**Poster Contributions**  
**Hall C**  
**Monday, March 31, 2014, 9:45 a.m.–10:30 a.m.**

Session Title: Statins, Diabetes and Arterial Physiology  
Abstract Category: 32. Vascular Medicine: Non Coronary Arterial Disease  
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**Background:** To evaluate the impacts of vitamin D and parathyroid hormone (PTH) on longitudinal changes in arterial stiffness.

**Methods:** Distensibility coefficient (DC) and Young’s elastic modulus (YEM) of the right common carotid artery were evaluated at baseline and after a mean (standard deviation) of 9.4 (0.5) years in 2,580 MESA participants. Cross-sectional and longitudinal associations were evaluated using multivariable linear regression and analysis of covariance.

**Results:** At baseline, participants were 60.1 (9.4) years old (54% female; 26% Black, 20% Hispanic, 14% Chinese). Mean annualized 25(OH)D was 65 pg/dL in 285 participants. In cross-sectional analyses, low 25(OH)D (0.4) and high PTH >65 pg/ml was associated with stiffer arteries after adjustment for CVD risk factors, other than systolic blood pressure (SBP) (DC: $\sigma=-2.4\times10^{-4} \text{mmHg}^{-1}$, $p=0.003$; YEM: $\sigma=166 \text{mmHg}$, $p=0.01$), but after adjustment for SBP, these associations no longer were statistically significant. Longitudinal arterial stiffening was associated with older age ($p<0.0001$), higher SBP ($p<0.008$), and use of antihypertensive medications ($p<0.006$), but not with 25(OH)D or PTH ($p>0.1$).

**Conclusion:** Carotid arterial stiffness is not associated with low 25(OH)D concentrations. Cross-sectional associations between arterial stiffness and high PTH may be mediated by SBP. After nearly a decade of follow-up, neither baseline PTH nor 25(OH)D concentrations were associated with progression of carotid arterial stiffness.