



**Oral Health for Head Start Children:
Best Practices**



Oral Health for Head Start Children: Best Practices

Just the Facts

Early Childhood Caries (ECC) is the single most common chronic disease of childhood, occurring at least five times more frequently than asthma, the second most common chronic disease of childhood.

American Indian and Alaska Native (AI/AN) children experience dental caries at a higher rate than the general U.S. population. Data from 2,663 children ages 2-5 years documented that 79 percent had experienced dental caries (filled or unfilled decay) and 68 percent had untreated dental caries. Over 50 percent of the children ages 2-5 years had severe Early Childhood Caries (ECC).*

By two years of age, only 30 percent of AI/AN children surveyed were caries-free, supporting the fact that prevention interventions must be implemented with pregnant women and infants. In order to prevent dental caries in the primary teeth, we must intervene before the first cavity develops, working with both mothers and infants. For children in Head Start, we want to prevent future decay in the erupting permanent teeth.

Dental caries is an infectious, transmissible disease caused by mutans streptococci, lactobacilli, and other acid-producing bacteria. The bacteria that cause tooth decay are fueled by sweet foods and drinks and other fermentable carbohydrates like white crackers. Over time, the enamel breaks down, resulting first in a chalky white spot that then progresses to a cavity.

Severe ECC causes pain and infection. ECC can also result in poor self-esteem and a reluctance to smile. The primary teeth are important for eating, holding space for the permanent teeth, talking, and smiling.

Severe ECC can cost from \$2,000-\$5,000 or more per child to treat. Some of these children need to be hospitalized, and treatment may need to be completed under general anesthesia. ECC places a huge financial burden on insurance, Medicaid, Indian Health Service, Tribal programs, and families least able to afford treatment.

Dental treatment does not remove the disease-causing bacteria. Even after treatment, the disease rages on for high-risk children.

***No child can be truly healthy
if he or she has poor oral health.***



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Introduction

Early Childhood Caries (ECC) is a term used to describe tooth decay, including filled or extracted teeth due to decay, in the primary teeth (baby teeth). Other names for this disease are Baby Bottle Tooth Decay (BBTD), nursing mouth, and bottle rot. Severe ECC is characterized by a distinctive pattern of tooth decay in infants and young children, often beginning on the maxillary anterior teeth and rapidly progressing to the other primary teeth as they erupt.

ECC is an infectious, transmissible disease caused by mutans streptococci, lactobacilli, and other acid-producing bacteria. While the transmission is primarily vertical between mothers or other primary caregivers and infants, studies have also demonstrated horizontal transmission from infants to infants, as well as from older children to infants. We now know that the organisms that cause dental caries can begin to colonize in the mouth of an infant even before the eruption of teeth. The bacteria that cause tooth decay produce acids from carbohydrates. The bacteria are fueled by sweet foods and drinks and other fermentable carbohydrates. Over time, the enamel demineralizes, resulting first in a chalky white spot that then progresses to a cavity. It is important to rethink the way we “treat” dental caries. Traditionally, we would wait until a child had a cavity and “treat” the cavity with a filling. In order to prevent ECC, we must intervene before the first cavity develops, working with both mothers and infants.

Problem Statement

American Indian and Alaska Native (AI/AN) children experience dental caries at a higher rate than the general U.S. population. Data from 2,663 children ages 2-5 years documented that 79 percent had experienced dental caries (filled or unfilled decay) and 68 percent had untreated dental caries.* Over 50 percent of the children ages 2-5 years had severe Early Childhood Caries, constituted by decay on a maxillary incisor or six or more decayed teeth. At two years of age, only 30 percent of the AI/AN children were caries-free, supporting the fact that prevention interventions must be implemented with pregnant women and infants.

Severe ECC causes pain and infection. Many of these children learn to live with this pain day in and day out. ECC results in increased missed school days and an inability to concentrate at school. Pain also affects a child’s sleep and nutrition, resulting in poor overall health and well being. ECC can also result in poor self-esteem and a reluctance to smile. The primary teeth are important for eating, holding space for the permanent teeth, talking, and smiling. We can no longer ignore this infection until a child is 3-4 years old, any more than we would ignore any other infection that a child might have.

- *The 1999 Oral Health Survey of American Indian and Alaska Native Dental Patients: Findings, Regional Differences and National Comparisons.* DHHS, IHS Division of Oral Health.



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Best Practices During Pregnancy	
<p>COLLABORATE!</p> <p><i>Collaborate with the medical, community health, and dental providers to assure that all pregnant women visit the dental clinic during the early months of pregnancy.</i></p> <p>EDUCATE!</p> <p><i>Educate the mother about the transmissibility of dental caries and ways to prevent ECC.</i></p> <p><i>Provide education and support to promote breastfeeding.</i></p> <p>COUNSEL!</p> <p><i>Provide nutrition counseling to reinforce the importance of a healthy diet during the perinatal period.</i></p> <p>MAKE RECOMMENDATIONS!</p> <p><i>Recommend that pregnant women stop using tobacco.</i></p> <p>SET AN APPOINTMENT!</p> <p><i>The dental staff can provide an oral exam, periodontal disease screening, prophylaxis, recommendations for completing any needed dental treatment, caries control, and appropriate recall.</i></p> <p><i>The dental staff can assess the mother's caries risk and prescribe anti-bacterials like chlorhexidine or xylitol for high-risk mothers during the perinatal period.</i></p>	<p>Why?</p> <p>Pregnant women should get their teeth cleaned and checked early in their pregnancy. Gum disease has been linked to premature low birth-weight babies.</p> <p>The caries risk assessment gives you the opportunity to assess whether the baby will be at high risk for future dental caries and also provides an opportunity to educate the mother about ways to prevent ECC. Modification of the mother's dental flora during the period from birth until the child is two years of age can lower the bacteria transmitted to the baby and positively affect the child's future dental caries risk. A 6-year study in Finland showed that mothers who chewed xylitol gum during the first two years of their children's lives led to lower levels of caries in their children.</p> <p>How?</p> <p>Collaborate between the medical, community health, and dental providers to assure that all pregnant women visit the dental clinic during the early months of pregnancy. Head Start, WIC, and other tribal health programs that serve pregnant women can also participate as partners to encourage pregnant women to visit the dentist. The following list of recommendations for education should be reinforced by the various medical providers, dental staff, community health workers, and other partners as identified in each community.</p> <ul style="list-style-type: none"> • Refer all pregnant women to the dental clinic during the early months of pregnancy. • Educate the mother about the transmissibility of dental caries and ways to prevent ECC. • Reinforce the importance of a healthy diet and limited snacking on pop, sweets, and starchy snacks like potato chips and white crackers because they cause cavities. It is also important to get plenty of calcium for baby's teeth and bones. It is found in milk, cheese, dried beans, and leafy green vegetables. • Support breastfeeding at every opportunity. • Educate the mother about gum disease as it relates to the health of her baby. Recommend and demonstrate daily brushing with fluoride toothpaste and flossing or other methods to clean in between the teeth and gums. <p>Recommend that pregnant women stop using tobacco. It is unhealthy for both baby and mother and it also is a contributing factor in gum disease.</p>



Oral Health for Head Start Children: Best Practices

Best Practices During Pregnancy

Glossary

ECC: Early Childhood Caries, previously called Baby Bottle Tooth Decay. This term refers to dental decay on the primary, or baby teeth.

Primary Teeth: Baby Teeth

Dental Caries: The disease process that leads to cavities, or tooth decay.

Prophylaxis: Procedures to clean the teeth of plaque, calculus, and stain.

Perinatal: As used in this document, it refers to the period of time during pregnancy and one year after birth.

Note:

Education alone is not a best practice. Effective health education includes motivational interviewing, demonstrations, and reinforcement.

The dental staff can provide an oral exam, periodontal disease screening, prophylaxis, recommendations for completing any needed dental treatment, caries control, and appropriate recall.

The dental staff can assess the woman's caries risk either by existing disease or by providing a strep mutans test and work with the mother to establish an effective and appropriate caries control program.

Anti-bacterials can be prescribed during the period from birth until the child is two years, specifically chlorhexidine and xylitol. Chlorhexidine therapy would consist of 0.12 percent chlorhexidine gluconate, used as a prescription mouthrinse, 10 ml daily for one week per month or for 2-3 weeks straight and repeated every 2-3 months, for approximately a year. Xylitol therapy would consist of daily use of lozenges, mints, or gum, either over-the-counter brands or various sources ordered from dental suppliers and over the internet. The therapeutic dose is 5-10 grams per day. For a therapeutic dose, xylitol must be listed as the first ingredient.

The downside of current anti-bacterial therapy is that it requires a high level of compliance on the part of the mother. There is no evidence that xylitol or chlorhexidine regimens that are sporadically followed have any effect at all. Therefore, effective interventions will require that health providers, WIC staff, community health workers, and dental providers work together to reinforce compliance.

The New York State Department of Health has developed a manual "Oral Health Care During Pregnancy and Early Childhood: Practice Guidelines" It is located at <http://www.health.state.ny.us/publications/0824.pdf>

Supporting Articles:

Xiong X, et al Periodontal disease and adverse pregnancy outcomes: a systematic review, International J of Obstetrics and Gynecology, Oct 2005.

Kanellis MJ. Caries risk assessment and prevention: strategies for Head Start, Early Head Start and WIC. J Public Health Dent. 60(3):210-17, discussion 218-20, 2000.

Kanellis M, et al. S mutans suppression in preschool children using 1% chlorhexidine gel. Abstract at http://confex.com/iadr/2004Hawaii/techprogram/abstract_39586.htm.

Scheer M and Phipps K. Compliance with chlorhexidine and xylitol among high risk mothers. Abstract. J Public Health Dent. 63(Suppl 1):S38, 2003.

Soderling E, Isokangas P, Pienihakkinen K, et al. Influence of maternal xylitol consumption on mother-child transmission of mutans streptococci: 6-year follow-up. Caries Res. 35(3):173-77, 2001.

The following are all from the Journal of the California Dental Association, February 2003 and March 2003: Lynch, H. and Milgrom, P. Xylitol and Dental Caries: An Overview for Clinicians.

Anderson, MH. A Review of the Efficacy of the Chlorhexidine on Dental Caries and the Caries Infection

Berkowitz, RM Acquisition and transmission of Mutans Streptococci.



Oral Health for Head Start Children: Best Practices

Best Practices: Birth Through Two Years	
<p>RECOMMENDATIONS:</p> <p>ASSESS!</p> <p>Provide an oral health assessment soon after the first tooth erupts or by 12 months of age.</p> <p>PREVENT!</p> <p>Provide topical fluoride varnish treatments 4 or more times during the period from 9-24 months of age.</p> <p>EDUCATE FAMILIES!</p> <p>Educate families about...</p> <ul style="list-style-type: none"> ▪ the importance of never putting baby in bed with a bottle, using a cup by 6 months, and weaning off the bottle at 12-14 months of age. ▪ about the protective qualities of fluoride. Ideally, every child should be drinking fluoridated water and have their teeth cleaned daily with a small smear of fluoride toothpaste. ▪ to lift the lip and look for chalky white or brown spots, telling them that if they see any signs of dental decay, they should see the dentist. 	<p>Why?</p> <p>By two years of age, most AI/AN children already have decay in their baby teeth. To prevent this disease, we must intervene soon after the first tooth erupts. An infant oral health assessment is recommended by the American Dental Association, American Association of Pediatric Dentists, American Public Health Association, American Association of Public Health Dentistry, and the American Academy of Pediatrics.</p> <p>Fluoride works by inhibiting demineralization, enhancing remineralization, and inhibiting plaque bacteria. Fluoride varnish is a safe, effective method to provide topical fluoride treatments to infants and toddlers.</p> <p>How?</p> <p>Collaborate with medical, dental, community health, Head Start, daycare centers, WIC, and other tribal organizations who serve infants and their families. Train medical, dental, and other community health workers to provide an oral health assessment and fluoride varnish treatments for infants and young children. (see above resources for specifics on “how to”)</p> <p>Provide a fluoride varnish treatment during the first oral health assessment and aim to provide 4 or more treatments during the period from 9-24 months of age. Given the high prevalence of dental caries in AI/AN children, most children will be classified at high risk and therefore, some programs may choose to follow a fluoride varnish protocol for all infants and toddlers. Other programs may choose to assess individual risk and apply fluoride varnish only for children determined to be at high risk for dental caries. High risk is determined if any white or brown spot lesions are observed, if the baby is on the bottle past one year of age, or if any siblings had ECC. For a more complex assessment of individual risk, refer to the American Academy of Pediatric Dentists “Caries Risk Assessment Tool” referenced above.</p> <p>Refer to a dentist if chalky white spots, brown spots or other signs of dental decay are observed. Chalky white spot lesions can be remineralized with fluoride varnish. If lesions have already progressed into the dentin, they can be treated with ART (Alternative Restorative Technique) where the decay is scooped out and a fluoride-releasing material is placed in the lesion. No anesthesia or drills are used in this technique. The dental program will recall the child as appropriate, based on caries risk.</p> <p>Note: While our overall goal is the prevention of ECC, early screening and the use of fluoride varnish and ART have the potential to manage ECC in AI/AN children, avoiding expensive referrals to pediatric dentists and extensive treatment under general anesthesia.</p>



Oral Health for Head Start Children: Best Practices

Best Practices: Birth Through Two Years	
<p>ENCOURAGE!</p> <p>Encourage healthy snacks and limited exposure to sweets, refined starches like chips and crackers, and sweetened drinks. Reinforce to families that pop does not belong in a preschooler's diet.</p> <p>RESULTS!</p> <p>As part of the Early Head Start program requirements, infants and toddlers will have their teeth cleaned daily with a small smear of fluoride toothpaste.</p> <p>Note:</p> <p><i>Education alone is not a best practice. Effective health education includes motivational interviewing, demonstrations, and reinforcement.</i></p>	<p>The following list of recommendations for education should be reinforced by the various medical providers, dental staff, community health workers, Head Start, and other partners as identified in each community.</p> <ul style="list-style-type: none"> • Teach families to lift the lip and look for chalky white or brown spots, telling them that if they see any signs of dental decay, they should see the dentist. • Educate families about the protective qualities of fluoride. Ideally, every child should be drinking fluoridated water and have their teeth brushed daily with a small smear of fluoride toothpaste • Educate and demonstrate to families, Early Head Start staff, and daycare staff how to clean infants' and toddlers' mouths. For infants, a clean wipe, gauze, or other infant cleaning tool is used to wipe the gums and any erupting teeth. Once a few teeth have erupted, a baby or child size toothbrush can be used to brush the teeth. • Educate families about the importance of never putting baby in bed with a bottle, using a cup by 6 months, and weaning at 12-14 months of age. <p>Encourage healthy snacks and limited exposure to sweets, refined starches like chips and crackers, and sweetened drinks. Reinforce to families that pop does not belong in a preschooler's diet.</p>

Supporting Articles

Holve S. Fluoride Varnish Applied at Well Child Care Visits Can Reduce Early Childhood Caries. IHS Primary Care Provider, October 2006. <http://www.ihs.gov/PublicInfo/Publications/HealthProvider/issues/PROV1006.pdf>

Topical Fluoride Recommendations for High-Risk Children. Development of Decision Support Matrix: Recommendations from MCHB Expert Panel, October 22-23, 2007 Altarum Institute, Washington, DC.

The following articles are all from the Journal of the California Dental Association, February 2003 and March 2003:

Featherstone JDB et al. Caries Management by Risk Assessment: Consensus Statement, April 2002.

Featherstone, JDB, et al. The Caries Balance: Contributing Factors and Early Detection.

Ramos-Gomex, FJ et al. Implementing an Infant Oral Care Program.

Donly, KJ Fluoride Varnishes.

IHS Head Start Program: <http://www.HeadStart.ihs.gov>

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Supporting Materials

Note: Many programs have already developed training materials to teach medical, dental, and community health workers to provide an oral health assessment and fluoride varnish treatments. The resources listed below are a combination of online courses, manuals, and other materials to support these trainings. The IHS Provider article by Holve (see weblink above) outlines an IHS model for intervention at well-child visits.

Phoenix College Online Course on ECC for Dental and Medical Health Professionals

www.pc.maricopa.edu/dental/ecc/preview/

The National Maternal & Child Oral Health Resource Center: educational materials and program descriptions on many oral health topics.

www.mchoralhealth.org

First Smiles Project in California: education materials for medical team, dental team, early childhood education team, and parents

<http://www.first5oralhealth.org/>

ABCD: University of Washington and Washington State Department of Social and Health Services: videotapes, posters, cups, and other materials

www.abcd-dental.org/res.html

Open Wide: Oral Health Training for Non-Dental Health and Human Services Providers: PowerPoint presentations and other materials for training non-dental health professionals to provide infant screening

http://oralhealth.infostats.com/test/publications_reports.html

American Academy of Pediatric Dentists "Caries Risk Assessment Tool"

http://www.aapd.org/media/Policies_Guidelines/P_CariesRiskAssess.pdf



Oral Health for Head Start Children: Best Practices

Best Practices: Three Through Five Years

<p>RECOMMENDATIONS:</p> <p>Provide a yearly oral health assessment and assure that every child has a dental home.</p> <p>Provide topical fluoride varnish treatments during the first oral health assessment and provide repeated treatments every 3-4 months for children at high risk for dental caries.</p> <p>Collaborate with families and the dental provider to get any needed dental treatment completed.</p> <p>Consider dental sealants for the primary molars of any children who are at high risk for dental caries.</p> <p>Educate families about the protective qualities of fluoride. Ideally, every child should be drinking fluoridated water and have their teeth brushed daily with a pea-sized amount of fluoride toothpaste.</p>	<p><i>Why?</i></p> <p>Most AI/AN children will either have ECC or not by this age. The focus now is on stopping the caries process in children with ECC and preventing future caries in the permanent teeth for all children. Any child with dental decay or white spot lesions in his/her primary teeth should be considered at high risk for future dental caries.</p> <p>Fluoride is effective as a protective factor against dental caries. Scientific studies have documented 15-30 percent reduction in caries with daily use of a fluoride toothpaste. Fluoride is added to about 90% of the toothpaste produced in the US, Canada and other developed countries. Topical fluoride (toothpaste, fluoride varnish) is absorbed directly into dental plaque and the outer layers of the tooth that are in the beginning stages of demineralizing. Fluoride can stop cavities from forming and can arrest the growth of existing cavities.</p> <p>Studies show that the more sugar children consume, the higher their threshold for sweetness. The consumption of soft drinks, including carbonated beverages, fruit juices and sports drinks in the US has increased 500% in the past 50 years and shows no sign of leveling off. Soda pop consumption begins early and increases as children age. Sugar-containing soft drinks can cause dental decay and the excess sugar can lead to obesity and type II diabetes in children. Some sodas have as much as 13 teaspoons of sugar. High consumption of soft drinks has also been shown to reduce consumption of milk, an important source of calcium for young children.</p> <p>Xylitol is a natural sweetener that is found in certain gum, mints, and other foods. It has the ability to actually kill the bacteria that cause cavities. The safety of xylitol has been extensively studied both in the US and internationally. The only side effect noted in animal studies appears to be mild diarrhea with ingestion of very large amounts.</p> <p>School-based xylitol programs have been proven effective at reducing dental caries. Ideally, the children need to be involved for at least one full school year and should receive the therapeutic dose at least five days a week. Since xylitol actually alters the cavity-causing bacteria, the children will benefit from this intervention for years to come.</p> <p><i>How?</i></p> <p>Through Head Start, every child should receive a yearly oral health assessment. Every child at this age should have a dental home identified.</p> <p>Provide a fluoride varnish treatment during the first oral health assessment and provide repeated treatments every 3-4 months for children at high risk for dental caries. Given the high prevalence of dental caries in AI/AN children, most children will be classified as high-risk. Fluoride varnish treatments can be provided efficiently onsite at the Head Start center or in the dental clinic.</p>
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Oral Health for Head Start Children: Best Practices

Best Practices: Three Through Five Years

<p>Encourage healthy snacks and limited exposure to sweets, refined starches like chips and crackers, and sweetened drinks. Reinforce to families that pop does not belong in a preschooler's diet.</p> <p>Through Head Start, consider implementing a xylitol program for 3-5 year olds.</p> <p>As part of the Head Start program requirements, supervised brushing with a pea-sized amount of fluoride toothpaste will occur daily, after a meal.</p> <p>Note: Education alone is not a best practice. Effective health education includes motivational interviewing, demonstrations, and reinforcement.</p>	<p>Collaborate with families and the dental provider to get any needed dental treatment completed. The dental staff can provide dental sealants for the primary molars of any children who are at high risk for dental caries. This can be accomplished with either traditional resin sealants or glass ionomer materials for less than cooperative patients. The dental program will recall the child as appropriate.</p> <p>Through Head Start, consider implementing a xylitol program for 3-5 year olds. Each child should receive at least 5 grams of xylitol daily during the school year. This is best accomplished by chewing xylitol gum or specially-ordered xylitol candy that is given with meals and snacks or during circle time. Head Start staff will have to work with the local dental staff to establish these programs, using the Head Start Xylitol Program Protocol as a guideline. Work with a local dentist to choose a xylitol product and order enough for each child to receive a therapeutic dose for one school year. You are looking for a product that lists xylitol as the first ingredient. Store the gum/mints under lock and key. Although not dangerous, ingestion of a large amount may cause diarrhea in some children.</p> <ul style="list-style-type: none"> • Educate families about the importance of xylitol in reducing future dental caries. Make sure you tell families that chewing xylitol now will even decrease cavities in the permanent teeth because you are changing the level of cavity-causing bacteria in the children's mouths. Develop a permission slip (see resources) and obtain parental consent from as many families as possible. The program will run much more smoothly if all of the children are involved. • Train the teachers and staff about the xylitol program. • Ideally, Head Start children should chew xylitol gum 3 times a day. This is already happening in some Head Start programs across the country. It is usually given after breakfast, after lunch, and in the late afternoon either during circle time or on the way out the door. <p>Through Head Start, each child should be brushing daily after meals at school with a pea-sized amount of fluoride toothpaste. Purchase child size soft toothbrushes (these may be available through your local dental clinic) and a fluoride toothpaste with the ADA seal of approval. Children should brush their own teeth after meals. (see paper on toothbrushes and storage) You can put the pea size dabs of toothpaste units needed on a paper towel. Each child takes his/her own toothbrush and swipes one dab of toothpaste from the paper towel. Children can brush in groups around a sink or during circle time, using music to time the 3 minutes of recommended brushing.</p>
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Oral Health for Head Start Children: Best Practices

Best Practices: Three Through Five Years

The following list of recommendations for education should be reinforced by the various medical providers, dental staff, community health workers, Head Start, and other partners as identified in each community.

- Educate families about the protective qualities of fluoride. Ideally, every child should be drinking fluoridated water and have his/her teeth brushed daily with a pea-sized amount of fluoride toothpaste. Educate and demonstrate to families how to clean a child's teeth, being sure to reinforce the importance of using fluoride toothpaste.
- Educate families about the importance of healthy snacks and limited exposure to sweets, refined starches like chips and crackers, and sweetened drinks. Reinforce to families that pop does not belong in a preschooler's diet.
- Permission slip (see resources) and obtain parental consent from as many families as possible. The program will run much more smoothly if all of the children are involved.
- Train the teachers and staff about the xylitol program.

Ideally, Head Start children should chew xylitol gum 3 times a day. This is already happening in some Head Start programs across the country. It is usually given after breakfast, after lunch, and in the late afternoon either during circle time or on the way out the door.

Supporting Articles

Topical Fluoride Recommendations for High-Risk Children. Development of Decision Support Matrix:

Recommendations from MCHB Expert Panel

October 22-23, 2007 Altarum Institute, Washington, DC.

Recommendations for Using Fluoride to Prevent and Control Dental Caries in the United States. MMWR, 50(RR-14):1-42, August 17, 2001.

Weintraub JA. Fluoride varnish for caries prevention: Comparisons with other preventive agents and recommendations for a community-based protocol. *Special Care in Dentistry*. 23(5):180-6, 2003

Anderson M. Chlorhexidine and xylitol gum in caries prevention. *Special Care in Dentistry*. 23(5):173-6, 2003.

Autio JT and Courts FJ. Acceptance of the xylitol chewing gum regimen by preschool children and teachers in a Head Start program: A pilot study. *Pediatr Dent*. 23(1):71-74, 2001.

Hayes C. The effect of non-cariogenic sweeteners on the prevention of dental caries: A review of the literature. *J Dent Educ*. 65(10):1106-9, 2001.