

## 554 | Effectiveness of diagnodent in detecting the extent of remineralization in primary teeth after pH cycling: An in vitro study

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**Background:** The changes after remineralization of teeth are difficult to detect clinically. A chairside device with a digital scoring helps the clinician to control demineralization and evaluate remineralization. This study evaluates the effectiveness of DIAGNOdent in detecting the extent of remineralization in primary teeth.

**Methods:** Ten exfoliated primary teeth with no visible white spots or caries were sectioned at CEJ. The samples were mounted on resin blocks to expose buccal surface, which were then serially polished to get a flat surface. The samples were submitted to demineralization and remineralization using fluoride varnish and then subjected to PH cycling process to promote remineralization. The Surface Microhardness (SMH) and Laser Fluorescence analysis were performed at baseline, after demineralization and after remineralization & PH cycling.

**Results:** Paired t tests were performed to compare the LF readings and SMH values at baseline, after demineralization and remineralization. Baseline SMH values showed significant differences from after demineralization & remineralization. Baseline LF values showed significant difference from after demineralization and remineralization.

**Conclusions:** DIAGNOdent proves to be efficacious in detecting the remineralization in artificially demineralized primary teeth under in vitro conditions.

## 1155 | Qualitative analysis and effects of three topical fluoride agents on demineralized human primary enamel using SEM, XRD and FTIR

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**Background:** Topical fluoride therapy has proven benefits in the prevention of demineralization. A novel fluoride agent silver diamine fluoride (SDF) has emerged as a potent caries arresting as well as caries preventing agent. The present study was aimed at assessing primary tooth enamel resistance to demineralization after topical application of SDF, ApF and NaF.

**Methods:** Enamel specimens were prepared from 30 caries free primary molars. These were randomly allocated to three groups of 10 each and were treated by three topical fluorides- Gr -1 SDF, Gr-2 ApF, Gr-3 NaF. Three specimen from each group were placed on custom made acrylic blocks with 5x5 mm of exposed window for SEM evaluation and rest of the specimen were ground into fine powder for XRD and FTIR analysis. The tooth blocks and treated specimens were subjected to demineralization for 168 hrs.

**Results:** Morphologically, SEM images of all samples showed some grooves and micro porosities along with homogeneously arranged crystals with well coalesced enamel rods without any loss of structural characteristics. Enamel was covered with a CaF<sub>2</sub> layer which showed a granular morphology.

Chemically, the Ca/P molar ratios of all groups were similar with slight variations.

Structurally, the crystalline phases found in enamel by powder XRD were hydroxyapatite and carbonate apatite. The initial peaks were obtained at 2θ values of 36.13, 40.20° and 46.92° and there was a higher amount of incorporated type B carbonate than type A carbonate as evidenced by FTIR which was registered between 4000 and 400 cm<sup>-1</sup> in a FTIR Spectrometer.

**Conclusion:** The study concludes that topical application of 38% Sdf can inhibit demineralization of enamel.

## 834 | Values of DMFT components among children aged 12 from Skopje region-Republic of North Macedonia (RNM)

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**Background:** To determine the values of DMFT components among children aged 12 from Skopje region to assess the effectiveness of the National Strategy.

**Methods:** About 30% of the population of RNM lives in the Skopje region. 627 children (314 males and 313 females), from urban and rural areas were examined. The examinations were performed by calibrated dentists following the WHO criteria and recording the findings in Oral Health Assessment Form for Children as per WHO's recommendation. Because the examinations were performed within the framework of

regular systematic examinations, no approval from the parents and ethics committee was required. During analyzing the data, a standard formula for DMFT index was used.

**Results:** The analysis showed a value of DMFT 2.77 where the number of carious teeth is 734 (42.1% of the total number of carious, extracted and filled teeth), the number of extracted teeth is 19 (1.1%) and the number of filled teeth is 990 (56.8%).

**Conclusions:** Comparing the values of each component of the DMFT index with the values of nearby countries, such as Montenegro, Albania and Bosnia and Herzegovina, in which the health system and socio-economic conditions are similar, it is clear that component M is the lowest. Components C and F show increased awareness of oral health but still at an unsatisfactory level, which indicates the need for further active education for proper nutrition with control over sugar intake and brushing teeth with emphasis on proper technique.

### 543 | Antibacterial efficacy of various dentifrices on *Streptococcus mutans* count in children with ECC: A pilot study

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**Background:** The study has been planned to evaluate the antimicrobial efficacy of various commercially available dentifrices namely, active oxygen based, amine fluoride based, sodium monofluoro-fluoride based, herbal and non-fluoridated dentifrices on the *S. mutans* count in children with ECC.

**Methods:** 20 participants aged 3–6 years with  $\text{def} \geq 4$  were selected and randomly divided into 5 groups of 4 children each, based on the dentifrice used as, Group I: Non-fluoridated dentifrice, Group II: Sodium Monofluoro-fluoride dentifrice (458 ppm), Group III: Amine Fluoride dentifrice (500 ppm), Group IV: Active Oxygen dentifrice and Group V: Herbal dentifrice. A baseline saliva sample was taken and cultured for *mutans streptococci* and the colonies were counted. Children were demonstrated the horizontal scrub method and then asked to brush their teeth using dentifrice given twice daily for 2 weeks. The saliva sample was then collected after 2 weeks and *streptococcus mutans* was again estimated. Data was analysed using Wilcoxon t-test.

**Results:** Statistically significant results were found where Group II and Group IV showed significantly higher reduction in *S. mutans* count after 2 weeks of intervention than those of Group I, Group III and Group V.

**Conclusions:** The results showed that all the dentifrices used in the study were effective in reducing the microbial load, however

Active Oxygen dentifrice and Sodium Monofluoro-fluoride dentifrice showed maximum reduction in cariogenic bacteria. The pilot study is still going on with much larger sample size.

### 765 | 38% Silver diamine fluoride (SDF): Literature review

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**Background:** Dental caries is most prevalent disease. Complete removal of caries can sometimes be difficult especially in case of un-cooperating child patient. Recently, a new concept that is, non-invasive dentistry is being practiced for prevention and arrest of the caries. SDF is a new material which arrest progression of the dental carious lesion by non-invasive treatment.

**Literature Review:** SDF is a clear, alkaline solution containing Silver and fluoride, which forms a complex with ammonia. SDF is painless, easy to use and inexpensive material. SDF has anti-bacterial action, inhibits caries progression via inhibiting biofilm formation and facilitates remineralisation. It used as caries arresting and preventing agent, as desensitizing agent and as endodontic irrigant. SDF is an effective non-invasive treatment for children's tooth decay and well tolerated by children as a treatment technique and can be quickly applied to isolated tooth without any extensive excavation. 38% concentration of the SDF has been used for arresting the dental caries. Major side effect of SDF is back staining of the tooth. Use of Potassium iodide immediately after the SDF application reduces the black staining of the tooth.

**Conclusions:** SDF has proven effective in management of dental caries. SDF treatment is an efficient, simple, quick and safe method of dental treatment

### 423 | Isolation of *Candida albicans* from pre-school children and a study of its forms and acidogenic nature in early childhood caries

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**Background:** ECC, a rampant type of dental caries in children below 71 months of age; a chronic childhood disease with a severe sequelae affecting the child and family. Recent literature suggests a probable role of *Candida Albicans* in Early Childhood