Preventing Tooth Decay and Saving Teeth with Dental Sealants

What Are Dental Sealants?

Dental sealants are thin plastic coatings that are applied to the chewing surfaces of the molars (back teeth) to prevent tooth decay by creating a physical barrier against bacterial plaque and food.

Dental sealants help keep teeth intact and prevent the most common type of dental caries (tooth decay), which destroys tooth structure.

Tooth structure is lost every time a tooth is filled or a filling is replaced, which occurs every 6 to 8 years on average.

Preventing Tooth Decay

When combined with fluoridated water, dental sealants have the potential to virtually eliminate dental caries. Fluoride helps safeguard the smooth surfaces of the teeth, and dental sealants protect the pits and fissures (the grooves on the chewing surfaces of the back teeth).

Eighty-four percent of caries in 5- to 17-year-olds are on tooth surfaces with pits and fissures.

Children and adolescents ages 5 to 15 benefit most from dental sealants because molars erupt during this period. However, less than 20 percent of children ages 5 to 17 have dental sealants. Older adolescents and adults may also benefit from the selective use of dental sealants.

Dental sealants are 100 percent effective in preventing pit and fissure caries as long as the sealants remain intact. One year after placement, 92 to 96 percent of dental sealants are still intact.

Improving Awareness

There is mounting scientific evidence that dental sealants are effective both in preventing caries and in arresting the progression of caries.

Increased public awareness of dental sealants, and improved communication between parents and oral health professionals, will help parents make informed decisions about dental sealant placement for their children.

Racial and ethnic minorities and individuals with low levels of formal education and low incomes are least knowledgeable about oral disease prevention. Because they lack insurance or access to preventive service, children from these groups have fewer dental visits and receive fewer dental sealants.

Cost-Effectiveness

On average, the cost for placing one dental sealant is less than half the cost of one silver filling. In 1999 the average cost for placing a dental sealant was $29.09, compared to the average cost of $65.09 for a one-surface filling.

If incipient lesions are sealed instead of restored, the total cost of treatment is lower.

If decay progresses, it may be necessary to perform root canals and other extensive and relatively expensive procedures, including inserting bridges and implants.
Access to Care

A few as 3 percent of children from families with low incomes have dental sealants, compared to the national average for children of 23 percent.\textsuperscript{13}

In the period 1988 to 1994, 9.0 percent of African-American children and adolescents ages 5 to 17 had dental sealants, compared to 23.6 percent of white children and adolescents in this age group.\textsuperscript{14}

Thirty-five percent of 8-year-old children whose head of household has at least some college education have dental sealants, compared to 17 percent of children of the same age whose head of household has less than a high-school education.\textsuperscript{13}

Most dental sealants are placed in private dental offices, yet children and adolescents at greatest risk for problems resulting from tooth decay are least likely to get private care.\textsuperscript{3}

Barriers to Care

Dental sealants are usually not covered by preferred provider organizations.\textsuperscript{5}

This lack of dental service coverage under many insurance plans, and the difficulty of accessing dental care for uninsured, underinsured, and medically indigent groups, make dental sealants hard to obtain.\textsuperscript{6}

Programs

In 1990 the U.S. Public Health Service set as a national objective that 50 percent of all children would have dental sealants on one or more permanent molar teeth by 2000,\textsuperscript{4} the objective was not met, in part because of lack of support for public programs that provide sealants for school children.\textsuperscript{5}

In 1991, 29 states had community detergent sealant programs, and by 1994 all 50 state Medicaid programs reported providing reimbursement for dental sealants.\textsuperscript{8}

The large network of school-based dental sealant programs in Ohio, supported by Maternal and Child Health Services Block Grant funds, has led to a remarkably consistent dental sealant prevalence among 8-year-old children. In this age group, 33 percent of African-American children, 30 percent of white children, and 30 percent of children from families with low incomes had dental sealants.\textsuperscript{15}

In 1999 the Health Resources and Services Administration's Maternal and Child Health Bureau funded eight grantees whose goal is to increase the use of dental sealants, reduce the amount of untreated dental disease, and encourage partnerships.

References