Spinal posture and movement in female adolescents with anorexia nervosa

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Background: Profound musculoskeletal alterations encompassing bones and soft tissues are common in people with anorexia nervosa (AN). This study aims to examine spinal posture and mobility in adolescents with AN, and to compare these outcomes with those obtained from normal-weight female controls.

Methods: Spinal posture and movements were measured in 37 adolescents with AN and 31 normal-weight controls using the Idiag M360 scan tool, and between-group differences were analyzed using analysis of covariance.

Results: Spinal postures and the lumbar-to-hip ratio were not different between subgroups. By contrast, AN had reduced thoracic (−21.8 degrees, $p < 0.0001$) and lumbar (−18.2 degrees, $p < 0.0001$) mobility in the frontal plane, as well as decreased hip flexion (−14 degrees, $p = 0.001$) and extension (−18.6 degrees, $p < 0.0001$) compared to the CG. Conclusions: Thoracic and lumbar spinal mobility, mainly in the frontal plane, and also hip mobility in the sagittal plane, are decreased in AN. These findings provide clinically relevant insights into spinal characteristics in adolescents with AN.