In Western society, toothbrushing was introduced as an oral care habit in the 18th century, and plastic toothbrushes with nylon bristles have been used since the middle of the last century. However, while there are numerous versions of manual toothbrushes on the market, there has been no clear evidence that any specific design is superior to another. Therefore, the choice of toothbrush is mainly a matter of individual preference. Despite daily use, in practice the efficacy of manual brushing is such that it does not appear to result in optimal oral hygiene.


The two best-known databases, PubMed and Cochrane, were searched for articles that addressed the efficacy of a manual toothbrush following a single brushing exercise. In order for an article to be included in the review, subjects in the study had to be healthy adults who were not wearing an orthodontic appliance or a removable prosthesis, and who had brushed without using ad-
Coronary heart disease patients with no teeth have nearly double risk of death

Researchers connect levels of tooth loss (due primarily to poor dental hygiene that leads to periodontal disease) with increasing rates of death and stroke.

By Dental Tribune U.S.

Coronary heart disease patients with no teeth have nearly double the risk of death as those with all of their teeth, according to research recently published in the European Journal of Preventive Cardiology. The study with more than 15,000 patients from 59 countries found that levels of tooth loss were linearly associated with increasing death rates.

“The relationship between dental health, particularly periodontal disease, and cardiovascular disease has received increasing attention over the past 20 years,” said lead author Dr. Olle Vedin, cardiologist at Uppsala University Hospital and Uppsala Clinical Research Center in Uppsala, Sweden. “However it has been insuf- ficiently investigated among patients with established coronary heart disease who are at especially high risk of adverse events and death and in need of intensive prevention measures.”

Analysis included 15,456 pa- tients from 39 countries on five continents

This was the first study to prospec- tively assess the relationship be- tween tooth loss and outcomes in patients with coronary heart disease (CHD). The results are from a sub- study of the STABILITY trial, which evaluated the effects of the P1-PLA2 inhibitor darapladib versus placebo in patients with CHD. The analysis included 15,456 patients from 39 countries on five continen- ts from the STABILITY trial. At the beginning of the study, patients completed a questionnaire about lifestyle factors (smoking, physical activity, etc), psychosocial factors and number of teeth in five catego- ries (26-32 considered all teeth re- maining 20-25, 15-19, 14-10 and none). Patients were followed for an aver- age of 57 years. Associations between tooth loss and outcomes were calcu- lated after adjusting for cardiovascular risk factors and socioeconomic status. The primary outcome was major cardiovascular events (a com- posite of cardiovascular death, myo- cardiac infarction and stroke).

Patients with a high level of tooth loss were older, smokers, female, less active and more likely to have dia- betes, higher blood pressure, higher body mass index and lower educa- tion.

During follow up there were 1,543 major cardiovascular events, 705 cardiovascular deaths, 1,120 deaths from any cause and 393 strokes. After adjusting for cardiovascu- lar risk factors and socioeconomic status, every increase in category of tooth loss was associated with a 6 percent increased risk of major cardiovascular events, 17 percent in- creased risk of cardiovascular death, 16 percent increased risk of all-cause death and 14 percent increased risk of stroke.

746 patients had a myocardial infarction during the study

Compared with those with all of their teeth, after adjusting for risk factors and socioeconomic status, group with no teeth had a 27 percent in- creased risk of major cardiovascular events, 85 percent increased risk of cardiovascular death, 83 percent in- creased risk of all-cause death and 67 percent increased risk of stroke.

“The risk increase was linear with the highest risk in those with no remain- ing teeth,” said Vedin. “For example, the risks of cardiovascular death and all-cause death were almost double to those with all teeth remaining. Heart disease and gum disease share many risk factors such as smoking and diabetes, but we adjusted for these in our analysis and found a seemingly independent relationship between the two conditions.”

“Many patients in the study had lost teeth so we are not talking about a few individuals here,” continued Ve- din. “Around 16 percent of patients had no teeth and roughly 40 percent were missing half of their teeth.”

During the study period, 746 patients had a myocardial infarction. There was a numerically increased risk of myocardial infarction for every in- crease in tooth loss, but this was not significant after adjustment for risk factors and socioeconomic status. Vedin said, “We found no association between number of teeth and risk of myocardial infarction. This was puzzling (because) we had robust as- sociations with other cardiovascular outcomes, including stroke.”

Tooth loss could identify patients who need more prevention efforts. Gum disease is one of the most com- mon causes of tooth loss. The inflam- mation from gum disease is thought to trigger the atherosclerotic process and may explain the associations observed in the study. Poor dental hygiene is one of the strongest risk factors for gum disease.

“This was an observational study so we cannot conclude that gum dis- ease directly causes adverse events in heart patients,” Vedin said. “But tooth loss could be an easy and in- expensive way to identify patients at higher risk who need more intensive prevention efforts. While we can’t advise patients to look after their teeth to lower their cardiovascular risk, the positive effects of brushing and flossing are well established. The potential for additional positive ef- fects on cardiovascular health would be a bonus.

About the European Journal of Preventive Cardiology

The European Journal of Preventive Cardiology describes itself as being the world’s leading preventive cardiology journal, playing a pivotal role in reducing the global burden of car- diovascular disease.

About the European Society of Cardiology

The European Society of Cardiology represents more than 90,000 car- dio professionals across Europe and worldwide. Its mission is to re- duce the burden of cardiovascular disease in Europe.

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(Dental Tribune U.S. 2016, February 10).

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New toothpaste removes four times more plaque than other toothpastes

By DTI

CHICAGO, USA: Microbial biofilms, or dental plaque, on teeth significantly contribute to the development of dental caries, gingivitis and periodontitis, and should therefore be managed through daily brushing and flossing. A recently published study has now shown that a new toothpaste, which contains teal disclosing agents to color and identify plaque build-up on teeth, helps users remove up to four times more plaque than a standard toothpaste does.

In the study, 35 healthy patients aged 18–64 who had all 12 anterior teeth were divided into two groups. At two visits to the University of Illinois at Chicago College of Dentistry over the course of seven to ten days, participants in the first group brushed their teeth with a control toothpaste only. Participants in the experimental group used the control toothpaste at one visit and the Plaque HD toothpaste, which contains an FDA-registered annatto seed extract dye, as well as FD&C Blue No. 1, giving the toothpaste a green color that adheres to intra-oral plaque, at the second visit.

After brushing, participants rinsed with fluorescein solution. The presence of plaque on tooth surfaces was visualized by plaque-bound fluorescein, photographed and digitally quantified to calculate the percentage of remaining plaque. The data analysis showed a statistically significant mean plaque reduction between the initial baseline appointment and the second appointment for the experimental group. While participants in the control group were only able to eliminate about 8 percent more plaque, participants in the experimental group removed over 50 percent more dental plaque compared with the first visit.

“This study demonstrates that brushing with a toothpaste with plaque-indicating dye, combined with proper use instructions, significantly increases plaque removal efficacy,” the researchers concluded.

According to the manufacturer of Plaque HD, the toothpaste incorporates Targetol Technology, which contains all-natural, plant-based disclosing agents, and colors any plaque. Currently Plaque HD is sold through dental and orthodontic offices across the U.S. and on Amazon. It is available in a professional version for $21.00 and a retail version for $14.95.


Study finds high urinary mercury levels in children with amalgam fillings

By DTI

DAEGU, South Korea: Although equivalent alternatives have become available over the past decade, dental amalgam remains in use as a restorative material for dental caries in children in many countries. The safety of dental amalgam, however, is still a controversial issue among experts, as it has been associated with developmental disorders and systemic conditions. A Korean study has recently provided evidence that dental amalgam exposure can affect systemic mercury concentration in children.

In order to assess chronic exposure to elemental mercury, researchers at Kyungpook National University in South Korea evaluated mercury concentrations in urine samples from more than 1,000 children aged 8–15, who also underwent oral examination.

They found that children with more than one amalgam-filled tooth surface exhibited significantly higher urinary mercury concentrations than those with none. The researchers thus concluded that dental amalgam exposure could affect systemic mercury concentration in children.

A number of studies have indicated that mercury exposure could be involved in problems in early brain development. Mercury has also been associated with adverse health effects relating to the digestive and immune systems, as well as the lungs, kidneys, skin and eyes. Awareness and recognition of these health and environmental implications have led to a ban on the use of dental amalgam in some high-income countries. However, dental amalgam restorations are still taught in the dental curriculum in South-East Asia. In Myanmar, for example, about 30 per cent of fillings placed are of amalgam.

The study, titled “Dental amalgam exposure can elevate urinary mercury concentrations in children,” was published online on January 10 in the International Journal of Dentistry.
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Scanning electron microscopy (SEM) allows for highly magnified viewing of the dentine surface. The images demonstrate how the open dentine tubules are plugged and sealed after application of Colgate® Sensitive Pro-Relief™ toothpaste.

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References:
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