CLINICAL MOTIVATION

- The complex, multi-axial motion of the spine has made it difficult to estimate the efficacy of both fusion and non-fusion devices.
- Popular techniques such as the range of motion (ROM) and neutral zone are limited in their ability to represent 3-dimensional (3D) kinematics.
- More complicated approaches such as the helical axis of motion (HAM) are difficult to analyze and interpret clinically.

STUDY OBJECTIVE

To present a new comprehensive and easy-to-use metric for comparing changes in 3D stiffness matrices between intact and instrumented motion segments.

RESULTS

- The stiffness ratio condenses the data for each posture into one inclusive number. Its simplicity can be seen below.

CONCLUSION

- The proposed method provides a unique and easy-to-use solution for determining the ability of spinal devices to mimic intact behavior.

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