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An evaluation of chiropractic manipulation as a treatment of hyperactivity in children

Giesen J, Center D, Leach R. *JMPT* 1989; 12:353-363.

The principle aim of this study was to determine the effectiveness of chiropractic manipulative therapy in the treatment of children with hyperactivity. Using blinding between investigators and a single subject research design, the investigators evaluated the effectiveness of the treatment for reducing activity levels of hyperactive children. Data collection included independent evaluations of behavior using a unique wristwatch type device to mechanically measure activity while the children completed tasks simulating schoolwork. Further evaluations included electrodermal tests to measure autonomic nervous system activity. Chiropractic clinical evaluations to measure improvement in spinal biomechanics were also completed. Placebo care was given prior to chiropractic intervention. Data were analyzed visually and using nonparametric statistical methods. Five of seven children showed improvement in mean behavioral scores from placebo care to treatment. Four of seven showed improvement in arousal levels, and the improvement in the group as a whole was highly significant ($p = 0.009$). Agreement between tests was also high in this study. For all seven children, three of the four principal tests used to detect improvement were in agreement either positively or negatively (parent ratings of activity, motion recorder scores, electrodermal measures, and x-rays of spinal distortions). While the behavioral improvement taken alone can only be considered suggestive, the strong interest agreement can be taken as more impressive evidence that the majority of the children in this study did, in fact, improve under specific chiropractic care. The results of this study, then, are not conclusive, however, they do suggest that chiropractic manipulation has the potential to become an important nondrug intervention for children with hyperactivity. Further investigation in this area is certainly warranted.

The recognition of mechanically induced pelvic pain and organic dysfunction in the low back pain patient

Browning J. *JMPT* 1989; 12:369-373.

Mechanical disorders of the lumbar spine have been identified as a cause of pelvic pain and organic dysfunction (PPOD). Categorically, the clinical features indicative of mechanically induced PPOD fall into three areas: the history of the development or onset of pelvic symptomatology attributable to lower sacral nerve root compression (LSNRC), identification of related symptomatology on presentation, and the recognition of clinical findings indicative of mechanically induced PPODs on examination. Characteristic features of each category are presented. The clinical signs that most reliably indicate the presence of PPOD secondary to a mechanical lesion of the low back are of a sensory nature, and the disappearance or lack of improvement of these signs closely parallels the patient's overall response to manipulative treatment. Without a thorough understanding of the salient features of mechanically induced PPOD, the practitioner is likely to overlook this as a diagnostic possibility. As a result, efforts to document chiropractic spinal manipulative therapy in relieving disorders of pelvic organic

function may be hampered. The empirical efficacy of chiropractic spinal manipulative therapy for treating disorders of pelvic organic function would be enhanced if more chiropractors were apprised of the salient features indicating the presence of mechanically induced PPOD.

Pelvic manifestations of diffuse idiopathic skeletal hyperostosis (DISH): are they clinically relevant?

Fahrer H, Barandun R, Gerber M, Friederich M, Burkhardt B, Weisman M. *Rheumatol Int* 1989; 8:257-261.

This is a cross-sectional, case-controlled study on the clinical relevance of diffuse idiopathic skeletal hyperostosis (DISH) in relation to the pelvic girdle. Thirty-two rheumatology patients with DISH were compared with 35 dermatology control subjects in respect to the clinical parameters pain and passive hip joint motion in a standardized manner. There were no significant differences between the two groups, indicating no major clinical relevance of DISH in the pelvic region. In a second study, the radiographs of 23 DISH probands were compared blindly with 23 matched controls. The only significant difference was a much higher degree of severe juxtaarticular bone formation in DISH probands. The majority of these spurs proved to be asymptomatic and did not affect the range of passive hip joint mobility. DISH is a frequently seen, often radiologically very impressive phenomenon of little clinical relevance, at least in the pelvic area.

Rotation of the cervical spine and angiographic picture of the internal carotid artery

Opala G, Arkuszewski Z. *J Manual Med* 1989; 4:47-48.

Manual treatment of the cervical spine disorders may be hazardous in cases with insufficient blood flow through the vertebro-basilar arteries. Lesser attention has been paid to the impact of manual procedures upon the carotid arteries. The authors investigated the effect of the head rotation on the internal carotid arteries examining 1,638 arteriograms of those vessels and found kinking of the arteries in 9% of patients with coilings, not visible before the head rotation. In conclusion some principles of examination have been advocated in order to eliminate the risk of disturbances of the cerebral blood flow brought about by careless manipulations of the cervical spine.

The comparison of the results of manual therapy versus physiotherapy methods used in treatment of patients with low back pain syndromes

Kinalski R, Kawik W, Pietrzak D. *J Manual Med* 1989; 4:44-46.

In a group of 111 in- and out-patients with low back pain syndrome treated in a medical rehabilitation department, manual therapy and physiotherapy methods were applied. Information on the erector spinae muscle strength, the Thomayer sign and the degree of pain were collected, analysed and results were compared. The efficacy of manual therapy in stages I and II of intervertebral lumbar disc disease was confirmed.

The prevalence of back pain and associated risk factors in Swiss recruits in 1985

Rohrer M, Paccaud F, Haller E, Gutzwiller F, Eggiman P. *J Manual Med* 1989; 4:22-24.

The aim was to study the prevalence of back pain and their associated risk factors e.g. physical and professional activities, to quantify and to qualify their pain and to proceed to a physical examination. The population studied consisted of 1,663 Swiss army recruits who were representative of the local 20 year Swiss male population resident in Western Switzerland in 1985. 93.8% of the distributed questionnaires were processed. 46.2% of the recruits had suffered from back pain prior to recruitment. 17.8% were suffering from back pain at the time of the survey and 93% of them reported previous back problems. None of the different working conditions were associated with a higher pain incidence, whereas sporting and other physical activities were related to a higher pain prevalence. The recruits proven to have some physical impairment of the back claimed to have significantly more back pain. Most of the patients described their pain either as discomforting or distressing, and the pain intensity and the pain localisation were the most important factors enhancing them to ask for a medical consult.

Cervical spine injuries in Switzerland

Dvorak J, Valach L, Schmid S. *J Manual Med* 1989; 4:7-16.

A representative sample of 1,100 insurance records out of 11,000 patients who suffered from soft tissue injuries to the cervical spine and who were insured by the Swiss Accident Insurance Company were evaluated. 320 records (86 cases of patients with a disability pension, 234 cases without pension) were evaluated and questionnaires on their complaints, treatment requirement and their psychosocial situation of which 65% were returned. 12.6% of all cervical spine injuries also imply a fracture. 20% of these patients went on to receive a disability pension. Out of the 87% of patients who had only soft tissue injuries 1% were pensioned. Nearly a third of the patients who did not receive pensions still suffer of pain and other complaints today, four to seven years after the injury: pain which they consider as being caused by their injury. Nearly all of the later pensioned, but only about 10% of the other patients described psychological symptoms. A prospective interdisciplinary study which would monitor the complex course of the symptoms of soft tissue injury of cervical spine is well justified on the basis of these catamnestic data.

The effect of flexion-extension motion of the lumbar spine on the capacity of the spinal canal

Liyang D, Yinkan X, Wenming Z, Zhihaa Z. *Spine* 1989; 14(5):523-525.

The symptoms of lumbar spinal stenosis are often posture-dependent, and it is generally accepted that the capacity of the spinal canal is affected by flexion-extension motions of the lumbar spine. A study of spinal capacity in flexion-extension of ten cadaver specimens on the

lumbar spine was done and measurements were obtained from the flexion-extension lateral myelograms. There proved to be a larger capacity of dural sac of 3.5 to 6.0 ml (4.85 ± 0.75 ml) in flexion than in extension, and the differences were highly significant ($P < 0.001$). In addition, the sagittal diameter of the dural sac and the length of the spinal canal increased from extension to flexion. Because of the effect of flexion-extension motion of the lumbar spine on the spinal capacity, we suggest that maintaining the lumbar spine in flexion is more suitable since spinal canal capacity is enlarged and symptoms may be mitigated.

Lumbar zygapophyseal joint meniscoids: evidence of their role in chronic intersegmental hypomobility

Jones T, James J, Adams J, Garcia J, Walker S, Ellis J. *JMPT* 1989; 12:374-385.

Meniscoid bodies of the zygapophyseal joints are considered by some to be a cause of the Acute-Locked Back syndrome. These meniscoid bodies have been identified anatomically and histologically, but not yet in a formal clinical investigation. The authors provide a brief review of the zygapophyseal meniscoid-related literature, present new documentation of histological variations and offer some possible consequences of the presence of mechanically pathological meniscoids. It is herein proposed that an important sequela to the pathophysiology of these structures is that of chronic intersegmental hypomobility. We invite the scientific community to pursue further investigations of these meniscoids. Magnetic resonance imaging is one method suggested to investigate the meniscoid in vivo.

Differences in sensory conduction velocity between different sensory branches and segments of the median and ulnar nerves

Joynt RL. *Am J Phys Med Rehab* 1989; 68(5):210-214.

Abnormality of absolute values of median sensory conduction velocities and differences in conduction velocity between median and ulnar nerves are used as criteria for abnormality in the diagnosis of carpal tunnel syndrome. Detailed studies of sensory conduction in various median and ulnar branches and segments indicate that conduction velocities measured and calculated by standard methods are different in the different nerves, segments and branches. In particular, the velocity in the middle digit branch of the median nerve is slower than that in the index, and that in the 3-4 palmar branch is slower than that in the 2-3 palmar branch. Median and ulnar sensory conduction velocities are not well correlated in the same hand in the same individual, so comparison of these nerves for diagnostic purposes is subject to some risk. Palmar and digital conduction velocity in the same nerve may not be identical and the median nerve may have asymptomatic palmar slowing of no clinical significance. The conclusion that abnormality is present must take these factors into account.