

# Abstract

Hypertension. 2004 Feb;43(2):182-5.

## Short telomeres are associated with increased carotid atherosclerosis in hypertensive subjects.

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**BACKGROUND:** Recent studies have shown that individuals with shorter telomeres present a higher prevalence of arterial lesions and higher risk of cardiovascular disease mortality. As a group, patients with high blood pressure are at an increased risk for cardiovascular diseases. However, some hypertensive patients are more prone than others to atherosclerotic lesions.

**OBJECTIVE:** The main objective of this study was to examine the relationship between telomere length, as expressed in white blood cells, and carotid artery atherosclerotic plaques in hypertensive males.

**METHODS:** Data from 163 treated hypertensive men who were volunteers for a free medical examination were analyzed. Extracranial carotid plaques were assessed with B-mode ultrasound. Telomere length was measured from DNA samples extracted from white blood cells.

**RESULTS:** The results of this study show that telomere length was shorter in hypertensive men with carotid artery plaques versus hypertensive men without plaques (8.17+/-0.07 kb versus 8.46+/-0.07 kb; P<0.01). Multivariate analysis showed that in addition to age, telomere length was a significant predictor of the presence of carotid artery plaques.

**CONCLUSIONS:** The findings from this study suggest that in the presence of chronic hypertension, which is a major risk factor for atherosclerotic lesions, shorter telomere length in white blood cells is associated with an increased predilection to carotid artery atherosclerosis.

PMID: 14732735

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