

Epidemiology, Evidence based Papers on Effective Diagnostic and Therapy Outcome  
Or  
Manual Techniques (diagnostic)

## **PREDICTIVE VALUE OF PASSIVE PELVIC MOTION TESTING IN EARLY INFLAMMATORY SPONDYLARTHROPATHY AND CORRELATION WITH SACROILIAC FUSION VALIDATED WITH CT SCAN**

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### **Introduction**

Three cases are presented, two with correlation between loss of passive sacroiliac joint (SIJ) motion loss and fused SIJ per CT scans. Case one (C1) was one of the first documented H1N1 virus infections in the US. SIJ infection led to fusion. The opportunity presented to screen it. Predictable loss of passive pelvic micro-motions accompanied an unpredicted loss of lateral lumbopelvic-hip macro-motion. Case two (C2), a competitive collegiate swimmer, was seen because of a significant and lasting drop in performance. Extensive efforts to restore motion failed, mandating rheumatologic work-up. The third case (C3) presented with a thoracic and lumbosacral fusion and lack of SIJ motion.

### **Purpose**

To compare passive pelvic mobility with objective CT imaging in cases of fused SIJ's and explore diagnostic utility of motion tests in a case of undiagnosed early inflammatory spondylarthropathy.

### **Materials and Methods**

Two cases were reviewed with lack of passive pelvic motion and objective evidence of pathological (C1) and iatrogenic (C3) SIJ fusion. A third case (C2) with motion deficit was later diagnosed with early inflammatory spondylarthropathy.

### **Results**

Passive micro- and macro-motion testing revealed pelvic motion loss in C1 and C3 which correlated positively with SIJ fusion. A paradoxical lack of passive and active lateral lumbopelvic-hip mobility (macro-motion) was encountered. There is nothing in the literature to suggest that unilateral fusion would limit this multi-joint gross motion. After failed efforts at restoring motion in C2, rheumatologic screen was recommended, which diagnosed inflammatory spondylarthropathy.

### **Relevance**

Passive motion tests may have clinical utility.

### **Conclusions**

Lack of passive motion correlates with SIJ fusion identified with CT scans in two cases and in a case of early inflammatory spondylarthropathy. Research is needed including larger sample size, a control group, and prior blinding of CT results.

### **Discussion**

Passive motion testing most likely does not actually isolate motion only *within* the SIJ, in spite of best effort at isolation. Testing does appear to evaluate motion or lack thereof going *through* the pelvis and pelvic joints. At present there appears to be considerable resistance to the use of passive motion tests based on extrapolation of limited intra-tester reliability with palpation and traditional gross "SIJ motion" tests.

### **Implications**

Early fibrotic changes in the SIJ may escape early detection of motion loss and the average time from symptoms to definitive diagnosis for ankylosing spondylitis (AS) is reported to be 10 years. Passive pelvic motion testing may be useful in predicting early and late disease states with reduced or absent SIJ

motion. Randomized studies using samples of adults with chronic AS and fused SIJ, intermixed with a control group with motion tests performed in the absence of visual cues is underway.

**Keywords**

ankylosing spondylitis, sacroiliac fusion, H1N1 virus, passive mobility tests, inflammatory spondylarthropathy