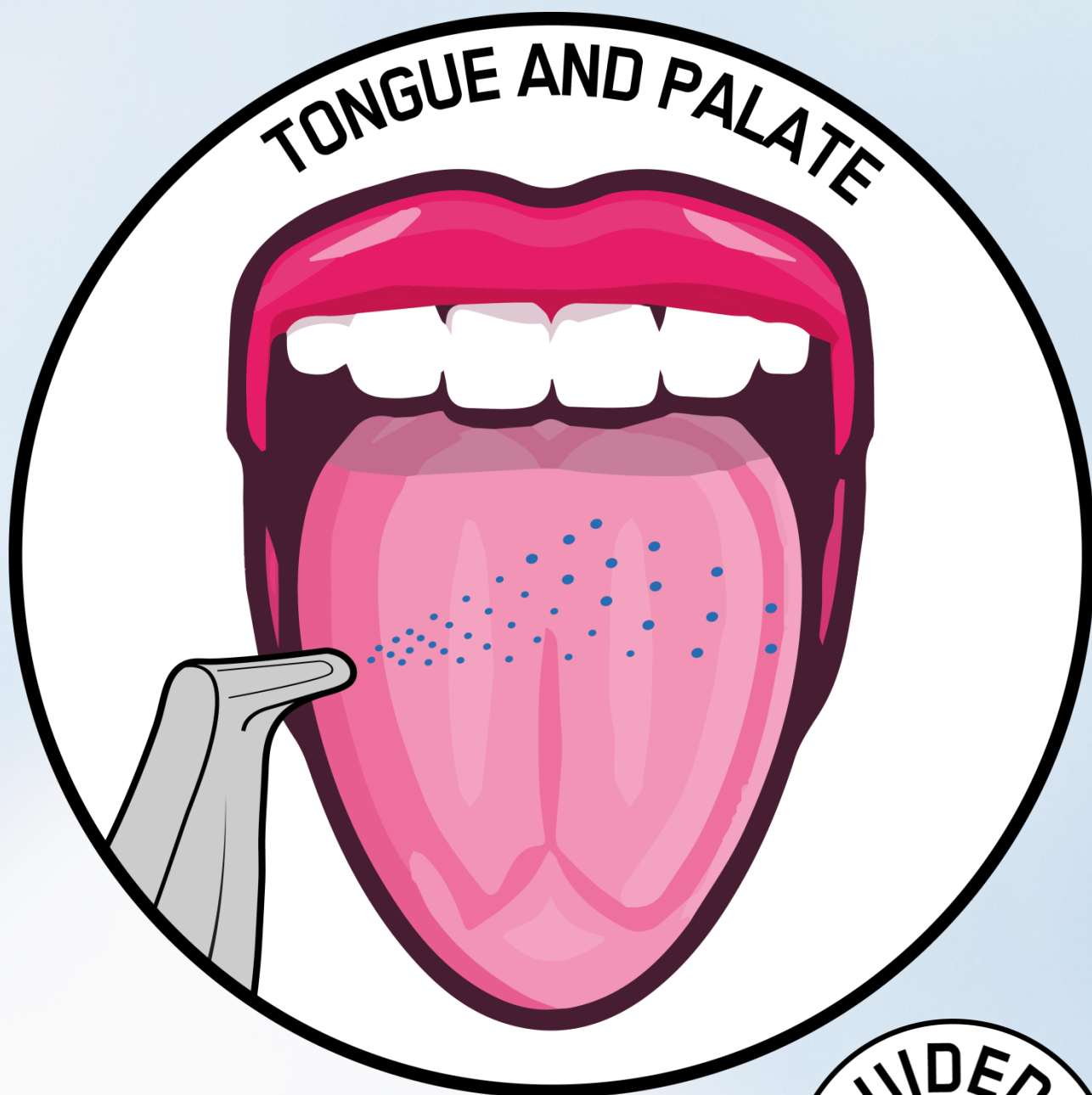


AIRFLOW[®]



SCIENTIFIC EVIDENCE



Reduces bleeding on soft tissues
Cleans tongue and palate



EMS⁺

AIRFLOW®

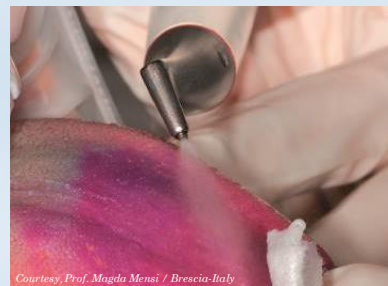
CLEANS TONGUE AND PALATE



“P.GINGIVALIS” THE BACTERIA CAUSING BLEEDING

Oral Hygiene not only encompasses teeth, restoration and implants but also tongue palate and mucosa.

- ▶ **For the patient:** Cleaning soft tissues helps treating halitosis and reducing bacteria load (mainly P. gingivalis) causing bleeding gum.
- ▶ **For the clinician:** It decreases aerosol contaminations and helps to work in a clean environment.



NEW EVIDENCE

The “full mouth” application of AIRFLOW® on tongue and palate has been already proven to be safe¹ since 2012, but so far, cleaning effectiveness had not been specifically demonstrated on tongue, palate and mucosa.

Belinda Reinhardt (Düsseldorf) and a group of scientists including Prof. Thomas Flemmig (Hong-Kong) have demonstrated² the following:

Prophylaxis procedure with “full mouth” AIRFLOW® applied on tongue, palate, gingival and buccal mucosa, significantly reduces P.gingivalis load.

Eon-Jong Park and al from Pusan University of Korea have demonstrated³ the following:

PERIOFLOW® with PLUS powder has a significant higher antimicrobial effect with regards to P.gingivalis, than conventional SRP.

Clinical Oral Investigations
<https://doi.org/10.1186/s12902-019-00251-3>
ORIGINAL ARTICLE

Microbiological dynamics of red complex bacteria following full-mouth air polishing in periodontally healthy subjects—a randomized clinical pilot study

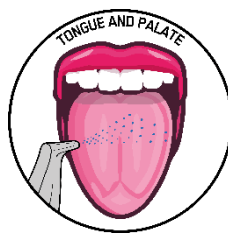
Belinda Reinhardt¹, Astrid Klocke¹, Sarah H. Neering², Sabine Selbach³, Ulrike Peters⁴, Thomas F. Flemmig⁵, Thomas Beikler⁶

Received: 17 June 2018 / Accepted: 16 January 2019
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Abstract
Objective: Suppression of periodontal pathogens in the oral cavity of periodontally healthy individuals may lower the risk for periodontal and peri-implant diseases. Therefore, the present study aimed to analyze the effect of supragingival debridement (SD) with adjunctive full-mouth glycine powder air polishing (FM-GAP) on the prevalence of periodontal pathogens in periodontally healthy individuals.
Materials and Methods: Eighty-seven systemically and periodontally healthy control carriers of red complex bacteria, i.e., *Porphyromonas gingivalis*, *Streptococcus dysgaliae*, and *Aggregatibacter actinomycetemcomitans*, *Prevotella intermedia*, and *Ellisella corrodens* were enrolled into the study and randomly assigned to receive SD with adjunctive FM-GAP (n = 42) or SD alone control (n = 45). In the first observation period, microbiological samples were obtained prior to, and 1, 3, and 9 days following intervention. If one of these periodontal pathogens could not be identified, additional microbial sampling was performed after 1 and 12 weeks.
Results: The prevalence of red complex bacteria was significantly reduced in the test compared to the control group following treatment (p < 0.001) and did not significantly differ between the test and control groups (p < 0.05) at 1, 3, and 9 days. Significant reduction in the mean prevalence in both groups was 38.1% (range 0–100%) and 31.0% (range 0–100%) reduction in the mean prevalence in both groups after 12 weeks (range 0–100%) and 22.0% (range 0–100%) reduction in the mean prevalence in both groups after 12 weeks.
Conclusion: In periodontally healthy carriers of periodontal pathogens, FM-GAP as an adjunct to SD transiently enhances the suppression of red complex bacteria.
Classification: Whether the enhanced suppression of red complex bacteria by adjunctive FM-GAP prevents the development of periodontitis in periodontally healthy carriers requires further investigations.

Keywords: Red complex bacteria · Non-surgical periodontal therapy · Full-mouth glycine powder air polishing · Periodontal health · Protonium

Introduction
 Periodontitis is a chronic inflammatory disease of the periodontium that results in the destruction of periodontal tissues and, if left untreated, in tooth loss. The multifactorial disease is typically associated with the presence of periodontal pathogens in the oral cavity. The strongest association with these species together with genetic and environmental risk factors [1, 2] are considered to be major risk factors for the development and progression of periodontal diseases [3–5]. Compared to periodontal health, the structural rearrangement in periodontal disease is characterized by a more unstable microbial community that further contributes to the complexity of



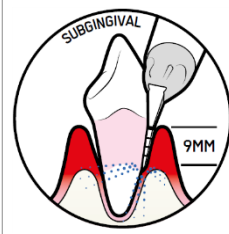
Journal Pre-proof
<https://doi.org/10.1007/s00785-019-01401-1>
Research Article

Clinical and microbiological effects of the supplementary use of an erythritol powder air-polishing device in non-surgical periodontal therapy: a randomized clinical trial

Eon-Jong Park^{1,2}, Eun-Young Kwon³, Hyun-Joo Kim⁴, Ju-Yeon Lee^{5,6}, Joaeh Choi^{7,8}, Ji-Young Joo^{9,10}

Abstract
Objective: This study was undertaken to evaluate the clinical and microbiological effects of an erythritol powder air-polishing device (RPD) as a supplement to scaling and root planing (SRP) therapy in patients with moderate periodontitis.
Methods: Clinical and microbiological evaluations were performed at 21 sites treated with SRP 3 months and 21 sites treated with RPD+SRP. All examinations were performed before treatment, 1 month after treatment, and 3 months after treatment.
Results: There were no significant clinical differences between the test group and the control group. Microbiological analysis revealed that the relative expression level of *Porphyromonas gingivalis* was significantly lower in the test group than in the control group at 1 month compared to baseline. In contrast, the results at 3 months after treatment were similar to those at 1 month after treatment.
Conclusions: In this study, both SRP and RPD+SRP were clinically and microbiologically effective as non-surgical periodontal treatments. In particular, the RPD+SRP group showed an additional effect on *P.gingivalis*, a red-complex bacterium associated with the onset of chronic periodontitis, in a short-term period. Periodic periodontal therapy, at intervals of less than every 3 months, is important for maintaining the microbiological effects of the treatment.
Keywords: Clinical trials · Dental scaling · Erythritol · Periodontitis · Polyethylene glycol · Root planing

INTRODUCTION
 Chronic periodontitis is an infectious disease that is caused by bacteria, the treatment of periodontitis requires removal of the bacterial biofilm during the initial stages of treatment, as well as during periodontal maintenance care [1, 2]. Traditionally, removal of the biofilm is performed by mechanical methods, using hand tools and ultrasonic instruments



- 1 RANDOMIZED CONTROLLED TRIAL ASSESSING EFFICACY AND SAFETY OF GLYCINE POWDER AIR POLISHING IN MODERATE-TO-DEEP PERIODONTAL POCKETS**
Journal of Periodontology 2012 Apr;83(4):444-52 | Flemmig TF, Arushanov D, Daubert D, Rothen M, Mueller G, Leroux BG.
 The results indicate that supragingivally applied glycine powder air polishing is more efficacious in removing subgingival biofilm in moderate-to-deep periodontal pockets than scaling and root planning. Furthermore, full-mouth glycine powder air polishing may result in a beneficial shift of the oral microbiota and appears to be well tolerated. [Link](#)
- 2 MICROBIOLOGICAL DYNAMICS OF RED COMPLEX BACTERIA FOLLOWING FULL-MOUTH AIR POLISHING IN PERIODONTALLY HEALTHY SUBJECTS—A RANDOMIZED CLINICAL PILOT STUDY**
Clinical Oral Investigations 2019 / Reinhardt B, Klocke A, Neering SH, Selbach S, Peters U, Flemmig TF, Beikler T. [Link](#)
- 3 CLINICAL AND MICROBIOLOGICAL EFFECTS OF THE SUPPLEMENTARY USE OF AN ERYTHRITOL POWDER AIR-POLISHING DEVICE IN NON-SURGICAL PERIODONTAL THERAPY: A RANDOMIZED CLINICAL TRIAL**
Clinical Oral J Periodontal Implant Sci. December 2018 / Park EJ, Kwon EY, Kim HJ, Lee JY, Choi J, Joo JY. [Link](#)

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