

Keep your teeth for life, but how?



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Drs Marcel Donnet and Neha Dixit discuss the importance of teeth cleaning and how the innovative AIRFLOW® PLUS powder can tackle biofilm and safeguard oral health

Hippocrates (around 300 B.C.) attributed greater importance to prevention than to treatment: ‘It is nice to be considerate for the ill, owing to their health. It is nicer to be considerate for the healthy, owing to their non-illness.’ Researchers have long discussed the importance of teeth cleaning and the link between a healthy mouth and providing a good foundation for a healthy body. Luckily, the association between oral and overall health is becoming increasingly well-known.

Oral health has been the driver of innovation since the foundation of EMS (Electro Medical Systems, Switzerland) in 1981. The company focuses on facilitating gentler and more effective professional tooth cleaning. If oral prophylaxis is to be successful over the long term, people must practice good oral hygiene at home with regular professional prophylaxis at the dental practice.

Together with researchers and clinicians, EMS has developed Guided Biofilm Therapy (GBT) to completely remove plaque (also known as biofilm) and calculus. In eight steps, patients are diagnosed, motivated by disclosing and treated to a wellness-like experience.

Receiving follow-up instructions for successful oral hygiene care at home and providing effective and gentle professional teeth cleaning in the practice, GBT delivers the best results to keep teeth healthy for life.

The challenges associated with teeth cleaning

Do you know the size of a bacterium?

It is around two microns, which is very small. The size of a toothbrush filament is about 100 microns. So, in terms of a bacterium, one toothbrush filament is like a giant – 50 times bigger.

This size difference could be compared to cleaning dust with a bundle of broom handles, instead of using a single broom’s tufts. It then becomes clear that regular tooth brushing is never going to be able to tackle bacteria completely, as half of biofilm is hidden in areas that are difficult to reach for standard toothbrushes.

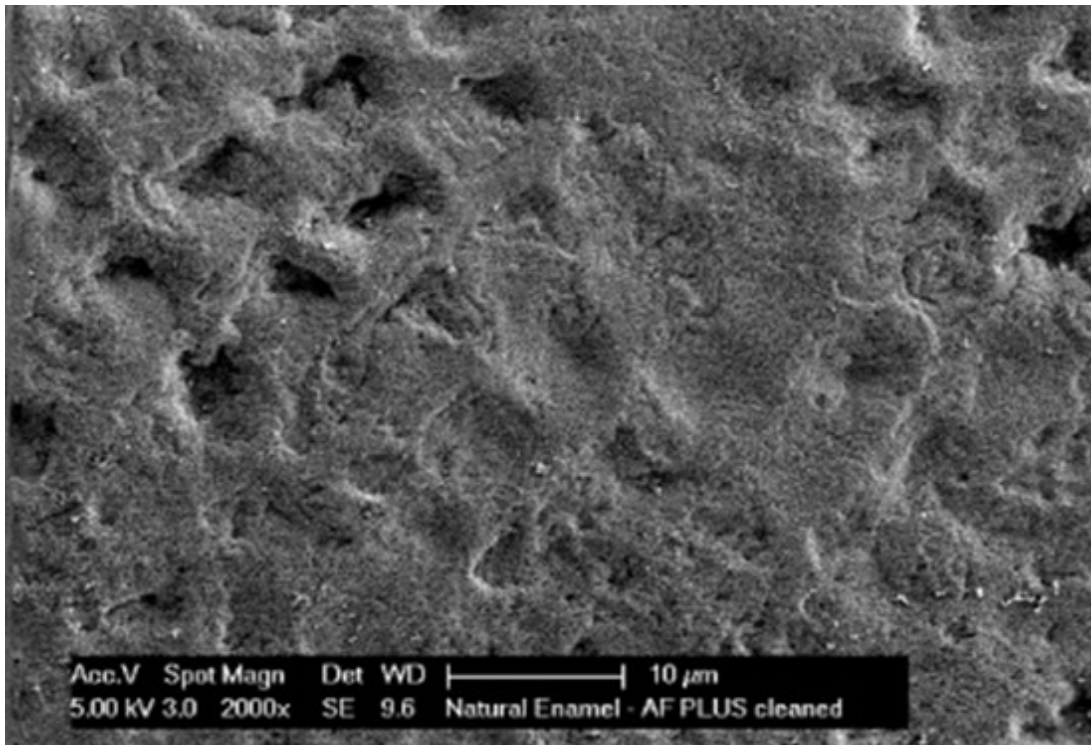


Fig 1a and 1b: Microscopic view of the natural roughness of enamel on the bacteria level



Fig 2: Microscopic view of a tooth and a toothbrush

Over time, if left untreated, these bacteria could result in the development of caries and/or gum disease. As an example, let's consider the natural roughness of enamel.

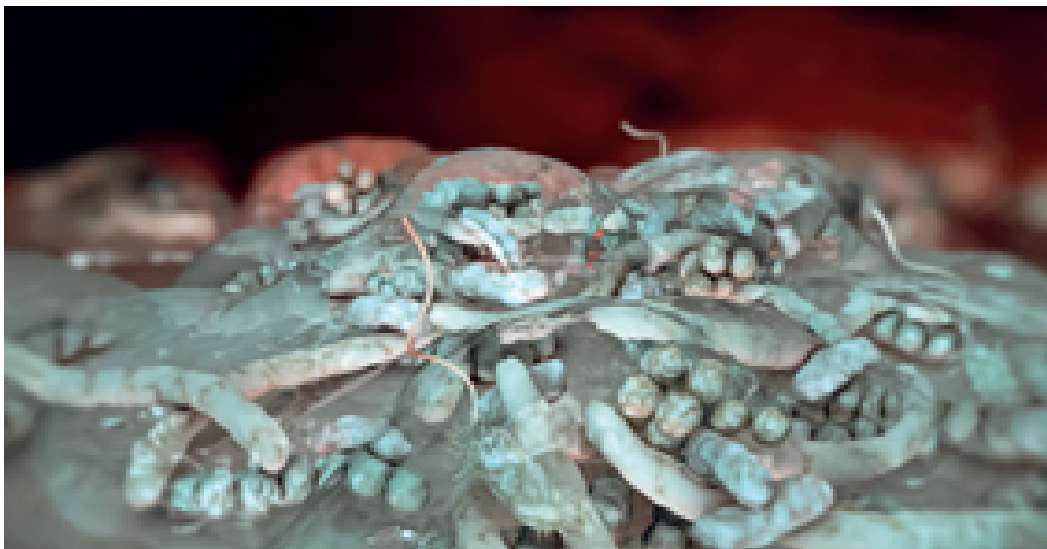


Fig 3: Harmful biofilm bacteria magnified 2.000x

Fortunately, due to the nature of bacterial growth, harm is not instantaneous. A good brushing technique plus adjunctive cleaning, with interdental brushes, for example, delays the impact of harmful bacteria but, unfortunately, does not stop it.

Therefore, from time to time, professional prophylaxis is needed to rectify the situation, facilitating a healthier oral environment.

How can dentists remove biofilm?

One method to remove biofilm could be to use small particulate material, like powder, projected against it. AIRFLOW technology combines sweet-tasting AIRFLOW® PLUS powder, warm water, and air spray. This combination supports patient comfort and the greatest efficiency while removing the disclosed biofilm, stains and soft calculus gently and completely – even in hard-to-reach areas.

Today, one of the most advanced materials in dentistry is the erythritol found in AIRFLOW PLUS powder, which has a mean size of about 14 microns. This is in the same order of magnitude of the bacteria to be removed and consequently has significant power to remove the bacteria down to the natural enamel roughness structure to aid teeth cleaning.

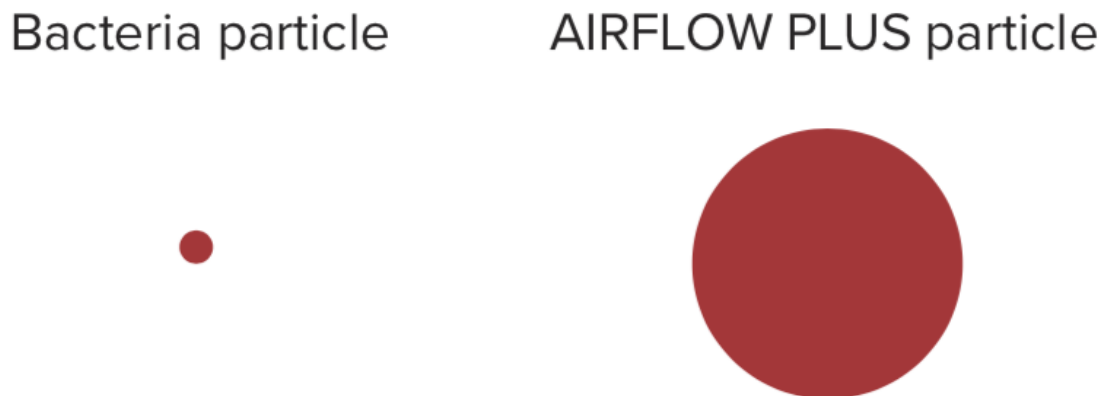


Fig 4: Size ratio comparing the AIRFLOW PLUS mean particle size and mean bacteria size. There is no opportunity for the bacteria to escape the impact of the powder

Using GBT, AIRFLOW PLUS powder can remove all bacteria, even those hidden in uneven or difficult-to-access areas. Thanks to the disclosing step within the [GUIDED BIOFILM THERAPY protocol](#), bacteria has nowhere to hide; all have been made visible, and the powder can remove all attached bacteria. This is because the impact of those particles disrupts all bacteria and their attachment to the surface.

Can powder have any negative impacts or damage the tooth surface or structure?

Choosing the right powder for teeth cleaning is very important to achieve efficient biofilm removal and preserve the tooth's surface. The erythritol in the AIRFLOW PLUS powder is specifically designed to remove the biofilm carefully without affecting the natural tooth surface(1); minimally invasive. Furthermore, the powder tastes pleasant, enhancing patient comfort during treatment.

In addition, one of the best hiding places for bacteria is the junction between the gums and the teeth, where toothbrush access is challenging. Therefore, it is important that thorough professional prophylaxis treatment carefully cleans this vulnerable area. The issue here is that the gums are often very sensitive, which can cause pain to the patient during treatment.

However, using a very fine powder of about 14 microns, like the AIRFLOW PLUS prophylaxis powder, is the best choice to overcome this issue. The small size of the particle means it is unable to initiate any pain reactions within the gum, but, at the same time, when repeated, the micro impulses are highly efficient in removing all biofilm and deposits on the tooth surface.

The struggle with oral bacteria never ends

This means that a very fine prophylaxis powder like AIRFLOW PLUS becomes the powder of choice for teeth cleaning, from a patient's perspective, for superior compliance and efficiency. Bearing in mind that the struggle with oral bacteria never ends, it is essential to reset the bacterial equilibrium within the oral cavity during professional prophylaxis, to maintain a healthy situation over the long term.

GBT enables the clinician to perform thorough and efficient biofilm removal, minimally invasive and maximally preventive, using a powder perfectly suited to the job. From the patient's point of view, this will provide the most comfortable, pain-free treatment option for effective teeth cleaning.

Guided Biofilm Therapy is truly the best choice today to keep teeth for life. Find your next GBT certified practice <https://gbt-dental.com/oag-switchtoGBT>

References

1. Camboni S, Donnet M. Tooth Surface Comparison after Air Polishing and Rubber Cup: A Scanning Electron Microscopy Study. J Clin Dent. 2016 Mar; 27(1):13-18. PMID: 28390211

Further reading

1. <https://www.openaccessgovernment.org/article/keeping-teeth-life-disclosing-agent-biofilm/156815/>
2. <https://www.openaccessgovernment.org/article/keep-your-teeth-for-life-wellness-experience-teeth-cleaning/149515/>
3. <https://www.openaccessgovernment.org/article/keeping-your-teeth-for-life/145236/>

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