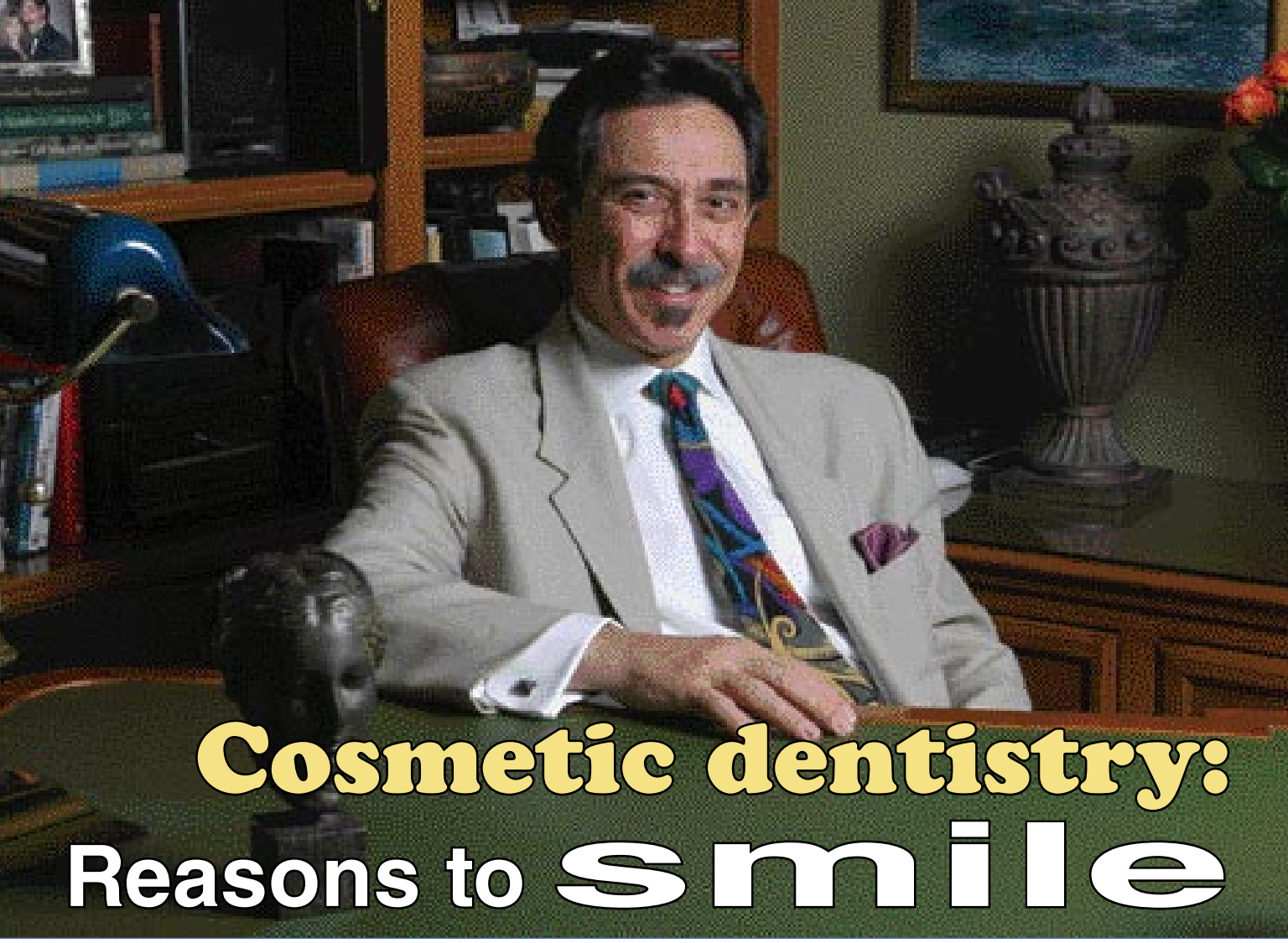

Cosmetic dentistry: Reasons to smile

Dr. Nicholas Davis, president of the American Association of Cosmetic Dentistry, talks about recent growth and future prospects in the field.

Cosmetic dentistry has developed into one of the fastest growing facets of the dental industry. DE spoke with AACD President Dr. Nicholas Davis about the current boom in cosmetics, the AACD, and what the organization is doing to improve the cosmetic dental experience for its some 7,000 members.

DE: Through the years, how has cosmetic dentistry evolved?

Dr. Davis: Cosmetic dentistry has evolved because new dental materials have enabled dentists to achieve superior esthetic results without mechanical retention and with minimally invasive restorations. Adhesive dentistry utilizing composite materials has made it possible to improve the esthetics and strength of teeth without destroying tooth structures unnecessarily. This has made dental procedures more appealing to the general public.

Porcelain restorations have achieved ideal esthetic results by creating natural-looking teeth, and enhancing the overall appearance of the patient. Patients have been able to see the cosmetic outcomes that we have worked so hard to achieve in our operatories and laboratories. The desire of patients to look the best they can by improving their teeth, and the dentist's ability to achieve these results, have led to an overwhelming positive awareness by the public. These positive reactions of the patients and dentists have encouraged and led to the evolution of cosmetic dentistry.

DE: Why is cosmetic dentistry one of the fastest growing areas in the dental field?

Dr. Davis: Dentistry in the past has focused on fixing problems because of tooth caries, missing teeth, or other destructive factors that necessitated restorations. The advent of cosmetic dentistry has allowed the dentist to provide elective procedures for cosmetic improvement in addition to problem-solving. The positive feedback by patients from their cosmetic dental experiences has been gratifying to dentists, and has been the impetus to further treatment plans with cosmetic improvement.

The continual development and evolution of dental materials and procedures have made it possible to

replicate the lifelike properties of the natural tooth structure. Cosmetic tooth lightening, for example, has become increasingly convenient for the public, and is one of the most sought after in-office and over-the-counter cosmetic dental procedures. Tooth lightening is an entry-level cosmetic procedure that has proven to be a pathway for smile enhancements and other cosmetic dental-related procedures. This process has encouraged many patients to enhance the appearance of their smiles beyond the limits of age and nature.

DE: Down the road, what do you envision taking place in cosmetic dentistry?

Dr. Davis: I see the development of a clinical philosophy that is integrated with other supporting dental and medical specialists as one of the keys for the future. This philosophy will act as a template for incorporating cosmetic dentistry as an integral part of comprehensive treatment planning for ideal esthetic and functional dentistry. This philosophy will deal with long-term predictability by comprehensive problem-solving for the most ideal treatment results. This philosophy also will identify the indications and limitations of cosmetic dentistry, and will develop teamwork with all dental and medical specialists for ideal goals.

Teamwork will be encouraged with not only the dental specialists, but also medical cosmetic specialists to make cosmetic dentistry an integral part of facial esthetic treatment planning. The involvement of the medical community, especially cosmetic surgeons, needs to be addressed so the cosmetic dentist and cosmetic surgeon have a closer working relationship for the best esthetic outcomes for their patients.

The predictability of long-term results of cosmetic dentistry also will need to be studied. Cosmetic dentistry, as we know it, is in the infant stages of growth. There may be some shortcuts taken to facilitate cosmetic dentistry that prove to be a problem as dental cases mature. Gingivectomies, altered axial alignment of restorations, nonaxial forces during parafunctional habits, and occlusal discrepancies will need to be the focus for long-term success. This will allow us to better understand the limitations of cosmetic dentistry, along with the indications and rationale for our treatment proposals.

The education of the patient and the general public will continue to be paramount in building the practice of cosmetic dentistry, and is part of the mission of the American Academy of Cosmetic Dentistry.

DE: Tell us a little about the history and mission of the AACD.

Dr. Davis: The American Academy of Cosmetic Dentistry is a nonprofit organization that was co-founded in 1984 by Drs. Jack Kammer and Jeff Morley. Through the years, this organization has flourished — growing to approximately 7,000 members this year. The AACD, with members in 60 countries around the world, is dedicated to advancing the "Art and Science of Cosmetic Dentistry," and encouraging the highest standards of ethical conduct and responsible patient care.

In those early years, the founding fathers felt a need to educate and build a network of qualified cosmetic dentists across the country that could be used as a referral source for patients seeking superior cosmetic dental care. This quickly evolved into much more.

Today, the AACD is the largest cosmetic dental organization in the world. It offers educational opportunities for dentists while providing accurate and useful information to the public. It has set the standard for cosmetic dental care, and offers an accreditation process for dentists to test their skills.

DE: Who and how can one join the AACD?

Dr. Davis: The AACD is unique because anyone can join the academy. Dentists, laboratory technicians, hygienists, assistants, business personnel, and corporations all comprise the membership of the AACD. Additionally, 43 dental schools participate in the academy's University Advisory Committee, and 15 private institutions participate in the Private Education Advisory Committee. The academy views these universities and private institutions as playing a synergistic role in cosmetic dental education for dentists, laboratory technicians, and staff. To join, visit the AACD Web site at AACD.com or call (800) 543-9220.

DE: What are some of the benefits or programs offered via AACD membership?

Dr. Davis: The key benefits of membership in the AACD are associated with the ongoing information source available to its members. The annual scientific session is a five-day educational event, which has proven to be the premier source of cosmetic dental information. The *Journal of Cosmetic Dentistry* has emerged as the members' number one acclaimed benefit. Other academy publications and

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— Dr. Nicholas Davis

pamphlets provide useful information for the cosmetic dental practice. The academy has established a credential in cosmetic dentistry that is known as accreditation for members who seek to pursue it and be tested to that level of excellence. For those members who qualify, the academy provides a referral service for the public on its Web site, which receives some 500,000 hits per month. The academy also has a charitable foundation, GBAS (Give Back A Smile), which restores smiles for victims of domestic violence. This foundation provides the organization with a humanitarian effort.

DE: What makes the AACD's scientific session the primary source for cosmetic dental information?

"It is important that cosmetic dentistry understands its niche in comprehensive dental care for the well-being of the patient. A multidisciplined approach always should be considered when establishing an ideal treatment plan."

— Dr. Nicholas Davis
President, AACD

Dr. Davis: This year's annual scientific session in Nashville (held April 19-23) represented the 21st year of continuing education in cosmetic dentistry. The academy is grounded in education that is scientifically based, and provides cosmetic dental information to attendees for creating consistently successful results. In addition, the scientific session has courses that incorporate different treatment philosophies. The AACD has developed the reputation of being an open forum for new and innovative ideas and philosophies. Exposing the membership to this type of leading-edge information stimulates creative thinking, and cultivates an environment that often leads to breakthroughs in dental materials and techniques.

The academy brings together a collection of leading educators, who span the spectrum of cosmetic dentistry, for this annual meeting. It also has a myriad of other educational opportunities. These include hands-on courses, round-table discussions, digital photography courses, and tracks of learning for dentists, laboratory technicians, and dental team members. Many of the educational presentations focus on developing an artistic eye.

When you combine this type of educational experience with an extensive exhibit hall full of the latest in the field, social events such as a Dolly Parton concert, which we did this case this year), a 5K run, and a golf tournament, you have an event that is difficult to match.

DE: Explain the AACD's accreditation program and the steps involved in the process.

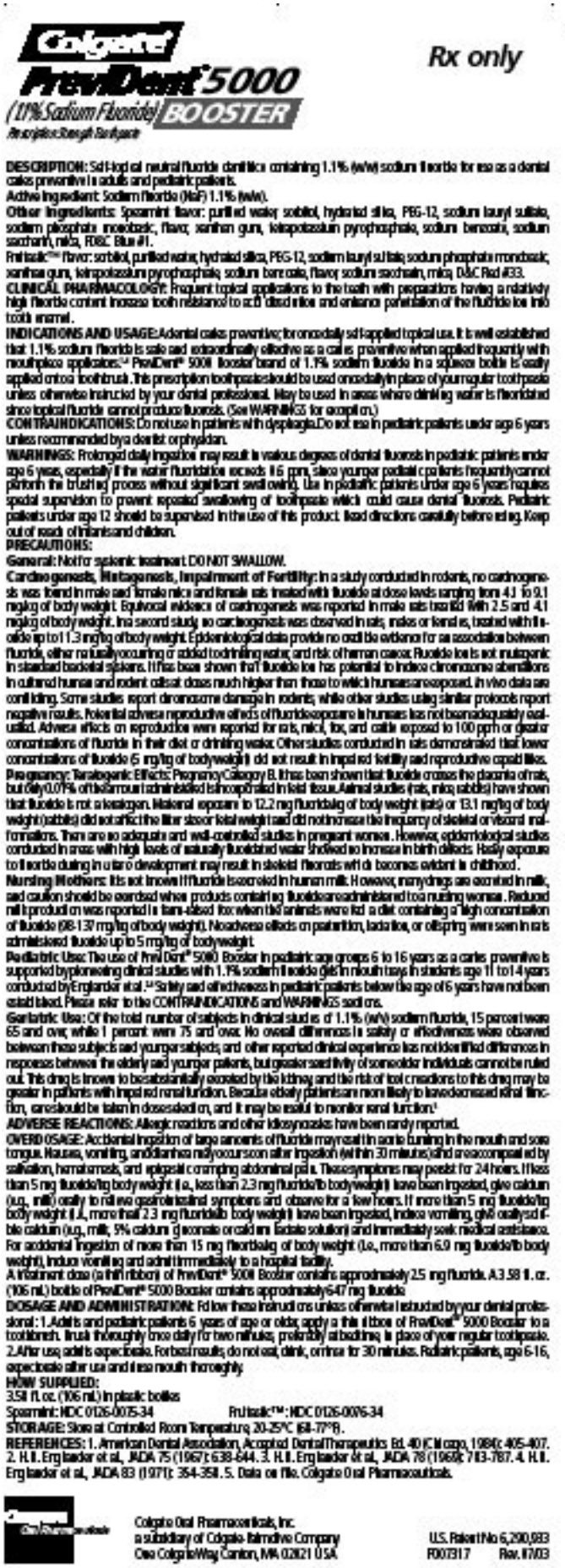
Dr. Davis: The AACD's accreditation process has evolved to reflect the protocol of traditional specialty examinations and testing. There are three key areas of testing. The first is a written test to establish a basic understanding of cosmetic dentistry and its role in the overall health and function of all the oral structures.

The second and most challenging section involves the treatment of five specific cosmetic dental cases, which are documented and achieved with dental photography. The cases include a direct veneer bonding case, a complex bonding procedure (diastema closure or Class IV composite restoration), an anterior tooth replacement case, one or two indirect anterior restorations, and six or more indirect anterior restorations. This may seem like a simple task since only five cases are necessary, but the challenge is that all five cases must demonstrate excellent dentistry. The dentistry and the tissues are evaluated with finite detail in this process. The degree of improvement is not as important as the excellence of the final treatment. Cases are blind-judged by a panel of calibrated accredited members. The pass rate for cases in the latest examinations was about 56 percent.

The final phase of the accreditation process is an oral examination in which the treating dentist must explain the treatment procedures and defend treatment choices. Treatment planning of a preselected case is the second part of the oral examination. There are slightly different criteria for laboratory technicians, who also are eligible for accreditation.

DE: What is the AACD doing to enhance its accreditation process?

Dr. Davis: This is a great question because several steps have been taken to help candidates improve the success



Colgate
PreviDent 5000
(1.1% Sodium Fluoride) BOOSTER
Anticaries Therapeutic

Rx only

DESCRIPTION: Self-topical neutral fluoride dentifrice containing 1.1% (w/w) sodium fluoride for use as a dental caries preventive in adults and pediatric patients.

Active Ingredient: Sodium fluoride (NaF) 1.1% (w/w).

Other Ingredients: Spearmint flavor: purified water, sorbitol, hydrated silica, PEG-12, sodium lauryl sulfate, sodium phosphate monobasic, flavor, xanthan gum, tetrapotassium pyrophosphate, sodium benzoate, sodium saccharin, mica, FD&C Blue #1.

Fruitastic™ flavor: sorbitol, purified water, hydrated silica, PEG-12, sodium lauryl sulfate, sodium phosphate monobasic, xanthan gum, tetrapotassium pyrophosphate, sodium benzoate, flavor, sodium saccharin, mica, D&C Red #33.

CLINICAL PHARMACOLOGY: Frequent topical applications to the teeth with preparations having a relatively high fluoride content increase tooth resistance to acid dissolution and enhance penetration of the fluoride ion into tooth enamel.

INDICATIONS AND USAGE: As dental caries preventive for once daily self-supplied topical use. It is well established that 1.1% sodium fluoride is safe and extraordinarily effective as a caries preventive when applied frequently with mouthpiece applicators.[1,2] PreviDent® 5000 Booster brand of 1.1% sodium fluoride in a squeeze bottle is easily applied onto a toothbrush. This prescription toothpaste should be used once daily in place of your regular toothpaste unless otherwise instructed by your dental professional. May be used in areas where drinking water is fluoridated since topical fluoride cannot produce fluorosis. (See WARNINGS for exceptions.)

CONTRAINDICATIONS: Do not use in patients with dysphagia. Do not use in pediatric patients under age 6 years unless recommended by a dentist or physician.

WARNINGS: Prolonged daily ingestion may result in various degrees of dental fluorosis in pediatric patients under age 6 years, especially if the water fluoridation exceeds 0.6 ppm, since younger pediatric patients frequently cannot perform the brushing process without significant swallowing. Use in pediatric patients under age 6 years requires special supervision to prevent repeated swallowing of toothpaste which could cause dental fluorosis. Pediatric patients under age 12 should be supervised in the use of this product. Read directions carefully before using. Keep out of reach of infants and children.

PRECAUTIONS:

General: Not for systemic treatment. DO NOT SWALLOW.

Carcinogenesis, Mutagenesis, Impairment of Fertility: In a study conducted in rodents, no carcinogenesis was found in male and female mice and female rats treated with fluoride at dose levels ranging from 4.1 to 9.1 mg/kg of body weight. Equivocal evidence of carcinogenesis was reported in male rats treated with 2.5 and 4.1 mg/kg of body weight. In a second study, no carcinogenesis was observed in rats, mice or hamsters, treated with fluoride up to 11.3 mg/kg of body weight. Epidemiological data provide no credible evidence for an association between fluoride, either naturally occurring or added to drinking water, and risk of human cancer. Fluoride ion is not mutagenic in standard bacterial systems. It has been shown that fluoride ion has potential to induce chromosome aberrations in cultured human and rodent cells at doses much higher than those to which humans are exposed. In vivo data are conflicting. Some studies report chromosome damage in rodents; while other studies using similar protocols report negative results. Potential adverse reproductive effects of fluoride exposure in humans has not been adequately evaluated. Adverse effects on reproduction were reported for rats, mice, fox, and cattle exposed to 100 ppm or greater concentrations of fluoride in their diet or drinking water. Other studies conducted in rats demonstrated that lower concentrations of fluoride (5 mg/kg of body weight/d) did not result in impaired fertility and reproductive capabilities.

Pregnancy: Teratogenic Effects: Pregnancy Category B. It has been shown that fluoride crosses the placenta of rats, but daily 0.07% of the amount administered is incorporated in fetal tissue. Animal studies (rats, mice, rabbits) have shown that fluoride is not a teratogen. Maternal exposure to 12.2 mg fluoride/kg of body weight (rats) or 13.1 mg/kg of body weight (rabbits) did not affect the litter size or fetal weight and did not increase the frequency of skeletal or visceral malformations. There are no adequate and well-controlled studies in pregnant women. However, epidemiological studies conducted in areas with high levels of naturally fluoridated water showed no increase in birth defects. Heavy exposure to fluoride during in utero development may result in skeletal fluorosis which becomes evident in childhood.

Nursing Mothers: It is not known if fluoride is excreted in human milk. However, many drugs are excreted in milk, and caution should be exercised when products containing fluoride are administered to a nursing woman. Reduced milk production was reported in rats dosed for when the animals were fed a diet containing a high concentration of fluoride (98-137 mg/kg of body weight). No adverse effects on parturition, lactation, or offspring were seen in rats administered fluoride up to 5 mg/kg of body weight.

Pediatric Use: The use of PreviDent® 5000 Booster in pediatric age groups 6 to 16 years as a caries preventive is supported by pioneering clinical studies with 1.1% sodium fluoride gel in mouth trays in students age 11 to 14 years conducted by Englander et al.[3] Safety and effectiveness in pediatric patients below the age of 6 years have not been established. Please refer to the CONTRAINDICATIONS and WARNINGS sections.

Geriatric Use: Of the total number of subjects in clinical studies of 1.1% (w/v) sodium fluoride, 15 percent were 65 and over, while 1 percent were 75 and over. No overall differences in safety or effectiveness were observed between these subjects and younger subjects, and other reported clinical experience has not identified differences in responses between the elderly and younger patients, but greater sensitivity of some older individuals cannot be ruled out. This drug is known to be substantially excreted by the kidney, and the risk of toxic reactions to this drug may be greater in patients with impaired renal function. Because elderly patients are more likely to have decreased renal function, care should be taken in dose selection, and it may be useful to monitor renal function.[4]

ADVERSE REACTIONS: Allergic reactions and other idiosyncrasies have been rarely reported.

OVERDOSAGE: Accidental ingestion of large amounts of fluoride may result in acute burning in the mouth and sore tongue. Nausea, vomiting, and diarrhea usually occur soon after ingestion (within 30 minutes) and are accompanied by salivation, hematemesis, and epigastral cramping abdominal pain. These symptoms may persist for 24 hours. If less than 5 mg fluoride/kg body weight (i.e., less than 2.3 mg fluoride/lb body weight) have been ingested, give calcium (e.g., milk) orally to relieve gastrointestinal symptoms and observe for a few hours. If more than 5 mg fluoride/kg body weight (i.e., more than 2.3 mg fluoride/lb body weight) have been ingested, induce vomiting, give orally soluble calcium (e.g., milk; 5% calcium gluconate or calcium lactate solution) and immediately seek medical assistance. For accidental ingestion of more than 15 mg fluoride/kg of body weight (i.e., more than 6.9 mg fluoride/lb body weight), induce vomiting and admit immediately to a hospital facility.

A treatment dose (a thin ribbon) of PreviDent® 5000 Booster contains approximately 2.5 mg fluoride. A 3.58 fl. oz. (106 mL) bottle of PreviDent® 5000 Booster contains approximately 647 mg fluoride.

DOSAGE AND ADMINISTRATION: Follow these instructions unless otherwise instructed by your dental professional: 1. Adults and pediatric patients 6 years of age or older, apply a thin ribbon of PreviDent® 5000 Booster to a toothbrush. Brush thoroughly once daily for two minutes, preferably at bedtime, in place of your regular toothpaste. 2. After use, adults expectorate. For best results, do not eat, drink, or rinse for 30 minutes. Pediatric patients, ages 6-16, expectorate after use and rinse mouth thoroughly.

HOW SUPPLIED:
3.58 fl. oz. (106 mL) in plastic bottles
Spearmint: NDC 0126-0075-34 Fruitastic™: NDC 0126-0076-34

STORAGE: Store at Controlled Room Temperature, 20-25°C (68-77°F).

REFERENCES: 1. American Dental Association, Accepted Dental Therapeutics, Ed. 40 (Chicago, 1984): 405-407. 2. H.R. Englander et al., JADA 75 (1967): 638-644. 3. H.R. Englander et al., JADA 78 (1969): 783-787. 4. H.R. Englander et al., JADA 83 (1971): 354-358. 5. Data on file, Colgate Oral Pharmaceuticals.

Colgate Oral Pharmaceuticals, Inc.
a subsidiary of Colgate-Palmolive Company
One Colgate Way, Canton, MA 02021 USA

U.S. Patent No. 6,290,983
F007317 Rev. 07/03

of their submitted cases. Courses and workshops are offered that demonstrate ideal treatment, and the proper photographic standards for documenting a case. Digital photography is a newly accepted method of photographic documentation. The details of how these images are to be captured and presented are also described in academy courses. There was also a new "Accreditation Track" at this year's scientific session in Nashville for those interested in seeing cases treated to accreditation standards.

In addition, particular attention has been paid to making the testing process impartial and nonbiased. Cases are evaluated by calibrated examiners without knowledge of the treating doctor's name. Only a number accompanies each case to be evaluated.

DE: What are the future plans for the AACD?

Dr. Davis: It is important that cosmetic dentistry understands its niche in comprehensive dental care for the well-being of the patient. A multidisciplined approach always should be considered when establishing an ideal treatment plan. We want to establish cosmetic dental treatment guidelines that will help foster and maintain the academy's respect and confidence with other dental and medical specialties and the public.

The academy hopes to increase its public affirmation so that AACD membership represents leaders in cosmetic dental care who are specially trained and capable of providing the highest level of consistent cosmetic dental care. These member dentists are the experts because of their education, training, and skills — not because of a marketing program that stands alone without the backing of advanced cosmetic dental education and experience.

The AACD also hopes to represent all cosmetic dentists, and to protect and gain special recognition for their additional training and ability. By setting standards of excellence, this organization has proven to be the leader in the field of cosmetic dentistry.

Dr. Nicholas C. Davis is a 1973 graduate of Loma Linda University School of Dentistry in Loma Linda, Calif. A member of the university's faculty, he teaches esthetic courses to dental students, hygienists, and graduate dentists. He has earned a Master's in the Academy of General Dentistry degree as well as a fellowship in the International Academy of Dental Facial Esthetics. In addition to publishing numerous articles on various topics, he has lectured nationally and internationally on cosmetic dental procedures and comprehensive dentistry. He maintains a cosmetic practice in Newport Beach, Calif.

DE