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Spinal Manipulation May Help Reduce Spinal Degenerative Joint Disease and Disability, Part II

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Could the hypomobile manipulable joint lesion cause degenerative joint disease?

Kirkaldy-Willis believes that an episode of trauma may injure the posterior spinal joints and their associated surrounding soft tissues leading to sustained reactive muscle splitting and pain; if additional trauma or continuing postural or compressive stress is present, this stiff, painful joint, unless treated at this juncture to restore mobility, will lead to facet and disk degeneration or degenerative joint disease.³² Studies which have induced hypomobility in animal joints by: placing tension springs over joints to restrict movement, producing constant compression and stiffness; making animals run on uphill treadmills producing compression, immobilizing joints, inducing postsurgical immobilization, and various other sundry methods have all led to the development of degenerative joint disease.³³⁻⁴³ All of the above mechanisms result in loss of nutrition and fluid exchange leading to increasing stiffness and degenerative joint disease. Loss of intermittent compression results in muscle, ligament, cartilage, and disc degeneration.^{44,45}

It is clear from the above that hypomobile animal joints develop degenerative joint disease but Junghanns, Baker, and Kirkaldy-Willis report similar degenerative changes in hypomobile human joints resulting from injury, trauma, and surgery, essentially the same degenerative changes as those seen in induced hypomobility in animals.^{32,46,47} In fact, according to the work of Kapandji,⁴⁴ Salter,⁴⁵ Junghanns,⁴⁶ Baker,⁴⁷ Kirkaldy-Willis,³² and Akeson,⁴⁸ the effects of hypomobility on human vertebral joints always results in an increased development of degenerative joint disease. It is well documented then that the nutrition and fluid exchange of cartilage, and to a somewhat lesser extent of muscle and ligament in animals as well as humans, is dependent on normal essentially full range mobility;⁴⁹ an observation reported by orthopedists for many years.⁵⁰

Could the Hypomobility or Stiffness Which May Lead to Degenerative Joint Disease, a Known Predisposer to Injury and Disability, Produce a Positive Feedback Cycle of Further Stiffness-Injury-Degenerative Joint Disease?

The development of degenerative joint disease is an outcome of global and therefore segmental hypomobility, a reaction to chronic stiffness. Such degenerative joint disease can result in the development of complex combinations of hypo and hypermobility in spinal joints resulting in a positive feedback cycle leading to increasing global stiffness and further degeneration of joint tissues.⁴⁴ This increasing stiffness will predispose joints to injury and disability. Felton and O'Connell studied back injuries for the county of Los Angeles using law enforcement officers, firefighters, attorneys, investigators, lifeguards, and deputy marshals and came to the conclusion that decreased spinal mobility (decreased global and therefore segmental mobility) predisposes to increased spinal injury.⁵¹

Norgren et al., evaluated 5,093 Scandinavian soldiers to determine risk factors in producing back pain and clearly demonstrated that decreased spinal range of motion, particularly segmental mobility correlated with tenderness, was a predisposer to the increased incidence and severity of low back pain.⁵² These studies clearly support the idea that global and therefore segmental hypomobility is a predisposer and precursor to increased injury and disability. The flip side of this equation is demonstrated in the Meade et al., study in which it was clearly demonstrated that in those low back pain patients who received chiropractic manipulation, and therefore attained documented superior restoration of mobility or increased global (and therefore segmental) mobility (as opposed to the control group of physical therapy patients), the chiropractic patients had less reoccurrences and complications, less need of additional treatment, and less disability.⁶

Patyn and Durinck in a controlled study followed the absenteeism rate for 12 months in 310 employees that received manipulation and 324 who received no treatment or standard medical treatment. The patients that received manipulation had 4.7 weeks of absenteeism, the other group 6.5 weeks of absenteeism (averages), clearly demonstrating that manipulation (which increases mobility) decreased disability.⁵³

Summary and Conclusions

Has the hypomobile manipulation joint lesion been demonstrated to exist? The answer is yes. Can we diagnose the hypomobile manipulable joint lesion? Diagnosis is slowly improving, is only partial at this time, and needs improvement. After manipulative therapy have these hypomobile joints been demonstrated to have had their mobility increased or restored? The answer is yes. Can such hypomobility or stiffness

develop into degenerative joint disease, lead to further hypomobility, further degenerative joint disease, and an increased predisposition to injury and disability? The answer is a qualified yes; additional research is needed to determine exactly what degree of hypomobility must develop to initiate the onset of degenerative joint disease and to predispose to injury and disability.⁵⁴ Such research and evidence could firmly establish that the hypomobile manipulable joint lesion is a developing pathology, in and of itself a developing disease, and a significant public health concern since, with diagnosis and manipulative treatment, injury, disability, and degenerative joint disease may not develop or develop less quickly. It is vital that the chiropractic scientific community perform this research and soon.

Can manipulation reverse global, and therefore segmental hypomobility, increase or restore mobility, possibly reverse, stop, or retard degenerative joint disease and lessen the predisposition to injury and disability? The answer appears to be yes.

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