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Current Seals on Preventing Caries: Reevaluation of Recent Studies on Sealing Efficacy

By Katerina Kervadis DDS, MS, PhD
Pakistan Director and Professor
Postgraduate Education in
European University College
Dublin - UAE

Dental sealants have been recognized as an effective preventive treatment for preventing pit and fissure caries in primary and permanent teeth of children. They are placed to prevent caries initiation and to arrest caries progression by providing a physical barrier that inhbits microorganisms and food particles from collecting in pits and fissures. It is generally accepted that the effectiveness of sealants for caries prevention depends on their long term retention. When an initial examination of fissures prior to sealant application, connects better to the sealant retention?

It has been long known that remova of the fissural fluid before sealant application is essential prior to etching in order to allow bonding of the sealant. The classic technique for removing of the debris prior to sealing is prophylaxis with a non-fluoridated toothpaste, now however have emerged, such as air abrasion, phosphoric acid etching. Air polishing technique with sodium bicarbonate is a non-invasive removal of organic and other elements from pit and fissure and the vitality of the sealant. The depth of the sealant resin penetration and when combined with acid etching produces a higher mean bond strength. Although it is recommended, never become the standard for sealant application procedure due to equipment cost and complexity of the procedure. Air abrasion with aluminum oxide particles is another alternative for cleaning of the fissures, and also produces roughening of the enamel surface. However it is not a substitute to acid etching and appears to be inferior to the acid-etch technique for use in public health settings. When both techniques of air abrasion on etching are used, similar bond strength have been found. When enamel is etched before and then acid-etched, Enameloplasty or reshaping of enamel, is indicated to deep fissures and narrow fissures to impinge, to increase the fissure width and surface area available for etching and to enhance the accuracy of visual ex-

mination. Studies have shown with this technique that smear layer and gaps being evident and loss microleakage, however its disadvantages are higher polymerization shrinkage and a necessary removal of intact enamel which is limited.

Does the use of a bonding agent prior to sealant application influence its retention?

Results from an vitro study, in extaordine, found that a bonding agent after etching and pri-

or sealant application since micro-

The bacteria P. gingivalis and T. for-

mulated a combination of four bacteria (55.1% of pit-and-fissure pre-operatively) and 20.9% and 28.8% of pits moderatley after intervention and after six weeks irrespective of the form of therapy used. The proportion of pits with only one bacteria increased in the third month.

Conclusion

The effect on the obligatory patho-

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Fig. 2 A SPRING SUGAR air polisher for connection to the air turbine

Fig. 1 A SPRING SUGAR air polisher for connection to the air turbine

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