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Title: The biomechanical impact of the facet tropism on the intervertebral disc and facet joints in the cervical spine

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18 **Abstract**

19 **BACKGROUND CONTEXT:** The facet tropism is defined as the angular difference
20 between the left and right facet orientation. The facet tropism was suggested to be
21 associated with the disc degeneration and facet degeneration in the lumbar spine.
22 However, little is known about the relationship between the facet tropism and
23 pathological changes in the cervical spine and the mechanism behind.

24 **PURPOSE:** This study was conducted to investigate the biomechanical impact of the
25 facet tropism on the intervertebral disc and facet joints.

26 **STUDY DESIGN:** A finite element analysis study.

27 **METHODS:** The CT scans of a 28 year-old male volunteer was used to construct the

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