



More rigorous studies needed to advance emerging dental caries diagnostic and management strategies, says NIH consensus panel

National Institutes of Health Consensus Development Conference.

Diagnosis and Management of Dental Caries Throughout Life, New Release.

The development of new diagnostic techniques to detect early stages of dental caries may give dentists more options than ever before to stop or reverse decay using noninvasive techniques. This and other findings emerged from a Consensus Development Conference on the Diagnosis and Management of Dental Caries Throughout Life, convened by the National Institutes of Health on March 26-28, 2001 in Bethesda, MD.

The conference examined the current state of dental caries research to help health care providers and the general public make informed decisions about this important health issue. Panel members reviewed an extensive collection of literature related to dental caries, including a systematic review of the dental research literature provided by the Agency for Healthcare Research and Quality (AHRQ). The panel also heard presentations by experts in the field, as well as public comment.

While water fluoridation, the use of fluoride products, dietary modification including sugar restriction, improved oral hygiene, and regular professional care have led to dramatic reductions in dental caries over the past 30 years, the disease remains a major public health problem. Nearly 20 percent of children between the ages of 2 and 4 have experienced dental caries, and by the age of 17 almost 80 percent of young people have had at least one cavity-- a late manifestation of dental caries infection. More than two-thirds of adults between the ages of 35 to 44 have lost at least one permanent tooth due to dental caries, and one-fourth of those aged 65 to 74 have lost all of their natural teeth.

Early phases of tooth decay are currently difficult to detect. While radiographs can disclose established cavities, particularly those that occur between the teeth, they are not effective in detecting early decay, or caries in the roots of teeth. The panel noted that the ongoing development of more sensitive diagnostic techniques to detect dental caries in its earliest phases will pave the way for the use of noninvasive treatment options to stop or reverse the caries process. Current data support the following treatment options: fluorides, dental sealants; combinations of chlorhexidine, fluoride, and sealants; and health education.

Despite their optimism about the future of dental practice, the panel was disappointed in the overall quality of the clinical data that it reviewed. According to the panel, far too many studies were small, poorly described, or otherwise methodologically flawed.

"This is not to say that the diagnostic, preventive, and restorative techniques currently used do not work," said the panel, "but rather that earlier studies to support their efficacy do not meet current scientific standards." Indeed, given the dramatic

improvements in reducing dental caries prevalence in the past 30 years, both consumers and health professionals should not depart from the practices which are likely to have contributed to this oral health improvement."

Although the panel did not evaluate the evidence for the effectiveness of community water fluoridation, they acknowledged that water fluoridation and the use of fluoridated toothpastes are highly successful in preventing dental caries. They also determined that there is evidence to support the use of fluoride varnishes in permanent teeth, as well as fluoride gels, chlorhexidine gels, sealants, and chewing gum containing xylitol, a sugar substitute. Combined interventions may be more effective in preventing caries in children.

The panel also noted that effective dentistry requires early identification of children at high risk for extensive caries so that they may receive early and intense preventive intervention. Children at low risk also need to be identified to reduce unnecessary care and expenditures. According to the evidence presented, the most consistent predictor of caries risk in children is past caries experience. Low socioeconomic status (SES) is also associated with higher caries rates. While some risk factors may be applicable across all ages, others are distinctive for adult and elderly populations, such as the inability to maintain good oral hygiene, lack of adequate salivary flow, and gum recession.

The panel called for a major investment of research and training funds to "seize the opportunities presented." "When solid confirmation of the effectiveness of promising new diagnostic techniques, non-surgical treatments of non-cavitated lesions, and conservative surgical interventions for cavitated lesions are obtained, dental health professionals and the public should embrace them rapidly in anticipation of attaining still higher levels of oral health."

Panel chair Michael C. Alfano, D.M.D., Ph.D., Dean of the New York University College of Medicine, also noted, "that for the American people to benefit from these findings, insurance companies will need to change the way they compensate dental providers so that the next generation of conservative therapy can be enjoyed by everyone."

Among its recommendations, the panel called for:

- studies of dental caries in the population that collect information on natural history, treatment, and outcomes in all age groups
- studies of diagnostic methods, including established and new devices and techniques
- clinical trials of established and new treatment methods that conform to contemporary standards of design, implementation, and analysis

- systematic research on caries risk assessment
- studies of clinical practice including effectiveness, quality of care, outcomes, health-related quality of life, and appropriateness of care
- genetic studies to identify genes and genetic markers of diagnostic, prognostic, and therapeutic value

The National Institute of Dental and Craniofacial Research and the NIH Office of Medical Applications of Research sponsored the conference. Cosponsors included the National Institute on Aging and the U.S. Food and Drug Administration.

The full NIH Consensus Statement on Diagnosis and Management of Dental Caries Throughout Life is available by calling 1-888-NIH-CONSENSUS (1-888-644-2667) or by visiting the NIH Consensus Development Program Web site at <http://consensus.nih.gov>.

The consensus statement is the report of an independent panel and is not a policy statement of the NIH or the Federal Government. The NIH Consensus Development Program was established in 1977 to resolve in an unbiased manner controversial topics in medicine. To date, NIH has conducted 115 such conferences addressing a wide range of controversial medical issues important to health care providers, patients, and the general public.

The AHRQ-supported evidence-based review, *Diagnosis and Management of Dental Caries: A Summary*, is available at <http://www.ahrq.gov/clinic/dentsumm.htm>. Printed copies are available for free from the AHRQ Publications Clearinghouse, P.O. Box 8547, Silver Spring, MD 20907 (tel: 800/358-9295) and by calling AHRQ InstantFAX (301) 504-2800 from a telephone-equipped facsimile machine.

An extensive bibliography of dental caries research papers, prepared by the National Library of Medicine, is available in the Web at http://www.nlm.nih.gov/pubs/cbm/dental_caries.html.

American Board



American Board Initiates Changes in Eligibility and Candidacy

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After reviewing the ADA's Requirement for Recognition of Dental Specialties and National Certifying Boards for Dental Specialists, and in consultation with the American Academy of Pediatric Dentistry and the College of Diplomates of the American Board of Pediatric Dentistry, the American Board has initiated the following changes which become effective immediately:

1. The term "Educationally Qualified" has been eliminated.
2. The term "Board Eligible" will be used to refer to a pediatric dentist who has successfully completed an advanced educational program in pediatric dentistry, accredited by the Commission on Dental Accreditation of the ADA for two or more academic years, as specified by the Commission, and has applied for eligibility with the American Board of Pediatric Dentistry. Upon graduation, the individual must submit to the ABPD an application and filing fee to verify their "Board Eligible" status. Then, the program director/institution sends verification that the pediatric dentist has successfully completed the program. Once the individual becomes "Board Eligible", he/she maintains that status provided that he/she pays the annual maintenance of eligibility fee. This required fee covers the costs of verification of status to requesting agencies. Should eligibility lapse, it could be reinstated with payment of delinquent fees. "Board Eligibility" is not time limited.
3. When a "Board Eligible" pediatric dentist registers with the ABPD to take one section of the Certification Examination, he/she becomes a "Candidate". As a "Candidate"

he/she has 8 years to complete the process and achieve Diplomate status. If "Board Certification" is not achieved in the 8 year time frame, the "Candidate" will forfeit all sections of the exam taken to date and must start over with a new 8 year time frame. At no time does the "Candidate" lose "Board Eligibility" as long as yearly maintenance of eligibility fees are paid.

4. When a "Candidate" achieves Board Certification, he/she becomes a "Diplomate" and no longer pays maintenance of eligibility fees. Instead a certificate renewal fee, as mandated by the ADA, is paid.

If a pediatric dentist has graduated from an accredited program years ago and has lost eligibility under the previous guidelines, he/she can be reinstated by application for eligibility with the Board and verification of training by his/her Program Director/Institution. The individual would be required to enter the current format for Board Certification, the same as new graduates. This consists of two tests, a comprehensive written exam and a clinical exam consisting of either a case review or site visit. Only those "Candidates" currently active in an older format may continue to pursue Board Certification outside the current two-section format.

For further information about the terms "Board Eligible" and "Candidate" and how the changes affect you, consult the new ABPD brochures, now published and posted on the ABPD website at www.abpd.org, or contact the ABPD Central Office at 317-573-0877.