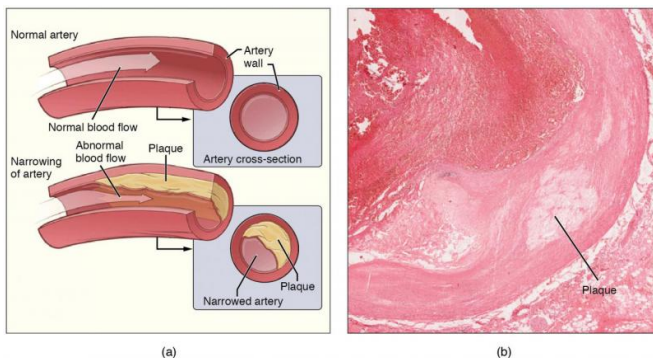


# Common oral infections in childhood may increase the risk of atherosclerosis in adulthood

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Atherosclerosis is a condition affecting the cardiovascular system. If atherosclerosis occurs in the coronary arteries (which supply the heart) the result may be angina pectoris, or in worse cases a heart attack. Credit: Wikipedia/CC BY 3.0

A Finnish 27-year follow-up study suggests that common oral infections in childhood, caries and periodontal diseases, are associated with an increased risk of atherosclerosis in adulthood.

The association between [childhood oral infections](#) and adulthood carotid atherosclerosis was observed in The Cardiovascular Risk in Young Finns Study, an ongoing prospective cohort.

"The observation is novel, since there are no earlier follow-up studies on childhood oral infections and the risk of cardiovascular diseases," says docent Pirkko Pussinen from the University of Helsinki.

More progressed oral infections and inflammations—endodontic lesions and periodontitis—are known to be associated with several [cardiovascular risk](#) factors and disease risk in adults. In adults periodontitis in particular has

been studied extensively, and currently it is considered an [independent risk factor](#) for atherosclerotic vascular diseases. The treatment of periodontitis is also known to decrease [cardiovascular risk factors](#).

The association between childhood oral infections and atherosclerosis was found in a study conducted at the University of Helsinki, Department of Oral and Maxillofacial Diseases, in collaboration with the national Cardiovascular Risk in Young Finns Study research group. The study was published in *JAMA Network Open*.

The study was initiated in 1980, when clinical oral examinations were conducted for 755 children aged 6, 9, and 12 years. The follow-up ended in 2007, when the carotid artery intima-media thickness was measured in an ultrasound examination of participants, who were then 33, 36, and 39 years old.

The follow-up was 27 years, and cardiovascular [risk factors](#) were measured at several time points. A cumulative exposure to the risk factor was calculated in both childhood and adulthood. The signs of oral infections and inflammation collected in the study included caries, fillings, bleeding on probing, and probing pocket depth.

## The more signs of oral infections, the higher risk for atherosclerosis

From all children, 68%, 87%, and 82% had bleeding, caries, and fillings, respectively. There were no differences between the boys and the girls. Slight periodontal pocketing was observed in 54% of the children, and it was more frequent in the boys than in the girls. Only 5% of the examined mouths were totally healthy, whereas 61% and 34% of the children had one to three signs and four

signs of oral infections, respectively.

"The number of signs associated significantly with the cumulative exposure to the cardiovascular risk factors in adulthood, but especially in childhood," says professor Markus Juonala from the University of Turku.

Both [caries](#) and periodontal diseases in childhood were significantly associated with carotid artery intima-media thickness in adulthood. Thickening of the carotid artery wall indicates the progression of atherosclerosis and an increased risk for myocardial or cerebral infarction.

The researchers emphasise, in conclusion: "Oral infections were an independent risk factor for subclinical [atherosclerosis](#); and their association with cardiovascular risk factors persevered through the entire follow-up. Prevention and treatment of oral infections is important already in childhood."

**More information:** Pussinen PJ et al. Juonala M. Association of Childhood Oral Infections with Cardiovascular Risk Factors and Subclinical Atherosclerosis in Adulthood. *JAMA Netw Open*. 2019;2(4): e192523. [DOI: 10.1001/jamanetworkopen.2019.2523](#)

Provided by University of Helsinki

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