

The total body approach to the osteopathic management of temporomandibular joint dysfunction

Hruby RJ. *J Am Osteo Assoc* 1985; 85: 502-510.

Dysfunction of the temporomandibular joint (TMJ) is being recognized clinically more and more. The skilled osteopathic physician can have a distinct advantage over other practitioners in the diagnosis and treatment of this disorder. This can be accomplished by having a systematic approach to the patient as a total structural-functional unit. The sequence of such an approach is described herein. Special attention is given to craniosacral techniques that may be employed in the management of TMJ dysfunction. The 2 case histories demonstrate that, with skilled manipulative care, the need for further orthodontic or prosthodontic treatment can be lessened or sometimes entirely eliminated.

Study on cervical visual disturbance and its manipulative treatment

Zhang C, Wang Y, Lu W, et al. *J Trad Chinese Med* 1984; 4: 205-210.

Studying the common disease cervical spondylosis in 1976, we found that not only were its symptoms relieved or eliminated after manipulative treatment. We found also that the associated blindness or blurred vision was alleviated. We have discovered the effective rate of improved vision in 114 cases treated in the past seven years to be 83%. Within this figure, cases with visual improvement of more than 6 rows on the test-chart comprised 37.4%; 45.6% improved 2-5 rows; 9 of 12 blind eyes regained vision, 7 of which were restored to more than 1.0. Of the 54 cases followed up for a minimum of half a year, 91.1% showed stable therapeutic effect. We found that impaired vision caused by cervical spondylosis comprised 2.1% of the cervical syndrome.

The relationship of heel contact in ascent and descent from jumps to the incidence of shin splints in ballet dancers

Gans A. *Physical Ther* 1985; 65: 1192-6.

I conducted a study to determine whether ballet dancers with a history of shin splints make heel contact on ascent and descent from jumps less often than dancers without this history. Sixteen dancers were filmed as they executed a sequence of jumps at two different speeds. Eight of the subjects had a history of shin-splint pain; eight had no such history. The film was viewed on a Super 8 movie projector. Heel contacts on ascent and descent from jumps were counted. Double heel strikes (heel rise between landing and pushing off) were also counted. A nonparametric *t* showed no differences between the two groups in the number of contacts on ascent or descent. The dancers with a history of shin splints, however, demonstrated more double heel strikes ($p = .02$) than the other group. Clinically, this finding may represent a lack of control or a tight Achilles tendon or both. Further study is necessary to confirm these theories. For treatment and prevention of shin splints, a clinician must evaluate a dancer's

jumping technique and then provide systematic training to develop the skill, strength, flexibility and coordination that make up control.

KEY WORDS: Dancing, Physical therapy, Tibia.

Effects of vapocoolants on passive hip flexion in healthy subjects

Newton RA. *Physical Ther* 1985; 65: 1034-6.

Vapocoolants have been documented clinically to increase range of motion limited by pain, but only one research study has been undertaken to investigate these observations. The purposes of this study were twofold: to replicate one existing quantitative study on Fluorimethane Spray® and to examine the effects of other brief, cold stimuli (ethyl chloride and isopropyl alcohol) to increase passive hip flexion in healthy adults. Three experimental groups and a control group were used; each subject served as his own control. Pretest and posttest measurements of passive hip flexion were measured in a gravity-minimized position. A specially designed table to ensure trunk stabilization was used. Brief, cold stimuli applied to the posterior region of the thigh were found ineffective in increasing passive hip flexion in healthy adults. The rationale for the findings is described in terms of the effects of brief, cold stimuli on a quiescent CNS as opposed to a CNS demonstrating heightened excitability in the pain-spasm-pain cycle.

KEY WORDS: Cold, Hip joint, Pain, Physical therapy.

Effect of load and carrying position on the electromyographic activity of the gluteus medius muscle during walking

Neumann DA, Cook TM. *Physical Ther* 1985; 65: 305-311.

Physical therapists often teach people with hip osteoarthritis ways to decrease gluteus medius muscle activity of the stance limb during gait. The rationale for decreasing this muscle activity is that hip muscle contraction needed for frontal plane hip stabilization is responsible for a large component of the hip joint compressive forces during stance. The magnitude and carrying position of external loads during walking are both variables that influence requirements of gluteus medius muscle force. Therefore, the purpose of this study was to determine through EMG, the relative amounts of gluteus medius muscle electrical activity produced during the stance phase of gait when subjects used varying combinations of load size (10 and 20% of body weight) and carrying position of the hands (contralateral or ipsilateral to a given hip, or anterior or posterior to the chest). We studied 24 healthy subjects and used their EMG activity during the stance phase of gait as an indication of the relative amount of myogenic hip compression force. Results indicated statistical differences in EMG according to carrying condition with the contralateral position (with loads of 10 and 20% of body weight) producing the highest levels of EMG. We discuss the kinesiological reasons for results and the prevention of hip osteoarthritis in occupational settings.

KEY WORDS: Electromyography, Hip, Muscles, Osteoarthritis.

Plasma and CSF endorphin levels in primary and symptomatic headaches

Nappi G, Facchinetti F, Martignoni E, Petraglia F, et al. *Headache* 1985; 25: 141-144.

The role of opiates in pain perception and neuroendocrine responses to environmental stimuli is well known, so that plasma and CSF endorphin levels may represent useful markers of endogenous analgesia and adaptive body mechanisms.

The present study concerns various forms of headache: *primary* (Common Migraine: CM; Migraine with Interparoxysmal Headache: MIH; Cluster Headache: CH) and *symptomatic* (Chronic Post Traumatic Headache: CPTH; Ischemic Cerebrovascular Headache: ICVH). A group of age-matched healthy subjects was used as controls (C).

The results show a significant decrease of plasma B-EP levels only in MIH patients ($p < 0.001$), while in the CSF a significant reduction of B-EP is present in MIH ($p < 0.001$) and CM ($p < 0.005$) subgroups, coupled with an inverse relationship between peptide levels and headache severity scores. In the symptomatic headaches, in which a normal functioning of the pain control systems may be presumed, no difference is present when compared to normal subjects.

These data support the hypothesis that migraine syndrome is a "pain disease" sustained by precarious, either genetic or acquired, biochemical mechanisms.

Medical diagnoses and problems in individuals with recurrent idiopathic headaches

Featherstone HJ. *Headache* 1985; 25: 136-140.

Two hundred cases with recurrent idiopathic headache and 200 age- and sex-matched controls without headaches were compared for the occurrence of medical problems and diagnoses according to their primary physicians. Hypertension, vertigo and dizziness, peptic ulcer, gastroesophageal reflux and depression and/or anxiety were among diagnoses seen more frequently in the headache cases, while nephrolithiasis, excessive ethanol use and abdominal pain in women were more common in the controls. There were no significant differences between the two groups in the diagnosis of cardiac disease, including mitral valve prolapse and ischemic heart disease, and occlusive cerebrovascular disease. Possible underlying mechanisms are discussed. These findings need confirmation and further investigation.

Role of reflex responses of knee musculature during the swing phase of walking in man

Garett M, Luckwill RG. *Physiotherapy* 1985; 71: 47-50.

Muscle activation patterns of the quadriceps and hamstrings were studied in normal human subjects walking at comfortable speed on a treadmill. In addition, knee angular velocity patterns and swing and stance phases of the step cycle were recorded. Data were collected from normal paces and from paces in which a momentary unexpected resistance was applied to the leg during swing.

The application of the resistance caused an advance in the onset of both quadriceps and hamstrings activity. The latency of the onset of

activity following the resistance in the quadriceps was 78.2 ± 26.4 ms and this was considered to indicate a long latency stretch reflex. There was a close association between the onset of quadriceps and hamstrings activity both in the normal and resistance paces. The changes observed in knee angular velocity upon application of the resistance indicate tight control of angular velocity patterns. The results have important implications regarding neural control of muscle during purposive movement and the regulation of sensitivity of muscle receptors during such movements, especially during the periods when the muscle is normally inactive.

Synkinetic contralateral tilting of atlas and head on lateral inclination. Part I.

Jirout J. *Manuelle Medizin* 1985; 23: 61-65.

The asymmetrical changes in the width of the articular interspaces at the atlas-axis level on lateral inclination of the head and neck, as seen in Sandberg's a.p. view, are the result of synkinetic rotation of the axis and also, to a lesser degree, the result of its ventral or dorsal tilting. The role of the atlas seems to be unimportant. This phenomenon occurs more frequently in the supine than in the sitting position. It can be assumed that this is a radiological sign of the normal dynamics of the craniocervical junction.

KEY WORDS: Craniocervical junction - Head articulations - Axis, synkinetic rotation - Atlas, synkinetic tilting.

Musculoskeletal chest wall pain

Fam AG, Smythe HA. *Can Med Assoc J* 1985; 133: 379-89.

The musculoskeletal structures of the thoracic wall and the neck are a relatively common source of chest pain. Pain arising from these structures is often mistaken for angina pectoris, pleurisy or other serious disorders. In this article the clinical features, pathogenesis and management of the various musculoskeletal chest wall disorders are discussed. The more common causes are costochondritis, traumatic muscle pain, trauma to the chest wall, "fibrositis" syndrome, referred pain, psychogenic regional pain syndrome, and arthritis involving articulations of the sternum, ribs and thoracic spine. Careful analysis of the history, physical findings and results of investigation is essential for precise diagnosis and effective treatment.

Unnecessary dental treatment of headache patients for temporomandibular joint disorders

Reik Jr L. *Headache* 1985; 25: 246-248.

The charts of 100 consecutive headache clinic patients were reviewed retrospectively to determine the frequency of prior dental treatment for TMJ disorders. Twenty had been treated, but only 4 satisfied our diagnostic criteria for the TMJ pain-dysfunction syndrome. The other 16 satisfied conventional criteria for other headache diagnoses, and none of them had improved with dental treatment. Increased patient awareness of the TMJ syndrome, inappropriate referral by physicians and incorrect diagnosis by dentists all probably led to the unnecessary dental treatment.