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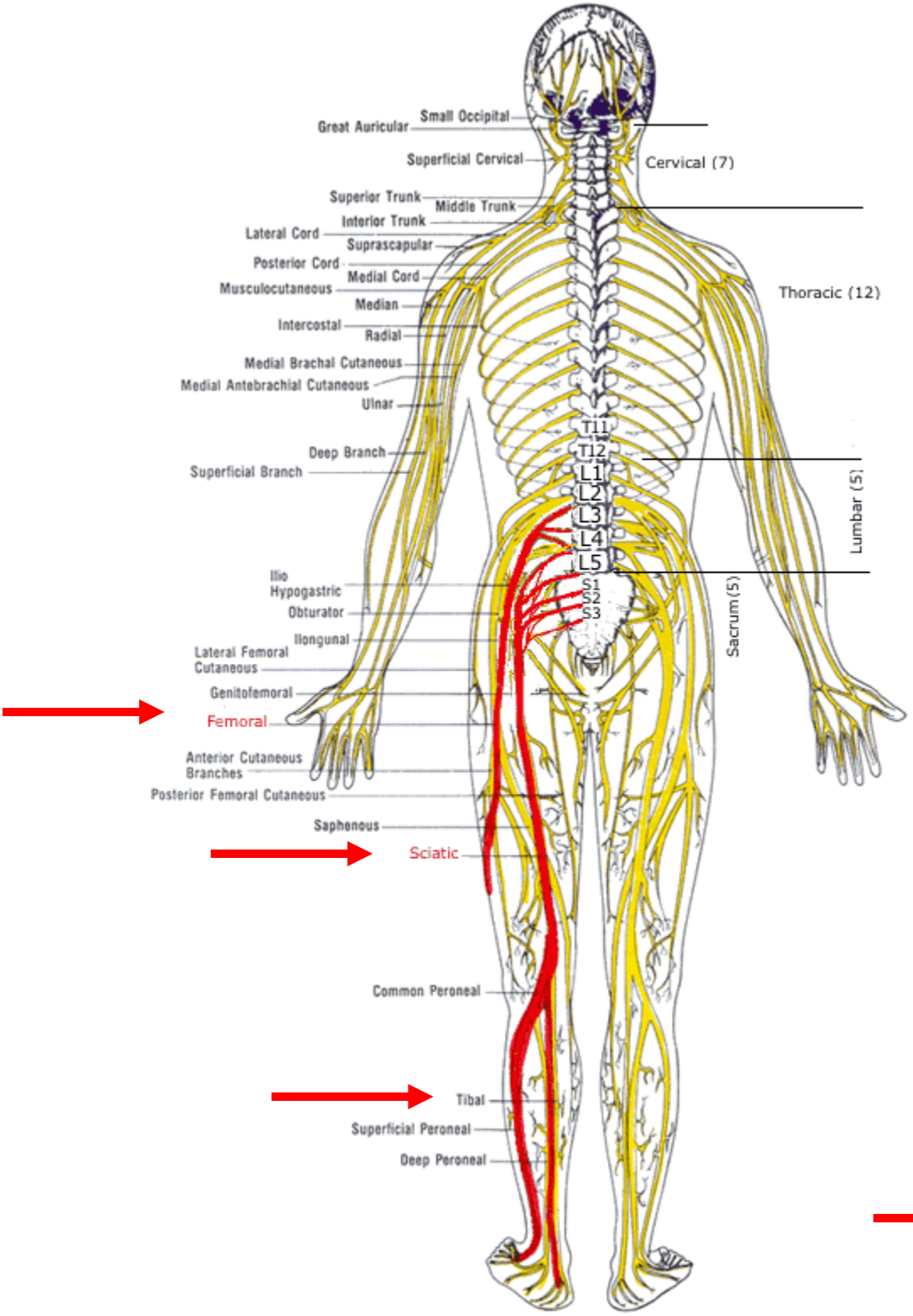

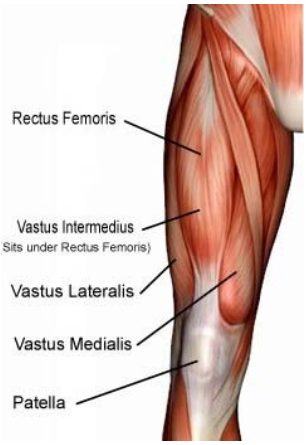

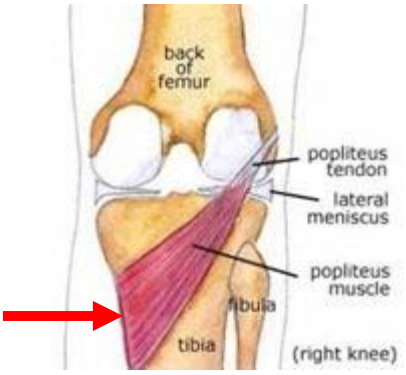

In 1982, Richard Rothman, MD, PhD and Frederick Simeone, MD, published the second edition of their book The Spine (1). Chapter 2 of the book is titled (2):

"Applied Anatomy of the Spine"

Anatomist Wesley Parke, PhD, writes this chapter, stating:

"Although the 23 or 24 individual motor segments must be considered in relation to the spinal column as a whole, no congenital or acquired disorder of a single major component of a unit can exist without affecting first the functions of the other components of the same unit and then the functions of other levels of the spine."

The concept of the entire spine acting as a single integrated functioning entity is further supported by the reference text written by rheumatologist John Bland, MD, in his 1987 text (3):

Disorders of the Cervical Spine

Dr. Bland is a Professor of Medicine at the University of Vermont College of Medicine. Dr. Bland writes:

"We tend to divide the examination of the spine into regions: cervical, thoracic, and lumbar spine clinical studies. This is a mistake. The three units are closely interrelated structurally and functionally – a whole person with a whole spine. The cervical spine may be symptomatic because of a thoracic or lumbar spine abnormality, and vice versa! Sometimes treating a lumbar spine will relieve a cervical spine syndrome, or proper management of cervical spine will relieve low backache."

I believe that the point of Dr. Parke's and Dr. Bland's comments is that the entire spinal column is an integrated functioning unit. It is also important to acknowledge that structures below the spine, specifically the feet, ankles, knees and hips also influence spinal biomechanical function and health. This point is very well detailed in the books by Janet Travell, MD and David Simons, MD (4, 5, 6).

The biomechanical base for human upright posture is the foot. Foot pronation or the presence of a Morton's Toe (7) does influence the biomechanical function and health of the ankle, knee, hip, pelvis and spine. Lower limb functional and/or biomechanical problems are known to impact knee biomechanics and risks for development of osteoarthritis (8, 9).

Yvonne Golightly, PT, PhD, from the University of North Carolina School of Medicine notes that 6% of the US adult population suffer from knee osteoarthritis (8). She states:

"Osteoarthritis (OA) is one of the most common chronic conditions in the United States and a leading cause of disability among older adults."

A recent (01/01/2014) search of the National Library of Medicine using the PubMed search engine with the words "arthroscopic knee surgery" locates 4,621 articles. Clearly, arthroscopic surgery is the primary intervention for knee osteoarthritis in the United States, and it has been for decades.

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In 1996, orthopedic surgeon J Bruce Moseley, MD, and colleagues published the results of a small pilot study (n=10) pertaining to arthroscopic treatment of knee osteoarthritis (10). Dr. Moseley is from the Houston Veterans Affairs Medical Center at Baylor College of Medicine. Their article was published in the American Journal of Sports Medicine, and titled:

Arthroscopic treatment of osteoarthritis of the knee: A prospective, randomized, placebo-controlled trial. Results of a pilot study

The purpose of this study was to determine if a placebo effect might play a role in arthroscopic treatment of knee osteoarthritis. Five subjects were randomized to a placebo arthroscopy group, three subjects were randomized to an arthroscopic lavage group, and two subjects were randomized to a standard arthroscopic debridement group. The physicians performing the postoperative assessment and the patients remained blinded as to treatment.

Incredibly, patients who received the placebo surgery reported decreased frequency, intensity, and duration of knee pain. They also thought that the procedure was worthwhile and would recommend it to family and friends. The authors concluded, "there may be a

significant placebo effect for arthroscopic treatment of osteoarthritis of the knee." As a consequence of the small number of subjects in this study, little controversy was generated; that was soon to change.

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Seven years later, in 2002, Dr. Moseley and colleagues presented the results of a much larger study in the New England Journal of Medicine, titled (11):

A controlled trial of arthroscopic surgery for osteoarthritis of the knee

The authors conducted a randomized, placebo-controlled trial to evaluate the efficacy of arthroscopy for osteoarthritis of the knee. A total of 180 patients with osteoarthritis of the knee were randomly assigned to receive arthroscopic debridement, arthroscopic lavage, or placebo surgery. Patients in the placebo group received skin incisions and underwent a simulated debridement without insertion of the arthroscope.

Patients and assessors of outcome were blinded to the treatment-group assignment. Outcomes were assessed at multiple points (2 weeks, 6 weeks, 6 months, 12 months, 18 months, and 24 months) over a 2-year period with the use of five self-reported scores–three on scales for pain and two on scales for function–and one objective test of walking and stair climbing. Incredibly, the authors found:

"At no point did either of the intervention groups report less pain or better function than the placebo group."

"In this controlled trial involving patients with osteoarthritis of the knee, the outcomes after arthroscopic lavage or arthroscopic debridement were no better than those after a placebo procedure."

These authors quantify arthroscopic knee surgery. They note that "more than 650,000 such procedures are performed each year at a cost of roughly $5,000 each." Yet, there is no evidence that arthroscopy cures or arrests knee osteoarthritis. At no point did either the lavage group or the debridement group have greater pain relief than the placebo group. At no time did the lavage group or the debridement group have greater improvement in function than the placebo group. Objectively measured walking and stair climbing were poorer in the debridement group than in the placebo group at 2 weeks and 1 year and showed a trend toward worse functioning at 2 years.

This study provides strong evidence that arthroscopic lavage with or without debridement is not better than a placebo procedure in improving knee pain and function. The authors conclude:

"Indeed, at some points during follow-up, objective function was significantly worse in the debridement group than in the placebo group."

"If the efficacy of arthroscopic lavage or debridement in patients with osteoarthritis of the knee is no greater than that of placebo surgery, the billions of dollars spent on such procedures annually might be put to better use."

In contrast to their prior study (1996), this study triggered multiple letters-to-the-editor, articles, and an official editorial in the ***New England Journal of Medicine*** (12). Newspapers throughout the world wrote stories on the study's results, including a front-page article in the ***New York Times*** (13). The editorial from the ***New England Journal of Medicine*** makes the following points:

"Malaligned knees may not respond well to arthroscopic debridement."

"Despite their current popularity, lavage and debridement are probably not efficacious as treatments for most persons with osteoarthritis of the knee."

"Although the debris in osteoarthritic joints may be related to synovitis, the results of this trial suggest that the effects of this debris on clinical symptoms are negligible."

"Although smoothing cartilage and meniscal irregularities may sound appealing, larger forces within and outside the joint environment, such as malalignment, muscle weakness, instability, and obesity, which are not addressed by this type of surgery, may have greater effects on the clinical outcomes of osteoarthritis of the knee."

"Debridement and lavage may simply remove some of the evidence while the destructive forces of osteoarthritis continue to work."

Importantly, these authors indicate that the primary factors in knee osteoarthritis pathophysiology, which arthroscopic surgery does not address, include mal-alignment,

muscle weakness, instability, and obesity. These are problems commonly addressed in chiropractic clinical practice.

Joseph Bernstein, MD is an assistant professor of orthopedic surgery, University of Pennsylvania. In 2003, Dr. Burnstein and colleague do an extensive review of Moseley and colleagues, publishing in the ***Cleveland Clinic Journal of Medicine*** (14). They note:

"Arthroscopy for degenerative conditions of the knee is among the most commonly employed orthopedic procedures, but its effectiveness (like the effectiveness of many surgical operations) has never been proven in prospective trials."

Dr. Bernstein notes that Moseley's study has an important strength, the inclusion of a sham treatment—a rarity in surgical studies. He notes that the "challenge is now made for researchers to repeat the Moseley methodology." As we will see below, this has been done.

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In January 2008, the ***Cochrane Database*** did an extensive review of the literature to identify the effectiveness of arthroscopic debridement in the management of knee osteoarthritis (15). Specifically, the authors evaluated the effectiveness of arthroscopic debridement on knee pain relief and improved knee function. The author's conclusion was:

"There is 'gold' level evidence that AD has no benefit for undiscriminated OA (mechanical or inflammatory causes)."

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In September of 2008, Alexandra Kirkley, M.D., and colleagues published an article in the New England Journal of Medicine, titled (16):

A Randomized Trial of Arthroscopic Surgery for Osteoarthritis of the Knee

The purpose of this study was to determine the efficacy of arthroscopic surgery for the treatment of osteoarthritis of the knee. Patients were randomly assigned to surgical lavage

and arthroscopic debridement together with optimized physical and medical therapy (n=86) or to treatment with physical and medical therapy alone (n=86). Each group was re-evaluated at 3, 6, 12, 18, and 24 months. The authors make these comments:

"Although arthroscopic surgery has been widely used for osteoarthritis of the knee, scientific evidence to support its efficacy is lacking."

"Arthroscopic surgery for osteoarthritis of the knee provides no additional benefit to optimized physical and medical therapy."

"This study failed to show a benefit of arthroscopic surgery for the treatment of osteoarthritis of the knee. At the end of 2 years, patients assigned to arthroscopic treatment in addition to optimized physical and medical therapy had no greater improvement in Western Ontario and McMaster Universities Osteoarthritis Index (WOMAC) scores than did those who received only physical and medical therapy."

"The results of this randomized, controlled trial show that arthroscopic surgery provides no additional benefit to optimized physical and medical therapy for the treatment of osteoarthritis of the knee."

This study by Dr. Kirkley and colleagues generated a follow-up article that was published in ***NATURE: CLINICAL PRACTICE: Rheumatology***, and titled (17):

Is arthroscopic surgery a beneficial treatment for knee osteoarthritis?

The author, Dr. Richard Nutton, from the Department of Orthopedics and Trauma at the University of Edinburgh, notes (from abstract):

"Considering the high prevalence of knee osteoarthritis and the relatively common use of arthroscopy to treat this condition, few well-designed studies have been published on the effectiveness of arthroscopy for treating knee osteoarthritis. The study by Kirkley et al. is a welcome addition to the literature as it addresses many of the criticisms of previous work by using appropriate exclusion criteria, standardizing treatment in the study groups, using well-

validated clinical scores, and providing a period of follow-up exceeding 2 years. The authors conclude that although all patients benefited from active treatment for knee osteoarthritis, comprising rehabilitation and optimized medical treatment, the addition of arthroscopic debridement of the knee did not improve outcomes. These results underline the outcome of a previous prospective, randomized trial [the Moseley study, reference #11]**, which concluded that the placebo effect of performing knee arthroscopy for osteoarthritis accounted for the main therapeutic benefit observed at follow-up."**

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Stephen Howell, MD, is a clinician, researcher, and innovator in the fields of total knee replacement, anterior cruciate ligament reconstruction, and meniscal injury. His clinical practice focuses on the treatment of degenerative processes and sports-related injuries to the knee. Dr. Howell performs over 350 total knee replacements and 100 ACL reconstructions per year. He is a Professor of Mechanical Engineering Department at University California at Davis. He is President of the International ACL Study Group, and he is on the editorial board of the ***American Journal of Sports Medicine and Knee Journal***. In September 2010, Dr. Howell published an article in the journal ***Orthopedics***, titled (18):

The role of arthroscopy in treating osteoarthritis of the knee in the older patient

Despite being one of the world's best known and busiest knee surgeons, Dr. Howell notes (from abstract):

"Arthroscopy of the osteoarthritic knee is a common and costly practice with limited and specific indications."

"The extent of osteoarthritis (OA) is determined by joint space narrowing, which is best measured on a weight-bearing radiograph of the knee in 30° or 45° of flexion."

"Randomized controlled trials of patients with joint space narrowing have shown that outcomes after arthroscopic lavage or debridement are no better than those after a sham procedure (placebo effect), and that arthroscopic surgery provides no additional benefit to physical and medical therapy."

"The American Academy of Orthopedic Surgeons guideline on the Treatment of Osteoarthritis of the Knee (2008) recommended against performing arthroscopy with a primary diagnosis of OA of the knee."

"There is no evidence that removal of loose debris, cartilage flaps, torn meniscal fragments, and inflammatory enzymes have any pain relief or functional benefit in patients that have joint space narrowing on standing radiographs. Many patients with joint space narrowing are older with multiple medical comorbidities."

"Consider the complications and consequences when recommending arthroscopy to treat the painful osteoarthritic knee without mechanical symptoms, as there is no proven clinical benefit."

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The most recent article evaluating knee arthroscopic surgery is only a week old (published 12/26/13). Raine Sihvonen, MD, and colleagues from the *Finnish Degenerative Meniscal Lesion Study (FIDELITY) Group* published their study in the ***New England Journal of Medicine***, titled (19):

Arthroscopic partial meniscectomy versus sham surgery for a degenerative meniscal tear

The authors conducted a multicenter, randomized, double-blind, sham-controlled trial in 146 patients 35 to 65 years of age who had knee symptoms consistent with a degenerative medial meniscus tear and no knee osteoarthritis. Patients were randomly assigned to arthroscopic partial meniscectomy or sham surgery.

The authors note that arthroscopic partial meniscectomy is one of the most common orthopedic procedures, yet rigorous evidence of its efficacy is lacking. These authors found that there were no significant between-group differences in the change from baseline to 12 months in any primary outcome. Likewise, there were no significant differences between groups in the number of patients who required subsequent knee surgery. Their conclusion was:

"In this trial involving patients without knee osteoarthritis but with symptoms of a degenerative medial meniscus tear, the outcomes after arthroscopic partial

meniscectomy were no better than those after a sham surgical procedure."

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On the same day that Dr. Sihvonen and colleagues published their study in the New England Journal of Medicine (12/36/13), Rachelle Buchbinder, PhD, and colleagues published a study in the journal ***Current Opinion in Rheumatology***, titled (20):

Knee osteoarthritis and role for surgical intervention: Lessons learned from randomized clinical trials and population-based cohorts

Dr. Buchbinder is an Australian Clinical Epidemiologist, and she has been the Director of the Monash Department of Clinical Epidemiology. The purpose of their study was to determine if the key findings from the best available studies pertaining to arthroscopic surgery to treat knee osteoarthritis has resulted in better evidence-based care. Their conclusions include:

"Use of arthroscopy to treat knee osteoarthritis has not declined despite strong evidence-based recommendations that do not sanction its use."

"More efforts are needed to overcome significant evidence-practice gaps in the surgical management of knee osteoarthritis, particularly arthroscopy."

I believe these studies present an opportunity for practitioners of non-surgical interventions to help patients with knee osteoarthritis.

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Non-Surgical Management Approaches

In light of the above evidence, it is clear that effective non-surgical approaches to the management of knee osteoarthritis are necessary. A few such approaches are reviewed below.

LASER

A recent (01/02/2014) search of the National Library of Medicine using the PubMed search engine with the words “low level laser AND knee” locates 75 articles. These studies used a variety of laser wavelengths, power, and joules. The bulk of these studies found low-level laser therapy to be effective for pain relief and functional improvement.

In one study, pertaining to knee osteoarthritis in animals, the authors were able to show that a low-powered red laser was able to enhance knee cartilage regeneration (21). A 632 nm red laser was applied over the arthritic knee for 15 minutes, three times per week, for 8 weeks to achieve the clinical improvement.

OMEGA-3s

In 2002, the journal ***Arthritis & Rheumatism*** published a study titled (22):

Pathologic indicators of degradation and inflammation in human osteoarthritic cartilage are abrogated by exposure to n-3 fatty acids

These authors exposed human cartilage to omega-3 fatty acid concentrations at levels that are achievable in human serum and are physiologically relevant. Study results led them to state:

“Clinical studies on dietary supplementation with n-3 (omega-3) polyunsaturated fatty acids (PUFAs), such as those present in fish oils, have demonstrated modulation of inflammatory symptoms involved in the pathogenesis of arthritis.”

“These studies show that the pathologic indicators manifested in human osteoarthritis cartilage can be significantly altered by exposure of the cartilage to n-3 PUFA, but not to other classes of fatty acids.”

“Dietary supplementation with n-3 PUFA may prove useful in both quiescent and active arthritis.”

demonstrated dietary supplementation with n-3 PUFAs to be beneficial in reducing pain and inflammation in human arthritic diseases."

"It has long been recognized that dietary supplementation with fish oils that are enriched with n-3 PUFAs can provide benefit in the treatment of arthritis."

More recently, in 2012, a study published in the journal ***Nature Reviews Rheumatology*** and titled (23):

Omega-3 fatty acids and synovitis in osteoarthritic knees

The authors review the literature on the associations between synovitis, cartilage damage and plasma levels of omega-3 and omega-6 fatty acids in patients with osteoarthritis. They conclude that treatment with omega-3 fatty acids "has the poten-tial to play a key part in the management of patients with osteoarthritis."

CHIROPRACTIC

In an extensive review, physicians Susan Garstang and Todd Stitik published an article in the ***American Journal of Physical Medicine and Rehabilitation***, titled (24):

Osteoarthritis:
Epidemiology, Risk Factors, and Pathophysiology

These authors note that osteoarthritis affects the majority of adults over age 55, and 58% of those older than 70 years have symptomatic osteoarthritis. They note there are systemic and local risk factors for the development and management of osteoarthritis.

The local factors "result in abnormal biomechanical loading of affected joints." The most important of the joint biomechanical factors include:

- ligamentous laxity
- malalignment
- impaired proprioception
- muscle weakness
- reduced or altered joint movement parameters

Importantly, these local factors are the exact components of the joint dysfunction that chiropractors refer to as a "***subluxation***." Components of the subluxation include altered alignment, altered movement, muscle atrophy, reduced range of joint motion and aberrant proprioception. These components of the subluxation are the same factors that this article associates with an increased risk of osteoarthritis.

Furthermore, registered physical therapist Darlene Hertling and physician Randolph Kessler did an excellent job in describing the mechanical pathoanatomy/pathophysiology of knee (and other articulations) osteoarthritis in their 1990 book titled (25):

Management of Common Musculoskeletal Disorders: Physical Therapy Principles and Methods Second Edition; Lippincott; 1990

These authors review the case of a boy who continued to use his knee in the absence of normal external rotation of the tibia on the femur during knee extension. One and a half years later, at surgery, dimpling of the articular cartilage of the medial femoral condyle was observable with the naked eye, presumably owing to continued abnormal compression of this portion of the articular surface from loss of normal arthrokinematic movement. They state:

"The traditional approach to management of patients presenting with loss of pain-free movement at a joint usually involves various modes of pain relief, active and passive measures to improve osteokinematic movement, and encouragement of normal use of the part."

"It should be clear that this approach is inadequate and perhaps dangerous. First, it ignores the basic problem, which is often loss of normal arthrokinematics. Second, it involves considerable forcing of osteokinematic movements in the absence of normal arthrokinematic movement, which may only occur at the expense of the articular cartilage."

"A more logical approach to the management of these patients emphasizes the restoration of joint play to allow free movement between bones. This can be achieved only by (1) evaluating to determine the nature and extent of the lesion, (2) deciding if joint mobilization is indicated based on the evaluation, (3) choosing the appropriate techniques based on the direction and extent of restrictions, and (4) skillfully applying techniques of specific mobilization."

"Efforts to relieve pain and reduce muscle guarding are, of course, important adjuncts to treatment but do not in themselves constitute a treatment program. Also, some movement should be encouraged in the cardinal planes, but only as normal kinematics are restored."

"To a certain extent, functional use of the part should be restricted through careful instructions to the patient until normal joint mechanics are restored. This approach minimizes the possible danger of undue stresses to the articular cartilage during attempts to restore movement. It also minimizes the possibility of discharging a patient who has relatively pain-free functional use of the joint, but who may have some residual kinematic disturbance sufficient to cause cartilage fatigue over time and perhaps osteoarthrosis in later years."

SUMMARY

Knee osteoarthritis can occur as a consequence of neuromechanical problems with the feet, ankles, hips, and spine. In turn, knee neuromechanical problems influence the physiology of the feet, ankles, hips and spine. Neuromechanically, the entire body is linked; a neuromechanical problem any place in the kinetic chain affects the entire body.

There is little doubt that most individuals with knee osteoarthritis should consider arthroscopic surgery only after other approaches have failed. Our clinical management of these patients is consistent with the studies presented here. They include:

- Whole body segmental and postural analysis and chiropractic adjustments.
- Knee alignment improvement, classically with foot orthotics and chiropractic adjusting.
- Knee exercise, specific to found muscle weaknesses.
- Low-level laser therapy.
- Omega-3 fatty acid supplementation.
- Weight loss strategies.

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The Chiropractic Impact Report™ is a monthly publication by myself, Dan Murphy, DC. I am a 1978 graduate of Western States Chiropractic College in Portland, OR. I have managed about 10,000 whiplash-injury cases. In the past 32 years, I have taught more than 500 12-hour post graduate continuing education classes pertaining to whiplash and spinal trauma, including 21 years of coordinating a year-long certification program in spine trauma, certified through the International Chiropractic Association. Additionally, I am board certified in chiropractic orthopedics (DABCO), and I am on the faculty at Life

Chiropractic College West in Hayward, CA (28 years).

The purpose of The ***Chiropractic Impact Report™*** is to keep you updated as to relevant academic concepts pertaining to whiplash-injured patients. The hope is that the information is useful in terms of enhanced understanding, as well as helping the personal injury attorney deal with insurance claim adjusters and adverse medical experts.

The chiropractor sending you this ***Report*** is well versed and trained in these concepts, and can be a valuable asset in personal injury cases in terms of both academics and treatment. Additionally, these expert chiropractors have access to a monthly phone consultation with me to discuss any pertinent issues that they may be facing on a particular case. I hope that you find this Report and the referring chiropractor a valuable resource.

Sincerely,

Daniel J. Murphy DC, DABCO

REFERENCES

1) Rothman RH and Simeone FA, The Spine, second edition, WB Saunders Company, 1982.

2) Parke WW, "Applied Anatomy of the Spine" chapter 2 in Rothman and Simeone, The Spine, second edition, WB Saunders Company, 1982.

3) Bland J, Disorders of the Cervical Spine, WB Saunders Company, 1987.

4) Travell J, Simons D; Myofascial pain and dysfunction, the trigger point manual; New York: Williams & Wilkins, 1983.

5) Travell J, Simons D; Myofascial pain and dysfunction, the trigger point manual: THE LOWER EXTREMITIES; New York: Williams & Wilkins, 1992.

6) Simons D, Travell J; Travell & Simons', Myofascial pain and dysfunction, the trigger point manual: Volume 1, Upper Half of Body; Baltimore: Williams & Wilkins, 1999.

7) Morton DJ; METATARSUS ATAVICUS: The Identification of a Distinctive Type of Foot Disorder; J Bone Joint Surg Am, 1927 Jul 1;9(3):531-544.

8) Golightly YM, Tate JJ, Burns CB, Gross MT; Changes in Pain and Disability Secondary to Shoe Lift Intervention in Subjects With Limb Length Inequality and Chronic Low Back Pain; Journal of Orthopaedic & Sports Physical Therapy; Vol. 37, No. 7, July 2007, pp. 380-388.

9) Harvey WF, Yang M, Cooke TDV, Segal N, Lane N, Lewis CE, Felson DT; Associations of Leg length Inequality With Prevalent, Incident, and Progressive Knee Osteoarthritis; Annals of Internal Medicine; March 2, 2010; 152(5): pp. 287–295.

10) Moseley JB, Wray NP, Kuykendall D, Willis K, Landon G; Arthroscopic treatment of osteoarthritis of the knee: a prospective, randomized, placebo-controlled trial. Results of a pilot study; Am J Sports Med. 1996 Jan-Feb;24(1):28-34.

11) Moseley JB, O'Malley K, Petersen NJ, Menke TJ, Brody BA, Kuykendall DH, Hollingsworth JC, Ashton CM, Wray NP; A controlled trial of arthroscopic surgery for osteoarthritis of the knee; N Engl J Med 2002 Jul 11;347(2):81-8.

12) Felson DT, Buckwalter J; Debridement and lavage for osteoarthritis of the knee; N Engl J Med. 2002 Jul 11;347(2):132-3.

13) Wald ML; Arthritis surgery in ailing knees is cited as sham. New York Times 2002 Jul 11;Sect. A:1 (col. 6).

14) Bernstein K, Quach BS; A PERSPECTIVE ON THE STUDY OF MOSELEY ET AL:Questioning the value of arthroscopic knee surgery for osteoarthritis; CLEVELAND CLINIC JOURNAL OF MEDICINE; Vol. 70; No. 5; May 2003; pp. 401–410.

15) Laupattarakasem W, Laopaiboon M, Laupattarakasem P, Sumananont C; Arthroscopic debridement for knee osteoarthritis; Cochrane Database Syst Rev. 2008 Jan 23;(1).

16) Kirkley A, Birmingham TB, Litchfield RB, Giffin JR, Willits KR, Wong CJ, Feagan BG, Donner A, Griffin SH, D'Ascanio LM, Pope JE, Fowler PJ; A Randomized Trial of Arthroscopic Surgery for Osteoarthritis of the Knee; September 11, 2008; Vol. 359; No. 11; pp. 1097-1107.

17) Nutton RW; Is arthroscopic surgery a beneficial treatment for knee osteoarthritis?; Nat Clin Pract Rheumatol. 2009 Mar;5(3):122-3.

18) Howell SM; The role of arthroscopy in treating osteoarthritis of the knee in the older patient; Orthopedics; 2010 Sep 7;33(9):652.

19) Sihvonen R, Paavola M, Malmivaara A, Itälä A, Joukainen A, Nurmi H, Kalske J, Järvinen TNL; Arthroscopic partial meniscectomy versus sham surgery for a degenerative meniscal tear; New England Journal of Medicine; 2013 Dec 26;369(26):2515-24.

20) Buchbinder R, Richards B, Harris I; Knee osteoarthritis and role for surgical intervention: lessons learned from randomized clinical trials and population-based cohorts; Current Opinion in Rheumatology; 2013 Dec 26. [Epub ahead of print].

21) Lin YS, Huang MH, Chai CY, Yang, RC; Effects of Helium-Neon Laser on Levels of Stress Protein and Arthritic Histopathology in Experimental Osteoarthritis; American Journal of Physical Medicine & Rehabilitation. 83(10):758-765, October 2004.

22) Curtis CL, Rees SG, Little CB, Flannery CR, Hughes CE, Wilson C, Colin M, Dent CM, Otterness IG, Harwood JL; Pathologic indicators of degradation and inflammation in human osteoarthritic cartilage are abrogated by exposure to n-3 fatty acids; Arthritis & Rheumatism; Volume 46; Issue 6; 2002; pgs. 1544-1553.

23) Cleland LG, James MJ; Omega-3 fatty acids and synovitis in osteoarthritic knees; Nature Reviews Rheumatology; April 2012; Vol. 8; No. 6; pp. 314-315.

24) Garstang SV, Stitik TP; Osteoarthritis: Epidemiology, Risk Factors, and Pathophysiology; American Journal of Physical Medicine and Rehabilitation; November 2006, Vol. 85, No. 11, pp. S2-S11.

25) Hertling D, Kessler RM; Management of Common Musculoskeletal Disorders: Physical Therapy Principles and Methods; Second Edition; Lippincott; 1990.

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The Author

Dr. Murphy is a magna cum laude graduate of Western States Chiropractic College and was awarded DABCO Diplomate credentials in 1986 from the American Board of Chiropractic Orthopedics. He has also accumulated additional advanced post-graduate continuing education in Biomechanics, Orthopedics, X-ray, and Neurology.

A recognized and popular instructor, Dr. Murphy teaches internationally and maintains clinical practice in California while serving on the faculty at Life Chiropractic College West. He has taught post-graduate classes for a long list of chiropractic colleges and individual programs, including the acclaimed CCST program he developed, and also the Whiplash and Spinal Trauma two-weekend series he presents around the US with the International Chiropractors Association. Dr. Murphy's areas of expertise involve a series of topic areas including: biomechanics of vehicular collisions; biomechanics of spine trauma; biomechanics of pediatric vehicular collisions; soft tissue injury and repair; pain and proprioceptive neurology; and the management of spine and spinal related disorders.

He is also the developer and primary lecturer of this comprehensive post-graduate curriculum that includes state-of-the-art information regarding trauma neurology, mechanisms of vehicular accident injury, clinical trauma case management concerns, and documentation issues and strategies.

A popular and dynamic presenter, he is respected for his ability to bring complex anatomical and physiological factors into perspective with case management decision-making and documentation, his clarity on communicating chiropractic principles in practice and research, and his commitment to sharing advancements in both clinical research and recently published literature on a wide range of clinically relevant topics.

Source: http://thechiropracticimpactreport.com/february-2014/

Newly Developed Program Eases Chronic Knee Pain without Surgery and in as Little as Two Days

Dr. Karl R.O.S. Johnson, DC, of Shelby Township, Mich. is using a proprietary multi-dimensional approach to help patients diminish their chronic knee pain without invasive surgery. His knee pain program identifies the true source of the problem and concentrates on the entire body, bringing relief to some patients in as little as two days.

SHELBY TOWNSHIP, Mich. (PRWEB) September 30, 2014

Dr. Karl R.O.S. Johnson, DC, has developed an inventive chronic knee pain program of care that is dramatically improving the health and lives of patients.

His clinic—Johnson Chiropractic Neurology & Nutrition—applies a proprietary, multi-dimensional approach that goes beyond merely focusing on the knee. It also addresses sources of inflammation, neurology of the joint and neurology of pain, as well as the "neurokinetic chain" from the brain to the spine, to the legs, knees and feet. As a result of this integrated, individualized and comprehensive approach, Johnson's chronic knee pain recovery program can deliver results in as little as two visits for some patients.

Johnson's approach to addressing chronic knee pain gives individuals a viable option beyond the conventional methods of treatment. "Our knee pain protocol is ideal for individuals who do not want to have surgery—though they may have been told it is their only answer—and who have also tried traditional drugs and are looking for an effective alternative solution," Johnson said.

Chronic knee problems are not only painful and annoying, but they can be debilitating, making normal activities such as getting out of bed, walking and exercising difficult to manage. However, according to Johnson, chronic knee pain is not natural, and it is not a normal part of aging. Moreover, he says knee surgery may not be the only option for even the most extreme situations involving bone-on-bone arthritis. Johnson Chiropractic Neurology & Nutrition merges natural therapies and research-proven medical procedures to provide effective, long-lasting relief so that patients can regain functionality.

When patients visit Johnson Chiropractic Neurology & Nutrition, they receive a comprehensive evaluation of the nerve, muscle and joint function from their feet, ankles, knees, hips, pelvic and lower back. Those who qualify for the clinic's knee program may receive one or more of the following:

- Cutting-edge laser therapy
- Axial knee decompression
- Knee, hip, ankle and pelvic alignments
- Nutritional support for cartilage and nerve repair, inflammation and pain reduction
- Re-establishing proper neurology that when "offline" results in increased knee pain
- Lower back non-surgical decompression
- MyoNeuro balancing work on the muscles that cross the knee, hip and ankle joints

Patients are raving about their care at Johnson Chiropractic Neurology & Nutrition. For example, one patient who had been having persistent problems for 10 years, was able to walk up stairs without any pain after her second visit to the clinic. She said: "I can do pretty much everything I was able to do before my knee acted up like gardening, kneeling down and doing my Tai Chi. It's a great improvement; it's like day and night." The patient also said she was very happy with the results of her knee pain program, which lasted a few weeks. She added: "It's absolutely pain-free and relaxing at the same time. The method is wonderful."

For more information about Johnson's non-surgical knee pain program, call 586-731-8840, or visit http://www.ChronicKneePainHelp.com.

About Dr. Karl R.O.S. Johnson, DC
Dr. Karl R.O.S. Johnson is a chiropractic physician whose areas of expertise include chiropractic, functional medicine, functional neurology and spinal rehabilitation. He is also a medical writer and the author of "Reclaim Your Life; Your Guide to Revealing Your Body's Life-Changing Secrets for Renewed Health." He also authored the "Ultimate Strategy" series of ebooks on the topics of fibromyalgia, balance disorders, migraine and other debilitating headaches, as well as unresolved thyroid symptoms. Johnson has owned and operated Chiropractic & Nutrition Wellness Center and Johnson Chiropractic Neurology & Nutrition in Shelby Township, Mich. since 1983.

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When You Injure Your Knee, It Changes Your Brain

Research finds that the brain changes and needs to be retrained after ACL injury. As we rely more on vision after injuries, this suggests a new approach to rehab -

Researchers at The Ohio State University Wexner Medical Center found that regaining full function after an anterior cruciate ligament (ACL) injury is more than just physical—it requires retraining the brain.

See Also: **Cause of phantom limb pain in amputees, and potential treatment, identified**

A new study, published in the *Journal of Orthopaedic & Sports Physical Therapy*, shows parts of the brain associated with leg movement lagged during recovery from an ACL injury. Through comparing brain scans, researchers could see the differences in brain activity in healthy adults, versus those recovering from ACL injuries, when extending and flexing the knee.

"The brain fundamentally changed in how it processes information from an injured knee," said Dustin Grooms, a researcher who conducted the study at Ohio State and is currently employed at Ohio University. "We think those changes play a big role in why people who recover from ACL injuries don't trust their knees entirely and tend to move them differently."

Therapists use shutter glasses during a rehab session at The Ohio State University Wexner Medical Center. The glasses cause visual distractions, allowing patients to rehabilitate injuries more instinctively, instead of relying on visual cues, which is often the case after knee injury. Credit: The Ohio State University Wexner Medical Center

The brain scans showed that instead of relying on movement or spatial awareness, people who had suffered an ACL injury relied more on their visual systems in the brain when moving their knee and didn't move it as naturally or instinctively as those who had not been injured.

"It's like walking in the dark, you don't walk as fast, you don't move as confidently," said Jimmy Onate, a health and rehabilitative sciences researcher at Ohio State Wexner Medical Center. "These individuals may, in a smaller sense, be doing the same thing—not moving as confidently and constantly using visual feedback from the world around them when they really don't need to."

Consistently depending on the brain's visual systems for movement can cause complications when participating in complex sports. To help patients overcome that, therapists are using strobe glasses to include motor learning and visual-motor compensations in rehabilitation.

Read Next: Wii Balance Board induces changes in the brains of MS patients

"The idea is to use these glasses to visually distract these patients, so their brains will rewire back to their original state," said Grooms. "That will allow them to once again move their knee based on natural instinct instead of relying on visual cues."

Individuals who experience an ACL injury and attempt to return to activity are 30 to 40 times more likely to sustain a second ACL injury relative to those in the same sport that have not experienced an ACL injury.

Note: Material may have been edited for length and content. For further information, please contact the cited source.

The Ohio State University Wexner Medical Center press release

Publication

Grooms D, Appelbaum G, Onate J. *Neuroplasticity Following Anterior Cruciate Ligament Injury: A Framework for Visual-Motor Training Approaches in Rehabilitation.* Journal of Orthopaedic & Sports Physical Therapy, Published 2015. doi: 10.2519/jospt.2015.5549

Dr. Karl R.O.S. Johnson, DC, DNMSc, BCIM, FICPA, FIFHI focuses on helping patients with chronic health challenges who are not responding to traditional medical treatments.

Dr. Johnson often sees people who are suffering from chronic conditions, such as **knee pain, foot and shoulder pain and back pain that won't resolve with traditional medical care,** as well as **peripheral neuropathy** and other chronic conditions.

Traditional approaches to healing often compartmentalize the human body, focusing on localities and not the whole person. But we look at all your systems, give you a questionnaire, and get to know you.

We talk with you about your medical history and your past struggles. We draw a complete picture of you. Then, Dr. Johnson will step back and try to determine what is slightly out of focus.

We don't use drugs or surgery. **Instead, our clinical approach is a SCIENTIFIC EVIDENCE BASED approach fused to a self-styled combination of alternative and western medicines.** We employ an array of diagnostic tests to penetrate the invisible web of factors causing your chronic health challenge. Since you must be part of your recovery solution, we arm you with an individualized set of comprehensive, preventative measures to help you address your chronic condition.

One of our corresponding goals is to help you develop a deeper appreciation and understanding of your own body, a remarkable instrument that is always willing to heal–no matter what. He does using his structural, neurological, metabolic approach, explaining in detail whatever you're curious about during the steps on your journey to health.

Dr. Johnson wrote a book detailing the concepts he's learned during his tenure and you can get a copy when you are at the office or at Amazon.com. The title of his book is *Reclaim Your Life; Your Guide to Revealing Your Body's Life-Changing Secrets for Renewed Health.*

He combines knowledge from his chiropractic degree and natural health care experience from over three decades with concepts derived from his doctorate in neuro-metabolic sciences to serve you.

Families all over the world are waking up to the fact that conventional medicine is "sick care" and while sick care is a blessing for life threatening disease and emergencies, **it is not the best choice for health improvement or routine and chronic conditions.**

As more and more families realize this truth, they are speaking out in a big way, **demanding less drugs and more natural alternatives,** a better way, a safer and healthier way!

Safe, natural health care is not intended to replace conventional medicine, it is simply a better choice for building better health, for non-emergency, routine and chronic illness!