

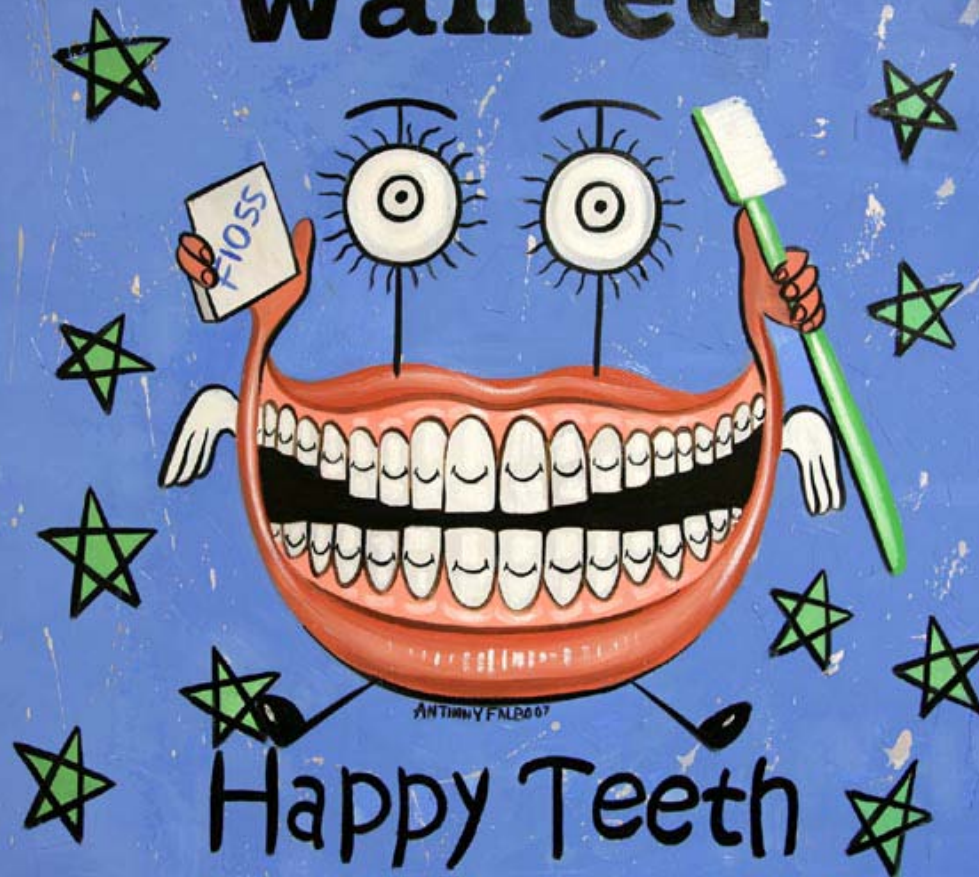
Different Stains, Different Treatment

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Wanted



Happy Teeth



Treatment Options

- ⦿ Bleaching
- ⦿ Resin Infiltration
- ⦿ Microabrasion
- ⦿ Tooth colored restorations
- ⦿ Veneers
- ⦿ Full coverage restorations (Crowns)

Treatment Options

- ❁ Bleaching
- ❁ **Resin Infiltration**
- ❁ Microabrasion
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Resin Infiltration

- ⊕ Resin infiltration concept is based on using unfilled resins with extremely high penetration coefficient.
- ⊕ Although re-mineralization works well on shallow lesions, when you get to deeper lesions, you are probably not going to have great success with re-mineralization.
- ⊕ Arrest and stop the progression of caries.
- ⊕ Masking of white lesions → improved appearance.

Clinical Applications

- Proximal caries Infiltration.
 - Post Orthodontic white lesions.
- } **Caries**



Clinical Applications

- Proximal caries Infiltration.
 - Post Orthodontic white lesions.
- } **Caries**
-
- Developmental white lesions
 - Fluorosis
 - Hypoplastic/Hypomineralized teeth
- } **Developmental**
-
- Occlusal sealant
- } **Preventive**



Color Masking Effect

- ⊗ Enamel opacity is dependent on enamel refractive index.
- ⊗ Alterations in the refractive index are due to
 - ⊗ Enamel surface roughness
 - ⊗ Internal reflection
- ⊗ Porous enamel scatter more light than sound enamel → white opacity.

Color Masking Effect

- ❁ The enamel has a refractive index of 1.62.
- ❁ Subsurface lesion → pores filled with
 - ❁ Water (R.I. → 1.33).
 - ❁ Air (R.I → 1.00).
- ❁ The difference in refractive index between the water and the enamel affects light scattering and makes the lesion look opaque.
- ❁ The infiltrated lesions are filled with resin (R.I. of 1.46 - 1.52)

❁ Kim S et al. The evaluation of resin infiltration for masking the labial white spot lesions. Int J ped Dent 2011;21:241-248

❁ Carlos Rocha Gomes Torres et al. Effect of caries infiltration technique and fluoride therapy on the colour masking of white spot lesions. journal of dentistry 39 (2011) 202–207

Color Masking Effect

- ⌘ The masking effect of white spot lesions by resin infiltration have long-lasting effects. Also, after a new acid challenge, the group with low viscosity resin infiltration presented the lowest means of color change. (Torres 2011)
- ⌘ The color difference of the infiltrated lesions was significantly lower than untreated lesions. After re-mineralization, infiltrated polished areas had lower color difference values than unpolished non treated lesions. (Paris 2010)
- ⌘ Besides an arrest of lesion progression, an improvement of the esthetic appearance of the lesions is achieved. (Paris 2009)

- ⌘ Paris S, Keltsch J, Dorfer CE, Meyer-Luckel H. Visual assimilation of artificial enamel caries lesions by infiltration in Vitro. Caries Res 44:171-248 Abs. 41, (2010)
- ⌘ Paris S, Meyer-Luckel H. Masking of labial enamel white spot lesions by resin infiltration—A clinical report. Quintessence Int 2009;40:713–718
- ⌘ Carlos Rocha Gomes Torres et al. Effect of caries infiltration technique and fluoride therapy on the colour masking of white spot lesions. journal of dentistry 39 (2011) 202–207

Icon®



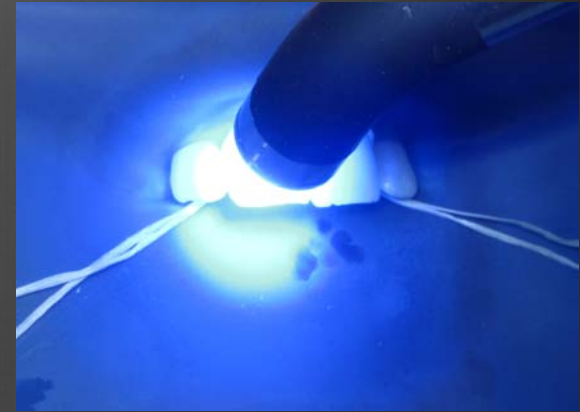




Ico



Remove excess



Cure (40 sec.)



Polish (if needed)



Separation



Interproximal (applicator)



Post Orthodontic lesions

Post Orthodontic White lesions (Post Treatment)



Post Orthodontic White lesions (Post Treatment)



Post Orthodontic
White lesions
(one year follow up)



Post Orthodontic
White lesions
(Immediate post op)



Post orthodontic White lesions

- ❁ Paris S. Masking of labial enamel white spot lesions with resin infiltration-A clinical report. Quintessence Int. 2009;40(9):713-718.
- ❁ Shivanna V, Shivakumar B. Novel treatment of white spot lesions: A report of two cases. J Conserv Dent 2011;14:423-6
- ❁ Knoesel M, Eckstein A and Helms. Durability of esthetic improvement following Icon resin infiltration of multibracket-induced white spot lesions compared with no therapy over 6 months: A single-center, split-mouth, randomized clinical trial. Am J Orthod Dentofacial Orthop 2013;144:86-96
- ❁ Heymann G.C. and Grauer D. A Contemporary Review of White Spot Lesions in Orthodontics. Journal of Esthetic and Restorative Dentistry 2013;25(2):85–95

Post orthodontic White lesions

- ⦿ Senestraro SV, Crowe JJ, Wang M, Vo A, Huang G, Ferracane J, Covell DA Jr. Minimally invasive resin infiltration of arrested white-spot lesions: a randomized clinical trial. J Am Dent Assoc. 2013 Sep;144(9):997-1005.
- ⦿ Yuan H, Li J, Chen L, Cheng L, Cannon RD, Mei L. Esthetic comparison of white-spot lesion treatment modalities using spectrometry and fluorescence. Angle Orthod. 2014 Mar;84(2):343-9.
- ⦿ Eckstein A, Helms HJ, Knosel M. Camouflage effects following resin infiltration of postorthodontic white-spot lesions in vivo: One-year follow-up. Angle Orthod. 2014 Aug 15.



Developmental Enamel Defects

Developmental Enamel Defects



Developmental Enamel Defects



Developmental Enamel Defects



Developmental Enamel Defects



Developmental Enamel Defects



Enamel Fluorosis



Nov 2011

Enamel Fluorosis



March 2014

Rehydration



Color Masking
(After Rehydration)



Color Masking
(After Rehydration)



Color Masking (After Rehydration)





Color Masking
(After Rehydration)









Yellow-Brown Discoloration



Yellow-Brown Discoloration



Resin restoration



Before treatment

Developmental Lesions/Fluorosis

- ❁ **Omar S.** Using Resin Infiltration to Treat Developmental Defects of Enamel (DDE): 3 case report. Journal of Restorative Dentistry 2013;1:31-5.
- ❁ Tirlet G, Chabouis HF, Attal JP. Infiltration, a new therapy for masking enamel white spots: a 19-month follow-up case series. Eur J Esthet Dent. 2013 Summer;8(2):180-90.
- ❁ Wang Y, Sa Y, Liang S, and Jiang T. Minimally Invasive Treatment for Esthetic Management of Severe Dental Fluorosis: A Case Report. Operative Dentistry, 2013, 38-4, 358-362
- ❁ Paris S, Schwendicke F, Keltsch J, Dorfer C, and Meyer-Lueckel H. Masking of white spot lesions by resin infiltration in vitro. Journal of dentistry 2013;41: e28–e34.

Developmental Lesions/Fluorosis

- ❁ Crombie F, Nton D, Palamara A & Reynolds E. Resin infiltration of developmentally hypomineralised enamel. International Journal of Pediatric Dentistry 2014; 24: 51–55
- ❁ Gugnani N, Pandit IK, Goyal V, Gugnani S, Sharma J, Dogra S. Esthetic improvement of white spot lesions and non-pitted fluorosis using resin infiltration technique: series of four clinical cases. J Indian Soc Pedod Prev Dent. 2014 Apr-Jun;32(2):176-80.
- ❁ Torres CRG and Borges AB. Color Masking of Developmental Enamel Defects: A Case Series. Operative Dentistry, 2015, 40-1, 25-33
- ❁ Muñoz MA, Arana-Gordillo LA, Gomes GM, Gomes OM, Bombarda NH, Reis A, Loguercio AD. Alternative esthetic management of fluorosis and hypoplasia stains: blending effect obtained with resin infiltration techniques. J Esthet Restor Dent. 2013 Feb;25(1):32-9.





THANK
YOU!

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15 % HCl gel Etching
(2 minutes)



Rinse
(10 sec)



Ethanol (30 sec) → air dry (10 sec)



Infiltrant
(3 minutes)



Light Curing
(40 sec)