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Imagine my dismay when she was 18 and I discovered a deep lesion originating in an uncovered distal pit of a second molar. Although her risk was low, she did experience a carious lesion (and fortunately no others). For her as an individual, there was good reason not to reduce preventive procedures.

It is also important to consider who is paying for preventive procedures. Although insurance companies might not want to do so, some parents might still request and be willing to pay for cost ineffective preventive procedures for their low risk children.

In his paper "Is caries prevention cost effective? Does anybody care?" (*Acta Odont Scand* 56:187, 1998), Schwarz comments "many dentists will attest to the fact that the (caries) reductions are real and that the dental caries picture is now totally different from that years ago." He concludes that "a reconfirmation of the purpose of caries prevention is needed, including an admission that caries is by no means eradicated, but that the present approach (must be) different from that taken when caries was a greater threat to the public."

Milton Haupt

LETTER TO THE EDITOR



Does prevention pay?

May I commend you on your excellent editorial "Real Change is Difficult" in the March/April issue of the journal. I would like to add my voice to yours in calling for real change in the prevention strategies of our practices. I want to approach the issue from a somewhat different perspective than that of your editorial.

I think we can readily acknowledge that prevention *pays* for the pediatric dentist, but the issue that I want to raise is does prevention pay for the child (and parent). By using the metaphor *pays*, it is my intention to raise questions of cost and benefit. The ethics of the profession of dentistry and pediatric dentistry as a specialty of dentistry, specifies that the pediatric dentist exists to benefit the oral health of the child patient, with, of course, derivative benefit accruing to the pediatric dentist, as a result of the professional fee the parent is willing to pay for the good provided the child. Thus, incumbent on the pediatric dentist is the professional responsibility of ensuring that the treatment provided the child does, in fact, result in a benefit to the child's oral health.

Today, a significant portion of the practice of pediatric dentistry is prevention. However, as clinical scientists, we are forced to raise and respond to the question of the benefit of various preventive therapies employed for children. What is the scientific evidence we have to support that which we recommend and do? I want to pose the question, not with regard to all preventive procedures we employ, though such could be done and might be relevant, but only with regard to two commonly utilized procedures: the pumice-rubber cup prophylaxis for "cleaning" teeth, and the use of professionally applied topical fluorides; two topics you addressed in your recent editorial.

Parents have come to accept (and expect) that "cleaning" of the teeth every 6 to 12 months with pumice and a rubber cup is therapeutic and an oral health benefit for the child.

Yet, evidence for such a benefit does not exist. We know that such a procedure removes the acquired enamel pellicle, the biological film that helps buffer the acid inherent in food and beverages of the child's diet. We know that when removed with pumice and a rubber cup, it requires approximately 7 days for the pellicle to reorganize and become mature and fully effective once again. We know that a pumice and rubber cup prophylaxis removes the outer 0.6-4.0 microns of enamel, the enamel zone that is rich with fluoride deposited as a result of pre- and post-eruptive uptake from exposure to fluoride. Such circumstances force the question of the benefit of such a procedure, which at first blush appears to be deleterious to the child, not therapeutic.

Polishing the teeth with pumice and a rubber cup does remove plaque from the child's teeth. But, it is the same plaque we expect the child (and/or parent) to remove on a daily basis, and plaque that will return, as you indicated, within 24-48 hours subsequent to removing it with pumice and the rubber cup. Evidence does exist that justifies the use of the pumice and rubber cup prophylaxis on selective tooth surfaces to remove stain from those surfaces and smooth tooth surfaces which have been roughened by the presence of calculus. While children occasionally do have staining and calculus necessitating such "selective" polishing, such is not a routine occurrence, nor are all teeth affected. Many years ago, it was also thought that such polishing of the teeth was a prerequisite to applying a topical fluoride, but we now know that this is not the case.

So why do we pediatric dentists continue to advocate and perform such a procedure as a routine in our offices? One pediatric dentist to whom I addressed this question responded, "If we don't do it, we won't get paid for it." My response was, "True. But if we don't do a pulpotomy that is not indicated, we don't get paid for it as well." Do we

justify the treatment we provide to children based primarily on what is best for our financial statement (at \$36 every recall visit for a "prophylaxis," the national average in 1999, it is certainly good for that), or on what is best for the child. If the former, we are primarily in the *business* of dentistry not the *profession* of dentistry. And, even then, one would question the business ethics of selling a product with undocumented value to the customer.

It is true that some pediatric dentists do not use pumice and a rubber cup prophylaxis, but rather employ the so called "toothbrush prophylaxis," that is, removal of plaque with a toothbrush and dental floss; a practice you indicated was taught in your particular institution. However, this will typically be coded and billed as a "prophylaxis," a term that most state boards of dentistry and third-party financial intermediaries define as the removal of plaque with pumice and a rubber cup. While these understandings and rulings may be unfortunate, to bill for "prophylaxis" when a "toothbrush prophylaxis" was accomplished might be considered to be fraudulent, and not only introduces ethical questions, but also exposes the pediatric dentist to serious legal vulnerabilities. The value of a professionally accomplished removal of plaque, even with a toothbrush and dental floss, with a significant fee associated with such, should be examined as to the intention and efficacy. Certainly this is justified as therapy in the context of educating the child and parent regarding the role of plaque in the etiology of caries and periodontal disease and instruction in how to effectively remove it. However, to imply that it offers something more than a very transient therapeutic value to the teeth is unwarranted.

As you indicated, topical fluorides are a significant mainstay of our preventive regimen. In a recently released report from the Centers for Disease Control and Prevention (CDC) entitled, "*Recommendations for Using Fluoride to Prevent and Control Dental Caries in the United States*," a summary of the effectiveness of topical fluorides was provided, restating a fact we have known for many years. "For persons at low risk for dental caries, professionally applied methods (of topical fluorides) are unlikely to be cost-effective." The topical fluorides we apply routinely can be expected to prevent 0.03-0.26 decayed surfaces per year. The professional fees charged for a topical fluoride make their utilization in practice very cost ineffective, except for children with documented high caries experience or risk. The professional fee for a topical fluoride is \$20 (national average in 1999). Can you imagine how a parent, whose child has minimal experience with or is at low risk for dental caries might respond when told that, as a component of your preventive regimen, topical fluoride will be placed on their child's teeth every 6 months (or even every year) at a cost of \$20 per application, but with little evidence to document that such would reduce their caries experience in any significant way? Would a parent be willing to pay up to \$40 per year, for ± 12 years ($\pm \$480$) to reduce the statistical risk that their child would experience 0.36-3.12 carious surfaces over that

period of time? The above cited CDC recommendations concluded "routine use of professionally applied fluoride gel or foam likely provides little benefit to a person not at high risk for dental caries, *especially those who drink fluoridated water and brush daily with a fluoride toothpaste.*" Yet many pediatric dentists, as a matter of office protocol, administer topical fluorides to all children in their practices, regardless of caries experience or risk and regardless of the status of fluoride in their drinking water.

All of this prompts the question of what would parents choose when deciding whether to have their child receive a pumice-rubber cup prophylaxis and/or a topical fluoride treatment if they knew the lack of evidence of the benefit these procedures could be expected to have for their child's oral health. The American Dental Association's "*Principles of Ethics and Code of Professional Conduct*," which is our Academy's as well, and federal law in the United States, *require* that we gain an informed consent from our patients or, in the case of children, their parents. A valid informed consent dictates that parents have explained to them, *prior to the performance of any procedure*, the nature of the procedure, the benefit to be derived from the procedure, any harms, risks, alternatives to the procedure and the cost of the procedure. As pediatric dentists, are we gaining an informed consent for performing pumice-rubber cup prophylaxis and topical fluoride treatments? I doubt it, for if we were, I strongly suspect we would have an overwhelming number of informed refusals, not consents.

It appears to me that many pediatric dentists are routinely employing and assessing a significant professional fee for procedures that cannot be justified scientifically on a cost/benefit analysis. And, we are typically doing so without the informed consent of the parents of the children we treat. This is inappropriate and a poor reflection on our specialty, and on the fiduciary responsibility we have to our child patients and their parents. The time has come to seriously examine our practices. It is my judgment that an honest and introspective assessment will force us to significantly modify our preventive regimen, with the parents of our child patients both understanding and concurring. Yes, prevention *pays*, but does it *pay* for the child or does it *pay* for the pediatric dentist?

I agree with the title of your editorial, "Real Change Is Difficult." However, to maintain a sense of integrity, pediatric dentists must grapple with that difficulty and really change. Changing our preventive strategies to be consistent with the scientific evidence of their efficacy will likely not pay financially, but will pay in sustaining the confidence and trust of the public and the families we serve.

Thank you for your thoughtful and insightful editorial.

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