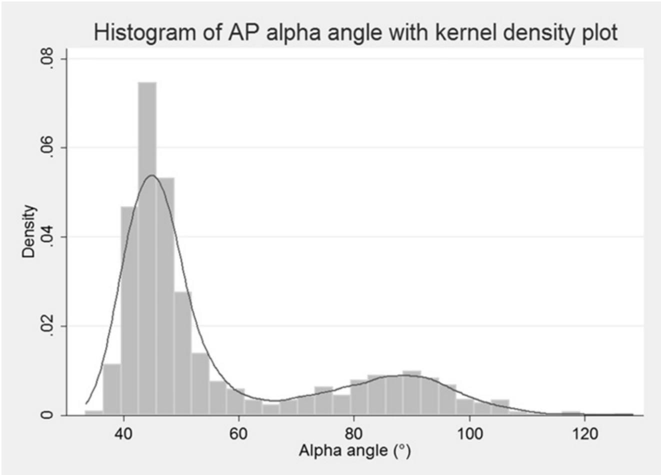
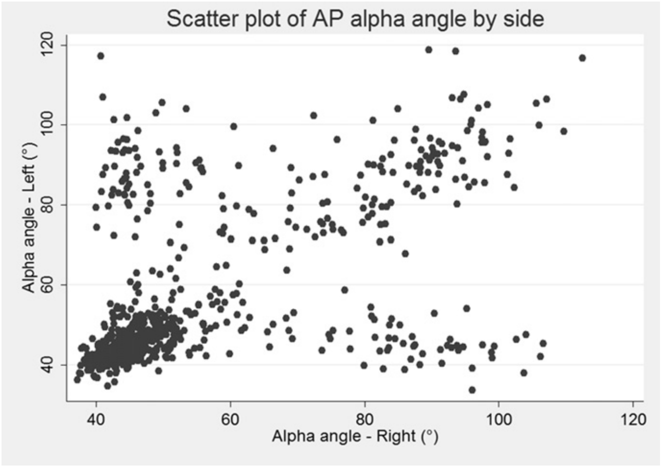
of alpha angle and horizontal toit externe angle. Table 1 shows a summary of the results. Figure 1 shows the bimodal distribution of alpha angle. Figure 2 shows a scatter plot of alpha angle by side, highlighting both bilateral and unilateral head asphericity. In addition, with an alpha angle cut point of 65° for cam type femoroacetabular impingement (FAI), 31.7% the cohort would be considered to have some degree of FAI, 45.8% of that bilateral.





Conclusion: Wide variation in hip morphology is present in the normal population. The most interesting of findings were in relation to alpha angle, which showed a bimodal distribution, suggesting a discrete pathological entity, this when combined with its discrete asymmetry suggests and acquired pathology. This is further supported by the normal distribution and symmetry of the other morphological variables.

The detailed description of hip morphology in this population cohort has clinical significance in providing a normal reference range for morphological measurement and suggests an acquired process for cam type deformity.

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GENERAL JOINT HYPERMOBILITY AND HIP OSTEOARTHRITIS: THE JOHNSTON COUNTY OSTEOARTHRITIS PROJECT

Y.M. Golightly [1], A.E. Nelson [1], V.B. Kraus [2], J.B. Renner [1], J.M. Jordan [1]. [1] *Univ. of North Carolina at Chapel Hill, Chapel Hill, NC, USA;* [2] *Duke Univ. Med. Ctr., Durham, NC, USA*

Purpose: Clinical impressions suggest that joint hypermobility is associated with osteoarthritis (OA). Results vary across the few published cohort studies on this topic, showing an association of metacarpophalangeal joint hypermobility and first carpometacarpal joint OA, inverse associations of general joint hypermobility and hand and knee OA, and no apparent associations of general joint hypermobility and lumbar or thoracic spine OA. This cross-sectional analysis describes the association of general joint hypermobility and radiographic hip OA in a large, bi-racial (African American and Caucasian) cohort of individuals 45-92 years of age.

Methods: Of the 1,546 participants from the population-based Johnston County Osteoarthritis Project with complete Beighton criteria data during 2001-2004, 1,360 had available hip radiograph data for analyses (mean age 63 years, mean body mass index [BMI] 30.7 kg/m2, 61.5% women, 35.4% African American). Presence of radiographic hip OA was defined as a score of ≥2 on the Kellgren-Lawrence scale in at least one hip or the presence of a total hip replacement for hip OA in at least one hip. The Beighton criteria for hypermobility were assessed during a clinical exam to determine the ability to complete the following nine maneuvers: passive dorsiflexion of the right and left fifth fingers ≥ 90 degrees, passive apposition of the right and left thumbs to the forearm, right and left elbow hyperextension of ≥10 degrees, right and left knee hyperextension of ≥10 degrees, and palms on the floor during forward trunk flexion with the knees extended. One point was assigned for each completed maneuver, and the total Beighton score ranged from 0 (unable to perform any maneuver) to 9 (able to perform all maneuvers). Hypermobility was defined as a Beighton score ≥4, a threshold used to clinically define joint laxity. Logistic regression was used to examine the relationship of hypermobility with radiographic hip OA, controlling for gender, race, age, and BMI. Interactions between hypermobility and gender, race, age, or BMI were examined ($p<0.10$ was considered statistically significant).

Results: In the 1,360 participants, 86 (6.3%) had hypermobility and 420 had hip OA (30.8%). Among participants with hypermobility, most were able to perform the elbow hyperextension (83.7%) and fifth finger (80.2%) maneuvers, followed by the thumb (29.1%), knee hypertension (27.9%), and forward trunk flexion (14.0%) maneuvers. Compared to participants without hypermobility, participants with hypermobility were more likely to have hip OA (36.1% vs. 30.5%) and to be women (84.9% vs. 59.9%), Caucasian (74.4% vs. 64.0%), and younger (mean age 60 vs. 63 years) and to have a slightly lower mean BMI (29.5 vs. 30.7 kg/m2). In adjusted models, the odds of hip OA were 59% higher among participants with hypermobility than those without hypermobility (adjusted odds ratio 1.59, 95% confidence interval 0.99, 2.56). There were no interactions by gender, race, age, or BMI.

Conclusions: General joint hypermobility was associated with radiographic hip OA. To our knowledge, this is the first study to examine this association in a large, bi-racial cohort. Ligamentous laxity may affect stability of the hip joint, but longitudinal studies are needed to determine the contribution of hypermobility to the development and progression of hip OA.

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IDENTIFYING TRAJECTORIES OF MEDIAL JOINT-SPACE WIDTH LOSS AND ASSOCIATED RISK FACTORS

T. Neogi [1], J. Niu [1], J. Duryea [2], J. Lynch [3], Y. Zhang [1]. [1] *Boston Univ. Sch. of Med., Boston, MA, USA;* [2] *Brigham and Women's Hosp., Boston, MA, USA;* [3] *Univ. of California San Francisco, San Francisco, CA, USA*

Purpose: Joint-space width (JSW) is a standard outcome in radiographic knee OA studies. Although there is interest in identifying knees at greatest risk for rapid joint-space loss, little is known about the natural history of JSW loss or factors associated with variable courses of JSW change, with few risk factors to date consistently identified for knee OA progression, potentially related to certain methodologic challenges. We sought to identify distinctive trajectories of medial JSW loss based upon quantitative JSW and their associated risk factors using data from the Osteoarthritis Initiative (OAI).

Methods: Participants of the OAI had bilateral fixed-flexion knee x-rays and demographic and clinical factors assessed at 0, 12, 24, 36, and 48 months. Quantitative radiographic JSW was assessed with software that delineated the margins of the femoral condyle and tibial plateau and measured JSW at fixed locations with respect to an anatomical coordinate system. We focused on medial JSW at x=0.250 (ICC >0.99) among all knees, and stratified by baseline KL grade. To be included, JSW measurements had to occur in ≥3 visits, with appropriate film quality, beam angle, and tibial plateau-rim distance. We agnostically categorized knees into distinct groups of JSW loss using a group-based semiparametric mixture model to identify these trajectories using a SAS macro (proc traj). This