

From... pub med-

## Dr Mario Clerici Study on Perio and heart disease Dec 12 \_ 2008

Prevention

Simple dental workup reverses atherosclerotic lesions

December 19, 2008 | [Lisa Nainggolan](#)

Summary: "By taking good care of your teeth and gums, ... you can also reduce your risk of developing cardiovascular disease... since periodontitis is highly prevalent but easily preventable and treatable... better oral health could greatly contribute to the prevention of atherosclerosis in the population... this is the first physical evidence that you can reverse a lesion that is already growing in the intima by doing something as simple as taking care of your gums."

[Download slides](#)

**Milan, Italy** - For the first time, researchers have shown that treating mild to moderate gum disease in otherwise-healthy volunteers improves endothelial dysfunction and significantly reduces carotid intima media thickness (IMT), as measured by echo Doppler [1].

The report, by **Dr Stefania Piconi** (Hospital Luigi Sacco, Milan, Italy) and colleagues, was published online December 12, 2008 in the *FASEB Journal*, the publication of the **Federation of American Societies for Experimental Biology**.

"The novelty of this study is that this is the first physical evidence that you can reverse a lesion that is already growing in the intima by doing something as simple as taking care of your gums,"

immunologist and senior author **Dr Mario Clerici** (University of Milan, Italy) told **heartwire**.

"To tell you the truth, we were really surprised by the result, but it turned up in subject after subject."

**To tell you the truth, we were really surprised by the result, but it turned up in subject after subject.**

Clerici stressed, however, that their sample size was small—just 35 individuals—so his team are now repeating the study with a couple of hundred people, this time spanning a wider spectrum of periodontal disease, from mild to quite severe. "We have also included patients with frank atherosclerosis," he noted, "because we want to see whether—if people have a really big, solid plaque—we can modify that as well. We want to confirm and extend our results. That's what we are doing now."

**Dr Maurizio Tonetti** (European Research Group on Periodontology, Berne, Switzerland), a periodontist with an interest in this field who was not involved with this research, told **heartwire**: "The data are consistent with current hypotheses that periodontitis is a cause of systemic inflammation and contributes to early atherosclerosis. [But] no conclusions can be drawn from this pilot study. Properly sized randomized clinical trials are needed to establish whether periodontitis can be considered a contributing cause of atherosclerosis."

Simple removal of tartar and cleaning is all that's required

Clerici explained to **heartwire** that many previous studies have established a correlation between dental health and the genesis of atherosclerosis; in particular, the bacteria *Porphyromonas gingivalis* has been associated with the development of atherosclerotic plaques.

Previous research has shown that by improving dental health, markers such as lymphocytes, monocytes, and C-reactive protein are reduced, he said, "but there has never been any demonstration of changes that can be picked up by echo Doppler."

He and his colleagues enrolled 35 otherwise-healthy individuals, with median age of 46 years, affected by mild to moderate periodontal disease who underwent treatment in their longitudinal study. This was "totally simple," said Clerici, "it involved removal of tartar and cleaning the gums, and that's it—no surgery and no antibiotics—just your basic dental hygiene."

**It involved . . . no surgery and no antibiotics—just your basic dental hygiene.**

Echo Doppler cardiography of the carotid artery was performed at baseline and at various time points after periodontal treatment, as was evaluation of inflammatory markers involved in the atherogenic process and surrogate markers of cardiovascular risk and carotid IMT.

Inflammation biomarkers were abnormally increased at baseline, and periodontal treatment resulted in a significant reduction in the total oral bacterial load, which was associated with a significant amelioration of inflammation biomarkers and adhesion and activation proteins, the researchers explain.

IMT reduced at various sites along carotid axis

Notably, IMT was significantly diminished after treatment. The reduction was observed as early as six months after treatment, persisted throughout the study period, and could be detected in multiple sites along the carotid axis.

**Changes in carotid IMT, by site, from baseline and after treatment**

<b>Site of carotid IMT measurement (median)</b>	<b>At baseline (mm)</b>	<b>6 mo after treatment (mm)</b>	<b>12 mo after treatment (mm)</b>	<b>p (12 mo vs baseline)</b>
<b>At carotid bifurcation</b>	0.55	0.40	0.45	0.01
<b>1 cm from carotid bifurcation</b>	0.49	0.38	0.37	<0.001
<b>2 cm from carotid bifurcation</b>	0.50	0.42	0.39	0.001

To download table as a slide, click on slide logo above

In conclusion, Clerici said that if their follow-up studies are successful, the take-home message will be: "By taking good care of your teeth and gums, you can not only prevent the development of atherosclerosis, you can also reduce your risk of developing cardiovascular disease."

Tonetti agrees: "Randomized trials are needed, since periodontitis is highly prevalent but easily preventable and treatable. If the relationship were indeed causal, better oral health could greatly contribute to the prevention of atherosclerosis in the population."

**Source**

1. Piconi S, Trabattoni D, Luraghi C et al. Treatment of periodontal disease results in improvements in endothelial dysfunction and reduction of the carotid intima-media thickness. *FASEB J* 2008; DOI: 10.1096/fj.08-119578. Available at <http://www.fasebj.org>.

