

ORTODONCIE S GUIDED BIOFILM THERAPY



KLINICKÉ DŮKAZY

POTŘEBA PREVENCE

Ortodontické aparáty mohou přispívat k vzniku zubních kazů kvůli přítomnosti biofilmu^{1, 2, 3, 4, 5, 6}. Profesionální profylaxe^{7, 8} je vysoce doporučována.

AIRFLOW®

AIRFLOW® efektivně^{10, 12} a bezpečně^{11, 12} odstraňuje biofilm^{11, 12, 13, 14} s maximálním komfortem¹⁵. Zachovává integritu aparátů, drátů, lepených attachmentů¹⁰ a měkkých tkání¹¹. Redukuje hromadění nečistot na zámcích¹⁶ a snižuje tření drátů¹⁶.

GUIDED BIOFILM THERAPY

Guided Biofilm Therapy je nejmodernější protokol managementu biofilmu kombinující následující kroky:

- DETEKCE biofilmu obarvením¹⁷;
- MOTIVACE pacienta k provádění domácí ústní hygieny osvědčenými metodami¹⁸;
- AIRFLOW® s práškem PLUS k odstranění biofilmu^{10, 11, 12, 13, 14};
- PIEZON® minimálně invazivní ošetření s jemnou PIEZON® PS NO PAIN*^{9, 19} koncovkou k odstranění zbytků lepidla a zubního kamene;
- KONTROLA a fluoridace⁷;
- RECALL pravidelně, dle potřeb pacienta²⁰.

* NO PAIN při použití v souladu s instrukcemi EMS a/nebo školením Swiss Dental Academy



KLINICKÉ DŮKAZY

1 ORTHODONTIC TREATMENT WITH FIXED APPLIANCES AND BIOFILM FORMATION. A potential public health threat?

Ren, Y., Jongsma, M.A., Mei, L. et al. / *Clin Oral Invest* (2014) 18: 1711. Improved preventive measures and antimicrobial materials are urgently required to prevent biofilm-related complications of orthodontic treatment from overshadowing its functional and esthetic advantages. [Link](#)

2 ENAMEL DEMINERALIZATION DURING FIXED ORTHODONTIC TREATMENT. Incidence and Correlation to Various Oral-hygiene Parameters.

Lourov S, Hertrich K, Hirschfelder U. / *J Orofac Orthop*. 2007 Sep;68(5):353-63. Of all teeth, 24.9% developed new White Spot lesions or a rise in their number. WSL incidence during therapy correlated with clinical attachment level, and the oral hygiene and fluoride-use scores. Despite improvements in materials and preventive efforts, orthodontic treatment continues to carry the considerable risk of enamel demineralization. Each patient's prophylactic efforts, including fluoride use, are of paramount importance in preventing White Spot lesions. [Link](#)

3 PREVALENCE OF WHITE SPOT LESIONS IN 19-YEAR-OLDS:

A study on untreated and orthodontically treated persons 5 years after treatment. Ogaard B / *Am J Orthod Dentofac Orthop*. 1989 Nov;96(5):423-7. The orthodontically treated subjects also had more teeth with white spot lesions than the untreated subjects. The present study showed that white spot lesions after orthodontic treatment with fixed appliances may present an esthetic problem, even more than 5 years after treatment. [Link](#)

4 SURFACE DISTRIBUTION OF ENAMEL OPACITIES FOLLOWING ORTHODONTIC TREATMENT.

Eltakim Mizrahi. / *American Journal of Orthodontics, Volume 84, Issue 4, October 1983, Pages 323-331*. Among individual teeth, there was a statistically significant increase in the prevalence and severity of enamel opacities on the maxillary and mandibular first molars, the maxillary lateral incisors, and the mandibular lateral incisors and canines. [Link](#)

5 PREVALENCE OF CARIOUS WHITE SPOTS AFTER ORTHODONTIC TREATMENT WITH MULTIBONDED APPLIANCES.

Jon Artun, Bjørn O. Brobakken / *Eur J Orthod* (1986) 8 (4): 229-234. The majority of the lesions were scored in gingival areas, and especially affected teeth were maxillary lateral incisors and mandibular canines and premolars. [Link](#)

6 ORTHODONTIC APPLIANCES AND ENAMEL DEMINERALIZATION: Part 1. Lesion development.

B. Ogaard. et al. / *American Journal of Orthodontics and Dentofacial Orthopedics Volume 94, Issue 1, July 1988, Pages 68-73*. The clinical significance of the present study is that enamel demineralization associated with fixed orthodontic therapy is an extremely rapid process caused by a high and continuous cariogenic challenge in the plaque developed around brackets and underneath ill-fitting bands. [Link](#)

7 INCIDENCE OF WHITE SPOT FORMATION AFTER BONDING AND BANDING.

L. Gorelick et al. / *Am. Journal of Orthodontics Vol. 81, Feb 1982, p. 93-98*. A clear relationship exists between resistance to white spot formation and the rate of salivary flow. Despite the lack of any preventive fluoride program among the study groups, 50% of the patients demonstrated resistance to white spot formation. [Link](#)

8 CLINICAL EVIDENCE ORTHODONTIC APPLIANCES AND ENAMEL DEMINERALIZATION: Part 2. Prevention and treatment of lesions.

B. Ogaard. et al. / *American Journal of Orthodontics and Dentofacial Orthopedics Volume 94, Issue 2, August 1988, Pages 123-128*. Although white spot lesions may remineralize and even disappear, most of the emphasis should be directed against prevention of carious lesion development during treatment with fixed orthodontic appliances. [Link](#)

9 EFFECTS OF ULTRASONIC INSTRUMENTATION WITH DIFFERENT SCALER-TIP ANGULATIONS ON THE SHEAR BOND STRENGTH AND BOND FAILURE MODE OF METALLIC ORTHODONTIC BRACKETS.

Alessandri Bonetti G, et al. / *Korean J Orthod* 214 Jan. Use of ultrasonics around brackets reduces the shear bond strength, hence there is need for gentle and safe professional oral hygiene procedures during recall sessions. [Link](#)

10 EFFECTS OF AN AIR POWDER POLISHING SYSTEM ON ORTHODONTICALLY BRACKETED AND BANDED TEETH.

C Barnes et al. / *Am J Orthod Dentofac Orthop, Jan 1990, Vol 97, No 1*. AIRFLOW® around orthodontic brackets and bands was not only effective but time efficient. There were no detrimental effects to any composite material or cement in comparison to rubber cup and pumice. [Link](#)

11 EFFECT OF GLYCINE POWDER AIR-POLISHING ON THE GINGIVA.

Petersilka et al. / *Clin Periodontol*. 2008 Apr. AIRFLOW® with glycine powder does not produce any change in the gingival morphology. [Link](#)

12 A CLINICAL COMPARISON OF THE EFFICACY AND EFFICIENCY OF TWO PROFESSIONAL PROPHYLAXIS PROCEDURES IN ORTHODONTIC PATIENTS.

L Ramaglia. / *European Journal of Orthodontics, 21 (1999) 423-428*. In orthodontic patients, use of air polishing is a lot more safer, efficient and effective to remove stains and dental plaque in comparison to rubber cup and pumice. [Link](#)

13 IN-VITRO STUDY OF SURFACE CHANGES IN FIXED ORTHODONTIC APPLIANCES FOLLOWING AIR POLISHING WITH CLINPRO PROPHY® AND AIRFLOW®

Benedict W, Shervin V, Dieter D. / *J Orofac Orthop* 2009;70:371-84. AIRFLOW® is unproblematic due to minimal increase in friction. Use of glycine and sodium bicarbonate powders is suitable on metal and ceramic brackets. When plastic brackets are used, Glycine is recommended due to its lower abrasiveness. Sodium bicarbonate causes greater roughness and subsequent plaque accumulation. [Link](#)

14 TOOTH SURFACE COMPARISON AFTER AIR POLISHING AND RUBBER

CUP: a scanning electron microscopy study. C Barnes et al. / *Am J Orthod Dentofac Orthop, Jan 1990, Vol 97, No 1*. AIRFLOW® around orthodontic brackets and bands was effective and time efficient. There were no detrimental effects to any composite material or cement in comparison to rubber cup and pumice. [Link](#)

15 A SYSTEMATIC REVIEW ON THE PATIENT PERCEPTION OF PERIODONTAL TREATMENT USING AIR POLISHING DEVICES

Bühler J, Amato M, Weiger R, Walter C. / *Int J Dent Hyg*. 2016 Feb;14(1):4-14. Use of Air Flow during non surgical periodontal therapy is associated with more. [Link](#)

16 CLEANSING ORTHODONTIC BRACKETS WITH AIR-POWDER POLISHING: effects on frictional force and degree of debris.

Leite Bdos S, Fagundes NC, Aragón ML, Dias CG, Normando D. / *Dental Press J Orthod*. 2016 July-Aug;21(4):60-5. Cleansing orthodontic brackets with air-powder polishing significantly reduces debris buildup on the bracket surface while decreasing friction levels observed during sliding mechanics. [Link](#)

17 EFFECT OF VISUAL METHOD VS PLAQUE DISCLOSURE IN ENHANCING ORAL HYGIENE IN ADOLESCENTS AND YOUNG ADULTS: a single-blind randomized controlled trial.

Peng Y, Wu R, Qu W, Wu W, Chen J, Fang J, Chen Y, Favella M, Mei L. / *Am J Orthod Dentofacial Orthop*. 2014 Mar. The use of visual communication helps patient motivation. [Link](#)

18 IN VITRO TOOTH CLEANING EFFICACY OF ELECTRIC TOOTHBRUSHES ROUND BRACKETS.

Schätzle M, Sener B, Schmidlin PR, Imfeld T, Attin T. / *Eur J Orthod*. 2010 Oct. Use of Sonicare electric toothbrush showed best cleaning efficiency around orthodontic brackets. [Link](#)

19 PAIN PERCEPTION DURING DEBRIDEMENT OF HYPERSENSITIVE TEETH ELICITED BY TWO ULTRASONIC SCALERS.

Müller S, Huber H, Goebel G, Wimmer G, Kapferer-Seebacher I. / *Clin Oral Investig*. 2017 Jun. "No significant pain" was observed with PIEZON® PS instrument. [Link](#)

20 ORAL HYGIENE AND DIETARY HABITS IN ADOLESCENTS WITH FIXED ORTHODONTIC APPLIANCES: a cross sectional study.

A Azaripour et al. / *The journal of contemporary dental practice, march 2016, 17:3:179-183*. Patients on Fixed orthodontic appliances need regular frequent recalls along with dietary modification in order to control gingival inflammation. [Link](#)

