

Original Article

Decay rates and retention of fissure sealant of first permanent molar at  
6-9 year's old children in Isfahan

Hajenoruzali Tehrani M\*, Shahtusi M\*\*, Etemadi A\*\*\*

\* Associate professor, Department of pediatrics, school of dentistry, Isfahan University of Medical science, Isfahan, Iran.

\*\* Postgraduate student, Department of pediatrics, school of dentistry, Isfahan University of medical sciences, Isfahan, Iran.

\*\*\* Dentist, Isfahan, Iran

Corresponding Author: Shahtusi M. E-mail: m.shahtusi@gmail.com

**Abstract**

**Background and Aims:** The prevalence of occlusal caries in children is a significant dental health problem. The increased proportion of caries experience attributed to pit and fissure caries is most likely due to the decreasing prevalence of caries with inter proximal surfaces. The aim of this study is to evaluate the effects of fissure sealant material in the reduction of decay in first permanent molars and consideration of retention rate in different periods.

**Materials and Methods:** In this experimental study 30 children aged 6-9 that have two intact first molar selected. One tooth has chosen as a control tooth and the other teeth selected for fissure sealant. After 6 and 12 months the sealant retention and caries rate evaluated. The sealant material used for this study was Deguseal. Moisture control during placement was obtaining using rubberdam.

**Results:** After 6 months %20 of control teeth was decayed only 3/3% of sealant teeth decayed. After 12 months 26/6% control teeth was decayed but only 6/6% control teeth was decayed (p value<0.001). After months 93/3% completely retained fissure sealant 6/7% partially retained and after 12 months 90% completely retained and 10% partially retained (p value<0.001).

**Conclusion:** Fissure sealants, placed by appropriately trained dental personnel, are safe, effective, and underused in preventing pit and fissure caries on at-risk surfaces-Effectiveness is increased with good technique and appropriate follow up and resealing as necessary.

**Key words:** Decay, fissure sealant, retention, first permanent molar