

Hidden tooth infections may predispose people to heart disease

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According to a study carried out at the University of Helsinki, an infection of the root tip of a tooth increases the risk of coronary artery disease, even if the infection is symptomless.

Hidden dental root tip infections are very common: as many as one in four Finns suffers from at least one. Such infections are usually detected by chance from X-rays.

"Acute coronary syndrome is 2.7 times more common among patients with untreated teeth in need of root canal treatment than among patients without this issue," says researcher John Liljestrand.

The study was carried out at the Department of Oral and Maxillofacial Diseases of the University of Helsinki, in cooperation with the Heart and Lung Centre at Helsinki University Hospital. Its results were published in the latest issue of the *Journal of Dental Research*.

Dental root tip infection, or apical periodontitis, is a bodily defence reaction against microbial infection in the dental pulp. Caries is the most common cause of dental root tip [infection](#).

Today, information is increasingly available about the connection between [oral infections](#) and many common chronic diseases. For example, periodontitis, an inflammatory disease affecting the tissues that surround the teeth, causes low-grade inflammation and is regarded as an [independent risk factor](#) for [coronary artery disease](#) and diabetes. Dental root tip infections have been studied relatively little in this context, even though they appear to be connected with low-grade inflammation as well.

The study consisted of 508 Finnish patients with a mean age of 62 years who were experiencing heart symptoms at the time of the study. Their coronary arteries were examined by means of

angiography, and 36 per cent of them were found to be suffering from stable [coronary artery](#) disease, 33 per cent were undergoing [acute coronary syndrome](#), and 31 did not suffer from coronary artery disease to a significant degree. Their teeth were examined using panoramic tomography of the teeth and jaws, and as many as 58 per cent were found to be suffering from one or more inflammatory lesions.

The researchers also discovered that dental root tip infections were connected with a high level of serum antibodies related to common bacteria causing such infections. This shows that oral infections affect other parts of the body as well. The statistical analyses took account of age, gender, smoking, type 2 diabetes, body mass index, periodontitis and the number of teeth as confounding factors.

Cardiovascular diseases cause more than 30 per cent of deaths globally. They can be prevented by a healthy diet, weight control, exercise and not smoking. With regard to the health of the heart, measures should be taken to prevent or treat oral infections, as they are very common and often asymptomatic. Root canal treatment of an infected tooth may reduce the risk of heart disease, but more research is needed.

More information: J.M. Liljestrand et al. Association of Endodontic Lesions with Coronary Artery Disease, *Journal of Dental Research* (2016). [DOI: 10.1177/0022034516660509](https://doi.org/10.1177/0022034516660509)

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