

ANALYSIS OF CREPITUS IN HUMAN SUBJECTS

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We hypothesize that decreased joint mobility associated with adhesion formation is accompanied by increased joint sounds (crepitus) during normal motions. Spinal manipulative therapy (SMT) has been shown to gap the Z joint articular surfaces (induced mobility), which would likely benefit a subpopulation of subjects with decreased joint mobility, by breaking intra-articular adhesions and potentially reversing the early development of joint degeneration. Consequently, change in crepitus following SMT may be a useful indication (biomarker) of changes in joint mobility and joint stiffness. In previous studies, we found human observer analysis of crepitus was accurate and reliable, however the process is time consuming in terms of both training of the observers and analysis of recordings. In an earlier study (RS-2001), we developed an automated method to increase the efficiency of this process. In this current study, we are testing the automated method on data recorded from healthy human subjects and those with low back pain. If we determine that automated analysis of crepitus is comparable to human observer analysis of crepitus in human subjects, the automated methods could then be used in future clinical trials and potentially in clinical practice. (H-2101)

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