

# Abstract

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## Short telomeres in patients with vascular dementia: an indicator of low antioxidative capacity and a possible risk factor?

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**BACKGROUND:** Progressive cerebrovascular atherosclerosis and consecutive stroke are among the most common causes of dementia. However, specific risk factors for vascular dementia are still not known. Human telomeres shorten with each cell division in vitro and with donor age in vivo.

**RESULTS:** In human fibroblasts in vitro, the telomere shortening rate decreased with increasing antioxidative capacity. There was a good intra-individual correlation between the age-corrected telomere lengths in fibroblasts and peripheral blood mononuclear cells. In 186 individuals including 149 geriatric patients (age range, 55-98 yr), leukocyte telomeres in patients with probable or possible vascular dementia were significantly shorter than in three age-matched control groups, namely in cognitively competent patients suffering from cerebrovascular or cardiovascular disease alone, in patients with probable Alzheimer's dementia, and in apparently healthy control subjects. No correlation was found to polymorphisms in the apolipoprotein E and glutathione-S-transferase genes.

**CONCLUSION:** Telomere length may be an independent predictor for the risk of vascular dementia.

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