
**Association of endothelial function and cardiovascular disease status in an elderly cohort:
The Cardiovascular Health Study**

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Introduction: Endothelial function measured by brachial flow-mediated dilation (FMD) has been associated with cardiovascular (CVD) risk and CVD events. Subclinical CVD is prevalent in older adults and have been associated with high CHD event rate (Kuller et al). However the association between FMD and subclinical CVD has been less well characterized. We assessed the association of brachial FMD and the presence or absence of subclinical and clinical CVD in a population based cohort of older adults.

Methods And Design: Brachial FMD was measured at year ten in 2972 adults aged 72-98 years in the cardiovascular health study(CHS), a population based cohort of adults >65years at baseline recruited from four clinic sites in the USA. ANCOVA was used to examine the association between brachial FMD and CVD status adjusting for age, race, gender, cholesterol, diabetes, hypertension, ACE inhibitor use, HMG CoA reductase use and smoking. Clinical CVD in CHS is defined as h/o afib/pacemaker, peripheral vascular surgery, CHF, stroke, TIA, MI or CABG/PCI. Subclinical CVD in CHS is defined as low ankle brachial index (<0.9), carotid stenosis >25%, wall thickness of the internal or common carotid artery > 80th percentile, major ECG abnormality, echocardiographic abnormality (abnormal ejection fraction or wall motion abnormality), or positive response to the Rose questionnaire for angina pectoris or claudication.

Results: 82.7% were Caucasians and 60% females. Out of 2971 with complete data, 743 had h/o clinical CVD, 607 had subclinical CVD and 1441 had neither clinical CVD nor subclinical CVD (CVD free). Data presented in table

Conclusion: Older adults free of clinical or subclinical CVD have higher brachial FMD compared with either adults with clinical CVD or subclinical CVD.

Brachial FMD of older adults with subclinical CVD is similar to adults with clinical CVD. This observation is consistent with similar CV risk and CVD event rates in older adults with h/o clinical CVD and subclinical CVD.

Comparison of brachial FMD between subjects with clinical, subclinical and neither clinical nor subclinical CVD (free of CVD).

Variable	^a Clinical CVD(N=743) Mean ± se	^b Subclinical CVD(N=607) Mean ± se	^c Free of CVD(N=1441) Mean ± se	P value (a&b)	P value (a&c)	P value (b&c)
FMD (%)						
Unadjusted	2.80 ± 0.07	2.92 ± 0.08	3.22 ± 0.05	0.215	<0.0001	0.001
Adjusted*	2.93 ± 0.07	2.93 ± 0.07	3.13 ± 0.05	0.969	0.025	0.030

* Adjusted for age, gender, race/ethnicity, cholesterol, hypertension, diabetes mellitus, cigarette smoking, ACE inhibitor use and HMG CoA reductase use.