

# Socioeconomic differences in progression of carotid intima-media thickness in the Atherosclerosis Risk in Communities study

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**OBJECTIVE:** To examine the association of socioeconomic factors with progression of carotid intimal-medial thickness (IMT) in middle-aged adults. Cross-sectional associations of IMT with socioeconomic status (SES) have been demonstrated in middle-aged cohorts. It is unclear whether these factors are associated with progression of IMT. **METHODS AND RESULTS:** We examined IMT progression over 9 years among a middle-aged cohort of 12,085 black and white subjects free of cardiovascular disease recruited from 4 US sites participating in the Atherosclerosis Risk in Communities (ARIC) study. Baseline IMT was inversely related to SES among whites and blacks. Repeated measures regression models of IMT progression showed moderate inverse relationships of IMT progression with income in whites so that the difference in 5-year IMT progression rates between the highest and lowest categories was -11.5 microm (CI, -17.4 to -5.6). In contrast, among blacks, this gradient is reversed, with an 11.1 microm (CI, -0.1 to 22.3) difference in 5-year progression between highest and lowest income category. Generally, similar patterns were observed for other socioeconomic indicators. Patterns were not accounted for by baseline cardiovascular risk factors. **CONCLUSIONS:** SES is inversely related to IMT progression in middle-aged whites but positively related to IMT progression among middle-aged blacks. These differences do not appear to be attributable to selective attrition or higher IMT among blacks at baseline. *Arterioscler Thromb Vasc Biol* 2006; 26: 411-6

Mean baseline intimal-medial thickness (IMT) and IMT progression by socio-economic characteristics at baseline in whites and blacks, the ARIC study, 1987-1998



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	IMT at baseline (in mm)		Five-Year in IMT (in mm)	
	Whites	Blacks	Whites	Blacks
<b>Education</b>				
Less than high school	0.6333	0.6847	0.0485	0.0308
High school/vocational school	0.6216	0.6602	0.0471	0.0425
Incomplete college	0.6188	0.6719	0.0462	0.0356
College completed	0.6058	0.6580	0.0440	0.0398
<i>P value for trend</i>	<i>&lt;0.0001</i>	<i>0.0005</i>	<i>0.2</i>	<i>0.13</i>
<b>Neighborhood score**</b>				
First quartile (lowest)	0.6261	0.6784	0.0463	0.0277
Second quartile	0.6202	0.6793	0.0473	0.0306
Third quartile	0.6192	0.6640	0.0495	0.0448
Fourth quartile (highest)	0.6124	0.6602	0.0448	0.0444
<i>P value for trend</i>	<i>0.0007</i>	<i>0.004</i>	<i>0.8</i>	<i>0.0005</i>