# Migraine and retinal microvascular abnormalities: the Atherosclerosis Risk in Communities Study.

**Abstract**

**OBJECTIVE:** This study examined the association between vascular headaches and retinal microvascular disease.

**METHODS:** We investigated the cross-sectional association between headaches (migraine/other headaches with aura, migraine without aura, other headaches without aura, no headaches) and retinal microvascular signs (retinopathy, focal arteriolar narrowing, arteriovenous nicking; arteriolar and venular calibers) among middle-aged African American and white men and women from the third examination of the Atherosclerosis Risk in Communities Study (1993 through 1995).

**RESULTS:** After controlling for age, gender, race, study center, and cardiovascular risk factors, we determined that persons with headaches were more likely to have retinopathy than those without a history of headaches (odds ratio [OR] = 1.38, 95% CI = 0.96 to 1.99 for migraine/other headaches with aura; OR = 1.49, 95% CI = 1.05 to 2.12 for migraine without aura; and OR = 1.28, 95% CI = 0.99 to 1.65 for other headaches). Associations with migraine were stronger among the subset of participants without a history of diabetes or hypertension (OR = 1.79, 95% CI = 1.09 to 2.95 for migraine/other headaches with aura; and OR = 1.74, 95% CI = 1.11 to 2.71 for migraine without aura). Headaches were not associated with focal arteriolar narrowing or
arteriovenous nicking. Persons with headaches tended to have smaller mean arteriolar and venular calibers; however, these associations did not tend to persist among those without hypertension or diabetes.

**CONCLUSION:** Middle-aged persons with migraine and other headaches were more likely to have retinopathy signs, supporting the hypothesis that neurovascular dysfunction may underlie vascular headaches.

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