

RELATIONSHIP OF CAVITATION TO GAPPING FOLLOWING SPINAL MANIPULATION

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The purpose of this study is to evaluate healthy subjects to determine the relationship between cavitation (the audible release or sound heard during a spinal adjustment) and the simultaneous gapping (separation) of the spaces in the L3-L4, L4-L5, and L5-S1 zygapophysial (Z) joints that occur as a result of lumbar side posture spinal adjusting. Gapping is measured from MRI scans and cavitation from accelerometers. An MRI is taken with the subjects in neutral (supine) position and then accelerometers are applied to the subject's back. Subjects are randomized to either the adjustment group or control group that undergoes side posture positioning without side posture adjusting. After adjusting or positioning, the accelerometers are removed; the subjects remain in side posture for a second MRI scan. Previous studies on healthy subjects at our facility demonstrated gapping of the Z joints following spinal manipulation. This study is designed to lead to a mechanistic outcome that verifies, by cavitation, whether Z joint gapping has occurred following a lumbar adjustment. Such verification of gapping would be used to provide a quantified standard for manipulations administered in future clinical trials evaluating the effects of spinal manipulation in a variety of conditions.

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