

# Removing dental calculus using a pill.

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## Introduction.

Plaque is a necessity for formation of dental calculus and for development of caries. However, all plaques do not develop calculus, probably due to some protective mechanism in saliva and/or the periodontal exsudate. There is not sufficient knowledge on the character of such a protective mechanism. The composition of diet might influence it.

The purpose of this study was to investigate if a daily swallowing of a pill (ProDen PlaqueOff®) had any influence on human dental calculus and plaque.

## Material and methods.

The pill consisted of herbs that have been commercially available all over Europe for more than 30 years. It contains a large number of nutrients and may be regarded as a dietary supplement.

The material consisted of 30 adult patients who used to be calculus formers and who had oral calculus present at baseline. They got free samples of the pill and agreed to consume two pills a day during two months.

One dentist recorded the extension of supragingival calculus and plaque on teeth 26, 31 and 11 (Greene and Wermillion index) at baseline and after two months. The results were recorded as plaque index (PLA) and calculus index (CAI).

**Statistical method:** The differences between values recorded at baseline and two months later were statistically evaluated by Analysis of variance.

## Results.

The tables and figures 1-2 demonstrate that the extension of both plaque and calculus was strongly and significantly reduced on all examined teeth.

As shown in figure 3 the effect of the pill on calculus differed between individuals. In 16 persons the calculus disappeared or the extension of it was reduced. In 12 persons, only little reduction was recorded but the calculus was extremely soft and easy to remove, even by the patient. No effect was recorded in two cases. The differing effect is most likely due to different levels of mineralization.

At the two month examination some of the patients who still had calculus accepted to increase from two to four pills a day for another eight weeks. This experiment is still running but it is evident that they are losing calculus more rapidly now. Thus it seems that the effect is dose dependent.

In other cases the calculus was removed by the dentist two months after baseline and the patients continued to eat the pill. Formation of new calculus was either nil or considerably slower compared to previous years.

The pill had a pronounced effect on plaque formation (figure 2). Consumption during two months reduced plaque by 71- 87 per cent. According to table 2 the difference before and after consumption was highly significant on all three examined teeth. Most likely that effect can be achieved already after a few days consumption of the pill.

**Table 1.** Extension of dental calculus on teeth no 26, 31 and 11 in 30 persons before and after two months consumption of Plaque-Off®

<u>Tooth no 26</u>	CAI	SD		
At baseline	0,96	0,527		
After two months	0,57	0,503	Diff 41%	P< 0,0021

<u>Tooth no 31</u>				
At baseline	1,13	0,571		
After two months	0,76	0,504	Diff 30 %	P< 0,011

<u>Tooth no 11</u>				
At baseline	0,41	0,568		
After two months	0,14	0,350	Diff 68 %	P< 0,009

**Table 2.** Extension of plaque on teeth no 26, 31 and 11 in 30 persons before and after two months consumption of Plaque-Off.

<u>Tooth no 26</u>	PLI	SD		
At baseline	0,85	0,456		
After two months	0,11	0,362	Diff 87 %	P< 0,0001

<u>Tooth no 31</u>				
At baseline	0,70	0,535		
After two months	0,10	0,305	Diff 86%	P< 0,0001

<u>Tooth no 11</u>				
At baseline	0,48	0,580		
After two months	0,15	0,362	Diff 71 %	P< 0,001

## Discussion.

This study indicates that consumption of this herb may eventually eliminate existing plaque and calculus.

It is emphasized that the data accounted for in table 3 to some extent are based on the dentists subjective judgement.

E.g no criterion for the hardness of the calculus or the force that was necessary for its removal had been decided before the start of the study. However, the observation that the calculus was easy to remove and/or soft may be important for the future understanding of the involved mechanisms. Such criteria should be included in future studies.

One patient told that his calculus could be removed with a wooden tooth pick already after one weeks consumption of two pills a day. In other cases two months were not enough **but when the dose was increased from two to four pills the calculus started to diminish even in those.**

Thus, some persons may need a higher dose and a longer treatment time than others. Our recommendation is to start by eating two pills daily during two weeks. If no effect is observed the dose should be increased to four pills to be eaten until the calculus is gone.

The recorded reduction of existing calculus is consistent with the observed plaque reduction and the observation that new calculus formation was unusual during the consumption period.

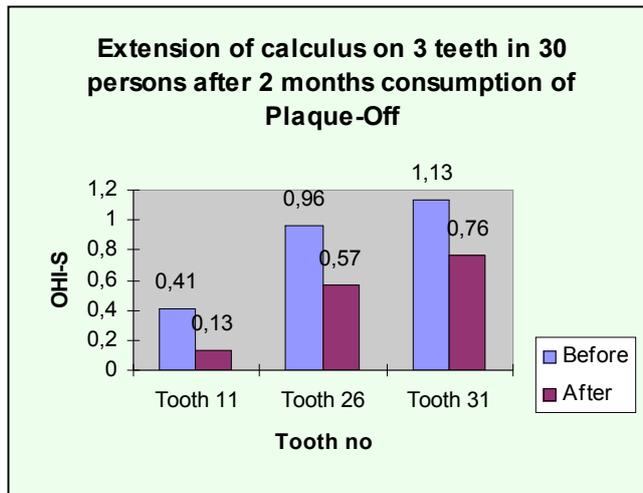
Since the pill seems to reduce plaque to quite an extent it should protect people from caries in the long run as well.

Future studies will reveal if that assumption comes true.

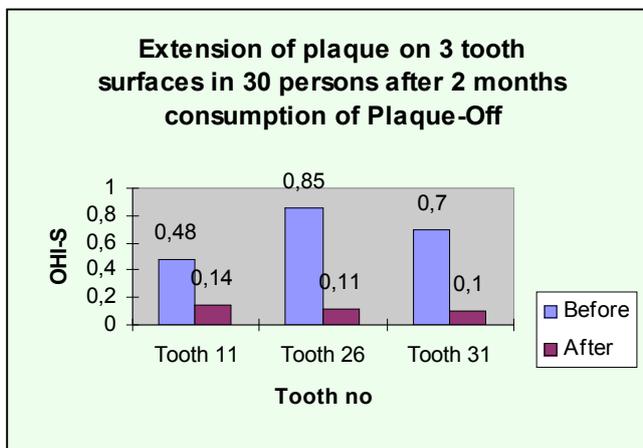
### Conclusion.

Daily consumption of the Plaque-Off pill may reduce the extension of plaque and of calculus in adults having calculus, but also prevent formation of new plaque and calculus.

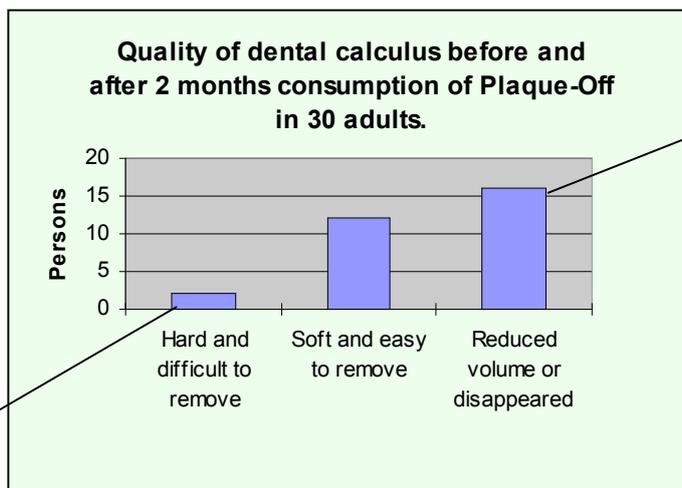
**Fig 1**



**Fig 2**



**Fig. 3**



In more than 50% the tartar disappeared completely

Even in these person's tartar disappeared when the dosage was increased