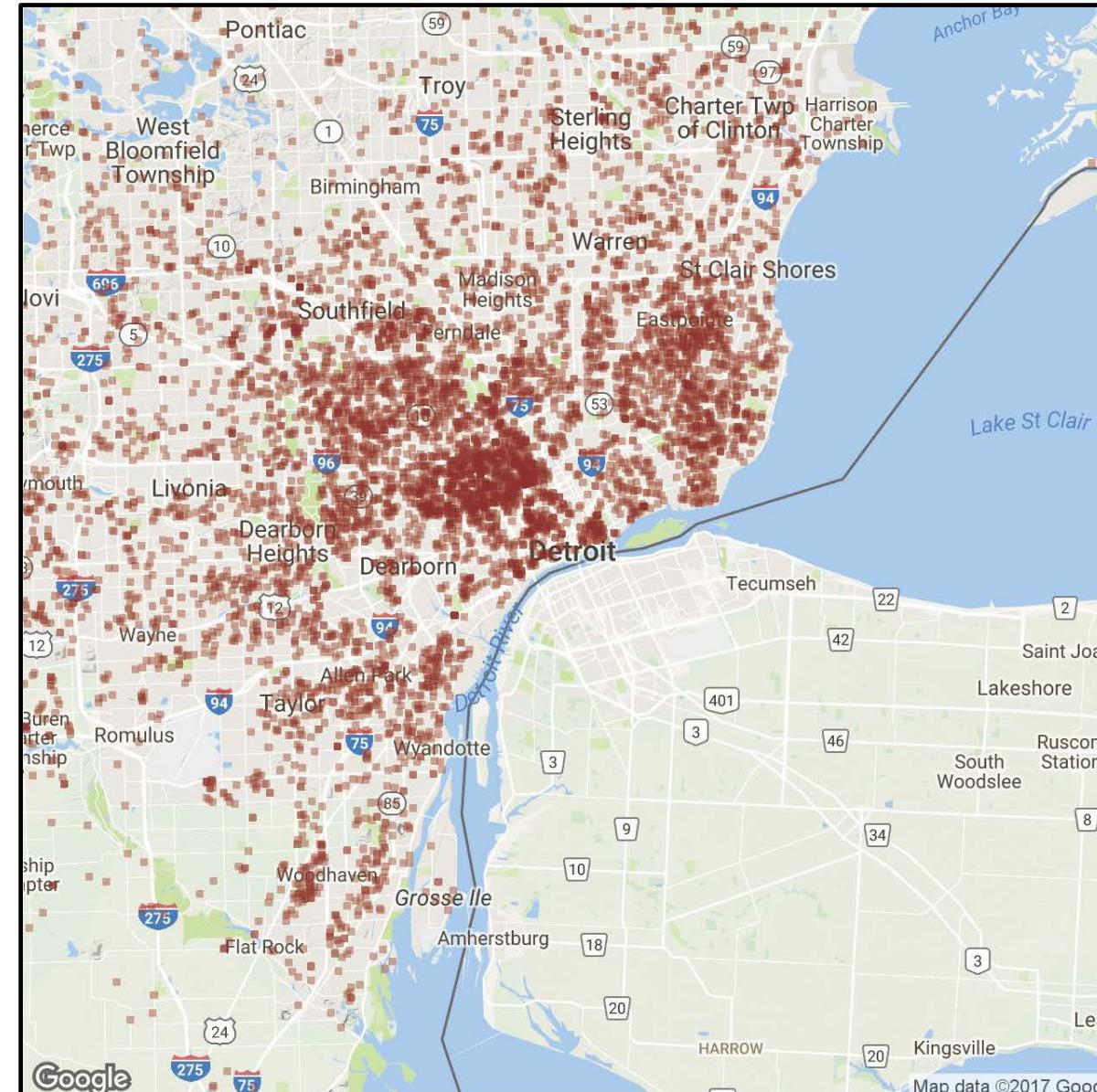
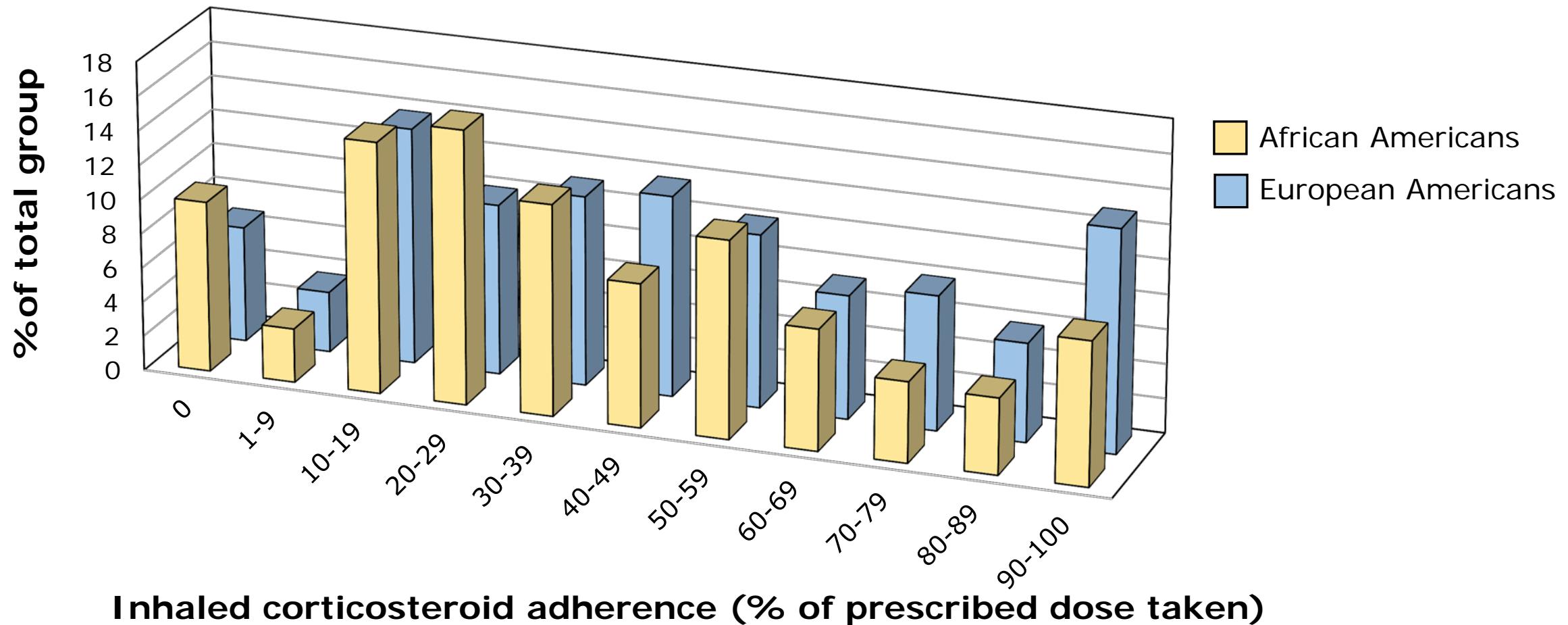


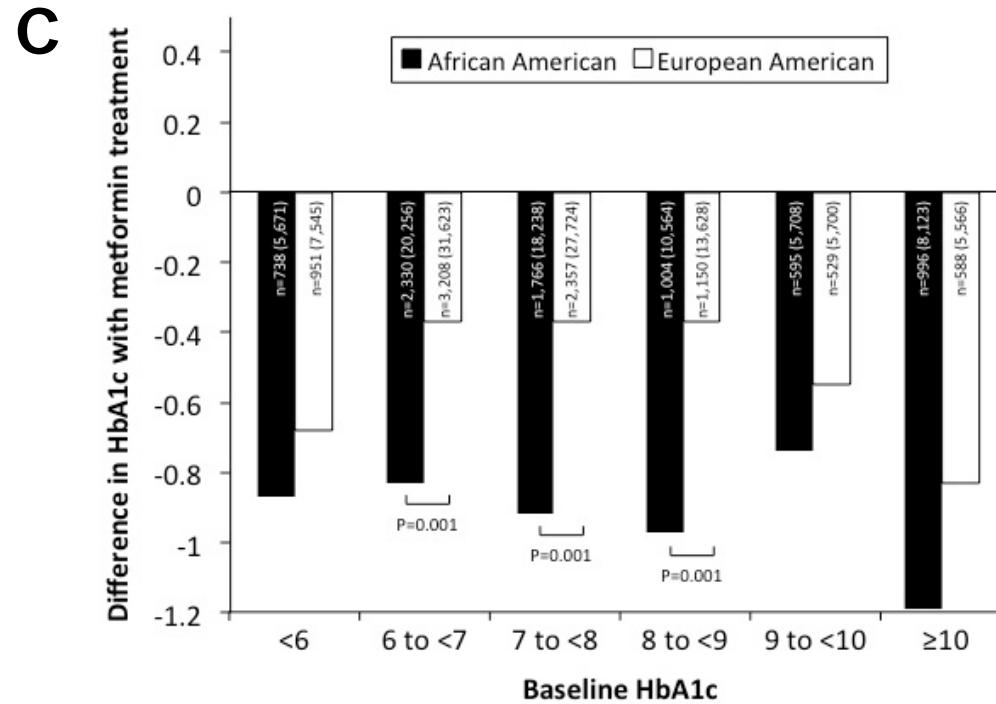
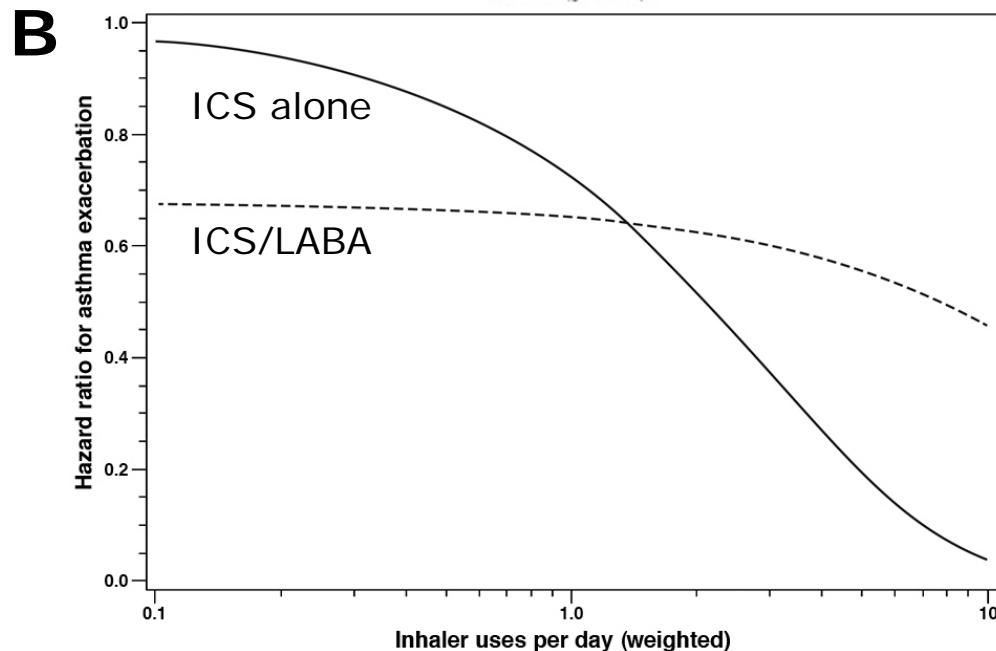
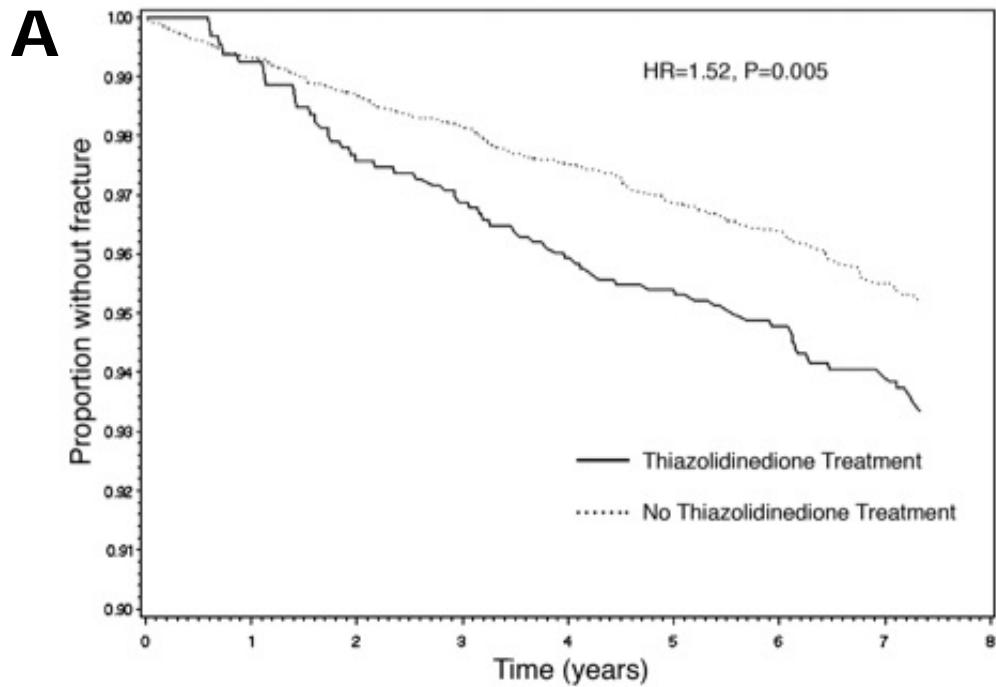
Study of Asthma Phenotypes and Pharmacogenomic Interactions by Race-ethnicity (SAPPHERE)

- 7,642 participants from the Detroit metropolitan area
 - 4,560 AAs
 - 2,349 EAs
 - 242 Latinos
- 6,170 with asthma and 1,472 controls
- Longitudinal follow-up on most patients via health plan participation



Differences in Asthma Controller Adherence among Covered Patients





- A. Heightened risk for non-traumatic fracture (HR 1.52) among diabetic women taking TZDs (solid line) vs. no TZD.
- B. Reduced risk for asthma exacerbations at therapeutic doses among individuals taking ICS/LABA combination (dashed line) vs. ICS alone (solid line)
- C. Greater glycated hemoglobin reduction with metformin among African American individuals vs. European American individuals.