantify the forces and elongations, as well as possible micro-or macro-damage of the vertebral artery during single and repeated spinal manipulative treatments, diagnostic procedures, and everyday movements. The investigators will use direct measurement of the forces and elongations of human vertebral arteries in cadaveric specimens during the various experimental procedures. During spinal manipulative treatments, they will measure directly the orientation of the head relative to the neck and the forces of the clinician on the neck contact points. They report to date that the elongations of the vertebral artery during neck manipulations are smaller than those observed during range of motion testing, and that there are no forces in the vertebral artery caused by neck manipulation because the vertebral artery has slack and is not mechanically taught during neck manipulation. The full study will appear in one of the next issues of JMPT.

walter@kin.ucalgary.ca

Forand/Drover/Symons/Herzog

"Forces exerted by female and male chiropractors during Thoracic Spinal Manipulation" will study whether the mechanics of spinal manipulation is different between female and male chiropractors. Women tend to be smaller and less strong than

men, and therefore may apply manipulative forces in a different manner than men. Forces applied by the clinicians during high-speed spinal manipulative treatments were measured using a thin, flexible pressure pad. The results indicate that there was no difference in any of the mechanical force-time variables tested between the female and the male chiropractors.

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Herzog/Symons

“Immediate effects of SMT on VA histology” will simulate neck manipulation by clamping cadaveric VA’s in a materials testing machine, and stretch it at specific strains/frequencies. A neuropathologist will then evaluate the histologic damage, if any. The operating hypothesis is that there will be a threshold for strain and number of repetitions above which histologic damage will appear. This threshold will then be compared against clinical practices.

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Suter/McMorland/Herzog

The project “Reflex responses following spinal manipulative treatments” as measured by using surface electromyography and H-reflex responses specifically tests the hypothesis that H-reflex responses of soleus are unaltered by chiropractic spinal manipulation, but are influenced by repositioning patients before and after treatment. The results indicate that the soleus H-reflex response remained unaltered in control (no treatments), sham treated (massage), and experimental (SMT) subjects, as long as the treatments and H-reflex measurements were performed in the same position. However, we found that re-orienting patients from a side lying to a prone position on the treatment table produced an H-reflex suppression for about 30-60 s, as described in the literature by others and associated with a treatment effect. We speculate that spinal manipulative treatment of the sacroiliac joint in a side-lying position does not alter the soleus H-reflex response.

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Drover/Herzog

The project entitled “Muscle inhibition in competitive athletes with thigh muscle injury” will study competitive soccer players with thigh muscle strains. It is well established that muscle or joint injury produces muscle inhibitions that cannot be overcome through voluntary contraction. We speculate that one of the beneficial aspects of chiropractic muscle treatment is a reduction in muscle inhibition in injured athletes. Muscle inhibition, strength, and activation of the muscles will be measured before and after muscle treatment performed by a chiropractor using the twitch interpolation technique, a strength dynamometer, and electromyography, respectively.

Results of this project will be reported at the Research Symposium in Toronto.

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Erwin

The project entitled “Is the notochord cell the key to intervertebral disc homeostasis?” concerns particular aspects of the physiology of the intervertebral disc. The project developed from the observation that certain species of dog do not develop degenerative disc disease whereas others do develop the disease and do so at an early age. The essential link in this observation is that the animals that do not develop degenerative disc disease maintain their resident notochord cells within the nucleus pulposus of the intervertebral disc. The animals that are prone to the disease (such as is the case with humans) lose these cells early in their life. The intervertebral disc nucleus pulposus originally contains two types of cells; chondrocytes and notochord cells. Dr. Erwin has determined that the notochord cells produce soluble proteins that seem to target the proteoglycan synthesizing machinery of the chondrocytes and do so across species in a dose dependent fashion. Dr. Erwin is presently characterizing the specific nature and identity of the proteins produced by the notochord cells and examining specific genes that are ‘turned on’ in cellular signaling events downstream. Dr. Erwin holds a CIHR post-doctoral fellowship. His work is supported by a pilot-funding grant from the Canadian Arthritis Network and he carries out his research at the Toronto Western Hospital.

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Ammendolia

The project “The use of back belts for the primary prevention of occupational low back pain: A systematic review of the literature” will provide recommendations for health care practitioners on the use of back belts for primary prevention of occupational low back pain. Co-investigators include Dr. Michael Kerr and Dr. Claire Bombardier from the Institute for Work & Health and University of Toronto and the Canadian Task Force for Preventive Health Care who critically appraised the evidence evaluating the use of back belts by workers. The study also reviewed risk factors for occupational low back pain and potential risks associated with back belt use. A summary of the findings of this research, is expected to be published in the Canadian Medical Association Journal and the Journal of the Canadian Family Physician.

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Ammendolia

The project “Views on x-ray use for acute low back pain among chiropractors in an Ontario community” explored quantitatively and qualitatively the attitudes and beliefs towards the use of x-

ray for the management of acute low back pain. The data was collected from chiropractors practicing in a southern Ontario community of about 100,000 people using a survey and focus group. This study has recently been accepted for publication in the Journal of Manipulative and Physiological Therapeutic. The co-investigators include Sheilah Hogg-Johnson, Claire Bombardier and Rick Glazier and was supported by a grant from CCRF.

ammendol@sympatico.ca

Ammendolia

The project "The Ontario low back pain study" will be collecting data on 2000 chiropractic patients who present with acute low back pain. Patients will be recruited from both CMCC outpatients clinics and field practitioners' offices. The objectives of the study include the evaluation of prognostic factors for acute low back pain and the comparison of patient characteristics and outcomes among the CMCC clinics and field practitioners. The results of this research may help practitioners predict which patients are likely to develop chronic low back pain and whether low back pain research findings conducted with CMCC patients can be generalized to patients seen by field practitioners. Supported by a post doctoral CIHR-CMCC fellowship training grant and the OCA-MOHLTC research grant.

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Boudreau/McBride

The project "Chiropractic Services in the Canadian Military: a pilot project" is a first in Canada. The Canadian military initiated a six month trial of on site chiropractic services for the later half of 2000. Services were provided through contracted chiropractors in the outpatient department of the Archie McCallum Hospital at CFB Halifax. A patient and physician satisfaction survey was used to determine if chiropractic services were valued by the patients and referring physicians. Details concerning the current and future role of chiropractic in Canadian military hospital environments will be examined.

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Quon

The project "Comparing the clinical outcomes and patterns of complementary and alternative, as well as conventional health services utilization of patients managed surgically versus those managed non-surgically for lumbar disc

Herniation" is a thesis project. The study population will consist primarily of lumbar disc patients who have been referred to the Spine Program at Vancouver General Hospital in Vancouver. The study will also identify a separate cohort of work-injured subjects, comprised of lumbar disc patients managed through the Workers' Compensation Board of British Colum-

bia. Health services utilization information on all subjects will be acquired by way of direct survey as well as administrative data, accessed through the BC Health Linked Data Base. The primary hypothesis for this study is: That there will be no difference in the overall costs of health services utilized between lumbar disc patients managed surgically versus those managed non-surgically at 2-years of follow-up. Dr. Quon is a CIHR fellowship recipient and a PhD candidate.

quon@interchange.ubc.ca

Quon

The project "A descriptive study of the prevalence of low back pain among Nepalese porters" is nearing completion. Co-investigator Steven Fedder, MD, is a former volunteer physician for the Himalayan Rescue Association Medical Clinic in Nepal.

quon@interchange.ubc.ca

Quon

The project "A descriptive study of emergency department patients' attitudes toward complementary medicine, and their willingness to participate in complementary and alternative medicine research was funded by the Vancouver Hospital Health Sciences Centre and the BC Health Research Foundation. The co-investigator R. Abu-Laban, M.D., is Research Director, Department of Emergency Medicine, Vancouver General Hospital.

quon@interchange.ubc.ca

Blouin

The aim of the whiplash injuries projects entitled "Whiplash injuries: from stabilization mechanisms to sensorimotor deficits" is first, to identify the nature of the neuromuscular responses that occur following whiplash motion and second, to describe the neck or vestibular dysfunctions observed in whiplash injured patients. A better understanding of these processes should help clarify the etiology of whiplash injuries as well as the nature of the functional incapacities experienced by these subjects. Funding Agencies: CIHR-FCQ, NSERC, FCAR, FCQ. Descarreaux is co-investigator. Dr. Jean-Sébastien Blouin, DC, MSc, is a PhD candidate and has been awarded a prestigious three-year fellowship award at Laval University funded by the Canadian Institutes of Health Research (CIHR) and by the Fondation Chiropratique du Québec (FCQ).

jsblouin@kin.msp.ulaval.ca

Blouin

In the project entitled "Influence of muscular fatigue on the postural control system", the aim is to identify how muscular fatigue of the lower limbs can affect the postural control system. Also, neuromechanical models of the postural control system

will be used to explore the possible effects of muscle fatigue on the various afferents and efferents. Funding Agencies : NSERC, CIHR-FCQ The co-investigator is Corbeil.
jsblouin@kin.msp.ulaval.ca

Blouin

The project entitled “Roles of vestibular and cervical proprioceptive signals for on-line space updating” will evaluate how and when healthy individuals can update on-line their visual field following neck proprioceptive and vestibular stimulations. It has been shown previously that healthy subjects could update their visual space more accurately following neck proprioceptive than vestibular stimulations (Blouin et al., 1997). Funding Agencies: CIHR-FCQ, NSERC, FCAR, FCQ. The co-investigators are Descarreaux and Simoneau.
jsblouin@kin.msp.ulaval.ca

Descarreaux

In the project entitled “Sensorimotor deficits associated with low back pain” Descarreaux is piloting a project where trunk positioning and trunk force production are evaluated in chronic low back pain patients and healthy subjects. Funding Agencies: FCAR, FCQ, NSERC, CIHR-FCQ. The co-investigator is Blouin. Dr. Martin Descarreaux DC is a PhD candidate at Laval University.
martin.descarreaux@kin.msp.ulaval.ca

Marcotte

This project is investigating the kinematics and kinetics of standardized motion palpation and is ongoing at the UQTR. The co-investigators are Dr. Martin Normand DC, PhD and Pierre Black MSc.
Justin_Marcotte@uqtr.quebec.ca

Busse

The project entitled “A 4-part series on a user’s guide to the chiropractic literature discusses how to interpret an article about therapy. The participants are: Jason Busse, Gordon Guyatt, Mohit Bhandari, and J David Cassidy. Dr. Busse is a previous Canadian Chiropractic Association Young Investigator Award recipient.
j.busse@utoronto.ca

Busse

The project entitled “A systematic overview and meta-analysis examining operative versus non-operative treatment of acute achilles tendon ruptures” has been accepted for publication in Clinical Orthopedics and Related Research (2002;400:190–200). The co-participants are: Bhandari, Guyatt, Morrow, Siddiqui, Leighton, and Schemitsch.
j.busse@utoronto.ca

Busse

Following the recent publication of a meta-analysis investigating the effect of low intensity, pulsed ultrasound on time to fracture healing (Busse JW, et al., CMAJ. 2002; 166: 437-441), planning for a randomized trial to further investigate this phenomenon has begun. The current co-participants are: Guyatt and Bhandari.
j.busse@utoronto.ca

Busse

The project entitled “A survey of Canadian chiropractic students examining attitudes towards vaccination” has been accepted for publication in the Canadian Medical Association Journal (2002;166:1531-1534). The co-participants are: Kulkarni, Campbell, and Injeyan.
j.busse@utoronto.ca

Busse

The project entitled “A database analysis to examine predictors of morbidity and mortality for emergency trauma surgery” is underway. The co-participant is Bhandari.
j.busse@utoronto.ca

Biggs

The project entitled “Professional Identities of Chiropractors” is examining the construction of professional identities among chiropractors. Although chiropractic philosophy has been a controversial issue both within and outside of the profession, little research has been conducted on the meaning of chiropractic philosophy to practising practitioners. This pilot study, will explore in more depth chiropractors’ belief systems, and the ways in which they resonate with chiropractors’ life-worlds. In addition, the research will examine chiropractors’ views on the regulatory framework, particularly their views on scope of practice, as well as their assessment of their education. This research will use qualitative methods that focus on the narrative strategies and cultural idioms that chiropractors use to understand and convey their knowledge base.
biggs@duke.usask.ca

Mercado

Chronic pain conditions are prevalent in our society and create a tremendous burden of illness. Knowledge about the factors that can impact on these pain conditions is extremely important, especially to health professionals, such as chiropractors. This researcher is a CCA-CIHR Doctoral Research Award recipient. Her dissertation examines coping behavior in people dealing with the chronic pain experience. It consists of four separate studies. The first study is comprised of a systematic review of the literature on factors associated with the coping behavior of

pain sufferers. The second study, which is also a systematic review of the literature, examines the risk and prognostic factors of low back pain. The third study examined the relationship between coping behavior and the subsequent development of disabling pain in individuals in the general population who are experiencing neck or low back pain. The fourth study examines the relationship between coping behavior and recovery from neck or low back pain that was a result of a motor-vehicle injury. The third and fourth studies have been completed and were presented at the Canadian Psychological Association annual convention.

annie653@hotmail.com

Hayden

The project entitled "Evaluation of chiropractic management of pediatric low back pain patients: A prospective cohort study" recently accepted for publication in JMPT, studied consecutive pediatric low back pain patients seeing randomly selected chiropractors. The objective of this investigation was to describe chiropractic management of low back pain in patients between the ages of four and eighteen years as well as outcomes and factors associated with the outcomes. Patients responded favorably to chiropractic management and there were no reported complications. Future investigations should establish the natural history and should compare chiropractic management to other forms of treatment to gain knowledge about the effectiveness of chiropractic in managing pediatric low back pain. Co-investigators were S. Mior and M. Verhoef. Dr. Hayden is a CIHR Fellowship Award recipient and a PhD candidate.

jhayden@iwh.on.ca

Hayden

The primary objective of the project entitled "Development of a framework to identify clinically useful predictive factors for low back pain" is to identify key clinically useful factors that predict chronicity in acute low-back pain patients that could be used in the development of clinical predictive rules. Secondary intermediate objectives are to understand and manage potential sources of heterogeneity within the LBP prognostic literature, to map the state of the art in LBP prognosis on models/frameworks of disability and to assess the congruency of useful predictive factors between the low-back pain prognostic literature and in clinical practice. Co-investigators are Bombardier, Beaton, and Hogg-Johnson.

jhayden@iwh.on.ca

Hayden

"Exercise therapy for treatment of adult non-specific low back pain" is a systematic review conducted within the framework of

the Cochrane Collaboration Back Review Group and will investigate the effectiveness of exercise therapy for the treatment of adult non-specific low back pain. This review will attempt to determine the effectiveness of specific aspects of exercise therapy and will analyze subgroups of studies to explore effectiveness relative to condition, population and outcome related factors. The co-investigator is van Tulder.

jhayden@iwh.on.ca

Hayden

This project entitled "Use of Bayesian statistics in meta-analysis of heterogeneous studies: a methodology review and example" will discuss Bayesian statistical methods and their use in meta-analysis. It will include a discussion of the potential benefits of Bayesian methods in review of studies with heterogeneous populations, outcomes and designs, and will present a novel worked example using the literature on an intervention for low back pain. The co-investigator is Tomlinson.

jhayden@iwh.on.ca

Hayden

"Measurement properties and feasibility of patient-report outcome measures in claim-based musculoskeletal rehabilitation practice" is a prospective study which investigated the feasibility of collection, and quality of information from routine use of patient-report outcome measures (SF-12 health survey, VAS pain scale, Roland Morris Disability Questionnaire, Neck Disability Index, DASH Questionnaire, and WOMAC questionnaire) in a claim-based soft-tissue rehabilitation patient population. It also explored qualitatively the usefulness of this information at the clinic level. With a few exceptions, all of the measures were easy to use, acceptable to patients and clinic staff, and fulfilled criteria of scaling assumptions. With education and support, use of patient-based outcome measures is feasible in routine practice, even in claimant populations. Co-investigators were Bombardier, Beaton, and Hogg-Johnson.

jhayden@iwh.on.ca

Oliphant/Kawchuk

This project at the University of Calgary, is entitled 'Identification of Induced Annular Tears Using Diffusion-Weighted MRI in a Porcine Model'. Annular tears of the lumbar intervertebral disc are thought to be a common cause of chronic low back pain, but are not easily diagnosed. It is thought that DWI (diffusion weighted imaging) will show these annular tears. Dr. Oliphant is a candidate in the Masters of Applied Science Degree in Musculoskeletal Management from the Royal Melbourne University in Australia.

dr-o-chiro@shaw.ca

Pitcher

The project entitled “Rates of Neuromuscular fatigue and repeatability of measurements of EMG and force using a prone isometric lumbar extension exercise” is a pilot study which will set the stage for a project that will investigate the neuromuscular effects of manipulation. Dr. Pitcher is a master’s candidate in Human Kinetics at Memorial University of Newfoundland.
mpitcher@avint.net

Kawchuk / Fauvel

Project: Development of a Non-invasive Ultrasonic Technique Capable of Quantifying Vertebral Load-displacement Responses into a Clinically Relevant Instrument. Funds from a number of different agencies (NSERC, CCRF, FCER) have been used to provide equipment and supply operating funds for several distinct projects designed to identify and test technologies that permit conversion of current laboratory techniques of spinal stiffness measurement to more clinically applicable technologies.
kawchuk@ucalgary.ca

Kawchuk

The project entitled “Ultrasonic Quantification of Spinal Displacements” is funded in part by the Ontario Chiropractic Association and seeks to establish the clinical performance criteria of a hand-held device designed to quantify spinal stiffness.
kawchuk@ucalgary.ca

Kawchuk

The project entitled “Identification of Intervertebral Disc Injury with Diffusion Magnetic Resonance Imaging” is funded by the University of Calgary and will develop a new magnetic resonance imaging technique to distinguish acute from chronic intervertebral disc herniations and/or false positives.
kawchuk@ucalgary.ca

Kawchuk

Project: Development of an Animal Model of Vertebral Artery Injury. Because the number of cases of stroke caused by vertebral artery injury are so few in number, development of an animal model would be a useful tool in the investigation of the causes and risk factors associated with this condition. This work is supported directly by the CCPA.
kawchuk@ucalgary.ca

Smith / Kawchuk

The project entitled “Effect of nucleus pulposus digestion on the mechanical properties of the intervertebral disc during static compressive loading” will develop a novel technique for creat-

ing control specimens for biomechanical and imaging studies.
kawchuk@ucalgary.ca

Kawchuk / Perle

“Radiographically determined anatomical location of the point of peak pressure during pisiform and hypothenar contact manipulation procedures” is a project undertaken in collaboration with Dr Stephen Perle of the University of Bridgeport, which seeks to define the relation between anatomical landmarks of the hand and the location where force is developed in the patient during spinal manipulation.
kawchuk@ucalgary.ca

van der Velde

The project entitled “Utility values for health states associated with two treatments (non-steroidal anti-inflammatory drugs and cervical spine manipulation) for mechanical pain” is a pilot study funded by the Ministry of Health and Long-Term Care and the Ontario Chiropractic Association. Co-investigators include Krahn, Hogg-Johnson, Maetzel and Nagile. Dr. van der Velde is a CIHR Fellowship recipient and PhD candidate at the University of Toronto. Her research thesis is entitled “A decision analytic cost-effectiveness analysis of non-surgical treatments for mechanical neck pain”.
gabrielle.vandervelde@utoronto.ca

Uchacz

The project entitled “Clinical effectiveness of a myofascial release technique on hamstring stiffness” was designed to determine the accuracy and reliability of stiffness measurements on the hamstring muscle group using an electronically controlled Tissue Stiffness Meter (TSM). The intent is to determine hamstring muscle group stiffness before and after a myofascial release technique treatment on a patient group with chronic hamstring injuries. It is hypothesized that stiffness of the hamstring muscle group will decrease (increased compliance) following the myofascial release treatment on patients with chronic hamstring injuries.
guchacz@cadvision.com

Otitis Media Study Underway at Harvard

This otitis media trial is funded by the Consortial Center for Chiropractic Research and the National Center for Complementary and Alternative Medicine at NIH. This trial is a collaboration between The Center for Alternative Medicine Research and Education, Department of Medicine, Beth Israel Deaconess Medical Center, Harvard Medical School and the Departments of Otolaryngology and Pediatric Infectious Disease, Boston Medical Center and the Department of Otolaryngology, Health Alliance, University Of Massachusetts Leominster Hospital.

The study design is a randomized, prospective comparison of chiropractic manipulation and standard therapy (usual care) for children ages 2 to 12 years suffering from persistent/recurrent otitis media with effusion (OME) who are scheduled to receive tympanostomy tubes.

The aim of the proposal is to examine whether chiropractic treatment will reduce the likelihood of persistent effusion in children with otitis media when compared to usual care. Pneumatic otoscopy, tympanometry and acoustic reflectometry will be performed for each child. Children will be randomized to receive usual care (no specific interventions until surgery) or chiropractic treatment, (to include manipulation of the upper cervical spine, level C1–4, massage of the area lymphatics and ‘ear tug’), rendered 6 times over a 2-week period according to established chiropractic protocols.

Five days prior to surgery the otolaryngologist will reassess all patients. The presence of middle ear fluid will be assessed in combination with pneumatic otoscopy, tympanometry and acoustic reflectometry. Children who are shown to have middle ear fluid will proceed to surgery as scheduled. Those children that are shown not to have middle ear fluid at this point of reassessment, will have the option to cancel or delay surgery for an additional four weeks. For those children that proceed to surgery, the presence and viscosity of middle ear fluid will be noted and culture for bacterial contamination performed.

All treatment protocols have been reviewed and accepted by the Institutional Review Board and Scientific Advisory Committee of the participating hospitals. Contact James P. Barassi DC, Research Fellow in Medicine, 978-534-1222 or via email at jbarassi@caregroup.harvard.edu.

Australian Clinical Trial on Spinal Pain Syndromes

Since 1995 the Multidisciplinary Spinal Pain Unit located at Townsville General Hospital has undertaken the challenge to conduct unique studies using a “fastidious” approach to identify which of three basic separate and clearly defined treatment modalities (chiropractic spinal manipulation, medicine or needle acupuncture) is most successful for treating spinal pain syndromes.

Following the pilot study comparing chiropractic spinal manipulation, medication (Paracetamol, Tenoxicam with Ranitidine, Celebrex or Vioxx), and needle acupuncture for managing chronic (> 13 weeks duration) spinal pain syndromes from July 1995 to June 1998, the main study was conducted as a prospective, randomised, independently assessed pre- and post-intervention clinical trial between February 1999 and October 2001.

Patients without contraindication to needle acupuncture, manipulation or medication were recruited from the specialised multidisciplinary spinal pain syndrome outpatient unit. One

hundred and fifteen (115) patients who presented to the Multidisciplinary Spinal Pain Unit were recruited. Main outcome measures were changes in (a) the *subjective scores* of (i) Oswestry Back Pain Disability Index, (ii) Neck Disability Index, and (iii) Short-Form-36 (SF-36) Health Survey questionnaire, (iv) three Visual Analogue Scales of local pain intensity (cervical, thoracic, lumbar), and (b) *objective measurements* for ranges of movement i.e. (i) straight leg raising, (ii) active lumbar spine flexion while seated and while standing, (iii) lateral bending, and (iv) active cervical spine flexion, extension, lateral bending and rotation. The results of the main study are under preparation for publication. The participating staff were a Chinese trained acupuncturist, a chiropractor, a chiropractor/clinical anatomist, a sports medicine practitioner, an epidemiologist and a research assistant. Funding of A \$1.2 million was provided by Queensland Health. Contact Dr. Lynton G F Giles, DC(C), MSc, PhD Director Multidisciplinary Spinal Pain Unit, The University of Queensland. lgiles@austarnet.com.au

Canadian Chiropractic Research Foundation

Dr. Susanne Gorka DC, of the Ottawa South Chiropractic Clinic in Ontario has become a 2002 “silver member” of the Canadian Chiropractic Research Foundation. Her very generous donation to support chiropractic research in Canada will help tremendously in advancing the profession’s research interests.

Canadian Federation of Chiropractic Regulatory Boards (CFCRB)

Recently the CFCRB has recognized the following five specialty colleges :

- 1 College of Chiropractic Sports Sciences (CCSS),
- 2 College of Chiropractic Orthopedists (CCO)
- 3 Chiropractic College of Radiology (CCR),
- 4 College of Chiropractic Sciences (CCS), and
- 5 College of Chiropractic Rehabilitation Sciences (CCRS).

The Fellows from these specialty colleges are expected to add tremendously to the research initiatives as they take up their leadership roles in research.

Natural Sciences and Engineering Research Council of Canada (NSERC) Release

NSERC has featured Dr. Greg Kawchuk DC, PhD Canada’s 1st university-based Chiropractic Research Chair in a national news release focusing on young new investigators.

If you’re one of the estimated six million Canadians who grimaces and pops painkillers to deal with lower-back pain on any given day, Dr. Greg Kawchuk has hopeful news. The University of Calgary back researcher is developing a high-tech

ultrasound imaging system that could transform how back problems are diagnosed and treated.

To date, the physical causes of lower-back pain have remained achingly elusive to technological fixes.

“In only one case in ten can the cause of lower-back pain be clearly determined,” notes Dr. Kawchuk, assistant professor at the University of Calgary’s Faculty of Kinesiology and senior chiropractor with the university’s Health Services. “With the ultrasound imaging system we’re working on, we hope to increase that percentage significantly.”

“We know there are many causes to back pain, such as lifting improperly, but you couldn’t bet a nickel on what exactly is causing the pain,” continues Kawchuk. “If you want to provide effective treatment, whether it’s surgery, exercise or manipulation, you must know what tissue is involved, such as joint, ligament or muscle. You must locate the exact injury.”

The diagnosis is so difficult in part because the dozens of spinal joints are relatively small and deep in the body compared with a knee or elbow joint. According to Dr. Kawchuk, current diagnostic imaging techniques, primarily x-rays, have one fundamental flaw: the images are static.

His lab-based ultrasound approach, called “ultrasonic indentation,” provides real-time images of spinal function. The prototype desk-sized diagnostic apparatus has a dual-action probe. It measures the spine’s resistance to the pressure it exerts with its toonie-sized tip while simultaneously taking ultrasound images.

“It’s like we’re instrumenting your finger’s ability to sense how stiff a tissue feels when you push into it,” says Dr. Kawchuk. “Then we take it even further than that – with the ultrasound I can look into the tissue and attribute stiffness values to different tissue layers. How stiff is the muscle layer? How far is the bone moving underneath that?”

This device has already proved its mettle by producing the highest diagnostic accuracy ever in distinguishing an arthritic spine from a normal one. The research, conducted with colleagues at Sweden’s Gothenburg University, used pigs with degenerative arthritis. It was recently published in the scientific journal *Spine*.

Dr. Kawchuk’s current NSERC-funded work is to turn this lab-based machine, which requires two operators, into a hand-held device that can be used in a doctor’s office. It would include a feedback mechanism so that patients could indicate their level of pain as pressure is applied to the lower back via the ultrasound probe.

“If we’re going to make this a hand-held device I have to give operators a tool that can be used in a reproducible fashion,” says Dr. Kawchuk. “You need to know in very precise terms where the ultrasound transducer is. So we’re using electromagnetic tracking devices that we attach to the ultrasound transducer to provide real-time feedback as to where the indenter is in 3-D space.”

Based on the enthusiastic response to Dr. Kawchuk’s initial results, the University of Calgary’s technology transfer company – University Technologies Incorporated – has filed two patents on the ultrasound indentation work.

The researcher hopes to have a hand-held prototype developed in the next three years. But his approach to developing the technique is as cautious as the movements of someone suffering with lower-back pain.

“This is exciting research,” says Kawchuk. “Accurate detection and treatment of lower-back pain has a direct relationship to improving quality of life, in terms of being pain-free and having greater mobility. The big question here though is will this technology suffer the same fate as numerous other technologies that have attempted to identify painful spinal tissues? There’s currently almost nothing in terms of a spine-based measurement that has a high correlation to pain. We’re hoping that with ultrasound indentation we’ll be able to clearly link pain to function.”

Dr. Greg Kawchuk is Canada’s 1st university based Chiropractic Research Chair.
kawchuk@ucalgary.ca

The Japanese Foundation for Spinal Research

The Japanese Foundation for Spinal Research (JFSR) is a non-profit organization was recently established to support and disseminate the results of research pertaining to the human spine, and related tissues, in health and disease. The inaugural meeting of the Board of Directors saw the election of Dr. Brian Budgell, associate professor, Kyoto University, as board chair and Dr. Mieko Kurosawa, professor, International University of Health and Welfare, as vice-chair. The founding board, consisting of eight directors – all with direct experience in research of relevance to chiropractic – represents six Japanese universities and four health professions – athletic therapy, chiropractic, nursing and medicine. The Foundation has established a bilingual web site at: <http://www.jfsr.org>

This site houses two of the important projects of the foundation, the Japanese Chiropractic Research Archives Collection (JCRAC) and the Japanese Digest of Chiropractic Research (JDCR)

The Japanese Chiropractic Research Archives Collection, modeled on the North American CRAC, is a collection of research articles, monographs and resources related to chiropractic. The collection consists of original Japanese papers, plus translations of full articles or summaries of significant English-language works. The home page features a search engine which functions in Japanese and English. This will aid English-speaking course development and accreditation teams overseas, as well as serve the primary target users – Japanese students and

practitioners. The Japanese Digest of Chiropractic Research is to be an electronic, peer-reviewed journal of original Japanese chiropractic research, and will publish translations of significant English-language research papers. The founding of the journal was facilitated by the kind advice of the Chiropractic Research Journal Editors Council. The editorial board of the journal consists of: Dr. Dana Lawrence, Editor, JMPT, Dr. Allan Gotlib, Editor, JCCA, Dr. Mary Ann Chance, Editor, CJA, and Dr. William Meeker, Editor, JNMS.

For further information visit the JFSR web site, email the Foundation at admin@jfsr.org or write to: Dr. Brian Budgell, College of Medical Technology, Kyoto University, Kawaharacho 53, Shogoin, Sakyo-ku, Kyoto 606-8507 Japan

Upcoming Conference

The 4th World Congress of Biomechanics is being held August 4–9, 2002 in Calgary, Alberta. *This is the premier event in biomechanics.* It features Nobel Laureate, Dr. Steven Chu presenting at the opening ceremony, 5 plenary speakers, 25 invited speakers and over 80 symposia sessions. Listen to McGill, Herzog, Panjabi, Kawchuk, Triano, Pikar, Nilsson, Dvorak, Indahl and Solomonow. Of interest is the plenary lecture by Dr. Don Giddens from Georgia Tech/Emory Biomedical Engineering entitled “Hemodynamics and atherosclerosis; How much do we really know?” Symposia programs include orthopedics, musculoskeletal and locomotion, biotechnology and bioengineering.

www.wcb2002.com

Summary

As Chair, I would like to acknowledge the commitment that committee members of both the CCA Research Committee and the Canadian Chiropractic Research Foundation have made in advancing the interests of Canadians, our profession, chiropractic research, and our chiropractic researchers. The CCA clearly has a significant role to play in the development of Canada’s outstanding world class chiropractic researchers and the CCA vision of improving the health and quality of life for Canadians through chiropractic research is a win-win relationship.

The CCA has been instrumental in fostering a *chiropractic*

research culture in Canada. As our relationship with CIHR continues to flourish we are better able to foster the creation of a national community of fulltime research scholars in chiropractic. Canadians will come to receive the benefits that chiropractic care brings. It is vital that chiropractic be fully integrated into our national health care system and that our discipline be entrenched within the university system. The CCA is participating in the development of Canadian chiropractic research by ensuring young talented chiropractors interested in research have access to the best training opportunities and resources to address the health challenges faced by Canadians and particularly chiropractic patients. The support of chiropractic research and chiropractic researchers by CIHR will obviously help to build our credibility with the government, academic researchers and the public

The Board of Governors of the CCA are to be congratulated for this extraordinary and exemplary commitment. For further information contact Dr. Allan Gotlib, CCA Research Programs Co-ordinator at tel: 416-781-5656, fax: 416-781-0923, email: algotlib@ccachiro.org

This Bulletin is distributed to the Canadian chiropractic research community. (30/06/02) You may view the preceding six bulletins on the CCA website at www.ccachiro.org

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**Contact Dr. Allan Gotlib DC
Assistant Secretary CCRF
Tel: 416-781-5656
Fax: 416-781-0923
Email: algotlib@ccachiro.org**