The Chiropractic Report

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The Role of Sports Chiropractic

". . . the loss of any single component in the neuromusculoskeletal apparatus leads to compensatory changes in the remaining functional parts."
Inman and Ralston, Human Walking[1]

A. Introduction

AS THE BEIJING OLYMPICS approach, the June newsletter of the International Federation of Sports Chiropractic (FICS) has stories on some of the sports chiropractors who will be with their national teams:

• Dr. Michael Reed, who works fulltime for the US Olympic Committee in Colorado Springs as Medical Director of the Performance Services Division, will be one of five doctors of chiropractic with the US team.

• In New Zealand Dr. Gregory Oke of Palmerston North, who was also in Athens in 2004, is once again a New Zealand team doctor. In Australia, Dr. Margie Barry will be with the cycling team.

• Dr. Per Rehm of Malmo, Sweden will be with the Swedish Equestrian Team for the equestrian events being held in Hong Kong. Dr. Daniele Bertamini of Genoa will be with the Italian team for rowing.

• Dr. Martin Camara of the Philippines, who was last year appointed a member of his country's National Olympic Committee, will be a team doctor for the Philippines. His interdisciplinary group Intercare is presently running a 6 week pre-Olympic training camp for swimmers from various countries.

• Canada has 7 sports chiropractors with its team, led by team doctors Dr. Wilbour Kelsick of Port Moody, British Columbia and Dr. Lawrence Schledewitz of Steinbach, Manitoba. Others are with individual sports.

2. Because of their unique education and specialized clinical skills in areas of fundamental importance to sports performance and injury chiropractors are now seen as an integral part of the core sports medicine team by most elite athletes and their coaches. Tiger Woods, who has had chiropractic care throughout his career, was one of the celebrities standing on the four corners of the Chiropractic Centennial Float in the Rosebowl Parade in Pasadena in 1995. Dr. Dale Richardson of Australia, who spends 26 weeks a year with the Professional Golfers' Association (PGA) Tour, is just one of the several sports chiropractors currently working continuously with many top golfers to improve their biomechanics and performance, and avoid or manage injuries.

In North America baseball, basketball, football and hockey franchises in the MLB, NBA, NFL and NHL all have team chiropractors. Ten years ago Ohio State University had no formal chiropractic services for the Buckeyes, its much loved football team, and other athletes – today it has a team of chiropractors led by Dr. Robin Hunter of Columbus.

Leading European football/soccer clubs, such as AC Milan in Italy and Chelsea in England, have team chiropractors. Australian cricket star Adam Gilchrist credits Perth chiropractor Dr. Noel Patterson with keeping him healthy and the world's foremost wicketkeeper/batsman for many years until his retirement this year. Chilean tennis star Fernando Gonzales, ranked fifth in the world last year, maintains his form and avoids injury with the assistance of his chiropractor Dr. Steven Flint, who also works Davis Cup fixtures for Chile. Softball in huge in Taiwan – in recent years Dr. Edward Chen of Taipei has been the chiropractic consultant for the national team.

3. What is the role of sports chiropractic? When and why should an athlete seek the services of a chiropractor? What is happening in sports chiroprac-

Professional Notes

Golf Injuries

Stude et al. report a written survey completed by recreational golfers attending a popular annual golf show in Minneapolis, and giving doctors of chiropractic an insight into common problems, likely causes of them, and the general willingness of golfers to participate in specific golf fitness exercises and programs if provided.

For the 402 of the 462 golfers who visited the Northwestern Health Sciences University booth and completed the survey:

• 4 of 5 (80%) were male and 90% were of working age. There were 19 younger than 20, 26 older than 60. Approximately half (47%) had had prior chiropractic care.

• Most transported their own clubs, and almost 90% played golf at least 3 times weekly, mainly for social purposes and exercise rather than competition.

• 9 of 10 (89%) wore spiked shoes when playing. These give stability, but add stress to joints in the foot, leg and back.

• 1 in 8 (12%) reported past injury while

continued on page 4

tic education and research? What are the organizations representing sports chiropractors, and what are they doing to give athletes access to chiropractic services at major games events? These and other questions are addressed in this review of sports chiropractic.

B. Scope of Practice

4. Where they work with amateur teams in the community, often as volunteers and without assistance from other healthcare professionals, chiropractors have a broad diagnostic and therapeutic role consistent with their education and general chiropractic practice. This includes assessment of injury and function throughout the neuromusculoskeletal system, manual treatments, prescription and supervision of exercise programs, use of physical therapy modalities, taping and prescription of orthotics and other supports, nutritional advice and counseling/education. This encompasses the three areas of importance to all athletes:

• Managing injury – the fastest possible recovery and rehabilitation, getting to the source of the problem

• Prevention of injury – most athletic injuries result from repetitive stress, an accumulation of minor trauma and overload, which finally leads to breakdown and injury. Chiropractic assessment of biomechanical and neuromuscular problems can prevent many such injuries.

• Improved performance. It is because of their success in this key area that chiropractors are now in such demand from elite athletes and their coaches.

However, what unique education, knowledge, perspective and clinical skills do sports chiropractors bring to a full sports medicine team that has medical doctors, athletic trainers, physical therapists and others? There are two major areas of unique education and clinical expertise – understanding and managing the biomechanics of the neuromusculoskeletal system and, related to that, influencing neuromuscular control and performance.

5. **Clinical Biomechanics**. The interrelated biomechanics and function of the various parts of the body's neuromusculoskeletal system represents a core field of chiropractic education and practice. Which joints, muscles and other soft tissues are not functioning properly? If there are several dysfunctions in the kinetic chain, as is typically the case, which is the key one to which treatment should first be directed?

For example, for the gymnast with joint movement restriction and pain in the cervical spine and nearby trigger points in the upper trapezius muscle, but also reduced joint mobility in the thoracic spine, is the mid back the key area requiring attention for therapeutic success?

For the runner or football player with recurring hamstring injuries or muscle strains in the upper or lower leg, is the primary problem the muscle weakness or imbalance or overuse that exists and is being managed unsuccessfully with an exercise program – or is it an undiagnosed joint restriction in the pelvis or knee and/or ankle which, when found and corrected, complements the exercise program and solves the problem?

From a chiropractic perspective there are two diagnostic levels. The first, where there is injury, is diagnosis of the lesion and local tissue response. The second, far more complicated, is diagnosis of the various dysfunctions throughout the locomotor system and which is primary, which are compensatory. In the words of Liebenson and Skaggs "most individuals have many dysfunctions, some of which are adaptive and others mal-adaptive or compensatory. Distinguishing between these dysfunctions is the essence of the functional examination, and it remains a most difficult art to master." The cause of pain "may be at some distance from the irritated pain generator (e.g. trigger point or inflamed nerve root)."[2]

Following assessment comes skilled manipulative and manual care, the primary focus of chiropractic clinical training during five years of study.

6. These are not skills that can be acquired by other health professionals in short postgraduate courses. To illustrate the complexity:

a) Today there are whole texts focusing on individual joints, such as Souza's Sports Injuries of the Shoulder: Conservative Management.[3] Dr. Thomas Souza, of Palmer College of Chiropractic West, San Jose, California which has a strong reputation in sports chiropractic, looks not only at the functional anatomy and biomechanics of the shoulder in general, but also provides chapters on shoulder biomechanics in specific situations – such as throwing, swimming, weight training.

b) From Michaud's chapter Biomechanics of the Foot and Ankle in a leading sports chiropractic text edited by Hyde and Gengenbach[4] we learn:

• There are 28 bones and 55 joints/articulations in the foot and ankle

• They have different functions in the three stages of the gait cycle that is measured from one heel hitting the ground until the same heel hits the ground again – the contact or landing period, the midstance, and the propulsive period.

• In the contact period the foot and ankle are a mobile structure, dissipating force and adapting to the ground surface. When walking within one second the foot must become a rigid lever transferring weight from heel to forefoot, when running within a fraction of a second.

• Richaud then provides 30 pages of

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description of normal and abnormal muscle and joint function throughout the different phases of the gait cycle.

• The average person takes between 10,000 and 15,000 steps daily, with each foot absorbing 640 metric tons. It is, as Michaud observes, "easy to see why even subtle biomechanical abnormalities might produce chronic injuries."

• Potential injuries are not only to the foot and ankle – but also include shin splints and soft-tissue strain in the lower leg.

• There are many different adjustive and manipulative techniques for the various joints, and such treatment may often need to be combined with prescription of orthotics as discussed.

As suggested, an understanding of foot and ankle and other human biomechanics – and how to assess and treat abnormal function – requires specialized education and is not gained from short postgraduate courses.

7. The linked nature of the whole neuromusculoskeletal system, the impact of altered biomechanics in one part of the system on another, and the benefits possible from chiropractic assessment and management, are all illustrated in a recent study from Australia. This is a randomized controlled trial by Hoskins, Pollard and Bonello from Macquarie University in Sydney which tested the results of adding chiropractic to other sports medicine services for professional football players.[5] There were much fewer hamstring injuries and lower limb muscle strains, and significantly less time lost to these and non-contact knee injuries, for those receiving preventive chiropractic care. Details are:

a) As Hoskins et al. explain, hamstring injuries are the most prevalent and recurring injuries in running-based power sports, including Australian Rules football. Conventional injury prevention focuses on local hamstring factors. These include poor flexibility, fatigue, lack of warm-up and weakness. However there is very limited scientific evidence to support these as risk factors for injury.

b) The goal of the trial was to investigate whether or not a manual therapy intervention from a sports chiropractic approach could reduce local and non-local risk factors, prevent hamstring and other lower limb injuries, decrease low-back pain, and alter health outcomes for elite footballers.

c) 59 adults (age 18-27) were recruited from two professional Australian Rules teams and randomly allocated to:

• The control group – which continued to receive standard club medical, paramedical and sports science management including medication, surgery, manipulative physiotherapy, massage, and conditioning and rehabilitation as directed by club staff.

• The intervention group – which received the above care, but also chiropractic management with a primary focus on manipulation and/or mobilization and/or soft-tissue therapies to the spine, pelvis and lower extremity/leg. This was on a minimum treatment schedule of one treatment per week for 6 weeks, then one every 2 weeks for 3 months, then on treatment monthly for the remaining 3 months of the football season.

d) Injury definition and surveillance were based on the AFL's injury surveillance system, with injury diagnoses determined by club staff blinded to which treatments had been received.

e) After the trial period and 24 matches there was a significant difference in favor of those in the sports chiropractic intervention group with respect to the incidence of injuries and time lost to injuries – hamstring injury (4 lost weeks in intervention group vs. 14 weeks in control group); lower limb muscle strain (4 vs. 21) and non-contact knee injury (4 vs. 24). The intervention group also experienced significantly less low-back pain. No adverse outcomes or results were reported.

f) Hoskins et al. conclude that the addition of a sports chiropractor to a medical team appears to be beneficial for the prevention of injuries and improved health status in elite Australian Rules players.

8. **Neuromuscular Control**. A central contribution of chiropractic to health care has been the appreciation that biomechanical disturbances in the joints, especially of the spine which encircles the central spinal cord and is intimately linked to the spinal nerve roots, can irritate the nervous system through mechanisms of torsion, stretch and compression. This may result in sustained abnormal reflex activity, and other interference with the ability of the nervous system to adapt to and benefit from training.

Neuromuscular adaptation and training is of central importance to improved sports performance – whether for execution of skilled movement or increase in strength. With respect to strength for example:

• Rutherford demonstrated a 200% increase in quadriceps weightlifting ability after 12 weeks of training with extension exercises – however increase in quadriceps strength, or maximum isometric force, was only 11%.[6] Much of the improvement came from neural adaptation – better activation and control of muscles through improved neurological function.

• Cross training studies show that where the right arm is trained for increased muscle bulk and strength, EMG recordings demonstrate increased strength in both the right and left arms. The left arm benefits through central neural adaptation – improved neurological function on the opposite side of the body mediated by the central nervous system.

Any loss of neuromusculoskeletal control and co-ordination is of significance to elite athletes, including sub-clinical impairment. The sports chiropractor has two roles when she or he addresses dysfunction – correcting biomechanical fault (here the chiropractor may be seen by analogy as the mechanic) and correcting its neurological impact (the chiropractor as the telecommunications expert).

C. Education

9. Accredited chiropractic colleges worldwide have consistent minimum standards monitored by the Councils on Chiropractic Education International (CCEI). These are the standards adopted by legislation as the basis for registration or licensure in the many countries that now regulate the practice of chiropractic. All chiropractors graduating from these colleges are qualified to practice in the field of sports chiropractic, and many of the sports chiropractors that work with elite athletes and have established reputations have no postgraduate qualifications other than practical field experience.

However postgraduate qualifications have been established within the profession, and are increasingly required as credentials for participation at major games. Internationally FICS offers an International Chiropractic Sports Sci-

continued on page 6

Golf Injuries

continued from page 1

playing golf, about 1 in 3 (35%) reported pain that interfered with their enjoyment of the game. Most common areas of discomfort after playing were the back (26%), feet (11%), shoulder (9%), knee (8%) and neck (6%).

• Over half (56%) already exercised regularly to maintain their physical condition, but approximately half (47%) said they would also be willing to attend a specific golf fitness program.

Stude et al. reference much interesting research relevant to golf injuries which suggests:

• The repeated one-sided swinging action in golf – which generates club head speeds of 100 mph/160 kmh in less than 0.2 of a second – frequently leads to biomechanical and musculoskeletal problems. (The new survey supports that.)

• Amateur golfers most frequently complain of back pain/injuries, professional golfers most commonly of wrist pain/injuries. Foot and knee problems are also common.

• Lower extremity and back problems may be related to use of standard spiked golf shoes that restrict movement, stress joints, and are not adapted to the needs of the individual. In a previous study Stude and Brink provided golfers with custom-casted orthotics for 6 weeks. This was shown to improve balance and proprioceptive symmetry, reduce fatigue associated with playing 9 holes of simulated golf, improve gait patterns by influencing pelvic rotation and stride length, and improve performance in terms of club head velocity and driving distance. (See the main article for another chiropractic study – a controlled trial from Brazil – showing improved driving swing range and distance after chiropractic care.)

(Stude DE, Hulbert J, Schoepp D (2008) *Practice Behaviors, Attitudes, Musculoskeletal Complaints, and Previous Exposure to Chiropractic Care in a Group of Recreational Golfers* J Manipulative Physiol Ther 31: 313-318)

Other Research Notes

1. **Angina Pectoris or Musculoskeletal Dysfunction – Denmark**. A continuing line of research by chiropractic and medical researchers at the University of Southern Denmark is looking at ways of identifying the many patients with suspected angina pectoris, and referred to cardiologists for further assessment, who in fact have a musculoskeletal problem mimicking heart disease.

A new study by Kumarathurai et al. involving 273 subjects with known or suspected stable angina, and also self-reported chest pain, finds that the presence of tenderness in response to a standard pattern of palpation of the anterior chest wall is associated with normal myocardial perfusion imaging. Significantly more patients with such tenderness appear to have a musculoskeletal origin for their suspected heart problem – and this association cannot be explained by other factors such as age, sex or self-reported pain.

In cardiology practice palpation is commonly used to classify patients with chest pain, and previous research has reported a link between reproducing chest pain on palpation and a non-cardiac origin or cause of pain. What is new in the present study is that patients with chest pain or tenderness on palpation were tested for ischemic heart disease by myocardial perfusion scintigraphy (MPS) imaging and demonstrated to have less disease and more normal perfusion than other patients.

Palpation was performed on 14 points on the anterior chest wall as described, and in accordance with a protocol previously published by Henrik Christensen DC, MD, PhD et al. MPS imaging scans were read by 2 experienced observers who were blinded as to the results of the chest palpation.

(Kumarathurai P, Farooq MK et al. (2008) *Muscular Tenderness in the Anterior Chest Wall in Patients with Stable Angina Pectoris is Associated with Normal Myocardial Perfusion* J Manipulative Physiol Ther 31: 344-347)

2. **Rib Manipulation for Tachycardia – USA**. Published in JMPT at the same time as the new Danish study is a case report from Dr. Mary Rose Julian, in private chiropractic practice in Reston, Virginia, which suggests a relationship between supraventricular tachycardia (SVT) and misalignment of the fourth rib. Instrument-assisted manipulation of the fourth rib brought rapid and reproducible return to normal heart rate, and reduced occurrences of paroxysmal SVT, to a man in his 50s over a 6 year period.

The patient had his fourth and fifth ribs on the right separated 3 cm during successful mitral valve repair surgery. However postoperatively he began experiencing episodes of SVT 5 or 6 times weekly for up to 20 minutes. Symptoms included rapid pulse, vertigo and head tremor. At first he endeavored to manage this with standard medical treatments, including medications and physical maneuvers.

On chiropractic examination palpation revealed a superior misalignment of the right fourth rib that was painful to palpation. Following specific instrument-assisted manipulations as described, symptoms subsided within 2 minutes. Frequency of episodes of SVT was reduced to 2 or 3 per month. Over 6 years there was consistent manipulation of the rib, and consistent rapid results following treatment.

Julian discusses hypotheses for the results achieved, which include autonomic and mechanical mechanisms. One is that activation of muscle spindle cells from the manipulative impulse may have caused a proprioceptive response – which has been shown to have the potential to increase vagal tone in animals. Another is that the stimulation of intercostal muscles might affect autonomic output and alter cardiac function. Another is that associated mobilization of T4 may have affected the ganglion at that level which supplies autonomic outflow to the heart.

There are apparently over 1 million people in the US with PSVT. Drug therapy has limited effectiveness, and unwelcome toxicity and side effects. Up to 75% of patients, Julian reports, are unable to control symptoms with physical maneuvers. Here is a safe alternative without side effects for consideration with hemodynamically stable patients. Like all good case reports, this offers an interesting new prospect but needs confirmation in larger, controlled studies.

(Julian MR (2008) *Treatment of Paroxysmal Supraventricular Tachycardia Using Instrument-Assisted Manipulation of the Fourth Rib: A 6 Year Case Report* J Manipulative Physiol Ther 31: 389-391)

World Notes

Australia: Dr. Mary Ann Chance, one of the profession's foremost leaders in Australia, passed away on June 12. Dr. Chance was a 1959 Palmer graduate who had a distinguished career in clinical practice, then in leadership of the Australian Chiropractors' Association in the 1970s and 1980s, and then since 1983 as co-editor of the *Chiropractic Journal of Australia* with her husband Dr. Rolf Peters.

From the mid-1970s Dr. Chance was part of the team that fought successfully for chiropractic legislation in all the unregulated eastern Australian states, including her home state of Victoria, and for formation of the International College of Chiropractic. This, Australia's first school of chiropractic and a necessary development for legislative success, is now the RMIT School of Chiropractic in Melbourne, Victoria.

As World Federation of Chiropractic President Dr. Stathis Papadopoulos of Cyprus said in his letter read at her funeral, "Mary Ann . . . demonstrated a rare and inspiring level of service, commitment and passion for the chiropractic profession . . . we will all miss her greatly." Dr. Chance is survived by her husband Dr. Peters and four sons by her former husband Dr. Frank McCleod, who was a student with her at Palmer

Canada: Last month Jason Busse, DC PhD, became the latest Canadian Chiropractic Research Chair at a leading public university – as an epidemiologist at the Department of Health Research Methodology, McMaster University, Hamilton, Ontario. Under a well-planned and successful Canadian Chiropractic Association (CCA) project led by Dr. Allan Gotlib, there are now similar Chiropractic Research Chairs at six major universities across the country, with each researcher having matching funding from the CCA and the federal government, and producing publicly funded research directly and through DC PhD students working with them.

The goal, not now far off, is to have a Chiropractic Research Chair at a major university in every Canadian province. Two optional sessions at the World Federation of Chiropractic's 10th Biennial Congress in Montreal next year, a Congress co-sponsored and hosted by the CCA, will feature short presentations on their work by these leading chiropractic scientists who have won research chairs. Get ready to be very impressed by the quality of what you will hear there. For all information on the Congress visit www.wfc.org/congress2009.

China: Hong Kong's two chiropractic associations, each with 40–50 members, are working with doctors of chiropractic in the rest of China in the formation of a new Chiropractors' Association of China (CAC). Dr. Henry Chan (Palmer), President, Hong Kong Chiropractors' Association (HKCA) and Dr. Vincent Chan (CMCC), President, Chiropractic Doctors' Association of Hong Kong (CDAHK), were both at a WFC hosted meeting in Seoul, Korea on June 6 where the decision to form a CAC was made. The Organizing Committee comprises Dr. Anli Dong (Sherman) of Beijing, Chair; Dr. Henry Chan (Palmer) of Hong Kong (HKCA); Dr. Albert Leung (CMCC) of Hong Kong (CDAHK); Dr. David Leung (CMCC) of Macao; Dr. David Bellin (Life) of Zigong.

The CAC and the WFC are now producing a Chinese translation of the WHO Guidelines on Basic Training and Safety in Chiropractic with a view to these being available for registrants and government authorities at the time of the WHO Congress on TM/CAM in Beijing November 7-9, 2008.

If you are a DC in China, or are aware of DCs in China, not known to Dr. Anli Dong and the WFC, please send contact information to Dr. Dong at aj_dong@hotmail.com and Serena Smith at ssmith@wfc.org.

ences Diploma (ICSSD), with information on courses at www.fics-sport.org. In Canada only those who have completed a 300 hour plus practicum fellowship can become fellows of the Canadian College of Chiropractic Sports Sciences. In the US, there is a 100 hour plus practicum Diploma of the American Chiropractic Board of Sports Physicians (DACBSP). Murdoch University in Australia is now offering a Masters in Sports Chiropractic, and other masters degree programs are in development in the UK (Anglo-European College of Chiropractic) and the US (Life University and Logan College).

Dr. Ted Forcum of Beaverton, Oregon, himself a gifted middle-distance runner, is one of the US Team Doctors for the Beijing Olympics. Here is his description of the USOC requirements he has completed over a 10 year period to gain this status[7]:

Dr. Ted Forum, US Team Doctor, Beijing Olympics

• Prior to application, a sports related postgraduate qualification, a minimum of 5 years experience as a team doctor, and national level experience at a world class sporting event.

• A 2 week internship at the USOC training center in Colorado Springs – served by him in 2004.

• USOC assignment to a major games – for him the Pan American Games in Rio de Janeiro, Brazil in July 2007.

D. Research

10. The main focus of sports chiropractic research is, naturally enough, the clinical results of chiropractic management – both for performance enhancement and prevention and management of injury. This can be seen in four new trials reported at last year's major original research meeting for the chiropractic profession, the International Conference on Chiropractic Research held as part of the World Federation of Chiropractic's 9th Biennial Congress in Portugal in May 2007, jointly administered by the WFC and the Foundation for Chiropractic Education and Research (FCER).

One was the Hoskins, Pollard et al. trial already discussed. The other three are:

a) **Brazil – Swing Performance in Golfers**. Bracher, Costa et al.[8] evaluated the effect of chiropractic manipulation on performance enhancement/range of swing in competitive golfers.

• 43 golfers from two Sao Paulo clubs, all of whom had a handicap under 15 and practiced golf for a four hour period at least once a week, were randomly assigned to either the experimental group (supervised stretching program plus chiropractic manipulation for joint dysfunctions) or a control group (stretching program only).

• All subjects performed full swing assessment as recommended by the PGA (three full swing maneuvers with a driver, with full swing ball range considered as the average distance) before and after treatment on each of four treatment days.

• On each of the four days an improvement in average full swing performance was observed in the experimental group only, and by the fourth day the improvement was statistically significant.

b) **South Africa – Chronic Ankle Instability**. In a small but well-designed trial with 30 subjects Price, Kohne et al.[9] reported that chiropractic manipulation of the talocrural or ankle joint improved both proprioception and range of motion in dorsiflexion, thereby assisting in the prevention of repeat ankle strains in patients with chronic ankle instability. Their findings, they note, "support previous studies that found manipulation to be efficacious in the treatment of ankle sprains and chronic ankle instability."

c) **Australia – Shoulder Pain**. Pribicevic and Pollard[10] tested two chiropractic management protocols for the conservative management of shoulder pain in the following controlled trial:

• 42 subjects with shoulder pain (age 18-45) were randomized into three groups – a control group (n 12) that received 10 minutes of ultrasound at a zero setting, a manipulation group (15) that received Diversified manipulation to the thoracic and/or cervical spine and/or the glenohumeral joint, and a multimodal group (15) that received chiropractic manipulation as above plus soft-tissue therapy (ischaemic compression/friction) and electrotherapy. Treatment for all subjects was 8 visits over 4 weeks.

• Outcomes measured were patient perception of pain (VAS scale), orthopedic range of motion (pleurimeter and goniometer) and orthopedic tests (Hawkins and Neers, painful arc and Jobes). Assessments were made at baseline, 4 weeks and 4 months by a blinded research assistant.

• There was clinically and statistically significant improvement for subjects in both treatment groups on all outcome measures at 4 weeks and at 4 months, but not for those in the control group. Those in the multimodal group had superior results in pain reduction and on orthopedic tests.

• Pain in the multimodal group was decreased from 6.7 out of 10 at baseline to 1.8 after 4 weeks and 1.4 after 4 months. This compared with 4.9 to 2.3 then 2.6 in the manipulation group, and 4.4 to 3.8 to 4.2 in the control group.

• Pribicevic and Pollard conclude that both treatment approaches, and particularly the multimodal one, are beneficial for managing pain from the synovial structures of the shoulder and/or shoulder girdle. Note again the chiropractic approach of addressing related structures in the musculoskeletal system, not just the source of pain.

E. FICS

11. The Federation Internationale de Chiropratique du Sport or International Federation of Sports Chiropractic (FICS) is the international organization representing the specialty of sports chiropractic. Formed in 1986, its headquarters are at the House of Sport in Lausanne, Switzerland which is the home of the Olympic Movement, its offices and museum.

The voting members of FICS are national sports chiropractic associations or councils (NCSCs), national chiropractic associations, colleges and student sports councils. Non-voting members are individuals and other organizations. More details, and application forms may be found at www.fics-sport.org. FICS's goals include:

• Establishing relationships with international sports federations representing individual sports (e.g. FIFA representing football), organizations responsible for major games (e.g. Pan American, World, Olympics) and organizations for athletes (e.g. World Olympians Association, representing present and

left *FICS President Dr. Roland Noirat of Lausanne, Switzerland*

right FICS News *Editor Dr. Tom Hyde of Miami, Florida, USA*

past Olympians), to promote access to chiropractic services for athletes.

• Promoting postgraduate education and research in sports chiropractic. It does this in part through its Education Commission, currently chaired by Dr. Tim Stark of Murdoch University, Perth, Australia, and its Research Commission, currently chaired by Dr. Henry Pollard DC, PhD of Macquarie University, Sydney, Australia. FICS offers postgraduate education through its International Chiropractic Sports Sciences Diploma (ICSSD) program. Several of its Education Commission members are faculty at chiropractic colleges currently developing masters degree programs in sports sciences (e.g. Murdoch University, the Anglo-European College of Chiropractic in the UK, and Life University and Parker College in the US).

12. Chiropractic Services at Major Games. Chiropractic services at the Olympics have generally been arranged at the national level. This has been the case for the Beijing Olympics in August, and the Vancouver Winter Olympics in 2010, for which the Canadian College of Chiropractic Sports Sciences has already arranged the availability of chiropractic services for all athletes at the main treatment facilities as part of the core medical team. However FICS is also working with the IOC and its Medical Commission to ensure that properly credentialed sports chiropractors and their services remain available for athletes at all future Olympics.

Other games for which FICS is organizing a sports chiropractic team for 2009 include:

a) Mediterranean Games – Pescana, Italy, June 2009. Following discussions at the annual meeting the General Assembly of International Sports Federations (GAISF) held in Athens in June, the Organizing Committee and its Medical Director have asked FICS to provide sports chiropractic services for these regional games.

b) World Games – Kaohsuing, Taiwan, July 2009. Theses Games, held under the patronage of the IOC, feature 30 popular sports seeking admission to the Olympic Games, such as archery, karate, rhythmic gymnastics, roller hockey, sumo wrestling. Under contract with the Organizing Committee FICS provided a team of sports chiropractors for the last World Games, in Duisberg, Germany in 2005. Under a similar contract FICS will provide a team of 25 chiropractors for next year's Games.

FICS team at the World Games, Duisberg, Germany, 2005

c) Masters Games – Sydney, Australia, October 2009. These are the Games for masters' athletes who, depending upon the sport, may be as young as in their 30s – as in swimming. Again, FICS is selecting and credentialing a team. The Masters Games administration, like FICS, the IOC Medical Commission and many others influential in international sports, has its office in the House of Sport in Lausanne.

d) South East Asian Games – Vientiane, Laos – November 2009. Over 3,000 athletes will attend these regional games. Dr. Martin Camara, Chair, FICS Communication Commission, has been invited to arrange sports chiropractic services for the athletes. Dr. Camara, who serves as a member of the Philippines National Olympic Committee, was also a team doctor for the Philippines team to the Asian Games in Doha, Qatar last year.

13. FICS is currently experiencing rapid growth and invites your participation and support. Until this year it has had no fulltime staff support because of limited resources. However, because of the importance of sports chiropractic to the profession as a whole and the evident need to develop education, research and practice in this key field, the World Federation of Chiropractic (WFC) has entered into a new partnership with FICS.

Under this the WFC is supplying staff and administrative support from its offices in Toronto, Canada. During the past year there are new FICS Statutes providing for an expanded Council and new membership categories, and new committees or commissions as shown in Table 1. The next FICS Assembly

Table 1: **FICS Commissions**

Commission of Communication (CoCOM)
Martin Camara, Chair – Philippines
Mustafa Agaoglu – Turkey
Gaery Barbery – Australia
Philippe Fleuriau – France
Tom Hyde, Editor, *FICS News* – USA
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of Members and Research Symposium will be held together with the WFC Congress in Montreal next April 29-May 2. This is being organized by one of the strongest national sports chiropractic organizations, the Canadian Chiropractic College of Sports Sciences, and generously sponsored by Life University and Palmer College of Chiropractic. Confirmed speakers include Jack Taunton MD and Robert Armitage DC, the chiefs of medical and chiropractic services for the Vancouver Olympics.

If you have a sports chiropractic side to your practice, or simply understand the importance of this area of practice to the future of the profession and wish to support its growth to full maturity:

• Visit www.fics-sport.org to learn more about FICS, and read recent issues of the FICS News.

• Download a membership form and join as an individual member at an annual cost of US$50-00.

• Make plans to be at the FICS Assembly and Symposium, and the WFC Congress in Montreal, next April 29. Registration forms for both events are now at www.wfc.org/congress2009.

F. Conclusion

14. Most chiropractors become involved in sports chiropractic the same way as Dr. Timothy Marshall of Toronto, who will be going to the Beijing Olympics with the Canadian Sailing Team. That means a combination of a background in sport, a willingness to provide volunteer services without charge to amateur athletes, and an appreciation that chiropractic offers a unique and valuable approach to the assessment and management of dysfunction and injury in the neuromusculoskeletal system in athletes.

For many years Dr. Marshall was a competitive sailor, gaining a full understanding of the physical demands of the sport and common injuries. As a doctor of chiropractic he volunteered his services at local then national competitions, and was increasingly consulted by sailors as patients. Next came an invitation to work with the Canadian Sailing Team – and now the Beijing Olympics. He and his partner Dr. David O'Connor will also work with the Canadian Gymnastics Team. In this case neither has a personal background in the sport – simply a pattern of volunteer service leading to an established reputation for ability to work within a sports medicine team to enhance performance and minimize injury.

15. Inman and Ralston, sports scientists at the Biomechanics Laboratory at the University of California at Berkeley who are quoted at the beginning of this article, have published a text titled Human Walking. This gathers and summarizes 35 years of data on normal and abnormal walking funded by the US National Institutes of Health and other agencies. This demonstrates conclusively, they conclude, that the loss of function in any part of the neuromusculoskeletal system "leads to compensatory changes in the remaining functional parts."[1] Putnam and Kozey say the same when studying running, and that any biomechanical analysis that treats the joints and segment motions "as if they were independent of each other" is "clearly inappropriate."[11]

This is the core contribution of the sports chiropractor to the sports medicine team and athletes – the ability to find the key joint and/or soft-tissue dysfunction or dysfunctions from an overall assessment of the NMS system, and to treat that with skilled manual and other conservative care. TCR

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