



# Each interdental space contains over ten billion bacteria—but removing them is easier than ever

Written by K. Mussche

**“Even the biofilm of young, healthy adults contains pathogens that can initiate periodontitis,” Speaking is Prof. Denis Bourgeois, researcher and lecturer at the University of Lyon’s dental faculty, and a pioneer in research on interdental biofilm management. He and his team were the first to provide an overview of 19 major periodontal pathogens in the interdental biofilm of young adults without periodontitis. The study’s implications are clear: daily, calibrated interdental brushing is necessary in order to prevent periodontitis and systemic disease, regardless of age or oral health status.**

## A breeding ground for bacteria

Tucked away and out of reach from the bristles of an ordinary toothbrush, the interdental space is the perfect breeding ground for pathogenic bacteria. Moreover, its anatomy does not allow the salivary self-cleaning mechanism found in the rest of the mouth. Prof. Bourgeois was the first to conduct a study that sheds light on the bacterial make-up of interdental biofilm and its implications for periodontal and systemic health. Using real-time polymerase chain reaction, he quantified and qualified the interdental bacteria of 25 healthy adolescents aged 18 to 35 without gingivitis and periodontitis.

In the study, a whopping ten billion bacteria were collected on average from each interdental site. Of the 19 major periodontal pathogens, bacteria of red and yellow Socransky complexes constituted the majority. Red complexes such as *Porphyromonas gingivalis*, *Tannerella forsythia* and *Treponema denticola* are recognised as the most important pathogens in adult periodontal disease, and they constituted 8.08% of the bacteria analysed. *P. gingivalis* was detected in 19% of the healthy subjects and represented 0.02% of the interdental biofilm. *P. gingivalis* alone can induce alveolar bone loss, and in combination with *T. denticola* and *T. forsythia*, periodontal disease is likely to develop. In other words, even the interdental biofilm of healthy individuals is composed of bacteria that could initiate periodontitis.

## Daily interdental brushing is a must

“We have established that the interdental space is a main source of bacterial contamination,” explained Prof. Bourgeois. “In another study, also with young adolescents, we were taken aback by the high number of adolescents (69.9%) that had over 30% of bleeding interdental spaces upon interdental brushing. This shows that inflammation is over-represented, and that daily interdental cleaning is a must.”

Presently, interdental brushes represent the primary and most effective method available for interdental cleaning. They disrupt biofilm the most efficiently, and owing to their ease of use, they are particularly liked by patients. “The interdental spaces of young adolescents usually require very fine brushes,” said Prof. Bourgeois “The Curaprox CPS prime brushes used in the study are able to penetrate 94% of interdental spaces. This allows young people too to clean interdentally easily and effectively.”



The Curaprox CPS prime brushes

## Calibration is key

The most effective cleaning method we know of today is the use of calibrated interdental brushes. This means using brushes with the largest possible diameter that

can penetrate and fill an interdental space completely without causing discomfort or trauma. The Curaprox interdental access probe is a quick and easy tool to determine the correct interdental brush size for each space. Dental professionals can simply insert it into each interdental space horizontally or at a slight angle, and the colour showing closest to the teeth’s buccal surface indicates the corresponding Curaprox interdental brush.



The Curaprox interdental access probe

“The use of interdental brushes still tends to be linked to treatment for periodontal disease, and they are often exclusively recommended to patients with large interdental spaces, whereas floss is recommended for narrow spaces. However, dental floss is no longer preferred, as its use is not supported by conclusive scientific evidence. For interdental brushes, we have that evidence\*. Given the association of those interdental pathogens with periodontal and systemic disease, the habit of daily interdental brushing may be the easiest way to maintain a healthy mouth and body.”\*<https://pubmed.ncbi.nlm.nih.gov/27681016/>

The study can be accessed at

<https://bit.ly/3c7bkpC>  
or scan the QR code:

