

## **Health ABC Ancillary Study AS08\_118 (Wendy Katzman) - Cobb Angle Data**

**Background:** Older adults with hyperkyphosis are at increased risk of falls, fractures, and functional decline. Modifiable risk factors for hyperkyphosis have not been well studied. Our objective was to determine whether spinal muscle area and density are associated with hyperkyphosis, independent of age, race, sex, bone mineral density (BMD) and trunk fat.

**Methods:** Using data from the Pittsburgh site of the Health, Aging and Body Composition study, we performed a baseline cross-sectional analysis. Participants were black and white men and women 70-79 years old (N=1173), independent in activities of daily living and able to walk ¼ mile and up 10 steps without resting. We measured Cobb's angle of kyphosis from supine lateral scout computed tomography (CT) scans, and categorized hyperkyphosis as Cobb's angle >40 degrees. Axial images from lateral scout CT scans assessed spinal extensor muscle cross-sectional area and density (proxy for fat infiltration). **Results:** In our sample, 21% had hyperkyphosis. Prevalence of hyperkyphosis in black men was 11%; white men, 17%; black women, 26%; and white women, 30%. In multivariate analysis, each standard deviation increase in muscle density was associated with a 29% reduction in the odds of hyperkyphosis, independent of covariates. Muscle area was not significantly associated with hyperkyphosis.

**Conclusions:** Lower spinal muscle density is associated with hyperkyphosis in healthy community-dwelling older men and women. This potentially modifiable risk factor could be targeted in exercise interventions. Randomized trials are needed to determine whether an exercise program targeting spinal muscle density reduces hyperkyphosis and in turn improves health outcomes.

**Health ABC Ancillary Study AS08\_118 (Wendy Katzman) - Cobb Angle Data****The CONTENTS Procedure**

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