Abratte C, et al. Folate intake and ethnicity influence choline status in young women. Presented at Experimental Biology, 2007.

Our previous work has demonstrated that choline and folate are inter-related and that ethnicity is a determinant of folate status. Specifically, African American women have lower folate nutriture relative to Caucasian and Mexican American women under conditions of controlled folate intake. This study sought to examine the influence of ethnicity and controlled folate intake on choline status. Forty-two women of Mexican American (n=14), African American (n=14), and Caucasian (n=14) descent consumed a folate restricted diet (135 mcg DFE/d) for 7 weeks, followed by 7 weeks of folate treatment with either 400 or 800 mcg DFE/d. Total choline intake remained unchanged throughout the study at approximately 350 mg/d. Plasma choline and its derivatives were measured by LC-MS/MS at weeks 0, 7, and 14. Plasma betaine was modified by ethnicity and level of folate treatment (week x ethnicity x folate interaction; P=0.0392), and tended to decline for all subjects during folate restriction (week effect; P=0.0783). Also, plasma betaine tended to increase less in African Americans receiving treatment with 800 mcg DFE/d relative to other ethnic groups (ethnicity x folate interaction; P=0.052). Phosphatidylcholine declined during folate restriction (week effect; P<0.001) and tended to increase in Mexican American and Caucasian women and decline in African American women during folate treatment (week x ethnicity interaction; P=0.056). These data suggest that the lower folate status observed in African American women relative to Caucasian and Mexican American women is also associated with lower choline status. In turn, diseases that are linked to folate nutriture may also be linked to choline status. *Supported by the NIH grant S06GM53933 and funds from the California Agricultural Research Initiative.*