

Anglo-European College of Chiropractic

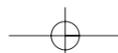
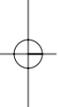
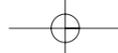
Research and Postgraduate Studies

AECC Research Report 2005 - 2007



Anglo-European College of Chiropractic
Bournemouth, England

Academic Years
September 2005 to August 2007



Anglo-European College of Chiropractic

Department of Research and
Postgraduate Studies

and

Institute of Musculoskeletal
Research and Clinical
Implementation



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Introduction



Welcome to the first combined report of the AECC's Department of Research and Postgraduate Studies and the Institute for Musculoskeletal Research and Clinical Implementation (IMRCI). This report details the research activities of the College and IMRCI from 2005-2007. As you will see, we have much to report including research investigations we have been involved in over the last two years and how these have been disseminated through publications and presentations. In addition, we report on the continuing scholarship and development activities of our staff, as well as our expanding postgraduate and continuing professional development (CPD) portfolios. All of these activities play a central role in the AECC's mission to be a leading centre of excellence in chiropractic education, training and research.

The IMCRI, established in 1999, is situated within the College and has as its focus collaborative, multidisciplinary research that sustains a chiropractic presence in health care research. College research on the other hand, has a more diverse agenda in experimental, clinical and educational research. There is a strong emphasis through research on staff development and scholarship, which is essential in underpinning the teaching-research interface, and ensuring that the taught curricula at AECC are evidence-based.

Both the Institute and the College research activities enable the AECC to deliver education and training programmes in a vigorous and dynamic research environment. It is this commitment to excellence in research, postgraduate education and scholarship that maintains the AECC as a prestigious and pre-eminent educational institution.

Professor JE Bolton
Director of Research and
Postgraduate Studies

Professor AC Breen
Director IMRCI



Feature Reports: Experimental Research



The Prone Hip Extension Test: Assessing its Usefulness in Clinical Practice

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(PhD Candidate, University of Portsmouth)

Traditionally, the strength and endurance of various muscles in and around the lumbar spine have been deemed important outcomes in low back pain (LBP) rehabilitation and thus have garnered the most attention in the research literature. More recently, however, the issue of motor control (i.e. the coordination of muscle activity) has been steadily getting more attention. Despite this, there are relatively few clinical tests which are used in practice to assess the motor control in and around the lumbar spine in LBP patients. The research carried out over the past three years has focused on one such test, the Prone Hip Extension (PHE) test, in order to see how the information gleaned from the test can be used in LBP rehabilitation

The PHE test involves having a patient lie prone and alternately lift each leg whilst the examiner palpates the ipsilateral gluteus maximus (GM), ipsilateral hamstring (HAM), ipsilateral erector spinae (IES) and contralateral erector spinae (CES) muscles in order to determine the order in which they activate. Since this movement is thought to simulate more functional movements, such as gait, it could therefore give an indication of how these muscles function during a patient's everyday activities. A "normal" activation order for this movement was proposed: GM-HAM-CES-IES. If a patient used an "abnormal" motor pattern, then treatment should be aimed at restoring the "normal" pattern. Although this test was developed

many years ago, the amount of research supporting its theoretical basis or quantifying its usefulness in clinical practice is sparse. Most of the previous research in this area has investigated the motor patterns used in small samples of subjects without LBP to see whether any "normal" patterns actually exist. Prior to this work, no published studies had actually used samples of LBP subjects to determine whether any particular aspects of the motor patterns used by these subjects are in fact "normal" or "abnormal".

Two studies have been completed, using surface electromyography, the objectives of which were to investigate the two basic theories behind this clinical test. First, the motor patterns used in a sample of non-LBP subjects were analyzed to investigate whether GM-HAM-CES-IES is the "normal" activation order for this movement. In the second study, the motor patterns used in samples of non-LBP and unilateral LBP subjects were compared to determine whether a delay in GM activation is associated with LBP.

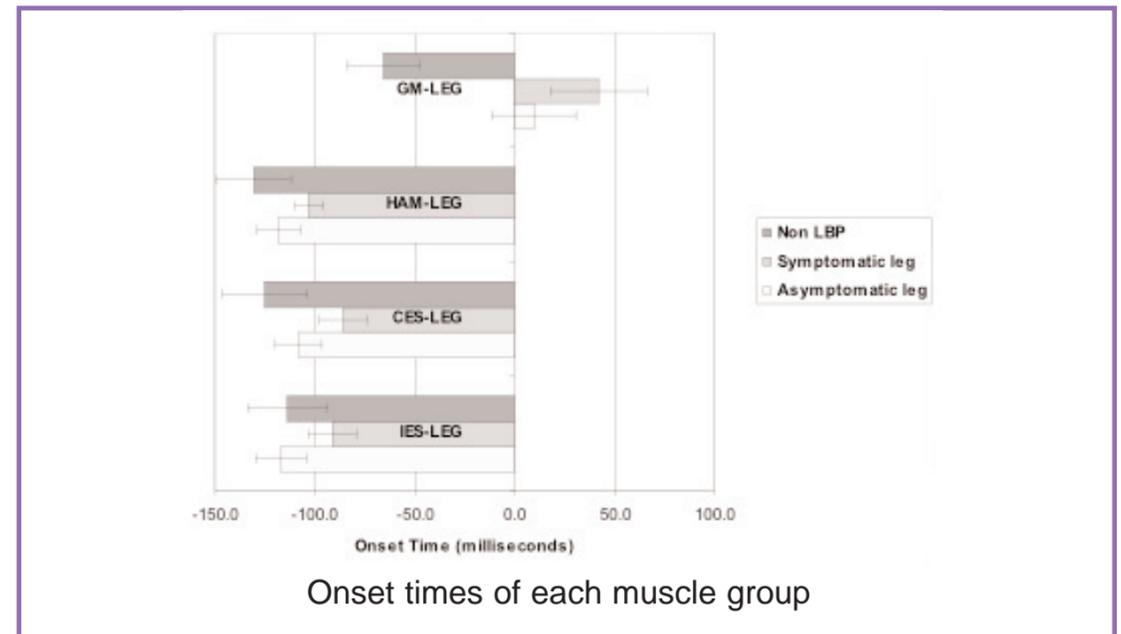
Results

Theory 1: GM-HAM-CES-IES is the "Normal" Activation Order During PHE

The non-LBP samples used 21 (first study) and 20 (second study) of the 24 possible different activation orders, whilst only eight

were used in the LBP sample of the second study. Although their relative rankings were different, the same six activation orders (HAM-CES-IES-GM, HAM-IES-CES-GM, CES-HAM-IES-GM, CES-IES-CES-GM, IES-HAM-CES-GM, IES-CES-HAM-GM) were the most prevalent in each sample and accounted for >80% of the activation orders

non-LBP sample. The magnitude of the delay relative to the onset of leg movement was 107.5 ms (95% CI = 78.3 to 136.7 ms; $p < 0.001$) in the symptomatic side's leg and 75.4 ms (95% CI = 47.8 to 103.0 ms; $p < 0.001$) in the asymptomatic side's leg.



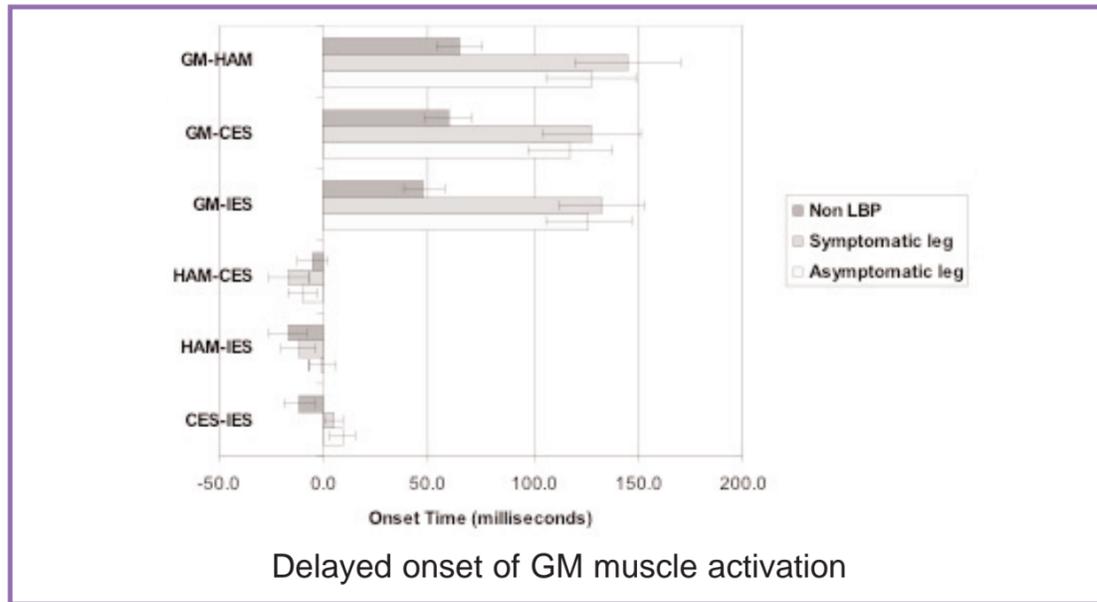
used. Of note, the GM-HAM-CES-IES activation order was only used once in 300 repetitions in the first study's non-LBP sample and was not used at all in the 310 repetitions of the second study's non-LBP sample nor in the 200 repetitions of the symptomatic and asymptomatic legs of the LBP sample.

Theory 2: A Delay in GM Activation is Associated with LBP

The onset of GM activation in the LBP sample was significantly delayed relative to the onset of leg movement as well as to each of the other muscles in both legs compared to the

Discussion

The results of these studies demonstrate that GM-HAM-CES-IES is not the "normal" activation order during PHE as it was only used once in the 610 repetitions analyzed in the two non-LBP samples. They also demonstrated that there is in fact no particular "normal" nor "abnormal" activation order for this movement as the same six activation orders were the most commonly used in both the non-LBP and LBP samples, with no one activation order showing a strong predominance in any of the samples/groups analyzed. This is consistent with the few other studies which have investigated the motor



Delayed onset of GM muscle activation

patterns used by small samples of non-LBP subjects during PHE, which have also demonstrated much variety in the activation orders used in their subjects.

Although the results for the activation order comparisons do not indicate any differences in LBP subjects, one trend emerged when analyzing the muscle onset time data – the activation of the GM appeared to be delayed in both legs in unilateral LBP subjects. This is consistent with the findings in other studies that have shown a similar trend in GM activation in various situations.

The cross-sectional nature of the design of the studies allows no inferences to be made as to whether this apparent difference is a cause or an effect of LBP – it can only be said that an association seems to exist. Whether the use of “abnormal” motor patterns during PHE is associated with an increased risk of developing LBP is also unknown and requires further study.

Although the delay demonstrated in the LBP

group was found to be statistically significant, the clinical significance of the magnitude of this difference is debatable. This magnitude is, however, comparable to other motor control differences which have been found in LBP subjects.

Another important issue is whether treatment would have any effect on causing the GM to activate earlier during PHE. Few studies have demonstrated that treatment has an effect on motor control parameters. It is unknown whether exercises thought to facilitate or strengthen the GM have any effect on the timing of GM activation during this or any other movement. It is also unknown if treatments aimed more at decreasing a patient’s pain (i.e. spinal manipulation) have a similar effect.

Direction of Future Work

No studies have been performed investigating the validity and reliability of determining the relative activation order of the muscles via palpation during this movement. Also,

considering the results demonstrated in this study, it is uncertain what useful information this would actually give to clinicians. However, a recent study demonstrated that the reliability of classifying subjects as either “positive” or “negative” based on the presence or absence of “abnormal” observable movement patterns (i.e. lumbar spine rotation, lateral flexion, or hyperextension) during PHE is good. A further study is investigating whether motor pattern differences exist between subjects who test “positive” and those who test “negative” during this movement. The results of this study would then be able to better inform clinicians on the

relative usefulness of observing these “abnormal” movement patterns in practice.

Acknowledgements

I would like to personally thank both the AECC Chiropractic College and the College of Chiropractors for providing me with the opportunity to do this research at the AECC. I would also like to thank Professor Jeff Bagust and Professor Jenni Bolton for their continuing help in my endeavours.



Eye:Neck Coordination in the Rehabilitation of Chronic Neck Pain

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It has long been suggested that chronic neck pain sufferers (especially post-whiplash cases) have a poor ability to reposition the head, with the eyes closed, to a previously preset position. Such observations have led to ‘normal’ expectations of ability in repositioning accuracy to be included in cervical spine assessment, and have spawned a number of research strategies into deficits of so-called cervical kinaesthetic sensibility (SSA). Along this path, some have used eye:neck coordination exercises to improve SSA ability, and to demonstrate less pain and less reliance upon analgesia in the patient population, compared to controls thus influencing subsequent rehabilitation protocols.

However, much of this research has failed to consider the precise nature of the relationship between eye movement and neck movement (the cervical-ocular reflex - COR) let alone between eye movement and neck pain, or dysfunction. It is this relationship which is the subject of this study: to identify the normal parameters of the COR, and then to compare this with those who have chronic neck pain or whiplash. Indeed, it would hopefully go some way as an objective measure of ‘dysfunction’, a much sought after aspiration of practitioners in the manual disciplines.

Up until now the investigation has largely dealt with the issues of reliability of the instrumentation and development of procedures – not least, with how to deal with

blinking. These early studies recognised the need for more accurate equipment to measure eye movement, which again needed scrutiny for reliability, and to integrate the motion analysis equipment to the same computer such that eye movement and neck movement



Investigation of perception of horizontal and vertical

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S Docherty BSc(Hons), PhD

In everyday life we use external visual cues to allow us to estimate environmental factors such as 'true' vertical and horizontal. In the absence of such cues some people are better at judging vertical and horizontal than others. This may be an important factor in maintaining balance and preventing falls in conditions of poor lighting, especially in the elderly or visually impaired. The Rod and Frame test measures an individual's perception of vertical and horizontal, and how this is affected by confusing external visual information.

The first computer based Rod and Frame test has been developed at AECC. Unlike earlier, mechanical systems it runs on a standard PC, with the image being presented to the subject through head-mounted video glasses. This means that it is fully portable and does not need specialist dark room facilities, making it easy to collect data outside the laboratory.

A preliminary study was carried out on 17 asymptomatic subjects using the Computerised Rod and Frame Test. This study found that most of them have a perceptual error within 2.5° of the vertical plane.

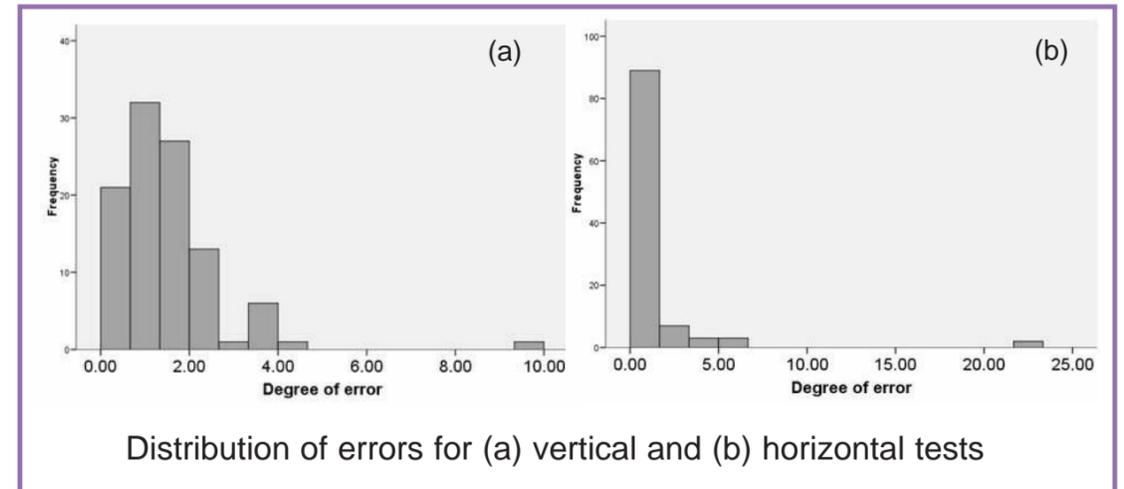
can be recorded simultaneously. The prospect of recording the COR will come to fruition in the summer of 2007, and it is hoped that transfer from MPhil to PhD will continue soon afterwards.

The preliminary study is now being expanded with the aim to establish a normative range for the perception of vertical and horizontal which will serve as a basis for future investigations. At this stage two experiments have been conducted to this end.

Experiment 1

In the first experiment, participants were assigned to either the vertical or horizontal test group. Each subject within a group received the same set of presentations however the order of these within the test were randomised by the computer. In each case, the frame was presented square on, tilted (18°) to the left and to the right. The rod also had two starting positions in which it was tilted by 20°. Each of these options was presented twice allowing the calculation of a mean error for each frame position. The order of these was randomised by the computer. Fifty one subjects were assigned to the vertical test and of these, 27 were male. The majority of the subjects were indeed within 2.5° of the vertical plane.

Fifty two subjects were assigned to complete the test for perception of horizontality and again 27 of these were male. In contrast to the results for verticality, the data from the



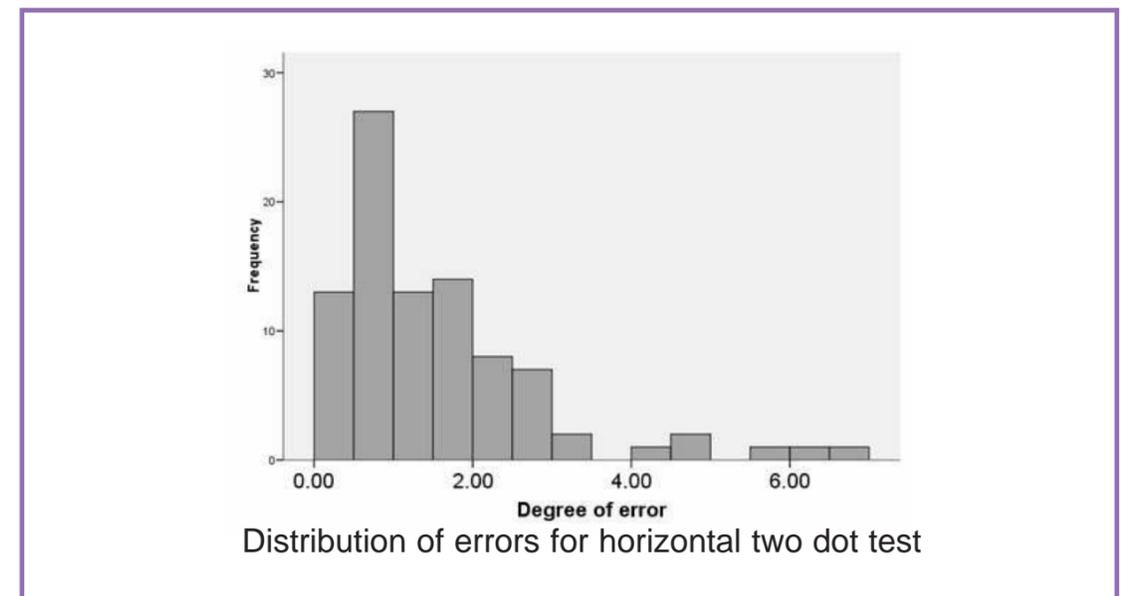
Distribution of errors for (a) vertical and (b) horizontal tests

horizontal test were not normally distributed when the frame was tilted with a concentration of subjects around 1°. This meant that 90% of participants had an error less than 1.6°. The distribution of errors differed from what was expected and also from what was found for the vertical group. However, during the tests many of the subjects commented that they were using the pixilation of the line to assist them in their decision i.e. when the line was horizontal it had a smooth appearance.

change from using a line to represent the "rod" to using two dots to represent the ends of the straight line.

Experiment 2

To test whether this change had the desired effect, a second experiment was set up where individuals were tested with both the dots and the line. Again the frame was presented in both a square on and tilted manner and the "rod" tilted to either side. Thirty subjects took part in this experiment of which 14 were female. There was a significant difference in



Distribution of errors for horizontal two dot test

Experimental Research

performance under these two conditions with the mean error for the two dots being significantly larger than the single line and the distribution of errors was more comparable to that of the vertical results. As a result, most people had an error of 2.75° when two dots were used.

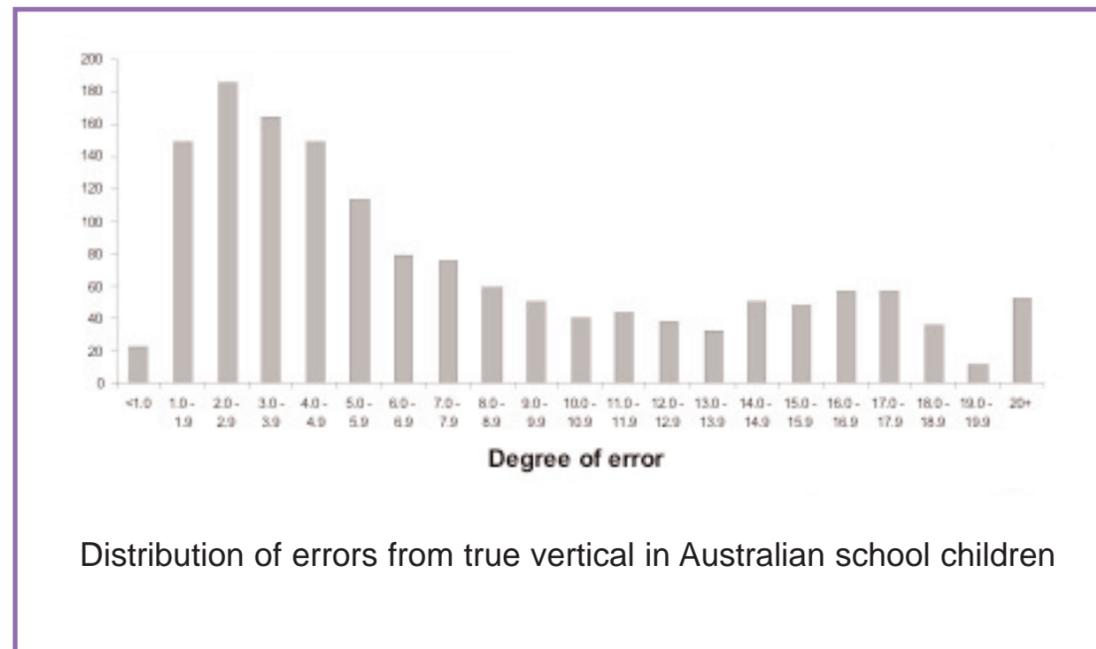
The final stage of this study will be to test a large sample of people, using the dots, for perception of both horizontal and vertical. This study is nearly complete and should establish a baseline on which to base future projects.

Related Collaborative Projects

In addition to the AECC the system is currently

being used in laboratories in Australia, Los Angeles and Hawaii. In the Australian study the Rod and Frame is one of a battery of tests employed to follow the development of 1000 schoolchildren in a major longitudinal study funded by the Commonwealth Institute, the Australian Research Council and the Bluearth Institute.

The results of the first year's study with the children age 7-8 years are fascinating. The children show a very wide spread of errors in estimating vertical, ranging up to 30°. Adults seldom show errors greater than 2.5°. It will be interesting to see how the pattern changes as the children grow up.



Experimental Research

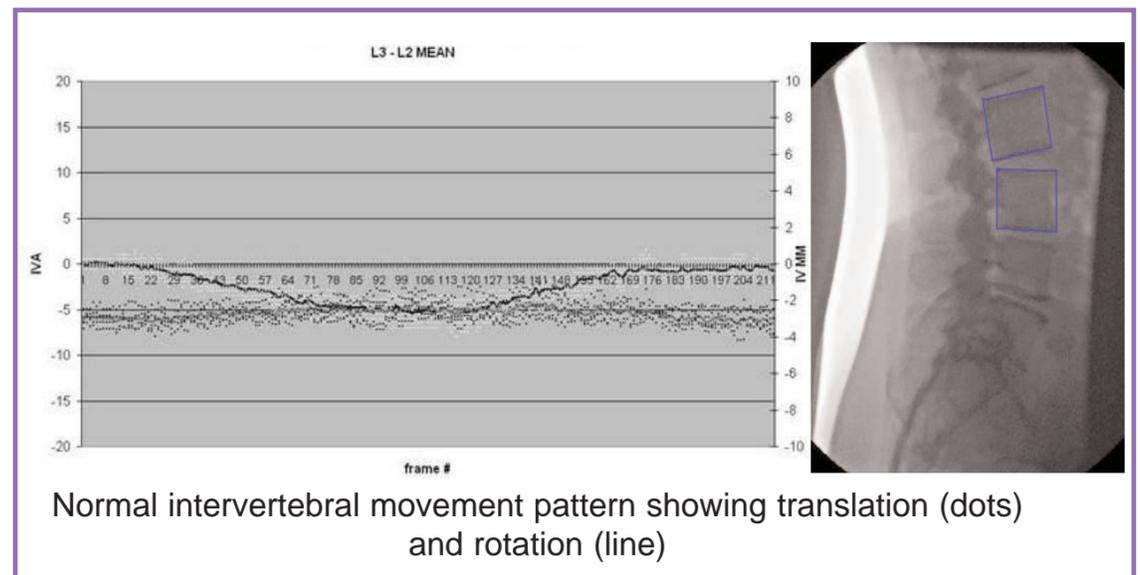
Measuring Inter-vertebral Motion Using Quantitative Digital Fluoroscopy

AC Breen DC, PhD
 FE Mellor BSc(Hons)
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Being able to measure the motion between vertebrae is central to our understanding of how the spine works as a mechanical entity. However, it has been impossible, until now, to do this in living patients without implanting metal beads or steel pins in patients' vertebrae and taking repeated X-rays of them, which is unacceptably invasive for day-to-day clinical evaluations. Conversely, our work with digital fluoroscopy over a number of years has now made possible the measurement of not only the range of tilting and sliding between vertebrae (translation) but also the trajectory and direction of this intervertebral motion, providing an objective spinal motion imaging assessment (OSMIA) tool for clinicians and researchers. Having established the reliability and validity of the device (Breen et al 2006), the motion patterns in the lumbar spines of people with severe, treatment-resistant chronic back pain have also been investigated and compared to

30 symptom-free controls. It was found that in the controls, the intervertebral segments always moved in the same direction as the trunk motion. The motion was regular, although not always symmetrical; it was seldom below 3°. In the chronic back pain patients however, a number of different motion patterns were frequently seen, including stiffness, paradoxical motion (intervertebral motion opposite to trunk motion direction) and apparent laxity (intervertebral motion reaching maximum range well before the trunk does). The kinds of motion that occur in elective pre-surgical patients with severe chronic back pain have also been investigated, and are thought to come from degenerate inter-vertebral discs. Matching the motion patterns to the presence and grade of disc degeneration on magnetic resonance (MRI) images, a significant relationship was found between the two. However, there was no correlation with disc

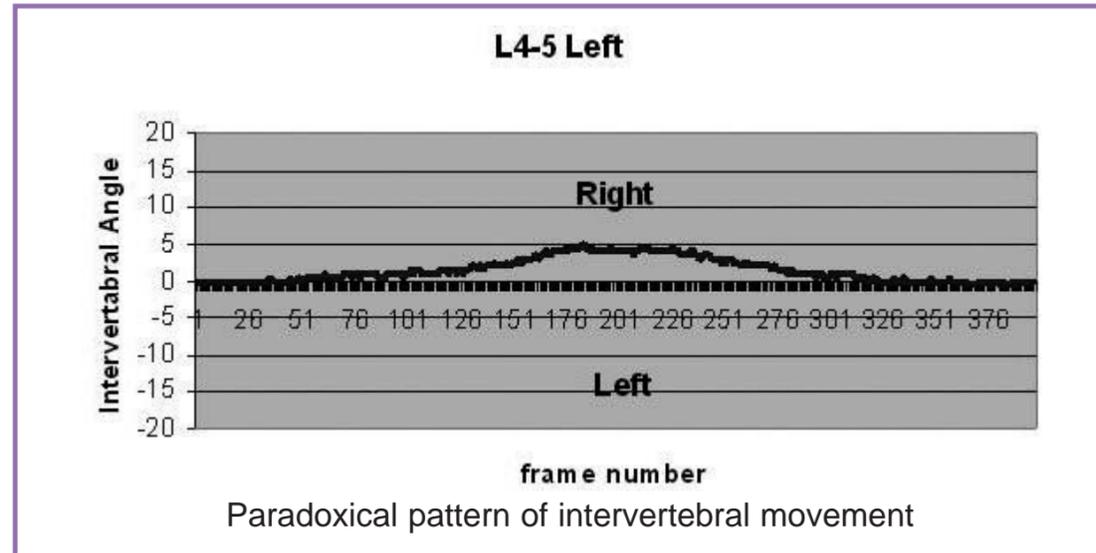


Normal intervertebral movement pattern showing translation (dots) and rotation (line)

Experimental Research

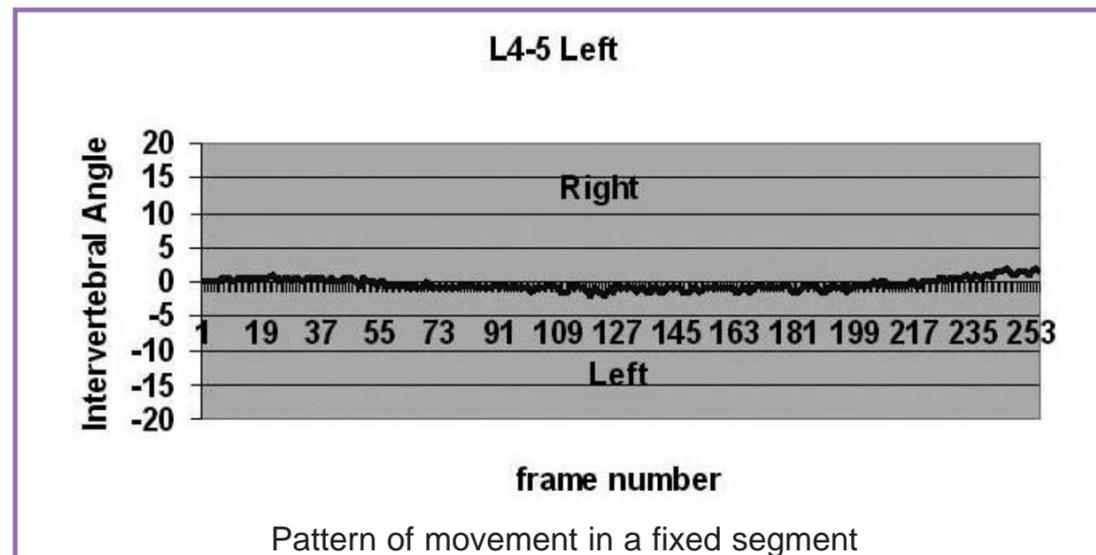
degeneration as seen on plain X-rays. This suggests that MRI, which gives anatomical information only, as opposed to functional dynamic information obtained from OSMIA, might not be necessary to investigate this kind of severe chronic back problem if OSMIA is available.

at the level above as well (adjacent segment). Similarly, patients who had such operations and were still in pain a year later had significantly more motion abnormalities above the fusion than did controls. However, a different group of patients who had a flexible implant and were comfortable a year later had



In a further 8 patients awaiting spine stabilisation surgery for severe chronic back pain, motion abnormalities were found, not only at the proposed level of fusion, but often

no such abnormalities at their adjacent motion segments. Currently, a feasibility study is being conducted for a clinical trial for such flexible spinal implants called the FleSS trial.



Experimental Research

OSMIA has clinical relevance in the evaluation of severe chronic spinal pain, spinal injuries, and in the assessment of such patients for spinal surgery, physical rehabilitation and spinal manipulation if the investigation has led to the view that surgery would not help. OSMIAs have been provided for the investigation of these issues for surgeons, neurologists and chiropractors. The clinical indications are usually to assess the desirability of surgical stabilisation or to reveal the mechanical effects of a previously unsuccessful operation. It has also been used to determine which patients undergoing other types of spinal surgery (for example, canal decompression) may also need stabilization at the same time. The clinical decision to ask for an OSMIA investigation thus relates mainly to mechanical derangements such as instability at symptomatic levels or levels adjacent to previously operated ones; and/or failure of an existing fusion and/or mechanical derangement at an adjacent level.

Acknowledgments:

The research and development work that has made the OSMIA technology possible was funded by an number of agencies through the years, starting with chiropractic ones such as the European Chiropractors' Union, and the Chiropractic Patients' Association, then by public charities such as the Henry Smith Charity, and latterly by a UK government source in the form of the NHS NEAT Programme. Its latter advances have supported by grants from Zimmer Ltd and by OrthoKinematics Inc. We are grateful to them all as well as to Dr Jen Muggleton, Mr Miles Woodford and Dr Andrew Morris who have worked with us over the development period and to our more recent collaborators, Mrs Suzanne Parsons, Mr John Fowler and Dr Jeremy Hogg.

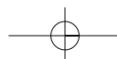
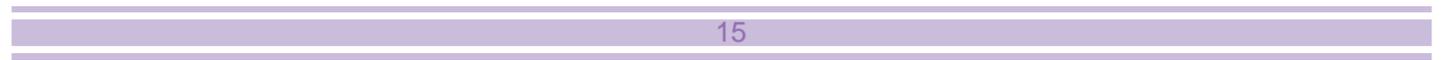
Reference:

Breen AC, et al. (2006). "An objective spinal motion imaging assessment (OSMIA): reliability, accuracy and exposure data." Biomed Central Musculoskeletal Disorders 7:1. <http://www.biomedcentral.com/1471-2474/7/1>





Feature Reports: Therapeutic Research



Chiropractic Manipulation of the Neck: Documentation of Treatment Outcomes

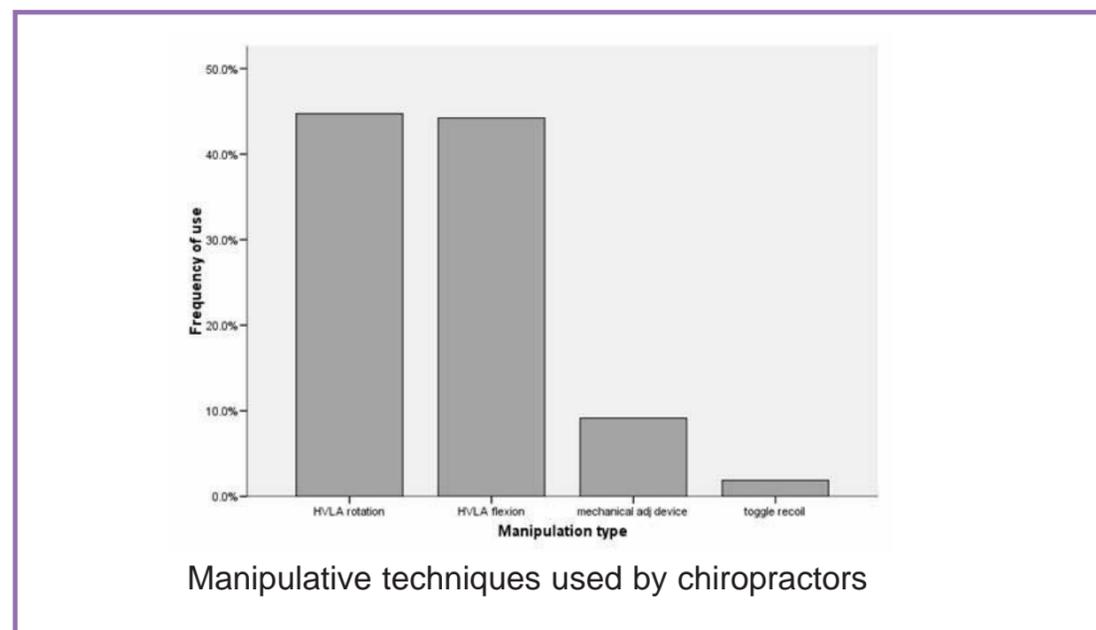
H Thiel DC, PhD, MSc, DipMedEd, FCCS(C), FCC
 JE Bolton PhD, MA Ed, FCC (Hon)
 S Docherty BSc(Hons), PhD
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The aim of this research programme was to conduct a large-scale, prospective cohort study in order to establish and document, in a systematic manner, the incidence and nature of beneficial and/or adverse outcomes following cervical spine manipulation treatments administered by chiropractors in field practices throughout the UK. It is likely to be the first prospective investigation, undertaken on such a large scale, specifically documenting outcomes following cervical spine manipulation. The study recruited 377 chiropractors and almost 20,000 patients and recorded outcomes based on close to 29,000 treatment visits, 15,500 subsequent visits and over 50,000 cervical spine manipulations. The loss to follow-up was extremely low (1.4%).

There were three distinct parts to this study.

The objective of the first part was to document in detail the sample characteristics by describing practice and other demographic details of the chiropractor and the patients, the manipulative procedures applied, in terms of technique and anatomical location, and any onset and/or change in symptoms immediately and several days after the treatment visit. The objective for the second part was to provide estimates of the risk of minor and major adverse events following spinal manipulative therapy of the neck. The final part of the study centred on the development of multifactorial prediction rules to help to identify patients who are likely to either benefit or worsen from cervical spine manipulation.

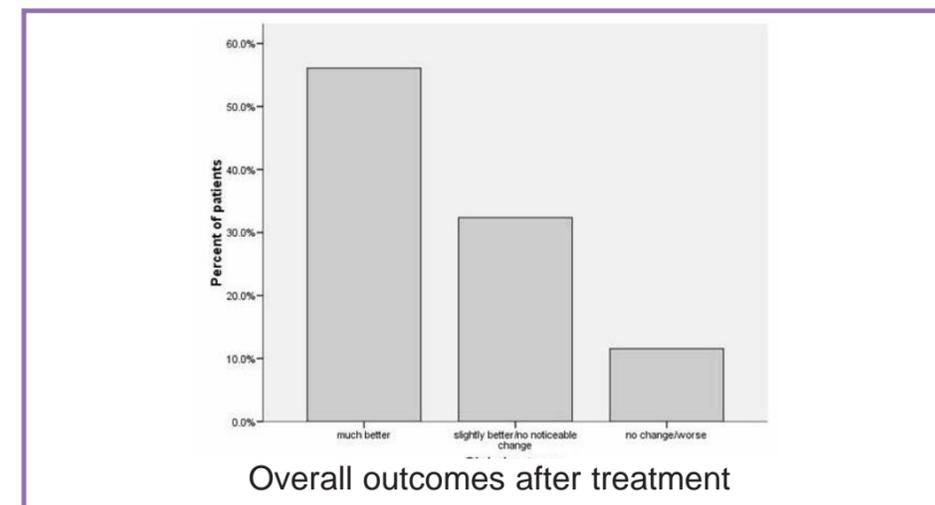
The study provided answers in terms of the descriptive research questions on chiropractor



and patient demographics, practice patterns, presenting symptoms, types of manipulative procedures administered and regions of the cervical spine manipulated. This showed that the sample of chiropractors was largely representative of the profession within the UK, with 60% of the practitioners being male and approximately 70% working in group practices and between 20 to 39 hours a week. Of the chiropractic patients, 60% were female and the mean age of all patients was 47 years, again largely representative of the patients that usually attend for chiropractic treatment. With close to 90%, 'high velocity low amplitude' (HVLA rotation and HVLA lateral flexion) thrust procedures were by far the most frequently employed manipulative techniques. The mechanical adjusting instrument was used in about 10% of the manipulative treatments and the toggle recoil technique in only 1.7%. It was shown that BCA and SCA chiropractors perform on average 1.7 manipulations per treatment visit and that almost twice as many interventions are directed to the mid and lower cervical spine in comparison to the upper region.

Further, this study documented details on the

outcomes of cervical spine manipulation immediately and at the follow-up visit in terms of improvement and worsening of presenting, or onset of new symptoms and their relationships to patient, practitioner and treatment characteristics. The two most frequently reported presenting symptoms were those of reduced motion or stiffness of the neck and shoulder regions and neck pain, followed by shoulder/arm pain and pain in the upper or mid back region. Certain presenting symptoms such as 'neck pain', 'shoulder, arm pain', 'headache', 'upper, mid back pain, 'fainting, dizziness, light-headedness', 'ringing in the ears, tinnitus', 'nausea and vomiting' and 'face pain, numbness, tingling' were strongly associated with the female gender. When considering all of the presenting symptoms together, 67% improved whilst 30% remained unchanged and 3% worsened immediately following the treatment. Of the presenting symptoms, 'reduced motion or stiffness' and 'neck pain' were the ones that appeared to show the best immediate improvement (85% and 73% respectively). Immediate worsening of presenting symptoms was predominately musculoskeletal in nature, with a worsening of neck pain most commonly



reported. Immediate onset of new symptoms on the other hand, accentuated non-musculoskeletal symptoms such as 'headache' and 'fainting, dizziness, light-headedness'. Data on global improvement were available from 13,873 patients of whom 54.6% reported that their condition felt much better and that a noticeable and worthwhile difference had been achieved. In 31.7%, the condition was reported as slightly better but without a noticeable or worthwhile difference overall, and in 11.3% there had been no change or a worsening.

The study also provided estimates of the risk of minor and serious adverse events following neck manipulation. Although minor side effects were found to be relatively common, no serious adverse event was reported by the chiropractors, patients or the patients' general practitioners. The absence of a single adverse event translates to an estimated risk of a serious event of, at worst 1 per 10,000 treatment consultations immediately after neck manipulation, 2 per 10,000 treatment consultations up to 7 days after treatment and 6 per 100,000 neck manipulations. On this basis, it was concluded that the estimated risk of a serious adverse event, immediately and up to 7 days after manipulative treatment, was low to very low. Minor side effects with a possible neurological involvement were more common. The highest risk immediately after treatment was 'fainting/dizziness/light-headedness' in, at worst 16 per 1,000 consultations. Up to 7 days after treatment, these risks were 'headache' in, at worst 4 per 100, 'numbness/tingling in upper limbs' in, at worst 15 per 1,000 and 'fainting/dizziness/light-headedness' in, at



worst 13 per 1,000 treatment consultations. This study therefore provided evidence that cervical spine manipulation is a relatively safe procedure when administered by registered BCA and SCA chiropractors. In its final part, the study developed multifactorial prediction rules to identify patients who are likely to either benefit (immediately and globally) or worsen (immediately) from cervical spine manipulation. Although it was not possible to establish a model using the variables measured in this study to predict global improvement, significant risk factors for immediate improvement and immediate worsening could be identified. The model for prediction was by far strongest for immediate improvement using the presenting symptoms of 'reduced neck, shoulder, arm movement, stiffness' (OR = 16.33, CI = 15.05-17.72), 'neck pain' (OR = 4.63, CI = 4.25-5.06), 'upper, mid back pain' (OR = 4.08, CI = 3.61-4.61), 'headache' (OR = 3.05, CI = 2.66-3.50), 'shoulder, arm pain' (OR = 2.36, CI = 2.12-2.58) and 'none or one presenting symptom only' (OR = 1.58, CI = 1.41-1.77) as the predictor variables.

In conclusion, this study is likely to be the first large-scale prospective study of cervical spine manipulations specifically recording beneficial and adverse outcomes following chiropractic treatment. Given the emphasis on issues of safety, the risk of a serious adverse event, immediately and up to 7 days after treatment, was estimated to be low to very low. On this basis, cervical spine manipulation is a relatively safe procedure when administered by registered UK chiropractors.

Proposal for a Minimal Comprehensive List of Factors for Prospective Cohorts in Back Pain; the MMICS Statement

AC Breen PhD
On behalf of the MMICS Collaboration



Predicting outcomes in people who get episodes of back pain is becoming very important; firstly because the effects of individual treatments are often small and secondly because many of the things that do predict outcome are modifiable (such as fear of movement or other health problems). Health care practitioners can therefore address these as well as giving treatment. There have been many studies that have investigated these factors, but it is difficult to get an overall impression of what they show, because investigators use different terms and measures to describe them. It is essential that this is overcome in order to be able to pool data and get more robust answers, not only from different studies, but also from studies from different countries and health care systems.

MMICS stands for Multinational Musculoskeletal Inception Cohort Study. It was originally proposed at the 6th International Forum for Primary Care Research on Low Back Pain in order to establish an agreed set of factors for the use of researchers who are planning to study the predictors of outcome in people at the start of low back pain episodes (inception cohorts). It was led by Royal Holloway, University of London and a UK



Steering Group that co-ordinated the input from expert teams in 11 other countries.

The MMICS Statement basically comprises a set of tables containing a recommended checklist of baseline factors (biological, psychological, social, system and societal) and outcome measures. These have been critically chosen and peer-reviewed by additional experts and by a subsequent International Back Pain Forum.

Two research papers have been submitted to journals presenting the individual and system factors from the project.

This work was supported by BackCare, the Charity for Healthier Backs and by The British Academy.

Collaborators:

- Tamar Pincus PhD, Department of Psychology, Royal Holloway University of London*
- Rita Santos MSc, Department of Psychology, Royal Holloway University of London*
- Kim Burton PhD, Centre for Health and Social Care Research, University of Huddersfield*
- Martin Underwood MD, Centre for Health Sciences, Queen Mary University of London*

Predicting Patient Outcomes

D Newell PhD

A developing research theme within chiropractic research is one centered around the attempt to predict which patients will get better from chiropractic treatments. This follows on from clinical trials that have shown efficacy for spinal manipulation therapy (SMT) but not always at the level perceived by chiropractors. The question then emerges as to why this seeming difference arises. One of the concepts potentially explaining this disparity is that low back pain (LBP) populations within randomised control trials do not contain homogenous LBP conditions, and that some subgroups respond well to the therapy while others do not respond as well. Averaging these effects may be the reason that the efficacy reported in such trials can be quite small.

By collecting characteristics of LBP subjects at baseline and using outcome measures that enable categorisation of patients into "better" or "not better" groups, it is possible to identify characteristics that predict success.

This area holds much promise and a poster presenting some preliminary results from clinical data, was presented at the FCER conference in Vilamoura, Portugal in May 2007 (see Published Abstracts). In addition, another more extensive paper is in the pipeline and funds have been acquired for a PhD student to conduct a UK based multicenter study to pursue this further.



Psychological and Social Factors in Chiropractic Patients with Non Specific Back Pain; their Relationship to Patient Outcomes and Satisfaction

AC Breen DC PhD

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IMRCI

Being able to estimate the likelihood of poor recovery from episodes of back pain is as important as knowing what treatments are most effective. Many studies have been done in general practice and occupational settings and have discovered that psychosocial factors are important predictors of such poor outcomes. However, no studies have yet investigated this in chiropractic patients, who are seen in the private sector and may have different characteristics. With a grant from the European Chiropractors Union Research Fund, the study investigated the question: "Do psychosocial factors at presentation predict the disability, work loss, attitudes to pain, satisfaction with care and return visits in chiropractic patients with nonspecific back pain?"

Baseline questionnaires were given to 130 new patients of both genders, aged 18-65 with new episodes of non-specific low back pain attending a chiropractic clinic for the first time. Socio-demographic, co-morbidity, work and functional status (Deyo's 'Core Set') and psychological data (fear-avoidance, negative outlook, coping and distress) were collected at baseline, with follow-up for functional status, satisfaction and number of visits at 6 weeks and 2 years. Predictors of poor outcome were explored for the 2-year data by first exploring correlations between individual baseline and outcome variables, then by conducting logistic and ordinal regression analyses to identify

independent predictors. Predictors of outcome at 6-weeks were calculated using relative risk ratios.

Findings

Most patients presented within 4 weeks of onset. Although most of them began with moderate-high back pain scores, few had high psychometric ones. No independent predictors of poor outcome were identified using logistic and ordinal regression analysis, despite having re-coded the predictor and dependent variables into categorical scales. This is partly because poor outcome was rare at 2 years and partly because baseline psychological scores were low compared to those reported in other studies. None of the individual aggravating features of low back pain (LBP) were significantly associated with poor outcome at 6 weeks from presentation.

At 6 weeks however, having other health problems was a risk for still having high-moderate interference with work (RR 2.37; CI 1.15-4.74) and the average number of subsequent care encounters was significantly greater in patients with such co-morbidity. Having had the problem for more than 4 weeks before presenting was associated with moderate to higher back pain bothersomeness at 6 weeks (RR 2.07; C. 1.19 – 3.38) and having a negative outlook was a risk for moderate to high interference with normal work at 6 weeks (RR 2.56; CI 1.08 – 5.08).

However, this was the only psychological predictor found. The greatest improvements at 6 weeks were in the degrees of interference with normal work (ES 1.12) and back pain bothersomeness (ES 1.37). The mean satisfaction score with overall care was 3.55 (range 0 very dissatisfied – 4 very satisfied), but this too could not be related to initial psychosocial status.

At 2 years however, despite the high attrition rate (46%), relatively few [15% (n=8)] reported moderate-extreme LBP bothersomeness, while 9% (n=5) were experiencing this level of interference with their normal work due to LBP. Sixteen percent (n=9) had reduced their normal activities over the preceding 4 weeks because of back pain, but only for a short period (mean = 1 day) and only 4% (n=2) had needed to take a short time off work due to it (mean = 0.5 days).

Discussion

Although some patients had moderate to extreme interference with normal work at the first consultation, this was not severe enough to stop most of them from working. Virtually all who were off work returned to work, which may be due to promptness in seeking care. Having the self-determination to consult a private provider might also be associated with other aspects of self-efficacy that would support an active approach on the part of the patient.

Conclusion

In this chiropractic back pain population with low levels of psychological distress, having other health problems and longer episodes before consulting appear to have been more important than psychosocial factors for predicting poorer outcomes. The literature in relation to other populations suggests that in the main psychosocial risk factors are depression, distress and role issues, especially with regard to work, although Waddell, Burton and Main (2003) also found that the strongest predictors of future chronic pain and disability include poor general health/perceptions. This study shows that chiropractic patients with new episodes of back pain may be different to National Health Service patients who may have more psychosocial problems and consequently achieve less long-term improvement.

Acknowledgments:

This study was conducted with a grant from the European Chiropractors' Union Research Fund (Grant no A.04-2). We are grateful to Nigel Hunt and Jennifer Casemore, chiropractors at the Salisbury Chiropractic Clinic, whose patients participated in the study, the Clinic Reception Staff for their help with recruitment and John Beavis and Tamar Pincus for statistical advice.

Reference:

Waddell G, Burton AK and Main CJ: Screening to identify people at risk of long-term incapacity for work. London, RSM Press Ltd; 2003.

Relative risk of poor outcome 6 weeks from presentation
(from Langworthy J, Breen A, 2007 BMC Chiropractic and Osteopathy 15(1) 5.)

Baseline Variable	Bothersomeness		Interference with Work	
	Relative Risk	95% C.I.	Relative Risk	95% C.I.
Age >55 years	0.63	0.11 – 3.01	0.37	0.06 – 1.67
Duration >4weeks	2.07*	1.19 – 3.38	1.78	0.84 – 3.73
Chronicity (LBP present >50% of past year)	1.22	0.49 – 2.71	0.92	0.34 – 2.19
High bothersomeness	0.76	0.36 – 1.66	1.96	0.45 – 11.27
High interference with normal work	1.71	0.69 – 4.57	3.42*	1.00 – 12.86
Co-morbidity	1.89	0.89 – 3.61	2.37*	1.15 – 4.74
LBP aggravated by:				
- Sitting	0.76	0.36 – 1.67	1.53	0.66 – 3.80
- Standing	0.28	0.14 – 0.47	0.71	0.32 – 1.53
- Walking	1.42	0.63 – 3.00	0.55	0.23 – 1.22
- Bending	0.43	0.21 – 0.98	1.05	0.42 – 3.19
- Lifting	1.15	0.31 – 4.68	..**	-
- Lying	1.89	0.89 – 3.67	0.86	0.42 – 1.95
Anxiety (CSQ)	..***	-	..***	-
Inevitability (BBQ)	2.27	0.97 – 4.42	2.56*	1.08 – 5.08
Fear-avoidance (FABQ)	..****	-	..****	-
Distress (GH-12)	1.02	0.20 – 3.48	1.21	0.22 – 3.88

* Statistically significant risk.
 ** No cases reporting moderate to high interference with work were aggravated by lifting.
 *** Only one case exhibited high fear-avoidance at baseline. Despite this, LBP was reported as not bothersome at 6 weeks.
 **** No cases exhibited anxiety at baseline.



Relative Effectiveness and Safety of Cervical Mobilisation, Manipulation and the Activator Instrument in Patients with Sub-acute Neck Pain: a Randomised Trial

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Most neck pain is not due to a particular disease but is considered non-specific. This is usually due to muscle and joints in the neck that are dysfunctional, postural stressors and muscle strains. There are many treatments available to patients for neck pain; however, there is not enough research to support any of these treatment modalities. Research is needed to enable patients to make informed decisions as to what treatment approach is safe and effective. The purpose of this study is to assess which of three commonly used therapies for acute / sub-acute cervical pain is the most efficacious. The three methods of treatment are:

1. High velocity, low amplitude adjustment;
2. Low velocity, moderate amplitude mobilisation;
3. The Activator™ instrument.

Advertisements in the local papers will recruit patients and potential participants will be asked to complete some baseline information (short form 36 (SF-36), the Bournemouth neck disability questionnaire (BQ) and demographic details). These patients will then be screened by the researcher and those meeting the selection criteria will be examined and further baseline measurements taken. The aim will be to see if these further measurements, along with the SF-36 and BQ, act as predictors of outcome in non-specific cervical pain. The patients accepted into the trial will then be randomly assigned to one of the above therapies and given a course of treatment involving six treatment sessions. At the end of the treatment sessions the patient will fill in another SF-36 and BQ plus a global improvement scale. The patient will then be sent these forms to fill in at 12, 26 and 52 week intervals to assess for both short and long term improvement. During the trial period the patient is asked to complete documentation informing the researchers of any reaction to treatment therefore allowing the research to assess if any of the treatment arms of the trial are causing more negative reactions. The trial has been kindly funded by the ECU, National Institute for Chiropractic Research and the TAM club and has completed the first of three phases.



Comparison of the Short-term Effects of Two Chiropractic Techniques in the Treatment of Infant Colic: a Single-blinded, Randomised Trial

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Infant colic is commonly described as paroxysmal crying, difficult to soothe, clustering in the late afternoon and/or evening, in an otherwise healthy, well-fed infant. The reported incidence of colic is 8-26% in infants up to three months old. However, although colic tends to remit by three months of age, 13.7% of infants who have colic at 6 weeks continue to have colic post three months of age.

Infant colic can have serious and long-term ramifications. Persistent infant crying has been implicated as a major predisposing factor in some cases of shaken baby syndrome, child abuse and neglect. In addition, there is evidence that colicky infants cause increased maternal stress and colic can cause disruption to family life for several years. Further, there is a higher risk of behavioural problems and lower academic achievement in later years in children who had untreated colic as infants.

There are no proven treatments for infant colic although a number of treatments have been suggested in the literature including pharmaceutical (e.g. Simethicone (Mylicon)), non-drug (e.g. fennel seed oil, herbal tea, sucrose) and behavioural (increased carrying, crib vibration) interventions. However, no satisfactory evidence exists to support any of these.

There are also manual therapies that have been used to treat this condition. Studies have indicated that spinal manipulative therapy (SMT) by chiropractors is effective in reducing crying time in infant colic. However, another study failed to demonstrate any beneficial effect of SMT beyond massage placebo on infant colic. Cranial osteopathy may also be effective in reducing crying time and increasing sleep in colicky infants.

The purpose of this study was to compare two chiropractic interventions, spinal manipulative therapy (SMT) and occipital sacral decompression (OSD) in the treatment of infant colic. Forty three infants who presented with infant colic were randomly assigned to receive either SMT or OSD for two weeks. The primary outcome measure was "change in daily hours of crying" as recorded by the parent in a crying diary. Secondary outcome measures were "change in daily hours of sleep" and "number of crying episodes per day". Both interventions significantly reduced daily crying time. There was no significant difference between the two interventions for any of the outcome measures. At day 7 of the trial, the mean hours of crying per day were significantly reduced in the SMT group (by 2.1 hours/day, $p < 0.01$) and in the OSD group (by 2.0 hours/day, $p < 0.01$) compared to baseline measures. At day 14, the mean hours of crying per day were significantly reduced from

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baseline in the SMT group (by 3.1 hours/day, $p < 0.01$) and in the OSD group (by 2.5 hours/day, $p < 0.01$) compared to baseline measures. The mean number of crying episodes per day was significantly reduced in the OSD group but there was no significant reduction in the SMT group. The mean hours of sleep per day were significantly increased in both treatment groups. Four weeks after completion of the two-week treatment trial, 82% of the SMT group and 67% of the OSD

group no longer fulfilled the diagnostic criteria for infant colic.

The results of this study show that both treatments may offer significant benefits. Infants treated by SMT and OSD cried less and slept more after two weeks of treatment. No significant differences were found between the two treatment approaches and neither treatment can be said to be more efficacious than the other.



The FleSS Trial. – Phase 1 Feasibility Study for a Randomised Controlled Trial Comparing Flexible and Solid Stabilisation Surgery for Spondylotic Back Pain

AC Breen DC, PhD, Chief Investigator

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IMRCI

FleSS is an acronym for 'flexible or solid stabilisation' for lumbar spondylosis and the FleSS trial is a feasibility study to inform the working methods and number of subjects needed for a single-blind randomised controlled trial to compare the effectiveness of flexible stabilisation (DYNESYS) with posterolateral fusion (PLF) with pedicle screws and graft. The trial is funded by Zimmer International Ltd. and began in April 2005.

DYNESIS is a new approach to stabilising the spine, which does not completely block motion between vertebrae in the way traditional (PLF) spinal fusions do. The general hypothesis is that the preservation of motion at the stabilised segment will reduce the risks of adjacent segment disease which is a known long term complication of solid fusions. This hypothesis has not yet been scientifically tested, however results of the FleSS trial will be instrumental in answering such a question.

For the first time in clinical trials of lumbar stabilisation, baseline (pre-operative) objective data of intervertebral motion has been obtained using OSMIA. (See feature report). The primary outcome measure in this study is the Oswestry Disability Questionnaire (ODI). Secondary outcome measures include the visual analogue pain scale, the short-form 36 health questionnaire (SF-36), the health transitions scale, Euroquol, and the Prolo economic scale, plus changes in intervertebral motion patterns measured using the OSMIA device.

To date, 10 patients who fit the selection criteria (of back pain without radiculopathy and attributable to lumbar spondylosis, an ODI score greater than 30, and in whom conservative therapy has been tried and failed) have been recruited to the FleSS trial (6 female, 4 male. Age range 37–62). They have been randomly assigned to receive either DYNESIS or PLF, and follow up examination

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with the OSMIA technology is undertaken at both 3 months and 12 months post-operatively.

Of the 10 patients recruited thus far, one has had L3–L4 stabilised, three have had L4–L5 stabilised, four have had L5–S1 stabilised, and two patients have had two level fusions of L4–L5, L5–S1. All patients have completed the three month follow up, seven patients have completed the 12 month follow up with the remaining three due to complete their 12 month follow up by October 2007.

All patients at three months show much improved ODI scores, and all but one patient have improved ODI scores at 12 months when also compared with their baseline. In respect

of intervertebral motion, one specific aim of the FleSS trial is "to seek explanatory and predictive models for clinical outcomes using an objective spinal motion imaging assessment (OSMIA) at instrumented and adjacent levels". When compared with data from asymptomatic subjects, some very interesting motion patterns have been observed at both baseline and follow up.

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Improving Golf Swing Through Research

K Edlund DC, BSc, CCSP

The AECC has had an active golf society, the Back Nine, for about 10 years. With membership usually around 25 to 35 individuals there are always students interested in golf related topics for their projects and there is always a supply of subjects for golf-related research.

In the last two years there have been two golf research projects looking at the effects of rehabilitation type exercise programmes on the speed of the golf swing. In the previous three years several students have carried out literature review and survey-based golf projects. In the academic year of 2004-05, Rick Gill did our first golf related experimental research project. Gill (2005) devised a golf specific exercise programme with the help of Dr Jonathan Cook, for his experimental group and compared pre- and post-intervention with

a control group to find that there was a statistically significant change of about 5% increase in swing speed in the experimental group. This research was presented at the Joint Student Conference on Chiropractic, Osteopathy and Physiotherapy in 2005.

The next year, Mika Janhunen not only studied swing speed, but also devised a measurement system to analyse the sway of a subject during the golf swing. He also devised a golf specific exercise programme incorporating core stabilising, with the help of Dr Cook, and found this exercise programme not only made a significant swing speed increase, of about 5%, but also increased the stability of the golfer during their swing, when compared to the control group. Janhunen (2006, see Undergraduate Projects) also added a subject satisfaction questionnaire that demonstrated

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that the experimental group felt that the exercises had been beneficial to their golf game.

The exercise programmes developed by the students and Dr Cook are based on a typical rehab type programme, but focused on the major muscles involved with the power generation of the golf swing. Most of the exercises are based on low-tech principles that could easily be reproduced in a chiropractic office and at a patient's home.

Both of these projects were presented to the European Chiropractic Union in Stockholm in 2006.

As with most good research, these studies have inspired other students to carry on with similar studies and to apply similar procedures towards other sports.

Reference:

Gill, R. (2005) Effect of a golf-specific resistance and flexibility training programme on club head velocity in amateur golfers. MChiro project. Anglo-European College of Chiropractic, England.



Feature Reports: Clinical Practice, Education and Training

GPs' Attitudes and Knowledge in the Bio-psychosocial Management of Back Pain

AC Breen DC, PhD (Chief Investigator)



GPs are accessed more than any other practitioner by patients seeking help for back pain, yet there is evidence that they have considerable difficulty with its management. Many patients cease consulting with their GP, seek other avenues for treatment, or consult repeatedly, despite the apparent lack of effective intervention. These patients consume large amounts of health and social care resources and psychological and social factors figure highly in promoting and sustaining their chronic disability.

The purpose of this study was to identify areas of cognitive dissonance in general practitioner attitudes and knowledge in relation to the bio-psychosocial management of back pain as a basis for the development of educational interventions for practice improvement. The research was in two parts. Part I aimed to inform the content of a set of brief vignettes, intended to stimulate GP focus group discussions in Part II. In Part I, a purposive sample of 21 GPs from three Primary Care Trusts in the South of England were asked to think of a patient who had consulted them for back pain and whose management involved psychosocial issues or problems with following guidelines. This was discussed in a 15-minute structured telephone interview with a researcher. Then, in Part II, issues from vignettes of fictitious patients, along with the sentiments they generated, were discussed in three focus groups, each attended by seven GPs from the original group.

The telephone interviews and focus groups were both tape recorded and subjected to thematic analysis for content. The transcripts were analysed, initially by charting, extracting clusters and themes. These were debated by all members of the research group for both Parts and coding for Part I was cross-validated. Member checks of the themes were done by the participants and external review of the data was also carried out.

Over 100 issues contributed to the themes, making the dataset a very full one. Frustration, time pressures and patient expectations were major and consistent themes. Feelings of anxiety and frustration were about being ineffective, while conflicts about certification and referral, impossible time management issues and lack of confidence in examining and in assessing and managing psychosocial aspects were identified as among the many negative issues, that can impair the management of patients with back pain in general practice. These are fruitful areas for educational development.

Collaborators:

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Improving the Management of Low Back Pain in the Community Using Action Learning Groups

AC Breen DC, PhD (Chief Investigator)



In a previous qualitative research study of 21 general practitioners in South-West England (see GP Attitudes study), the study identified significant difficulties that participants found in providing bio-psychosocial management for patients with back pain. This informed the development of an educational initiative. Subsequently, the local Primary Care Trust commissioned an educational package addressing this for general practices in the same locality. The objectives were to support organisational and professional behaviour change towards improved care quality and outcomes for patients with back pain using a collaborative action learning framework.

Eighteen practices were invited to participate in a learning exercise. Six responded and four participated (12 practice staff members). Each was represented by a GP and a practice nurse, plus either a receptionist, a further nurse, or a practice physiotherapist. Participants were shown the results of the previous research that identified the problems in relation to the bio-psychosocial management of back pain and were asked to identify their hopes and expectations of the learning sessions. The team then provided access to the information and expertise that these called for, with iterative modifications in response to participants' wants and needs.

Four workshops were conducted over four months. These supplied the content identified by participants using rapid feedback

questionnaires on 'appreciative enquiry' principles. Participants from each practice formed an 'Action Learning Group' (ALG). Practice-based activity also occurred between meetings. Evaluation was by rapid feedback questionnaires completed at the end of each workshop, modified PABS-PT questionnaires (designed to assess attitudes to bio-psychosocial management) and visual analogue scales (VAS) measuring 'self-confidence' in managing back pain completed at the beginning and end of the project. A final evaluation questionnaire was given at the end.

Although there was only a small increase in bio-psychosocial orientation and a small decrease in biomedical orientation among participants, confidence about managing back pain greatly increased from 3.9 to 7.0 on the 10-point VAS measurement scale. All felt that their practices would change as a result of the learning and the materials felt to have provided the most value were: the psychologist speaking on 'yellow flags', the chiropractor on back examination, the pain nurse on pain control presentation and the talk by a physiotherapist.

Using collaborative action learning groups involving general practice staff as well as doctors was seen as a worthwhile approach to supporting practice staff to alleviate the difficulties associated with the bio-psychosocial management of back pain. This pilot work informed a successful grant

application to the UK's Health Foundation's 'Engaging clinicians in quality improvement' grant stream.

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The Effect of an Information Package of National, Evidence-based Guidance on the Reported Management of Acute Back Pain Patients by Chiropractors, Osteopaths and Physiotherapists in the UK: A Randomised, Controlled Trial

AC Breen DC, PhD



Chiropractors, osteopaths and musculo-skeletal physiotherapists manage 15-20% of people with low back pain in the UK, but there is evidence that some members of these groups do not follow recommended 'best practice'. However, there may be a relationship between practitioners' beliefs and their management decisions for patients with LBP. The purpose of this study was to test the short-term effectiveness of a directly-posted, contextualised, printed educational package on chiropractors', osteopaths' and musculo-skeletal physiotherapists' reported practice (behaviour).

This was done by using a prospective, pragmatic randomised trial to test the effectiveness of the printed educational package versus a no-intervention control. Reported behaviour was measured using three questions corresponding to a previously developed vignette of a patient with non-specific LBP with no 'red flags'. The questions related to key guideline recommendations about Activity, Work and Bed-Rest. The response to each question measured using a

5-point scale, which was later dichotomised, using cut-offs based on an expert consensus exercise to determine 'guideline-consistent' and 'guideline-inconsistent' behaviour for each recommendation. These dichotomous variables were analysed by logistic regression, with baseline values of the outcome variables used as covariates.

Three hundred and thirty-five chiropractors, 600 osteopaths and 823 musculoskeletal physiotherapists were recruited and intervention packages sent to them with follow-up questionnaires 6 months later. At the 6-month follow-up, dropout for all three groups was under 20% and there was a small positive change towards meeting all 3 guideline criteria. Practitioners in the intervention group were significantly more likely than those in the control group to be consistent with guidelines in their reported practice in terms of activity and work, but not in terms of bed rest.

These results demonstrate that directly-posted, printed educational material can make a small but statistically significant change in the reported practice (behaviour) of healthcare

practitioners. However, given the low unit cost of this as an educational intervention, printed material should play a part in knowledge implementation strategies.

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Attitudes to Back Pain Amongst Musculoskeletal Practitioners: Differences Between Professional Groups and Practice Settings Using the ABS-mp

AC Breen DC, PhD



Chiropractors, osteopaths and physiotherapists play key roles in the management of patients with non-specific low back pain in the UK. Each profession comes from its own therapeutic tradition that conditions practitioner attitudes. In an area where care for patients is diverse and often fragmented, it is important to know the extent to which these practitioners are amenable to the evidence in relation to back pain management. In order to understand this better, we conducted qualitative research to develop a questionnaire that would measure how their attitudes to the management of back pain relate to the recommendations of the latest evidence-based guidelines. This questionnaire is called the "Attitudes to Back Pain Scale for Musculoskeletal Practitioners" (ABS-mp).

The questionnaire has 19 questions over two domains. These domains are personal interactions (such as willingness to explore patients' psychological problems) and

treatment orientation (such as what the main aims of treatment are; e.g. mobility). Within the domains there were found to be six factors; "limitations on sessions", "psychological", "connection to the health care system", "confidence and concern", "re-activation" and "biomedical orientation".

Five hundred and forty-six members of the three professions completed the questionnaire in a large study funded by a grant from the Economic and Social Research Council. One factor of interest was that at least 10% of each profession reported that they continued to treat patients who showed almost no improvement over three months. This seemed to be because they did not see their roles as 'cure or refer', but as educators and counsellors. There was also concern evidenced that discharging or referring patients sometimes amounted to abandonment.

Comparing the professions, chiropractors adopted the most biomedical approach and

were the most reluctant to limit sessions. However, all three groups endorsed a psychosocial approach to treatment and saw re-activation as a primary goal. Working in the NHS (in the case of physiotherapists) was associated with greater promotion of maintaining normal activity and greater limitation of treatment sessions.

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The Role of Chiropractors in the United Kingdom as Healthcare Professionals

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The aim of this study is to provide an understanding of current chiropractic practice in the United Kingdom (UK) with respect to the perceived and actual role as “primary” healthcare professionals. This will be achieved through qualitative semi structured interviews to obtain the opinions and attitudes of chiropractic educators towards the role chiropractors play as primary health care professionals and their perceived ability of chiropractors to fulfil this role. These results will inform a quantitative survey of a random selection of the profession to see if they agree with the views expressed by educators. Additionally, the results should add to the current debate regarding the identity of the chiropractic profession.

Since the last report, the analysis of the data for the first (qualitative) part of the study has been completed as well as the data collection for the second (quantitative) part of the study. Currently, the first part of the study is being written up and the statistical analysis of the second part is being undertaken.



Consent: Its Practices and Implications in UK and US Chiropractic Practice

JM Langworthy MPhil



J Cambron DC PhD (National University of Health Sciences, Chicago, USA)

The recognition and implementation of a patient’s right to informed consent lies at the very core of ethical clinical practice. It is also a legal tenet, while with greater acceptance comes a greater focus on accountability. The obtaining of informed consent prior to the administration of any intervention is a requirement of all medical codes of ethical conduct and the obligation to seek valid consent is no less applicable to practitioners of complementary and alternative medicine (CAM) than it is to other health professionals.

Informed consent and its major components of disclosure, comprehension, voluntariness and competence is largely grounded in five ethical principles:

- respect for [patient] autonomy
- veracity (truthfulness)
- justice (equality)
- non-maleficence (do no harm)
- beneficence (positive action to provide benefit)
- to the patient/acting in the patients’ best interests).

Although central to best practice both ethically and legally, few studies have been undertaken to look at actual consent practices within the chiropractic community. With a grant provided by the Foundation for Chiropractic Education & Research, attitudes towards and the implementation of consent procedures were investigated in a sample of UK and US

chiropractors. How well these practices satisfy the core ethical principles of autonomy, veracity, justice, non-maleficence and beneficence were also investigated.

To do this, a pre-coded questionnaire (adapted from a previous study by Langworthy & le Fleming, 2005) was sent to 500 geographically stratified, randomly selected chiropractors across the UK and to 500 similarly selected chiropractors in 10 States across the US. Non-responders were followed up twice and data were subjected to descriptive and thematic analysis.

Many of the practitioners appeared to view consent as an event rather than a process, i.e. as something that happens at a single point in time rather than being a continuous communication between the chiropractor and patient throughout the course of treatment. This was perhaps best illustrated by the sharp decrease in the number of practitioners who discuss and ask for consent to proposed treatment after the initial patient encounter, those who do not seek consent to treat a new complaint arising during a course of treatment and the chiropractors’ reluctance to discuss any inherent risks, minor or major, involved with treatment beyond the first visit, if raised at all.

Generally, the results suggest that a patient’s autonomy may often be diminished when seeking chiropractic care. Furthermore,

problems may also be experienced by the chiropractor in relation to the principles of justice and veracity and highlight the potential for conflict in relation to beneficence and paternalism.

Reference:

Langworthy JM and le Fleming C. Consent or submission? The practice of consent within UK chiropractic. *Journal of Manipulative and Physiological Therapies* 2005; 28: 15-24.

Nutrition in Primary Care: a Chiropractic Perspective

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The public health importance of advising primary care patients on nutrition is widely recognised in the published literature, which to date has focussed on the role that medical practitioners may play in this regard. There is a paucity of work however, regarding the potential nutritional role that other primary care professionals, such as chiropractors, may play. This study set out to evaluate the current nutritional practices of UK chiropractors and their perceived education requirements.

This was accomplished through a survey in which primarily quantitative data were collected using a self-administered postal questionnaire. The study focused on: (i) demographics/practice style; (ii) current/potential nutrition education requirements; (iii) delivery of nutrition education to patients.

There were four hundred and ninety six respondents from the 1220 'active' members of the British Chiropractic Association. This represented a response rate of 41%. and was largely representative of UK chiropractors as a whole. About one-third (30%) of chiropractors 'often' evaluated patients' nutritional status,

most using verbal questioning. However, almost all (97%) recommended nutritional supplements to patients although only half of the respondents (49%) ever sold them. The vast majority (91%) would undertake further continuing professional development in nutrition; topics of most interest were musculoskeletal disorders, food allergy and supplements and major barriers were distance/travel, lack of time and lack of awareness of suitable courses. Again, almost all (97%) would advise their patients on nutrition, the majority giving brief, verbal advice. Patients were perceived as most interested in food allergy, supplements and nutrition for musculoskeletal disorders. Better knowledge of the food sources of different nutrients and a nutrition 'quick-reference pack' would be most useful for enhancing chiropractors' current practice.

In conclusion, UK chiropractors are well-motivated and well-placed in terms of education and mode of practice to advise their patients with respect to nutrition. Many already undertake this role but require further nutritional education in order to improve the quality and effectiveness of such work.

Evaluation of Techniques Used to Assess the Spinal Manipulative Lesion and their Use in Teaching at the AECC: A Grounded Theory Approach

P Miller BSc, DC, MSc, FCC(Orth), FHEA
(PD Candidate, University of Portsmouth)

The aim of this study was to evaluate, via previous literature, the techniques that purport to detect a spinal manipulable lesion (SML) in chiropractic practice for reliability and validity as at present there is no gold standard. This was achieved using a standard literature review combined with a systematic review. The study then assessed which of these techniques are taught currently at the AECC and at other chiropractic colleges internationally via a questionnaire. The study then looked at the thoughts of the current technique faculty at AECC regarding which techniques for detecting the SML should be taught through the use of a modified Delphi process and two focus groups.

The purpose of the study was to allow for better understanding amongst faculty at AECC of the techniques used for detecting a spinal manipulable lesion and to enable a consensus of opinion to direct future teaching at the AECC.

Results of the focus group generated the following themes:

1. Factors that hamper decision-making
2. Clinical utility and clinical context
3. Need for an institutional paradigm
4. Intellectual honesty
5. Palpatory skills development
6. Self-reflection on, and perception of, the technique

So far this research has helped shape teaching of technique at AECC and has improved communication amongst faculty.

Improved Early Pain Management for Musculoskeletal Disorders

AC Breen DC, PhD

J Langworthy MPhil

J Bagust BSc(Hons), PhD



Musculoskeletal disorders (MSDs) and stress are the most commonly reported types of work-related illness, representing around three-quarters of cases. Although there has been evidence of a decrease in the incidence of musculoskeletal disorders since 2001-2, there has been no decrease in their prevalence. The UK Health and Safety Commission and Health and Safety Executive therefore established a Musculoskeletal Disorders (MSD) Priority Programme as a means of contributing to a 30% reduction in days lost from workplace injuries and work-related ill-health by 2009-10. As part of this Programme, a research agenda was developed in which IMRCI was contracted to produce a report in order to:

- present the latest evidence and authoritative evidence-based guidance addressing the usefulness of secondary intervention pain management techniques in helping people with MSDs to stay at work or get back to work
- propose Care Pathways consistent with that evidence.

The work took the form of a narrative review of current evidence relating to the rationale for early intervention, plus its basis in the current evidence in pain physiology and musculoskeletal conditions in the national culture. Care pathways for employers, employees and health professionals were proposed based on what predicts good and poor outcomes, on the most authoritative

national and international guidelines available at the time, on systematic reviews published after the publication of the guidelines, plus individual high quality studies that had targeted the issues. The project was helped by a panel of world experts in occupational research in musculoskeletal disorders who were consulted regularly for comments as the project began to draw its inferences.

Findings

The evidence to support these inferences is much stronger for back pain than for any other musculoskeletal disorder. Neck pain guidance at the time was based on much weaker evidence, followed by upper limb disorders, which suffered from their diversity in terms of their case definitions and what conclusions could be drawn. General occupational guidance has therefore rested much more on psychosocial than biomedical features.

How best to intervene to help people with musculoskeletal disorders also depends on what outcomes are being sought. In occupational settings we found that these almost always include functional restoration and avoidance of work loss. For this, employee self-efficacy and empowerment are among the positive factors most supported by the evidence and ill-health, social deprivation, work dissatisfaction and low job decision latitude the negative factors. Guidelines and systematic reviews based on cohort studies and clinical trials also come to this conclusion.

There is also evidence and strong theoretical arguments for early intervention that includes the physiological benefits of avoiding a chronic pain state. Early intervention therefore is mainly a matter for the employer and employee in the first instance, yet here, the channels of communication may have become inadequate for purpose and the recommended care pathways draw attention to this need.

If, in the early phases of an episode of musculoskeletal pain, there is no improvement, or high pain levels, or other reasons for concern, a health professional who is both expert and accessible will be needed. However, light of the evidence, we encountered the following barriers:

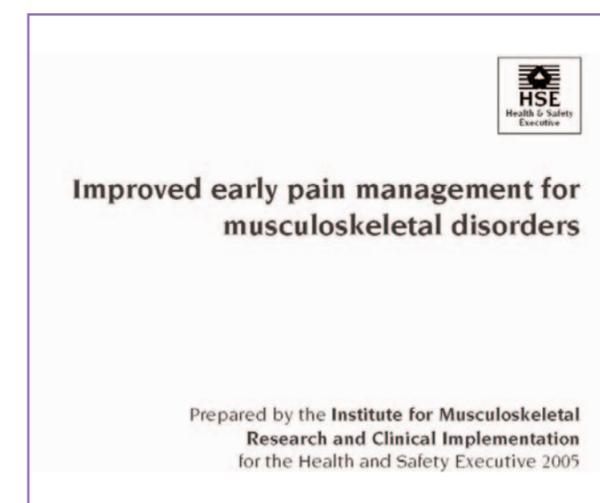
- NHS primary care, although at the forefront of the opportunity for early intervention, is not generally well configured to implement the changes needed for early evidence-based intervention on biopsychosocial principles.
- Lack of awareness, inconsistent

leadership, competing priorities and lack of ongoing support and commitment are common employer barriers.

- Musculoskeletal practitioners (chiropractors, osteopaths and musculoskeletal physio-therapists) are well placed for early evidence-based intervention, but their more traditional approaches may require modification.

Conclusion

The report outlined what is involved in the use of bio-psychosocial assessments and interventions in close proximity to work for improved early management of musculoskeletal disorders. It concluded that the employer and employee have the main roles in the light of this and the combined need for rapid access and specialist expertise that musculoskeletal practitioners (chiropractors, osteopaths and musculoskeletal physio-therapists) are needed since they are the most accessible and qualified health professionals to support them.



This report is available online at: <http://www.hse.gov.uk/research/rrhtm/rr399.htm>



Improving the Management of Back Pain in Primary Care

AC Breen DC, PhD

J Langworthy MPhil

IMRCI

Our previous work (see short feature reports) found that despite good guidelines for practice, the management of back pain in primary care continues to be problematic for a variety of reasons. Some of these include time pressures, limited local resources, lengthy waiting times for investigations, poorly integrated services, lack of knowledge (and confidence) and poor assessment of psychosocial factors known to affect the trajectory of back pain. Many GPs lack the knowledge and confidence to manage back pain. Even when colleagues have sound knowledge, they are frequently unable to change the environment in which care takes place. This project will give them skills to identify the real needs of patients, identify areas for improvement and initiate these improvements in primary care management and commissioning.

What does the project hope to achieve?

Educational interventions that are directly linked to improved patient care are challenging. This project will provide evidence of how to improve both practice processes and patient outcomes in ways that leave a legacy of strengthened capability in work based learning. We anticipate that learning about 'service improvement' will enable practice staff to apply this and other health areas in the future as part of their everyday skill set.

This work, which will run over three years, builds on a series of other research projects that IMRCI and the Pain Group at the Institute for Health and Community Studies have done

together over the past five years involving health care professionals in the management of back pain. It is being carried out with a grant of £456,000 from the Health Foundation's funding stream "Engaging with Quality in Primary Care" to work with primary care practices to improve the management of acute low back pain and evaluate the initiatives. The grant will also support workshop costs, a full-time researcher, aspects of the evaluation, a facilitator for the middle part of the project and an administrator. The project includes the participation of the Primary Care Trusts of Bournemouth and Poole and South Wiltshire and 10 GP practices from these localities. A steering group with senior membership from the two PCT's, local clinicians and patient representatives will guide the project.

Evidence for best clinical practice:

The improvement learning involved in this project is evidence-based. Most of the evidence about best practice in the management of back pain comes from the acute and subacute back pain literature. The latest and most authoritative guidance that draws on this is from the European Commission Cost Action B13 Guidelines Project. This covers acute and chronic back pain and the prevention of back pain.

Methodology

In the first year, each practice will form a team of clinical and administrative staff and patients. Meanwhile, a baseline evaluation will be done with a cohort of 100 of their patients with back pain using the Clinical Value Compass

(Nelson, et al. 1996) measures of disability, functional status, satisfaction and cost at baseline and 3 months. These practices will then attend a series of eight workshops around the management of back pain and 'healthcare improvement' knowledge and skills and will be supported between workshops to identify aspects of care that need to be redesigned to meet their patients' needs better. These workshops will support "action learning" schemes on the part of their participants and will be supported in this by the South Wiltshire Health and Social Care Academy which specializes in improvement learning techniques. They will enable clinicians to integrate understanding about the patient's journey, organization of health care and best practice to bring about redesigns in NHS health care which can produce better patient outcomes. Immediately following the workshop phase, a second high-level evaluation will be conducted using a matched cohort of back pain patients.

Measuring improvement

In addition to the high level improvement measures, a set of process measures will monitor PCT data in relation to drug costs, referrals, imaging and other options, while practices will identify processes, measurement approaches and how they might use this data for quality improvement in visual displays; such as run charts and control charts. There will also be brief evaluations of their learning by the participants themselves, plus qualitative analysis of interviews with them.

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European Guidelines for the Management of Acute Non-specific Low Back Pain in Primary Care

A Breen DC PhD

On behalf of the Cost B13 Working Group



The European Commission launched the COST B13 program in 1999 to formulate evidence-based guidelines for the prevention, diagnosis and treatment of low back pain. This was an ambitious pan-European project that gathered together 48 experts from 14 European countries to analyse over 70 clinical guidelines and 800 systematic reviews. The participants were divided into three multidisciplinary Working Groups who independently developed guidelines for the prevention of back pain and for its management in the acute and chronic stages. Their findings were published in 2006 in a supplement of the European Spine Journal (V15, Supp2, March).

There is much more evidence for the management of acute low back pain than for chronic or for prevention. The Acute Back Pain Working Group were first informed by a review of the many guidelines already in existence and their findings (Koes, Van Tulder et al. 2001). The development process was then taken in three stages: summarising the results of published systematic (Cochrane) reviews from 1966 to 2003, then summarising the recommendations of the existing world guidelines and finally discussion and debate about the synthesised information that would make up the European Guideline.

The resulting guideline is mainly aimed at general practice, and sometimes puts forward

things that GPs may be unfamiliar with, such as the assessment of patients for modifiable psychosocial risk factors, and the reassessment of patients whose problems are failing to resolve. Their implementation is therefore likely to require educational initiatives. To aid understanding of how the conclusions were reached, each aspect of care is dealt with in terms of what the evidence says, what the existing guidelines say and what the Working Group agreed should be the current guideline's recommendation and why.

All three guidelines can be viewed online at: www.backpaineurope.org.

Reference:

Koes BW, et al. (2001) Clinical guidelines for the management of low back pain in primary care. *Spine* 26 (22): 2504-14.

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Chiropractic in Europe: An Illustrated History

Francis J H Wilson, DC, MSc, FCC, FHEA

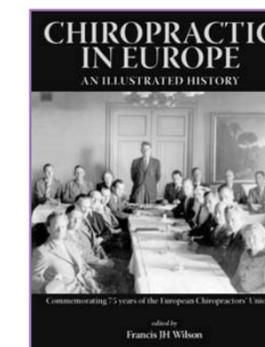
It has been more than 100 years since word of chiropractic first reached European shores and 75 years since the European Chiropractors' Union (ECU), a body which today represents the profession in Europe at supra-national level, came into being. To commemorate its 75th anniversary, the ECU commissioned a history of chiropractic, written from a European perspective. That history was published in May 2007 as the book, *Chiropractic in Europe: An Illustrated History*.

The book's editor, Francis Wilson, a senior lecturer at the AECC, has worked with 22 other authors and in conjunction with the chiropractic associations of Europe to produce this volume. The text is complimented by more than 70 photographs. Specific consideration is given to the history of chiropractic in 19 European nations.

In writing the book the intention was to produce a work that would be accessible to the non-specialist, but also one that would add usefully to knowledge and understanding in relation to chiropractic's past. In doing so, it was hoped that the book would attract interest from those already familiar with aspects of the history of chiropractic.

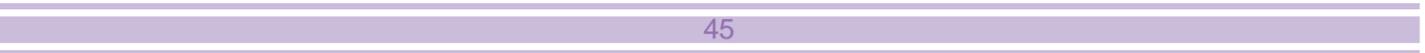
Publication of the book, *Chiropractic in Europe - An Illustrated History*, stands alongside other recent endeavours to bring aspects of the history of chiropractic in Europe to the attention of a wider audience. As well as publication of the book, May 2007 saw publication of the first European issue of the peer-reviewed journal *Chiropractic History*. With input from Alan Binns, a final year student at the AECC, Sybil Dendy, a librarian at the College, and Francis Wilson, the issue included four articles authored by individuals from the AECC. May 2007 also saw members of the Association for the History of Chiropractic (AHC) meet in Vilamoura, Portugal, for their annual conference, a meeting held in association with the World Federation of Chiropractic and the European Chiropractors' Union. This was the first time that an annual meeting of the AHC had been held in Europe.

Acknowledgement: Francis Wilson would like to thank the European Chiropractors' Union for the financial support that they have given him in recent years, without which the book, *Chiropractic in Europe: An Illustrated History*, would not have been published.





Conferences
and
Special Events



Conferences

A fundamental aspect of research is not just the pursuit of knowledge but also the transfer and dissemination of evidence gained. To this end, both faculty and students of the AECC are dedicated to presenting research findings at conferences at both the national and international levels.

ECU Convention; May 2006

In 2006 the ECU conference was held in Stockholm to coincide with the 70th Anniversary of the Swedish Chiropractic Association. Over 400 delegates attended from all over Europe. The AECC was well represented among the numbers with Jane Cook, Jonathan Cook, Kent Edlund, Joyce Miller, Haymo Thiel, Louise Warren and Francis Wilson demonstrating the range of research interests at the AECC. In addition, the Paediatrics Masters students were represented by Sue Weber who also gave a presentation.

VIII International Forum for Research on Low Back Pain in Primary Care, Amsterdam; June 2006.

Jenny Langworthy and Alan Breen attended this conference and presented work on psychosocial factors that predict outcomes in chiropractic patients, plus other papers in collaboration with Bournemouth University's Pain Group and with the UK Musculoskeletal Process of Care Collaboration. Five presentations in all were given by IMRCI staff and their collaborators at what has become the key gathering of researchers in low back pain from around the world.



Spine Society of Europe, Istanbul; October 2006.

Two posters were presented at this meeting of orthopaedic spinal surgeons by one of IMCRI's orthopaedic surgeon collaborators, John Fowler. These showed the characteristics of inter-vertebral side-bending motion in people with no back pain and the association between motion abnormalities and MR changes in the inter-vertebral disc in people with chronic back pain. Over a thousand delegates attended this conference which is the largest of its kind in Europe.

CECE; November 2006

The AECC played host to the Annual Meeting of the Consortium of European Chiropractic Educators in November 2006 and Ken Vall opened the proceedings. Francis Wilson and Ed Rothman represented the AECC in a discussion entitled "Ethics and the Practice of Chiropractic" while Peter Miller and Louise Warren were involved in a discussion based on the teaching of manual skills.

AECC/BCA Joint Conference; March 2007

Following the success of the Joint AECC/BCA Conference in 2005, the AECC and BCA again joined forces for the Spring Conference. Invited speakers included Lindsay Rowe who spoke on imaging the cervical spine, David Warwick, a Consultant in hand, wrist and elbow surgery, and Wolfgang Rauschnig who continued the discussion of cervical anatomy and imaging. AECC research was represented by Alan Breen presenting an overview of findings based on OSMIA

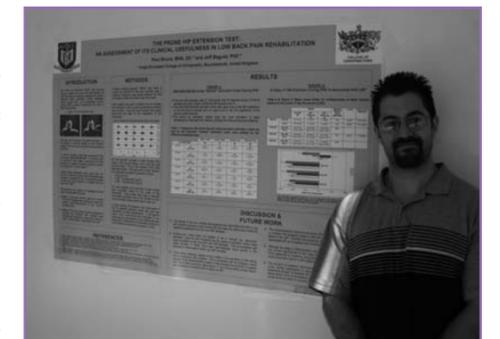


and Haymo Thiel with an update on the Chiropractic Reporting and Learning System. The afternoon saw a workshop run by Pat Collins and Alex Webb on Anatomy and a Radiology workshop with the team of Jane Cook, Alf Turner and Susan Yasvac.

ACC-RAC Conference; March 2007

This year's ACC-RAC Conference was the 6th consecutive combined meeting of the Association of Chiropractic Colleges (ACC) and the chiropractic Research Agenda Conference (RAC). The conference was held in Phoenix, Arizona and the theme for this year's program was "Ethics and Professionalism". The majority of the presentations were related to one or both of these issues.

As well, there were several sessions which allowed chiropractic researchers from around the world to present original research papers in various areas of interest. Two members of the AECC faculty, Jeff Bagust and Paul Bruno, attended the conference and presented a paper related to one of their recent studies entitled "An investigation into motor pattern differences used during prone hip extension between subjects with and without low back pain". Overall, they were impressed with the quality of the research presentations and considered the conference a very worthwhile experience. It was also a chance to enjoy the dry heat and beautiful surroundings of the Arizona desert.



Health and Wellbeing at Work Conference, Birmingham NEC; March 2007

Alan Breen gave a plenary lecture at this meeting of occupational health staff dealing with what the evidence is now suggesting about the management of musculoskeletal disorders at work. The lecture covered the potential conflicts between policies and practices in industry and the need to control pain and maintain activity in people with these disorders. Over 1,000 delegates attended.

European Congress of Radiology, Vienna; March 2007.

Fiona Mellor gave a platform presentation reporting the latest of IMRCI's Objective Spinal Motion Imaging Assessment data at what is the largest radiology conference in Europe. This conference is mainly populated by radiologists and communicates the latest techniques in both diagnostic and interventional radiology from around the world.

Spine Arthroplasty Society. Global Symposium on Motion Preservation Technology. Berlin; May 2007.

IMRCI and its collaborators at the Orthopaedic Department at the Royal Hampshire County Hospital at Winchester were represented at this conference by a presentation that compared the lumbar motion patterns at spinal segments adjacent to those that had been instrumented with spinal implants, both solid and flexible. Evidence is emerging that solid fusions may be associated with more adjacent segment motion abnormalities than flexible stabilisations. This would be important information for the orthopaedic devices industry who make artificial discs and other spine orthopaedic devices. We learned a great deal about the priorities of this industry and of the surgeons who are its key audience. This will help to inform the direction of our work using quantitative digital fluoroscopy.

Joint WFC/ECU Conference May 2007

Vilamoura on the Algarve in Portugal was the location for the conference which was a joint effort between WFC, FCER and ECU. The conference was a celebration of the ECU's 75th Anniversary and was attended by over 700 delegates. It was fitting that the conference began with a welcome reception which saw the launch of the book "Chiropractic in Europe: an Illustrated History" which has been edited by Francis Wilson. Chiropractic History was also the theme of a symposium within the conference and the AECC was represented by both Francis Wilson and Alan Binns who is a final year student. Both of these speakers received prizes for their presentations.



Alan Breen, Jane Cook and Kent Edlund were all invited speakers. In addition Jenny Langworthy, Sharon Docherty and Haymo Thiel gave platform presentations and Jeff Bagust, Paul Bruno and David Newell presented their research in poster format. David Newell received the 2nd prize for his poster.

**Other Student Presentations**

Students under the supervision of Ed Rothman have been active in the field of research related to dance. In November 2005, Gemma Holohan presented a paper at the conference for the International Association of Dance Medicine and Science. Her paper was well received by orthopaedic and trauma surgeons as well as several physiotherapists and dance teachers. Following this success two students, Victoria Blogg and Victoria Richardson, both had poster presentations accepted for one-day research forum on dance science entitled "From Cognition to Conditioning". This was held at Middlesex University, London in February 2007.

Chiropractic, Osteopathy and Physiotherapy: Moving Forward Through Research and Practice

Jennifer Langworthy, MPhil

Each year, undergraduate students from the educational institutions for chiropractic, osteopathy and physiotherapy produce hundreds of research projects. The primary aim of these is to provide learning experiences that are transferable to the clinical realm. Practitioners are increasingly being called upon to critically appraise findings and their own work in order to improve the quality of care they deliver. Whilst a small amount of undergraduate level research may be presented at conferences or published in the relevant literature, there is no recognised forum for the presentation of quality undergraduate research.

To redress this, colleagues from the AECC (Jennifer Langworthy), the British School of Osteopathy (Steven Vogel, Jo Zamani, Kate Nash) and the Physiotherapy School at the University of Brighton (Prof. Ann Moore, Nikki Petty) organised the first interprofessional conference for undergraduate research in October 2004 for all UK undergraduate students of chiropractic, osteopathy and physiotherapy. Two further aims of the initiative in an era of multidisciplinary healthcare were to foster understanding and

collaboration between the three professions and to encourage new graduates to pursue research as part of their practice career. The final aim of the organisers was to make the conference a sustainable annual event.

The conference was first hosted by the British School of Osteopathy (BSO) in London. In 2005, AECC was the host institution and in 2006, the University of Brighton. The conference has proved to be a great success, with submissions from an increasingly wide number of institutions and full delegate capacity. While the presenters are all students, the conference is attended by other students, faculty members and field practitioners. Prominent figures in musculoskeletal research and healthcare have supported the event by acting as keynote speakers and sponsorship has been provided by leading publishers, organisations and suppliers to the field.

Prizes are awarded for the best presentation in each research track and for the best overall presentation. In addition, the abstract of the study deemed best overall is published in *Manual Therapy* and is entered into BackCare's (National Back Pain Association)

Conferences & Special Events

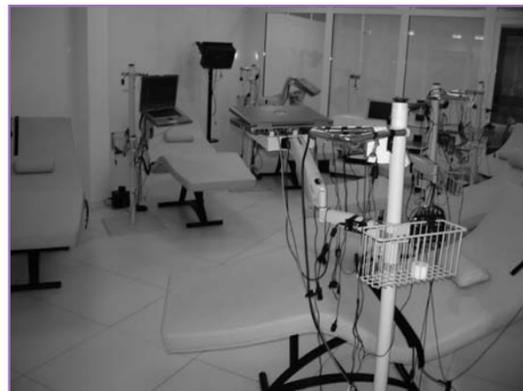
national undergraduate research award. To date, overall prize-winners have all emanated from AECC, two of whom have also won the BackCare national award. In 2007, the conference is again hosted by the BSO on the 29th September and in 2008 will return to AECC.



Special Events

Visit to MilanLab

In March 2007, a team from AECC visited MilanLab, a centre focusing on the psycho-physical integrity of the football players for AC Milan. The centre is focused through knowledge management systems on the continuous monitoring of the psychophysical condition of each player in order to assess for risk of injury and to enhance the performance of the team. Dr. Jean-Pierre Meersseman, a chiropractor, is Director of MilanLab and issued a personal invitation to the Principal, Dr. Ken Vall, to visit the centre.



It was fascinating to see how one of the world's premier football clubs, with all the facilities and sponsorship at its disposal, approached the fitness of its players. This was an integrated multidisciplinary high tech approach that included the biochemical and nutritional status of the players, the psychological state of the players through relaxation and biofeedback, physical parameters including flexibility, agility, power, resistance and strength. Each footballer's individual data is collected through powerful software systems based on neural net technologies. The neural net is constantly learning, and all the physiological, orthopaedic, mechanical and psychological data are integrated to come up with forecasts for each player in terms of risk and performance, as well as the overall performance of the team.

One of the most interesting aspects of the centre is its commitment to ongoing improvement through research collaborations across the world, including MIT (Boston, USA) and the University of Leuven (Belgium), as well as links with universities in Italy. One of our strategic targets is how we might establish an assessment centre for sports fitness at the College,

Conferences & Special Events

although not of course on such a scale as the MilanLab! Chiropractors are central in assessing musculoskeletal structure and function, and there is much to learn for the future from our visit to the MilanLab.



Appointment of Jeff Bagust as Professor in Experimental Research.

Jeff Bagust was appointed to the Chair in Experimental Research in September 2006 in recognition of his research career and his work in the measurement of physiological systems at the College. Jeff has published over 60 full scientific papers in the peer-reviewed literature, and supervised 25 successful PhD students. At the college we have identified 3 main areas of research: experimental research, therapeutic research and clinical practice and education research. A strategic target for the College is to appoint at professorial level in each of these- Jeff was the first.

Jeff was invited to give a Professorial Inaugural Lecture, and this happened on Friday evening, 20 April 2007. Over 90 invited guests attended the lecture, entitled 'Through a glass darkly'. Surface potentials: a window on the brain'. This lecture was superb, and bravely Jeff included many live demonstrations to the delight of the audience. The audience itself was made up of Jeff's present and past colleagues, friends and members of his family. Congratulations Jeff!



Publications and Presentations

Publications

Full Papers

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Bagust J, Haynes W and McGrath M. *The perception of vertical in young children as measured by a Computer Rod and Frame Test (CRAF).* ECU, WFC and FCER Joint Conference, Vilamoura 2007: 221-223.

Breen AC. *A comparison of European and American philosophical thought: Where has this brought the profession, where is it taking us?* (Keynote Presentation). ECU, WFC and FCER Joint Conference, Vilamoura 2007: 9-11.

Breen AC. *Clinical applications of the European guidelines in the management of acute back pain. (Invited workshop).* ECU, WFC and FCER Joint Conference, Vilamoura 2007: 78-79.

Breen AC. *Current best methods for measuring outcomes in chiropractic practice. (Invited workshop).* ECU, WFC and FCER Joint Conference, Vilamoura 2007: 80-81.

Bruno PA and Bagust J. *An investigation into motor pattern differences used during prone hip extension between subjects with and without low back pain.* Journal of Chiropractic Education 2007; 21: 47.

Reports

Bruno PA and Bagust J. *The prone hip extension test: an assessment of its clinical usefulness in low back pain rehabilitation.* ECU, WFC and FCER Joint Conference, Vilamoura 2007: 315-317.

Bruno PA and Bagust J. *An investigation into motor pattern differences used during prone hip extension between subjects with and without low back pain.* Clinical Chiropractic 2006; 9: 189.

Bruno PA and Bagust J. *Assessing the consistency of muscle activation patterns used during prone hip extension in subjects without low back pain.* Society for Neuroscience Abstracts, Washington 2005; 518: 13.

Docherty S and Bagust J. *Investigating perception of horizontal and vertical using the Computerised Rod and Frame Test.* ECU, WFC and FCER Joint Conference, Vilamoura 2007: 224-226.

Edlund K. *Introduction to the Gonstead Technique.* ECU, WFC and FCER Joint Conference Vilamoura 2007: 38-39.

Gemmell H and Haynes S. *Topical treatments for osteoarthritis of the knee: a systematic review.* ECU, WFC and FCER Joint Conference, Vilamoura 2007: 256-257.

Langworthy J and Cambron J. *Consent: its practices and implications in UK and US chiropractic practice.* ECU, WFC and FCER Joint Conference, Vilamoura 2007: 205-206.

Newell D and Field J. *Initial exploration of possible predictors of chiropractic success as collected during routine practice.* ECU, WFC and FCER Joint Conference, Vilamoura 2007: 280-281.

Thiel HW, Bolton JE and Docherty S. *Safety of chiropractic manipulation of the cervical spine: a prospective national survey.* ECU, WFC and FCER Joint Conference, Vilamoura 2007: 180-182.



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Platform

Bolton JE. *Bridging the gap between clinical practice and research.* College of Chiropractors Research Conference, London; June 2006.

Bolton JE. *Everything you wanted to know about appraising the evidence but were too afraid to ask.* Evidence-based Physical Therapy Conference, London; May 2006.

Breen AC. *Lumbar inter-vertebral motion: What the OSMIA technology is teaching us.* British Chiropractic Association/Anglo-European College of Chiropractic Joint Spring Conference, Bournemouth; March 2007 (invited lecture).

Breen AC. *Musculoskeletal disorders at work: Where is the evidence taking us?* Health and Wellbeing at Work Conference (Sterling Events Ltd) Birmingham NEC; March 2007.

Breen AC. *Exercise prescription: The Evidence.* Workshop on exercise prescription. Bournemouth University; Bournemouth; March 2007.

Breen AC. *The epidemiology of musculoskeletal disorders.* Lecture on MSc Ergonomics Course –Southampton University; January 2006.

Breen AC. *Chiropractic for all the People? Should chiropractic be integrated into mainstream healthcare?* Evening lecture at AECC, Bournemouth; January 2006.

Breen AC. *The epidemiology of musculoskeletal disorders.* Lecture on MSc Ergonomics Course – School of Health Professions, Southampton University; January 2006.

Breen AC. *Musculoskeletal research and the chiropractic interventions.* Finnish Chiropractic Association: Presentation to national medical teams, Helsinki; October 2005.

Breen AC. *Chiropractic scope of practice: What kind of patients should we treat? How many treatments and for how long? Cost-effectiveness of Chiropractic.* The Joint Finnish and Swedish Chiropractic Associations, Helsinki; October 2005.

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Breen AC, Austin H, Mann H, Carr E and Champion-Smith C. *Managing low back pain in Primary Care- results of local research studies, GP experiences and more.* Dorset Medical Research Conference, Bournemouth University; Sept 2006.

Breen AC and **Langworthy J.** *Psychosocial factors in chiropractic patients with new episodes of non-specific back pain – a prospective cohort study with 2-year follow-up.* 8th International Forum for Primary Care Research on Low-Back Pain, Amsterdam; June 2006.

Champion-Smith C, Austin H, Carr E, Mann E and **Breen AC.** *Improving the management of low back pain in the community using collaborative action learning groups.* 8th International Forum for Primary Care Research on Low-Back Pain, Amsterdam; June 2006.

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Evans DW, Foster NE, Vogel S, **Breen AC,** Underwood M and Pincus T. *Can practitioners' behaviour towards low back pain be changed? Results of a randomised controlled trial of a contextualised educational package.* 8th International Forum for Primary Care Research on Low-Back Pain, Amsterdam; June 2006.

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Gill R and **Edlund K.** *Effects of a golf specific resistance and flexibility training program on club head velocity in amateur golfers.* ECU Convention, Stockholm May 2006.

Janhunen M and **Edlund K.** *Effects of an 8-Week golf specific core stability training programme on club head velocity and swing stability in male amateur golfers.* ECU Convention, Stockholm May 2006.

Mellor F, Breen AC, Fowler J, Senior C and Muggleton J. *Sensitivity and specificity of objective spinal motion imaging analysis (OSMIA) in detecting lumbar discs that have significant MR degeneration.* European Congress of Radiology, Vienna; March 2007.

Miller P and **Gemmell H.** *An AECC paradigm: A grounded theory approach.* WFC conference on professional identity and curriculum, Cancun, October 2006.

Parsons S, Harding G, **Breen AC,** Foster N, Pincus T, Vogel S and Underwood M. *How do patients' and primary care practitioners' beliefs and expectations about chronic musculoskeletal pain influence the process of care? A systematic review.* 8th International Forum for Primary Care Research on Low-Back Pain, Amsterdam; June 2006.

Pincus T, Burton K, **Breen AC** and Underwood M. *Health care factors and the transition from acute to persistent LBP.* 8th International Forum for Primary Care Research on Low-Back Pain, Amsterdam; June 2006.

Pincus T, Foster NE, Vogel S, **Breen AC** and Underwood M. *Attitudes to back pain amongst musculoskeletal practitioners: Differences between professional groups and practice settings using the ABS-MP.* 8th International Forum for Primary Care Research on Low-Back Pain, Amsterdam; June 2006.

Rothman E and **Wilson FJH.** *Ethics and the practice of chiropractic.* Consortium of European Chiropractic Educators. Bournemouth; November 2006.

Thiel H. *An update on the CRLS and incident reporting by chiropractors.* AECC-BCA Joint Spring Conference, Bournemouth; March 2007.

Thiel H. *The chiropractic reporting and learning system – CRLS.* General Chiropractic Council, London, January 2007.

Thiel H. *Risk management and safety issues.* BCA business management seminar, Bournemouth; December 2006.

Thiel H. *The safety of chiropractic manipulation of the cervical spine.* ECU media training for chiropractors. ECU, Brussels; September 2006.

Thiel H. *The reporting of patient safety incidents – first experiences with the CRLS.* BCA Spring Conference. Glamorgan; April 2006.

Thiel H. *The Chiropractic Reporting and Learning System.* BCA – SCA Joint Autumn Conference. Edinburgh; October 2005.

Thiel H and **Bolton J.** *The reporting of clinical errors – a reporting and learning system for Chiropractors.* ECU Convention. Stockholm; May 2006.

Thiel H, Bolton J, Docherty S and Portlock J. *Safety of chiropractic manipulation of the cervical spine: a prospective national survey.* Annual Symposium on Complementary Therapies, Exeter, December 2006.



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Posters

Breen AC, Fowler J and Mellor F. *Adjacent segment motion and posterior lumbar spine instrumentation: a comparison of patient groups.* Spine Arthroplasty Society. Global Symposium on Motion Preservation Technology. Berlin; May 2007.

Breen AC and Langworthy J. *Psychosocial factors in chiropractic patients with new episodes of non-specific back pain – a prospective cohort study with 2 year follow up.* VIII International Forum for Research on Low Back Pain in Primary Care, Amsterdam; June 2006.

Breen AC, Mellor F, Muggleton J, Morris A, Fowler J, Mason W, Bagust J and Senior C. *Lumbar Inter-vertebral side-bending motion in asymptomatic subjects.* Spine Society of Europe. Annual Meeting. Istanbul; October 2006.

Fowler J, **Mellor F**, Muggleton J, Morris A, Senior C, **Breen AC.** *Abnormal inter-vertebral motion is associated with chronic low back pain and MR disc degeneration.* Spine Society of Europe. Annual Meeting. Istanbul; October 2006.

Gemmell H and Miller P. *Comparative effectiveness of manipulation, mobilisation and the Activator instrument in treatment of non-specific neck pain: a systematic review.* European Consortium of Chiropractic Education meeting. Glamorgan; August 2005.

Miller P and Jones-Harris A. *The face validity of an evidence based practice pathway for determining the best evidence to answer a clinical question: A pilot study.* Association for Medical Education in Europe. Amsterdam; September 2005.

Warren A-L. *The role of the chiropractor in providing nutritional advice to patients.* European Chiropractors' Union Conference. Stockholm, May 2006.



Undergraduate Projects and Postgraduate Dissertations



2005-2006

P. Arthur

Survey of chiropractic awareness in England
(F. Wilson & F. Barlow - supervisors)

M. Beentjes

Cervical spine dysfunction as a cause of headache, vertigo, temporomandibular dysfunction, bruxism and tinnitus: a literature review
(M. Kondracki – supervisor)

J. Bezemer

Effect of post-isometric relaxation of suboccipital muscles on vertical perception
(J. Bagust – supervisor)

A. Binns

Interest in the history of chiropractic. A survey of GCC members
(F. Wilson – supervisor)

G. Blackwood

Comparing the active and passive flexibility of male non-climbers, intermediate and advanced climbers
(A. Coode – supervisor)

V. Blogg

Relationship between Q-angle and first position turnout in female pre-professional dancers
(E. Rothman – supervisor)

E. Boardman

Inter-examiner reliability of a multidimensional approach for detecting manipulable lesions of the upper thoracic spine
(H. Gemmell – supervisor)

J. Bola

Effects of symptomatic knee pain on muscle activation sequence during active knee flexion
(N. Osborne – supervisor)

B. Bonnemayers

Characteristics of gaze during head and trunk rotation: a pilot study
(N. Osborne – supervisor)

J. Boyle

Relationship of respiration, cardiac and skeletal muscle during yoga relaxation
(J. Bagust – supervisor)

R. Brown-Hovelt

Treatment of dyslexia and dyspraxia with physical therapies: a literature review
(P. Miller – supervisor)

G. Bucknall

Case-based learning curricula in medical education: A literature review
(P. Miller – supervisor)

T. Butterfield

Comparison of the kinematic analysis of the preferred and non-preferred kicking leg during the maximal instep soccer strike and how it effects maximal ball velocity
(M. Kondracki – supervisor)

C. Calvert

A survey on the attitudes and beliefs of entering and exiting chiropractic students concerning the use of medication in chiropractic practice
(E. Rothman – supervisor)

L. Carroll

Perceived strengths and weaknesses of the new curriculum at the AECC using the DREEM inventory
(M. Kondracki – supervisor)

S. Carter

Prevalence of cervicogenic, tension-type and migraine headache in headache patients attending the AECC clinic
(G. Rix – supervisor)

S. Cooper

Inter-examiner reliability of the nervo-scope® in a clinical setting in detecting temperature changes in the upper thoracic spine.
(K. Edlund – supervisor)

C. Davies

Use and outcomes of therapeutic interferentials in the AECC clinic: an historical cohort study
(G. Clarke – supervisor)

M. Davis

Pathophysiology and nutritional therapy for asthma: a literature review
(I. Brown – supervisor)

W. Davis

Stress levels and coping mechanisms of students attending the AECC
(G. Clarke – supervisor)

S. D'Cruz

The awareness and attitudes of midwives regarding chiropractic treatment for pregnant women
(A. Jones-Harris – supervisor)

L. de Santy

Effect of C5, C6, C7 chiropractic adjustment on muscle strength of the biceps muscle in patients with acute neck pain
(J. Cook – supervisor)

H. Derde

Investigation of changes in cardiac pattern and skinpotential upon thermal stimuli on the posterior neck
(J. Bagust – supervisor)

R. Doherty

Use of foot orthoses in the treatment of plantar fasciitis: a literature review
(A. Coode – supervisor)

A. Dordoni

Radiographic investigation into the relationship between facet arthrosis of C2-C3 and the complaint of headache in patients over the age of 40
(Jane Cook – supervisor)

S. Dunbar

Techniques utilised by recent graduates from the AECC: a pilot study
(P. Miller – supervisor)

P. Dunford

Differences in cervical range of motion, pain and proprioception between forwards and backs in the game of rugby union
(H. Gemmell – supervisor)

K. Fordham

Evidence for the efficacy of complementary and alternative medicine for the treatment of asthma: a systematic review
(I. Brown – supervisor)

Undergraduate Projects & Postgraduate Dissertations

T. Galvez Rivera

Clinical effectiveness of traction on low back and neck pain: a literature review
(J. Cook – supervisor)

E. Gijbers

Attitudes and opinions of senior AECC students regarding smoking behaviour within the chiropractic profession
(Jane Cook – supervisor)

S. Gilchrist

Surface EMG activity of rectus femoris, the hamstrings, gluteus maximus and erector spinae muscles in a cohort of university rowers, during a 2000m row
(J. Cook – supervisor)

A. Gowers

Investigation to determine the efficacy of the AECC infection control policy: student knowledge base and current procedures
(P. Collins – supervisor)

D. Gruen

Aetiology, diagnosis and management of spondylolisthesis
(A. Turner – supervisor)

M. Hamblin

Differences between experienced radiologists and inexperienced AECC students when reading x-rays
(N. Osborne – supervisor)

A. Harris

Presentation and detection of developmental delay in a paediatric practice at the AECC teaching clinic
(J. Miller – supervisor)

W. Hawthorne

Are organic fruit and vegetables more beneficial to health than conventional ones? A literature review
(L. Warren – supervisor)

S. Haynes*

Topical treatments for osteoarthritis of the knee: a systematic review
(H. Gemmell – supervisor)

R. Hodson

Current opinions on the pathogenesis and management of motor neurone disease: a literature review
(G. Rix – supervisor)

S. Hofstad

Deglutition and its disorders: a literature review
(P. Collins – supervisor)

G. Homdrum

Attitudes of UK chiropractors towards the use of palpation methods and their accuracy
(A. Jones-Harris – supervisor)

M. Janhunen

Effects of an 8-week golf specific core stability training programme on club head velocity and swing stability in male amateur golfers
(K. Edlund – supervisor)

K.T. Johansen

Techniques used by Norwegian chiropractors
(G. Clarke – supervisor)

Undergraduate Projects & Postgraduate Dissertations

J. Jonk

Critical review of theories about the functions of parallel fibres in the cerebellar cortex
(G. Rix – supervisor)

M. Jonsson

Survey of Swedish chiropractors
(F. Wilson – supervisor)

A. Karlsen

Current concepts regarding "the obesity epidemic": a literature review
(L. Warren – supervisor)

W. Kay

Acute back pain: guideline-compliant attitudes and beliefs about psychosocial aspects of care in members of the UK chiropractic associations
(A. Breen – supervisor)

V. Kil

Investigation into transient and long term effects of upper thoracic and cervical chiropractic adjustments on auditory acuity
(B. Lewis – supervisor)

L. King

Is there agreement between various spinal diagnostic methods and x-ray analysis to determine a chiropractic malposition in the lumbar spine?
(K. Edlund – supervisor)

S. Kleiv

Inter-examiner reliability of the nervo-scope® when used in a clinical setting
(K. Edlund – supervisor)

P. Kobayashi

Chiropractors' reasons for the selection of examination and treatment procedures
(J. Bolton – supervisor)

B. Koch

Surface electromyography of lumbar paravertebral muscles during the OSMIA acquisition procedure
(A. Breen & J. Bagust – supervisors)

R. Lancaster

Adaptations to cold and hypothermia in the elderly: a literature review
(I. Brown – supervisor)

L.T. Lau

Awareness, utilisation and opinions on chiropractic care: a pilot survey of professional golfers on the PGA European tour
(K. Edlund – supervisor)

J. Liu

Does dehydration have an adverse effect upon accuracy of football players?
(I. Brown – supervisor)

C. Lommerse

Investigation into the perceptions of senior AECC students regarding chiropractic practice preferences
(J. Langworthy – supervisor)

M. Mahony

The difference in outcomes of the McTimoney technique compared with Diversified technique in chiropractic treatment of low back pain
(A. Turner – supervisor)

Undergraduate Projects & Postgraduate Dissertations

D. Maxut

Survey of drinking habits and attitudes towards alcohol among undergraduates at AECC
(A. Tyler – supervisor)

J. McCoy

Benefits, risks and placebo effects of drug-nutrient-supplement interactions: a literature review
(A. Tyler – supervisor)

J. Molloy

Does stretching effectively treat or prevent low back pain? A literature review
(J. Cook – supervisor)

J. Molony

Chiropractic care: a patient's perspective
(A. Jones-Harris – supervisor)

M. Muncila

Does the effect of debt (student loan) have an impact on the professional practice of AECC graduates practising in the UK?
(K. Vall – supervisor)

A. Newell

Intra- and inter-examiner reliability of the pulstar-FRASTM and comparison with prone springing in the thoracic spine
(J. Bagust & P. Miller – supervisor)

G. Nolan

Factors that may affect the utilisation of radiography by chiropractors in New Zealand - a pilot study
(A. Turner – supervisor)

H. Nordstrom

Immediate effect of upper trapezius trigger point therapy compared to detuned ultrasound on cervical lateral flexion, pain and trigger point tenderness
(H. Gemmell – supervisor)

E. O'Hare

Effect of the Buteyko breathing technique and abdominal breathing on pulmonary function: a randomised controlled trial
(I. Brown – supervisor)

M. Pettersson

Prevalence and associated lifestyle factors of spinal pain in adolescents in a Norwegian secondary school
(J. Bolton – supervisor)

H. Prytz

Attitudes and beliefs of chiropractors treating animals
(A. Breen – supervisor)

C. Rankin

Current theories on the association between diet and migraines: a literature review
(A. Tyler – supervisor)

A. Robertson

Survey of upper limb peripheral nerve injuries experienced in competitive road cycling
(A. Coode – supervisor)

J. Rogers

Electronic medical records in chiropractic practice: a literature review
(H. Thiel & M. Holgate – supervisor)

M. Rogers

Neurogenic implications in understanding physical therapies in the treatment of Rheumatoid arthritis: a literature review
(I. Brown – supervisor)

G. Ross

Prevalence of injury in elite female golfers
(K. Edlund – supervisor)

A. Ruhe

Effects of cervical SMT on brain function in children with attention deficit/hyperactivity disorder (ADHD): a literature review
(G. Rix – supervisor)

E. Seymour-Spicer

Influence of age and temperature on nerve conduction velocity in the ulnar nerve
(J. Bagust – supervisor)

J. Sheppard

Potential use of embryonic stem cells in the regeneration of the central nervous system: a literature review
(J. Bagust – supervisor)

N. Simon

CROM versus Zebris for the measurement of cervical range of motion
(A. Webb & G. Rix – supervisors)

E. Skeie

Development of a written report of findings: a qualitative study
(B. Lewis – supervisor)

W. Smith

Presentations for dexta-scan studies at the AECC clinic and the likelihood that bone mineral density knowledge assists in plans to change lifestyle
(J. Miller – supervisor)

A-M. Stefan

Use and outcomes of therapeutic ultrasound in the AECC clinic: a retrospective survey
(G. Clarke – supervisor)

K. Storey

Nocebo and nutrition: fact, fantasy or fallacy?
(A. Tyler – supervisor)

C. Streeter

Lifelong learning skills: how experienced are students when they enter AECC?
(J. Bolton – supervisor)

D. Stromme

Comparing digital to conventional radiography: a literature review
(A. Thorkeldsen – supervisor)

N. Tast

Relative value of plain film radiographs at the AECC teaching clinic
(A. Turner – supervisor)

E. Vall

Primary factors influencing chronic pain patients' decisions to seek chiropractic care: a grounded theory
(P. Miller – supervisor)

R. van der Haas

Effect of a neck brace on cervical range of motion in motocross
(G. Rix – supervisor)

A. van Leeuwen

Waiting and wellness: an investigation of the effect of the physical environment on patients' well-being in the waiting room - a pilot study
(P. Miller – supervisor)

L. van Viegen

Effect of head movement upon erector spinae and gluteal muscle surface EMG activity
(A. Turner – supervisor)

T. Vassvik

Is chronic low back pain a risk factor for neck pain?
(J. Bolton – supervisor)

T. Waddell

The effects of massage on gastric myoelectrical activity and heart rate variability
(J. Bagust – supervisor)

M. Walles

What is the evidence that chiropractic interventions influence general health? A systematic review
(A. Breen – supervisor)

A. Webley

Inter- and intra-examiner reliability when performing the carpal tunnel compression test
(I. Brown – supervisor)

S. Wood

Effects of accupressure Sea-Bands on peak respiratory flow
(A. Tyler – supervisor)

* **Best Project**
Sophie Haynes



2006-2007

U. Ahmed

Prevalence of carpal tunnel syndrome among office workers
(M. Wikstrom – supervisor)

S. Andersen

Prevalence and associated risk factors of low back pain in Norwegian school children
(J. Bolton – supervisor)

K. aus der Fünten

Football injuries in one German female National League team from season 2001/2002 to season 2004/2005
(J. Cook – supervisor)

A. Aziz

Non-insulin dependent diabetes mellitus in 2nd generation Muslim immigrants to the UK in relation to diet and lifestyle.
(I. Brown – supervisor)

C. Bakker

"Friendly bacteria": the role of the gut microflora in health and disease - a primary contact perspective.
(L. Warren – supervisor)

A. Barfoot-Saunt

Prevalence of use and understanding of therapeutic ultrasound in the treatment of musculoskeletal pain by interns at the AECC chiropractic clinic
(P. Miller – supervisor)

S. Bartholomew

What stressors at the AECC are perceived by students to cause the greatest distress?
(H. Gemmell – supervisor)

M. Bergstrøm

Survey on how the new legislation of 01.01.06 has impacted on chiropractic practice in Norway
(A. Thorkeldsen – supervisor)

J. Bidgood

Who's interested in the history of chiropractic? A survey of students at the AECC
(F. Wilson – supervisor)

J. Birdseye

Lumbar spine injuries in cricket fast bowlers: a literature review
(A. Coode – supervisor)

L. Birkeland

Non-pharmacological treatment for patients with rheumatoid arthritis: a critical review of the evidence
(G. Rix – supervisor)

C. Bjørnsen

Can intensive exercises increase throwing velocity in female handball players?
(J. Cook – supervisor)

D. Blanshard

Visual compensation after proprioceptive inhibition by means of cold foot immersion
(J. Bagust – supervisor)

A. Blikstad

The immediate effect of activator trigger point therapy and myofascial band therapy on non-specific neck pain compared to sham ultrasound: a randomised controlled trial
(H. Gemmell – supervisor)

Undergraduate Projects & Postgraduate Dissertations

O. Bolton

A survey of AECC students investigating eating behaviour in response to stress
(S. Docherty – supervisor)

J. Bond

Investigation into the effects of TENS stimulation on audio reaction times
(J. Bagust – supervisor)

D. Brown

A comparison of ergogenic aids in sports performance training
(J. Andrews – supervisor)

H. Bugler

The difference in body mass index as a measure of obesity in patients presenting to the AECC clinic in 1998 and 2006
(A. Tyler – supervisor)

C. Burdon

Investigating the links between cannabis, psychosis and schizophrenia: a literature review
(I. Brown – supervisor)

A. Callegari

Changes in blood pressure and heart rate upon ingestion of caffeine from cola
(L. Wright & J. Bagust – supervisors)

M. Chrapkowska

The portrayal of chiropractic in the UK press
(B. Lewis – supervisor)

L. Christensen

The feelings and thoughts of chronic musculoskeletal pain patients about chiropractic treatment prior to their first visit
(A. Jones-Harris – supervisor)

R. Correll

Diagnostic properties of the standing iliac crest palpation test
(H. Thiel & J. Bolton – supervisors)

S. Davies

Effects of manipulation of thoracic vertebrae on thoracic erector spinae muscle activity as measured by electromyography & effects of thoracic manipulation on heart rate as measured by electrocardiograph
(P. Miller – supervisor)

M. Decavel

A literature review evaluating conservative and orthodox treatment of cystic fibrosis
(A. Tyler – supervisor)

E. Dillner

Do Swedish chiropractors' management of acute non-specific low back pain confirm with evidence based practice in Europe?
(A. Breen – supervisor)

W. Drost

The effect of thoracic manipulation on the active extension range of motion and bench press performance of powerlifters: a pilot study
(K. Edlund – supervisor)

H. Edwards

An investigation of the clinical outcomes of male patients with simple low back pain compared to those with low back pain and leg pain
(G. Clarke & P. Miller – supervisors)

Undergraduate Projects & Postgraduate Dissertations

S. Elsner

Evidence-based management for subacromial impingement syndrome: a literature review
(M. Kondracki – supervisor)

S.-A. Engevik

Knee injury patterns amongst handball players - mechanisms and prevention of anterior cruciate ligament injury
(M. Wikstrom – supervisor)

Å. Feldtö

What are the beliefs, expectations and satisfaction of parents whose children are undergoing chiropractic treatment in the AECC student clinic?
(J. Miller – supervisor)

F. Fursdon

Nutrition and breast cancer - a literature review
(A. Tyler – supervisor)

V. Gimbrere

The effect of a lower cervical spine (C5-C7) chiropractic adjustment on biceps brachii muscle strength in patients with sub-acute mechanical neck pain
(J. Bagust – supervisor)

M. Grandaunet

Comparison of chiropractic education at AECC and WIOC from a senior studentpoint of view: a qualitative study
(M. Wikstrom & K. Vall – supervisors)

S. Gunn

British Chiropractic Association members' attitudes towards the chiropractic reporting and learning system: a qualitative study
(H. Thiel & J. Bolton – supervisors)

C. Haddon

The control and rehabilitation of posture: a literature review
(N. Osborne – supervisor)

G. Handa

Physiological responses to affective visual stimuli
(S. Docherty & J. Bagust – supervisors)

D. Heritage

Testosterone levels and athletic competition in women: a literature review
(S. Docherty – supervisor)

A. Holleman

Study of the irritable infant in relation to maternal depression
(J. Miller – supervisor)

D. Hughes

A comparison of neck strength and extension: flexion ratio between rugby players and the general population
(K. Edlund – supervisor)

T. Jakobsen

The immediate relative effect of carpal manipulation and activator on the opponens pollicis muscle using a strain gauge and electromyography
(H. Gemmell – supervisor)

M. Jensen

The importance of neurogenic symptoms in the evaluation and treatment of chiropractic patients
(J. Cook – supervisor)

B. Jones

The effect of an activator instrument on myofascial trigger points in the forearm and concomitant changes in grip strength and pain thresholds

(A. Coode – supervisor)

J. Knarren

Interprofessional relationships within complementary and alternative medicine in the United Kingdom

(J. Langworthy – supervisor)

C. Lambrecht

Chiropractic treatment of otitis media: a survey

(J. Langworthy – supervisor)

H. Lane

A survey into the long term benefits of chiropractic treatment on those previously suffering from infantile colic

(J. Miller – supervisor)

N. Langlois

How does lifestyle affect ADHD symptom incidence in the general population?

(A. Tyler – supervisor)

J. Leath

Emergence of CAM: pushed away from orthodox medicine or pulled towards CAM?

(J. Bolton – supervisor)

C. Lunow

Investigation of the computerised rod and frame test: assessment of error of dots in comparison to rod

(J. Bagust – supervisor)

I. MacFarlane

An investigation into the effect cervical extension has on balance and coordination in the amateur rugby player

(I. Brown – supervisor)

M. Madge

Investigation of the symptom patterns, during upper limb nerve tension tests in healthy subjects

(G. Rix – supervisor)

K. Mason

Can excess thyroid hormone cause osteoporosis? A literature review

(I. Brown – supervisor)

J. McGurk

The underlying pathologies of fibromyalgia: a literature review

(I. Brown – supervisor)

N. Metcalfe

Sex hormones, finger lengths and pain perception

(S. Docherty – supervisor)

L. Miles

Will the Dopstudio provide an accurate representation of vertebral artery flow parameters utilising the Haynes methodology of detection?

(H. Thiel – supervisor)

N. Milton

Somato-visceral reflex. Effects of TENS (Transcutaneous Electrical Nerve Stimulation) on heart rhythmicity

(J. Bagust – supervisor)

K. Mohan

The eye movement profiles during reading of individuals with dyslexia

(N. Osborne – supervisor)

A. Molina González

Awareness and opinions toward chiropractic in Spanish professional football: a survey of healthcare teams of professional football teams

(K. Edlund – supervisor)

H. Mulliner

Views and opinions of GCC registered chiropractors towards gaining limited prescribing rights: a survey

(J. Langworthy – supervisor)

J. Myers

Can spinal manipulative therapy (SMT) affect mood/emotion? A literature review

(I. Brown – supervisor)

K. Nie

A retrospective study into the range of therapeutic modalities used in the treatment of spinal injuries in National Hunt racehorses

(L. Warren – supervisor)

I.J. Nilsen

The observed effects of chiropractic on the behaviour of autistic children: a qualitative study

(J. Langworthy – supervisor)

J. Noble

Retrospective analysis of patterns of attendance at the AECC Rehabilitation Department and the relationship to patient history

(N. Osborne – supervisor)

M. Ogre

ACL injuries in football players with emphasis on risk factors, management and treatment: a literature review

(A. Thorkeldsen – supervisor)

K. Orderud

Comparison of clinical justification details provided by GP's, chiropractors and referring physiotherapists at a Norwegian MRI imaging centre

(A. Turner – supervisor)

C. Pellissier

The effect of a baby hip support on the electrical activity generated in the erector spinae muscle group when carrying an infant on the hip

(P. Miller – supervisor)

I. Rolvink

The surface of EMG activity of the neck extensor musculature in various stages of anterior head carriage

(M. Wikstrom – supervisor)

P. Sadler

Informed consent in a chiropractic teaching clinic: what information is retained by the patient

(J. Langworthy & F. Wilson – supervisors)

H. Sampson

Perspectives of innate intelligence: a survey into the attitudes and beliefs of chiropractors practising in the UK

(F. Wilson – supervisor)

Undergraduate Projects & Postgraduate Dissertations

N. Sandanger

Non-surgical treatments for acute/subacute non-specific neck pain: a narrative literature review

(H. Gemmell – supervisor)

J. Santamaría Balbás

Attitudes, perception and general knowledge of medical doctors regarding chiropractic at the Hospital Virgen Del Rocio in Seville, Spain

(M. Kondracki – supervisor)

S. Si

Chiropractic care: experiences of people with severe physical disabilities

(J. Langworthy – supervisor)

C. Sinclair

Effective chiropractor-patient communication: the use of educational tools/visual aids

(Jane Cook – supervisor)

N. Sion

In scuba diving, what are the effects of pressure and decompression sickness on the body; and is patent foramen ovale a risk factor for decompression sickness?

(A. Coode – supervisor)

R. Smith

A pilot study to assess the use of plyometric and ballistic exercises to improve peak acceleration and peak load of a chiropractic cross-bilateral thoracic adjustment

(A. Coode – supervisor)

M. Smyth

Evidence based practice and chiropractic: the way forward

(P. Miller – supervisor)

K. Stone

Acid-base balance and bone health: a literature review

(A. Tyler – supervisor)

T. Svendsen

Prevalence of injuries in Norwegian male amateur and semi-professional football players

(K. Edlund – supervisor)

C. Swala

Survey of Ontario chiropractors on the relationship of the chiropractic profession with the medical profession

(A. Turner – supervisor)

G. Thorsen

The effect of the oral contraceptive pill on pressure pain threshold in spinal regions during a menstrual cycle

(G. Rix – supervisor)

H. Todnem

Investigation of unilateral functional ankle instability with strength and balance training in football players: a cohort study

(P. Miller & J. Cook – supervisors)

***E. Tritschler**

The correlation between patient satisfaction and consultation length at the AECC clinic: a qualitative investigation

(Jane Cook – supervisor)

A. Tsang

A survey of chiropractic practice in Hong Kong: who are the chiropractors?

(A. Breen – supervisor)

Undergraduate Projects & Postgraduate Dissertations

S. Tsang

The improvement of speed and load in a chiropractic adjustment via practising on a rubber balls compared to practicing with resistance bands

(A. Coode – supervisor)

C. van Landeghem

A survey of Flemish new chiropractic patients presenting with musculoskeletal complaints

(A. Breen – supervisor)

R. Walker

A study into the effects of overnight fasting on active flexion and extension in the cervical spine and lumbar spine and passive hip flexion

(A. Tyler – supervisor)

C. Ward

The hidden disability: experiences of chiropractic students with dyslexia at the AECC

(Jane Cook – supervisor)

R. Whall

What is the nature and activity of prions? The pathogenesis, clinical effects and treatment of prion diseases

(I. Brown – supervisor)

G. Whitefoot

Can the assessment of psychometer skills be used as a predictor of future skills based performance? A literature review

(J. Andrews – supervisor)

G. Winslade

Concussion in sports: a literature review

(P. Miller – supervisor)

*** Best Project**
Elaine Tritschler



Undergraduate Projects & Postgraduate Dissertations

MSc Advanced Professional Development in Chiropractic,
University of Portsmouth

Jane Cook

Patients' understanding of their low back pain condition as reported to them by a chiropractic intern at the AECC teaching clinic. 2005 (**J. Bolton** - supervisor)

J. Cook

The reciprocal relationship of the latissimus dorsi and gluteus maximus in stabilisation of the low back. 2005 (**J. Bagust** - supervisor)

D. Evans

A cross-sectional study to assess the effects of clinical experience on patient outcomes. 2006 (**J. Bolton** - supervisor)

H. Faulkner

Test-retest reliability of sEMG paraspinal scans: a comparative study. 2006 (**J. Bagust** - supervisor)

E. Poulsen

Reliability of passive and range assessment of the hip in flexion, internal and external rotation. 2006 (**J. Bolton** - supervisor)



MSc Advanced Professional Development in Chiropractic Paediatrics,
University of Portsmouth

M. Browning

Comparison of the short-term effects of chiropractic spinal manipulation and cranio-sacral treatment in the treatment of infant colic: a double-blinded, randomised, controlled clinical trial. 2005 (**J. Miller** - supervisor)

J. Leighton

Is there a difference in the magnitude of the femoral neck anteversion angle between those 2-10 year old children who manifest the clinical signs of "growing pains" and those that do not? A blinded cross-sectional pilot study. 2006 (**J. Miller** - supervisor)



Research Grants,
Awards
and
Memberships

Grants, Awards & Memberships

Grants and Awards

2005-2006

Bruno P. Elsevier Science Postgraduate Writing Prize £350.

Grant for Research Fellow (**Bruno P.**). College of Chiropractors £10,000.

Grant for Research Fellow (**Bruno P.**). TAM Club £5,000.

IMRCI. Research grant: *Improving the Management of Low Back Pain in the Community Using Action Learning Groups.* South-West Dorset Primary Care Trust £2,500.

IMRCI. Research grant: *Psychosocial Factors in Chiropractic Patients with New Episodes of Non-Specific Back Pain: a Prospective Cohort Study.* European Chiropractors' Union £19,031.

IMRCI. Research grant: *GP's Attitudes and Knowledge in the Biopsychosocial Management of Back Pain.* Institute for Health and Community Studies and Royal College of General Practitioners (Wessex Faculty) £450.

IMRCI. Research grant: *The Effect of an Information Package of National, Evidence-based Guidance on the Reported Management of Acute Back Pain Patients by Chiropractors, Osteopaths and Physiotherapists in the UK: A randomised, controlled trial.* The British Chiropractic Association and the AECC TAM Club £2,100.

IMRCI. Research grant: *Flexible Stabilisation or Solid Fusion for Lumbar Spondylosis? A Randomised Controlled Trial – Stage 1 – Feasibility Study.* Zimmer International £27,341.

IMRCI. Research grant: *Improved Early Pain Management for Musculoskeletal Disorders.* Health and Safety Executive £27,868.

IMRCI. Research grant: *A Comparative Study of US and UK Chiropractic Practice in Obtaining Informed Consent.* FCER/NCMIC - £2,588.

Wilson F. Doctoral research/editing of book: *Chiropractic in Europe: An Illustrated History.* European Chiropractors' Union £10,000.

2006-2007

Bagust J. Purchase an ECG Amplifier for use in Research and Teaching. TAM Club £1,305.

Bruno P. Elsevier International Writing Prize £350.

Grants, Awards & Memberships

Gemmell H. Research grant: *Relative effectiveness and safety of cervical mobilisation manipulation and the Activator instrument in patients with sub-acute neck pain: a randomised trial.* European Chiropractors' Union € 30,000.

Gemmell H. Research grant: *Relative effectiveness and safety of cervical mobilisation manipulation and the Activator instrument in patients with sub-acute neck pain: a randomised trial.* National Institute of Chiropractic Research US\$ 7,000.

Gemmell H. Research grant: *Relative effectiveness and safety of cervical mobilisation manipulation and the Activator instrument in patients with sub-acute neck pain: a randomised trial.* TAM Club £2,780.

Grant for Research Fellow (**Bruno P.**). College of Chiropractors £10,000.

Grant for Research Fellow (**Bruno P.**). TAM Club £5,000.

IMRCI. Research grant: *Improving the management of back pain in Primary Care.* The Health Foundation £455,098.

IMRCI. Research grant: *Objective Spinal Motion Imaging Assessment (OSMIA).* OrthoKinematics. Inc. £51,938.

Osborne N. Skalar Iris Basic for use in Research. TAM Club £6,010.

Wilson F. Doctoral research/editing of book: *Chiropractic in Europe: An Illustrated History.* European Chiropractors' Union £10,000.



Honorary Lectureships/Professorships

Breen AC.

Honorary Senior Research Fellow: Dept of General Practice and Primary Care, Barts and the London: Queen Mary's College of Medicine and Dentistry
Visiting Research Fellow: Institute for Health and Social Care, Bournemouth University

Brown I

Visiting Lecturer: Neuropsychology and Psychopharmacology, School of Psychology and Animal Behaviour, University of Southampton
Visiting Research Fellow: Department of Biological Sciences, University of Southampton

Grants, Awards & Memberships

Grants, Awards & Memberships

Docherty S

Visiting Lecturer: Neuropsychology and Psychopharmacology, School of Psychology and Animal Behaviour, University of Southampton

Tyler A

Visiting Lecturer: Neuropsychology and Psychopharmacology, School of Psychology and Animal Behaviour, University of Southampton



Membership/Editorship on Research Journal Boards

Bolton J

Associate Editor: Clinical Chiropractic
 Editorial Board: Journal of Manipulative and Physiological Therapeutics
 Editorial Board: Journal of Chiropractic Education
 Editorial Board: Journal of Chiropractic Medicine

Breen A

Editorial Board: BMC Chiropractic and Osteopathy
 Editorial Board: Clinical Biomechanics
 Editorial Board: Journal of Manipulative and Physiological Therapeutics
 Editorial Board: Manual Therapy
 Editorial Board: Journal of Alternative and Complementary Medicine
 Editorial Board: The Chiropractic Report
 International Advisory Board: BMC Musculoskeletal Disorders
 International Advisory Board: Clinical Chiropractic
 Associate Editor: National Electronic Library of Health - Complementary and Alternative Medicine Specialist Library (NeLCAM)
 Reviewer: Pain
 Reviewer: Physiotherapy
 Reviewer: Clinical Journal of Pain

Gemmell H

Reviewer: Clinical Chiropractic

Jones Harris A

Reviewer: Clinical Chiropractic
 Reviewer: Australasian Chiropractic and Osteopathy

Langworthy J

Editorial Board: Journal of Manipulative and Physiological Therapeutics

Newell D

Reviewer: Clinical Chiropractic

Wilson F

Editorial Board: Chiropractic History
 Reviewer: Clinical Chiropractic



Positions in Scientific Advisory Boards/Professional Associations

Breen AC

Member: British Chiropractic Association
 Member: Institute of Physics and Engineering in Medicine
 Fellow: Royal Society of Medicine
 Education Member: The UK General Chiropractic Council
 Fellow: College of Chiropractors
 Member: WFC Advisory Panel for WHO technical Documentation on Chiropractic (Geneva)
 Member: Steering Committee – Christchurch Back Club

Bolton J

Honorary Fellow: Higher Education Academy
 Honorary Fellow: College of Chiropractors
 Fellow: British Chiropractic Association

Mellor F

Member: Health Professions Council
 Member: Society of Radiographers, UK
 Member: Society for Back Pain Research



Membership of Research Societies

Bagust J

Member: British Neuroscience Association
 Member: Society for Neuroscience (USA)
 Member: Physiological Society
 Member: British Pharmacological Society

Bolton J

Member: International Association for the Study of Pain
 Member: Society for Back Pain Research

Breen AC

Society for Back Pain Research
 Research Council of the World Federation of Chiropractic (Canada)
 Research Council of the European Chiropractors' Union
 Member: Society for Academic Primary Care

Grants, Awards & Memberships

Grants, Awards & Memberships

Edlund K

Member: Gonstead Clinical Studies Society

Langworthy J

Member: Society for Back Pain Research

Tyler A

Member: Institute of Biology

Member: Nutrition Society

Fellow: Royal Society of Medicine

Wilson F

Member: Association for the History of Chiropractic



AECC Research and Staff Development Sub-Committee

Membership: 2005-2007

J Bolton (Chair)

A Breen

H Thiel

J Bagust

G Rix

L Warren

J Lewis

Student Representative

Principal (ex-officio member)



AECC Research Ethics Sub-Committee

Membership: 2005-2007

J Bolton (Chair)

3 co-opted members from Research & Staff Development Sub-Committee



Projects Approved by the Research Ethics Sub-Committee

Bruno P. *Investigating the differences in muscle activation patterns used during prone hip extension and hip abduction between subjects with chronic low back pain and those without low back pain.* Approved October 2005.

Leighton J. *Is there a difference in the magnitude of the femoral neck anteversion angle between those 2-10 year old children who manifest the clinical signs of "growing pains" and those that do not? A cross-sectional study.* Approved March 2006.

Faulkner H. *Test – retest reliability of sEMG paraspinal scans, a comparative study.* Approved March 2006.

Bagust J. *Investigation to establish a normative dataset of individuals' perception of the vertical and horizontal.* Approved May 2006.

Poulsen E. *Reliability of passive end range assessment of the hip flexion, internal and external rotation.* Approved June 2006.

Gemmell H. *Relative effectiveness and safety of cervical mobilisation manipulation and the Activator instrument in patients with sub-acute neck pain: a randomised trial.* Approved July 2006.

Bruno P. *Investigating the differences in muscle activation patterns used during prone hip extension between non-low back pain subjects who test positive and negative on the prone hip extension test.* Approved November 2006.

Nilsson A-B. *Chiropractic treatment of children with recurrent acute otitis media: a randomised controlled single-blinded pilot study.* Approved January 2007.

Breen A. *Erector spinae muscle electrical activity during recumbent and weight-bearing OSMIA acquisition procedures – a pilot study.* Approved January 2007.

Davidson E. *Grampian General Practitioners' experience with and attitudes towards chiropractors treating children – a survey.* Approved February 2007.

Green A. *Paediatric Questionnaire of infant cry-fuss and sleep behaviour.* Approved March 2007.

Allen SC. *Measuring inspiratory transductance: a pilot study to determine the stability, reproducibility and directional characteristics of the index.* Approved July 2007.

Miller J. *Chiropractic manual therapy for excessive infant crying (formerly known as infantile colic): a randomised controlled trial.* Approved June 2007.



Grants, Awards and Memberships

Supervision of External Doctoral Degrees

D. Carnes

Picturing persistent pain: patterns in visual representation of musculoskeletal pain that are predictive of long term prognosis in a community sample. Department of General Practice, Barts and the London Medical School Queen Mary College. Completed 2006 (External advisor: **Prof Alan Breen**)

D. Evans

Barriers to the implementation of evidence among the physical therapy. Department of General Practice and Primary Care, University of Keele. Completed 2007 (External advisor: **Prof Alan Breen**)

K. Konstantinou

Mobilisations with movement in the treatment of low back pain. School of Social Sciences, University of Coventry. Completed 2007 (External advisor: **Prof Alan Breen**)



Appointment of Visiting Professors to AECC

A Khattab MBChB, PhD, FRIPHH, CBiol, MIBiol, MIHE

Institute of Health and Community Studies, Bournemouth University

P Thomas PhD

Dorset Research and Development Support Unit, Poole Hospital



Continuing Professional Development





ON-LINE DISTANCE CPD LEARNING FOR CHIROPRACTORS WORLD-WIDE



The World Wide Web offers a new dimension for distance learning, providing easy access for self-paced study to chiropractors undertaking CPD wherever in the world they are. The AECC is making use of internet learning in CPD, and is now launching its first two innovative distance-based CPD courses in Radiology.

- Geriatric Low Back Pain (author: Dr C Peterson, DC, RN, DACBR, MMed) 5 CPD Hours
- Cervical Spine Trauma (author: Dr C Peterson, DC, RN, DACBR, MMed) 7 CPD Hours
- Clinical Pharmacology for Chiropractors (author: Dr I Brown, PhD, MEd) 7 CPD Hours

Each package can be accessed free on the web at:

<http://cpdonline.aecc.ac.uk>

This enables access to practice cases together with model answers. These will prepare for the test cases that follow.

To undertake the course, chiropractors must register with AECC. This will give access to a set number of test cases with questions. Answers are sent by email to the tutor who will mark and feedback to the individual.

Successful completion of each package is awarded a Certificate and CPD hours (UK).

An Information Sheet giving full details of registration, the registration period and registration fee can be obtained from the AECC.

The distance learning packages have been developed by Dr Ian Brown (PhD, MEd) at AECC and are compiled by experts offering chiropractors current and clinically relevant information in the specialist topic area.

Contact: details: Mrs Georgina Enright,
Administrative Assistant, Department of Research and Postgraduate Studies
AECC, 13-15 Parkwood Road, BOURNEMOUTH BH5 2DF
Phone: 01202 436324 Email: genright@aecc.ac.uk

Postgraduate Studies and Continuing Professional Development

The AECC is not just an undergraduate education institution but an institution that educates and trains at a number of levels, all within an active research environment. The AECC has expanded its postgraduate portfolio over the last two years, and now includes award-bearing Masters programmes and CPD short courses.

Masters programmes

In early 2006, three Masters programmes were validated by Bournemouth University. These are: MSc Advanced Chiropractic Practice, MSc Advanced Chiropractic Paediatric Practice and MSc Advanced Chiropractic Rehabilitation Practice. The AECC holds a unique position in chiropractic education worldwide in offering a portfolio of postgraduate programmes designed to educate qualified chiropractors at Masters level. The college is committed to providing these opportunities for chiropractors as one way of advancing the profession and enabling practitioners to study at an advanced level using their own clinic practice as the main 'classroom'. Education at this level must be relevant to practitioners' professional needs, and learning in practice is an obvious way to change and improve where it matters most. Over these last two years we have enrolled chiropractors on all three pathways. As mainly distance-based learning programmes, this delivery model has its own unique challenges, and ones we have met through a dedicated and committed academic and administrative team.

Evolving out of these Masters programmes was an idea to develop a Postgraduate Certificate qualification specifically for new graduates to facilitate the transition to full autonomous professional practice. Validated by Bournemouth University, the first cohort of graduates started in October 2005. Once again, the innovative programme designed by a team at AECC represents the college's commitment to postgraduate education and its unique position in delivering programmes for chiropractors at all stages of their careers.

CPD Short Courses

For many chiropractors, the intensive nature of award-bearing programmes and the necessary time commitment is not for them. The recent introduction of mandatory CPD by the General Chiropractic Council means that all chiropractors must engage in life-long learning and reflective practice. Again the college is committed to this principle, and delivers short courses over a wide range of topic areas. We are continually striving to present high quality seminars that are relevant to practitioners' needs and that will facilitate improvements in practice. A list of CPD seminars presented by the college over the last two years is shown in this Report. Labour-intensive, often frustrating, the CPD portfolio again illustrates the AECC as a dynamic and responsive institution to the educational and training needs of chiropractors.

Details of the Masters, PgCert and CPD courses are continually updated and can be found on the AECC website.

Continuing Professional Development

**Staff Development
(Post-graduate Award bearing programmes)**

John C. Certificate in Essential Skills in Medical Education (ESME); start date September 2006

Rothman E. MA Academic Practice, Bournemouth University; start date September 2005

Rowe-Jones K. MA Academic Practice, Bournemouth University; start date September 2006

Wood A. MA Health & Social Care Education, Bournemouth University; start date September 2006

Completed

Cook Jane MSc Advanced Professional Development in Chiropractic, University of Portsmouth; 2005

Cook Jonathan MSc Advanced Professional Development in Chiropractic, University of Portsmouth; 2005

Jones-Harris A. Certificate in Essential Skills in Medical Education (ESME) 2006

Warren L. MSc Nutritional Medicine, University of Surrey; 2006



(Doctorate Research Degrees)

Bruno P. *Muscle Recruitment Patterns During Prone Hip Extension and Hip Abduction: Clinical Usefulness in Assessing Low Back Pain Patients and Impact on Low Back Pain Rehabilitation.* University of Portsmouth; start date October 2004 (Supervisors: **Prof Jeffrey Bagust**, Dr Graham Mills and Dr Sally Kilburn)

Jones-Harris A. *Role of Chiropractors in the UK as "Primary" Healthcare Professionals.* University of Portsmouth; start date September 2001. (Supervisors: **Prof Jennifer Bolton** and Dr Graham Mills)

Miller P. *Lived Experience of Dizziness in Patients Presenting to Chiropractors.* University of Portsmouth; start date September 2001. (Supervisors: **Prof Jennifer Bolton** and Dr Graham Mills)

Continuing Professional Development

Osborne N. *Eye:neck Co-ordination Training in the Rehabilitation of Chronic Neck Pain Patients.* University of Brighton; start date January 2003. (Supervisors: **Prof Jeffrey Bagust** and Prof Ann Moore)

Rix G. *Development of Neurological Investigative Techniques and Outcome Measures for the Study of Cervicogenic Vertigo in Humans.* University of Southampton; start date September 1999. (Supervisors: **Prof Jeffrey Bagust**, Prof Robert Walker and Dr Alan Noble)

Wilson F. *A History of Chiropractic in Britain.* University of Southampton; start date September 2001. (Supervisors: Dr Bernard Harris, Dr Gordon Causer and **Prof Jennifer Bolton**)

Completed

Thiel H. *Prospective study of cervical spine manipulation treatments by chiropractors.* May 2007. (Supervisors: **Prof Jennifer Bolton**, Dr Graham Mills and Dr Jane Portlock)



Continuing Professional Development

CPD Courses 2005-2006

Dates	Course	Tutor(s)
17/18 September 05	Advanced Anatomy/Radiology Workshop for the Upper and Lower Limb	P Collins, A Webb, A Thorkeldsen, A Turner and Mike Smith (external)
29 October 05	Organising & Recording your CPD for Retention of Registration	J Bolton, A Jones-Harris and Peter Miller
19/20 November 05	Introduction to Dry Needling	J Reynolds (external)
26 November 05	Diagnostic Imaging Update: 'Everything Joints'	C Peterson (external)
14/15 January 06	The Four Myofascial Distortions: A Simple Approach to Diagnosis and Effective Treatment	H Gemmell & P Miller
27 January 06	Research Methods for Chiropractors Part 1	J Bolton, A Jones-Harris and Peter Miller
28/29 January 06	Neonate & Early Development Part 1	J Miller and A Tyler
18/19 February 06	Introduction to Dry Needling	J Reynolds (external)
25/26 February 06	A Regional Approach to Rehabilitation: Lumbar Spine	S McGill (external)
10 March 06	Research Methods for Chiropractors Part 2	J Bolton, A Jones-Harris and Peter Miller
11/12 March 06	Neonate & Early Development Part 2	R Ferrance (external)
18/19 March 06	Gonstead Technique	D Currie (external)
18 March 06	Clinico-Legal Update for Chiropractors	A Andrews (external)
22/23 April 06	Evidence-based Healthcare	J Bolton, A Jones-Harris, Peter Miller, D O'Neill
22/23 April 06	Simple but Effective Diagnosis & Treatment of Headache	H Gemmell
22 April 06	Chiropractic Care of the Pregnant Patient	J Fallon (external)
6/7 May 2006	The ABCs of Pain Management	H Gemmell
6 May 06	Radiography Workshop	A Wood
10/11 June 06	Introduction to Dry Needling	J Reynolds (external)
17/18 June 06	Applied Anatomy & Radiology of Head, Neck & Cervical Spine	P Collins, A Webb, A Thorkeldsen, A Turner, J Cook and R Kerry
17/18 June 06	Whiplash: Diagnosis & Treatment	H Gemmell
1 July 06	Diagnosis of Arthritis Made Easy	H Gemmell
1/2 July 06	Gonstead Weekend Workshop	J Taylor and A Stevko (external)
5 July 06	The Vertebral Artery: To Test or not to Test?	A Taylor (external)
8 July 06	Radiology Refresher Course	J Cook & A Turner



Continuing Professional Development

CPD Courses 2006-2007

Dates	Course	Tutor(s)
16/17 September 06	Applied Anat & Radiology of Lumbar Spine & Pelvis	P Collins, A Webb, A Thorkeldsen, A Turner, J Cook & N Langridge (external)
16 September 06	Radiography Workshop	A Wood
28 September 06	Osteoporosis - effective management	N Hopkinson & J Seymour (external)
30 Sept/1 October 06	Paediatric Orthopaedics Part 1	J Miller, M Wessely (external)
7 October 06	Emergency First Aid	L Johnson (external)
21/22 October 06	Introduction to Dry Needling for the Chiropractor	J Reynolds (external)
26 October 06	Recovery & Regeneration - Practical strength & conditioning (evening)	N Grantham (external)
28/29 October 06	Fibromyalgia, Muscle Pain & Soft Tissue Pain	M Schneider (external)
18/19 November 06	Paediatric Orthopaedics Part 2	J Miller & T Rubinstein-de Koekkoek (external)
25/26 November 06	Low Back Syndromes: Integrated Clinical Management	C Morris (external)
20 November 06	Low Back Pain & Indications for Spinal Surgery (evening)	A Hilton (external)
2/3 December 06	The Neglected Cervical Spine & Accidents & Injuries of Spinal Manipulation	A Terrett (external)
8/9/10 December 06	Research Methods for Chiropractors	J Bolton, A Jones-Harris & P Miller
2 February 07	Pregnancy Masterclass	S Williams (external)
3/4 February 07	Pregnancy & Foetal Development 1	J Miller, L Warren & S Williams (external)
10/11 February 07	Introduction to Dry Needling for the Chiropractor	J Reynolds (external)
17/18 February 07	Gonstead Technique 'Ladies Only'	J Taylor (external)
3 March 07	Clinico-Legal Update for Chiropractors	A Andrews (external)
3/4 March 07	Growth & Development 1	J Miller, L Warren, C Chandler (external), J Williams (external) R Draper (external)
16 March 07	Spinal Imaging: The Inside Information	L Rowe (external)
24/25 March 07	Temporomandibular Disorders vs. Orofacial Disorders	C Skaggs (external)

Continuing Professional Development

Dates	Course	Tutor(s)
29 March 07	Latest Advances in Foot & Ankle Surgery	H Taylor (external)
31 March 07	Emergency First Aid (Basic Life Support with Adjuncts)	T Bennison (external)
26 April 07	Latest Advances in Knee Surgery	A Harvey (external)
21 April 07	Radiography Workshop	A Wood
21/22 April 07	"Discover the Gonstead Advantage"	D Rowe, D Currie, C Martin, J Taylor G van Koert, J McFadden (all external)
27 April 07	Growth & Development 2 (MSc)	J Miller & V Wyle
27 April 07	Carol Phillips Workshop	C Phillips (external)
28/29 April 07	Carol Phillips Seminar	C Phillips (external)
12 May 07	Intermediate Dry Needling	J Reynolds (external)
16/17 June 07	Introduction to Dry Needling for the Chiropractor	J Reynolds (external)
5 July 07	Effects of Spinal Manipulation & Mobilisation	N Langridge (external)
7/8 July 07	Functional Reactivations & Rehabilitation Seminar focusing on self-care principles	C Liebenson (external)
14/15 July 07	Chiropractic Gems Series Part 1: Upper Quadrant	V Pabbathi, P Miller & J Cimino



