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Jon R. Roth, MS, CAE

391 ORAL HEALTH DURING PREGNANCY AND EARLY CHILDHOOD: EVIDENCE-BASED GUIDELINES FOR HEALTH PROFESSIONALS
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PROJECT CO-CHAIRS: Ellen J. Stein, MD, MPH; Jane A. Weintraub, DDS, MPH

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Editor

Ladies in Attendance

KERRY K. CARNEY, DDS

Someone sent me an Internet link to a film from pre-1906 earthquake San Francisco. The camera was secured to the front of a streetcar travelling down Market Street. It is a long, real-time trip down the thoroughfare to the turnaround at the Ferry Building. I have watched it several times. The feeling of being there is uncanny. It is a different world. Traffic laws appear nonexistent or universally ignored. Automobiles, horse-drawn carts, and pedestrians move in any direction they please. Several vehicular accidents miraculously do not occur and more than one pedestrian barely escapes with his life.

It is a world of men and boys, with only rarely the occasional woman. It is four years into the Edwardian period and six years before California would grant women the right to vote. It is a haberdasher’s paradise as almost everyone is wearing a hat of some kind. It is the kind of world in which Dr. C. Edmund Kells would have felt right at home.

Kells was born in the family home on Canal Street in New Orleans in 1856. His father was a dentist and “Eddie” followed in his footsteps. He graduated from the New York Dental College in 1878 and returned to New Orleans to practice with his father. While he was studying in New York, he became fascinated with electricity and visited Thomas Edison’s laboratory. He had a curious and innovative mind that kept him at the forefront of dentistry. His practice and techniques were often considered controversial.

The electric drill had been previously introduced into the practice of dentistry but it was run on batteries and was too cumbersome to be adopted by many. Kells wired his own office and was the first to run a drill from current connected to the street current. He used the street current to provide light for his operatory. It was not the high intensity light we employ today but it allowed illumination not dependent on gaslight or the sunlight from an open window.

Kells was an inventor who held more than 30 patents covering a diverse array of inventions. He held patents for a fire extinguisher, a fire alarm, an automobile jack, an electric thermostat, an automobile engine starter, an elevator starter and brake, and compressed air for use in dental operations. He promoted restoring the pulpless tooth and developed instruments for measuring and filling root canals.

Though documentation is questionable, he is generally given credit for taking the first dental radiograph on a live patient. This was no mean feat. He read about Dr. Roentgen’s X-ray experiments in Germany and built his own machine for clinical use. The procedure took 15 minutes of exposure and required the fabrication of intraoral-sized film, an intraoral holder and the first attenuating filter (a thin piece of wood used to stabilize the head). His patents also included a processing or developing unit.

The invention that has had perhaps the greatest impact on dental and medical surgery was the electric suction pump. You need to have the suction go down only once during a dental procedure to appreciate, personally, the importance of Dr. Kells’ contributions to your everyday practice.

In the history of dental assisting, Dr. Kells is attributed the honor of having hired the first dental assistant. The facts supporting this claim are not so absolute. It seems that men were the first assistants. Kells is said to have seen or heard of colleagues in the metropolitan areas of New York and Chicago who advertised a “lady in attendance” to reassure women of the propriety of seeking dental care in such an office. In 1885, Mrs. Kells was his assistant and he could advertise a “lady in attendance” in his office. By 1895, Dr. Kells hired another female assistant. Eventually, Dr. Kells hired Malvina Cueria, who is considered, by some sources, to be the first female dental assistant of modern history.

Kells recognized the need to overcome the prevailing social norms to make dental care accessible for women who could not be accompanied by a chaperone. His move to incorporate women into his practice was an example of his innovative thought. He was using the assistant to bridge a gender gap just like many practices use assistants today to bridge cultural and linguistic gaps.

The obvious economic advantage of increasing the patient base for his practice did not go unnoticed. Initially, the senior
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Dr. Kells found his son’s working alongside a woman inappropriate, but, like his other colleagues, he soon realized the advantages and also hired female assistants. Dr. Kells went on to become a great advocate for the incorporation of dental auxiliaries into the dental practice. He recognized the efficiencies that auxiliaries could facilitate. He is quoted as having said, “The lady assistant is one of the dental institutions of the day and is due to survive as long as dentistry lives. The lady assistant is absolutely essential to the modern dental office.”

During 2003 to 2007, the average number of chairside assistants per dentist in the primary private practice of independent dentists hovered around 1.6. (Specialists during that same time employed an average of 2.6 chairside assistants.)

One comparison of gross billings per practice hour showed that the mean figure for those dentists with no assistant was $169.70. The mean for those dentists with one chairside assistant was $300.51; for those with two chairside assistants, the mean figure was $427.35.

The obvious improvements in efficiency in the dental delivery system resulted in grants to dental schools to promote dental auxiliary utilization, DAU. Even in this economic downturn, a recent Internet posting of the 20 fastest-growing occupations included dental assistants.

Productivity aside, the increased emphasis on universal precautions and recognition of the need to maintain sterile techniques make practicing without an assistant almost as difficult as performing surgery in the operating room without a surgical nurse.

Some say the relationship we enjoy with the members of our practice team is the single, most important element in a successful practice. Efficiency, productivity, issues of sterilization, and bridging the cultural gap are of major importance but working with great assistants simply makes my life much nicer. Their ability to anticipate my needs, eliminate schedule log jams, make patients comfortable, and take the initiative in improving office team work are skills that I appreciate every day.

I imagine as I watch that 1905 film that if the resolution were a bit better, I might be able to see a sign in the window of a dental office on Market Street. It might read, “Lady in Attendance,” and I could witness an early indicator of the dental team that Dr. C. Edmund Kells championed more than a century ago.

REFERENCES

ADDITIONAL REFERENCES

Address comments, letters, and questions to the editor to kerry.carney@cda.org.
**Synopsis**

On Sunday, this course will present the practical use of the CBCT in the modern dental setting, including the following issues: When is it useful? When is it essential? When is it the standard of care? How does CBCT radiology compare to the standard CT? What is CBCT’s role in dental radiology? How does CBCT relate to orthodontics? Resolution and radiation dosage, does it matter?

Monday’s presentation will focus on the next dimension in implant esthetics, facial gingival tissue stability in esthetic implant dentistry, general consideration for custom ceramic abutments, and rationale and indications for custom ceramic abutments. A lecture and demonstration on a newly developed interactive program on head and neck anatomy for dentistry will be presented.

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**Christopher B. Marchack, DDS**  
Associate Clinical Professor  
Department of Continuing Education  
School of Dentistry, University of Southern California

---

**Date:** Sunday & Monday, October 17 & 18, 2010  
**Time:** 8:30 a.m. Registration, 9:00 a.m. – 5:00 p.m.  
**Lectures and Live Demos**  
**Tuition:** Both Days: $350 DDS $250 AUX  
Sunday Only: $200 DDS $150 AUX  
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9. Wednesday July 21st, Saint Louis, MO
10. Thursday July 22nd, Tulsa, OK
11. Monday August 9th, Knoxville, TN
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13. Wednesday August 11th, Kansas City, MO
14. Thursday August 12th, Denver, CO
15. Monday August 23rd, Birmingham, AL
16. Tuesday August 24th, New Orleans, LA
17. Wednesday August 25th, Houston, TX
18. Thursday August 26th, Dallas, TX
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Enduring Patients
BY DAVID W. CHAMBERS, PHD

“Patient” is not a term used to describe a person in need of oral health care or medical treatment, generally. Many Americans suffer the pain of tooth loss or oral cancer and have no charts in any dental office. On the opposite side, there are Americans who attend the dentist regularly to hear that there is nothing amiss in their mouths or to get their teeth a few shades whiter.

A patient is an individual who has agreed to follow recommendations, provide information, pay for services, and otherwise do as health professionals expect. A patient of record is an individual who has been treated under such terms and thus enjoys specific rights, such as access to continuing and emergency care, or access to their records.

The patients of one dentist are not automatically patients of another, and,

CONTINUES ON 377

More Volunteers Needed for Medical Mission in Central America

International Medical Alliance has assembled a team of dentists, nurses, physicians, and support staff for a 10-day medical mission, from July 28–Aug. 28, to Somoto, Nicaragua. However, it still is looking for more volunteers, including an oral and maxillofacial surgeon, an anesthesiologist, a surgical tech, and two recovery nurses in addition to a gynecologist, a pediatrician, and a pharmacist.

“If we can recruit a few more volunteers, we can perform more life-changing surgeries and medical examinations,” said Ines Allen, IMA’s founder and president of the Southern California-based nonprofit organization.

IMA volunteer surgeons typically perform surgeries to remedy cleft lips, cleft palates, and other facial deformities. “We have a very diverse group of volunteers joining us for our medical mission, including general, plastic and maxillofacial surgeons,” Allen said.

Room and board are provided by the Nicaraguan government; volunteers, however, are responsible for their own airfare.

For more information about the organization or to volunteer, go to internationalmedicalalliance.org or call Ines Allen at 760-485-8963.
Dentists Are Screening Patients for HIV

A small number of dentists and clinics across the country now are screening patients for HIV through a new and quick saliva analysis.

“The surprise factor is you are offering this,” said Catrise Austin, DDS, who estimated she has screened some 100 patients for HIV since last July, according to a news release. “The topic of HIV can be uncomfortable for some, so we decided we would talk about it with patients in a matter-of-fact way, the way we talk about cavities and gum disease,” said the New York City-based practitioner.

Using a kit costing approximately $15, Austin said she has tested some of her patients for the antibodies to HIV-1 and HIV-2. The wait time for the results is between 20 to 40 minutes.

According to one manufacturer of a HIV screening kit, there are several methods of collection for screening. Among the modes are swab, fingerstick, venipuncture whole blood, and plasma. In the swab test, the sample is collected from the patient’s upper and lower gums. Similar to a home-pregnancy test, a change in swab color determines “nonreactive” or “preliminary positive” for the virus. A nonreactive result means anti-HIV antibodies were not detected during the swab test and interpreted as “negative.” A preliminary positive means HIV antibodies were detected in the sample. In those cases, it is recommended another method be used as a confirmatory test.

The Centers for Disease Control and Prevention advocates routine HIV screening and a few public health agencies throughout the nation want to bring HIV testing to the dental chair, according to a news release. These efforts are being made because, the CDC has determined:

- An estimated one in 10 U.S. residents will see a dentist at least once a year, but not a physician.
- More than 1.1 million U.S. residents are infected with HIV.
- Nearly 233,000 individuals are infected with HIV but are unaware of their status. This group is responsible for 54 to 70 percent of the 56,000 new infections each year.
- Seventy-five percent of those who are HIV+ have been shown to change their unsafe behaviors when they are aware of their health status.

FDA Approves Anti-numbing Agent

Many patients dislike that hours long, blunt feeling following dental work with anesthesia. But a solution is on its way. A newly developed anti-numbing agent recently was approved by the Food and Drug Administration for use in adults and children older than 6.

Injecting the anti-numbing agent immediately after the dental work is done reverses the effects of anesthesia. “It causes vasodilation, so it makes those blood vessels dilate in the area, and the act of the dilation helps to reverse the affects of the anesthetic,” said Vidya Sankar, DMD, MHS, director of Oral Medicine Clinic at the University of Texas Health Science Center.

In clinical trials with four common dental anesthetics, the reversal agent got patients back to normal in about an hour, cutting recovery time in half, according to the study. “It shortens the length of anesthetic, soft tissue anesthesia, and return to normal function,” Sankar said.

The anti-numbing treatment, however, generally is not covered by insurance.
in some cases, would not be accepted as patients. The ADA Code of Professional Conduct allows some latitude to practitioners in selecting their patients, although patient status cannot be determined by characteristics such as disability or sexual orientation. However, this must be determined by the dentist’s competence to treat the presenting conditions.

The noun “patient” — a person who has agreed to the terms of treatment — and the adjective “patient” — minor suffering without complaint — have the same root. In that sense, the title of this column is essentially redundant.

Sociologist Talcott Parsons coined the phrase “sick role” to describe societal expectations around the notion of debilitating health. Those who are sick are excused from many obligations, such as going to school or work, and even excused from observing polite etiquette. It is a precondition of this status that they did not choose to be sick, as by excessive drinking, reckless driving, overeating, or refusing to brush one’s teeth. A second condition on the sick role is that individuals must exercise personal responsibility for seeking competent help and following expert advice.

American society has changed since Parsons developed his ideas about the sick role more than half a century ago. We have, through the American with Disabilities Act and other legislation, relaxed the precondition about sickness not resulting from personal choice. The access issue is all about the second condition — personal responsibility and seeking help. Access is not a numbers issue (as the proportion of Americans receiving dental care is slightly better than in times past). The debate we are not having are over the conditions that must be fulfilled to qualify for care, with individuals seeming to abandon some of their responsibility for their own health and practitioners seeming to expect to concentrate their service on the most idealized cases. The conversation we are avoiding is about what it means to be a patient.

The nub:

1. Review the conditions individuals in need of oral health care must meet to qualify as patients in your practice.
2. We should ask ourselves how patient we are with our patients.
3. The patient issue is who has access to whom and under what conditions.

David W. Chambers, PhD, is professor of dental education, Arthur A. Dugoni School of Dentistry, San Francisco, and editor of the Journal of the American College of Dentists.
ADA Develops Kit to Help Dentists Comply With HIPAA Rule Changes

To help dentists comply with HIPAA Privacy and Security and the enhanced requirements that were part of HITECH Act, the American Dental Association now is offering the ADA Practical Guide to HIPAA Compliance: Privacy and Security Kit.

Included in the HITECH Act is how and when dentists are required to provide notification if protected health information has been exposed in a security breach, and well as the breach notification process that a business associate must follow. The ADA recommends dentists review and revise their Health Insurance Portability and Accountability Act compliance programs and make any necessary changes to their Notice of Privacy Practices.

The ADA’s Privacy and Security Kit includes Sample Notice of Privacy Practices and Business Associate Agreement Amendment provisions, workforce training guidance, and an analysis of 12 HIPAA Privacy and Security Attributes, along with a companion CD-ROM. Those who purchase the kit will receive a subscription to the ADA’s annual HIPAA Compliance Update Service through January 2013 and be eligible to earn up to eight continuing education credits after successfully completing the HIPAA test at adaceonline.org. The fee for the test is $29 for members.

The cost of the kit for ADA members is $225; $337.50 for nonmembers. For more information, call the ADA at (800) 947-4746 or go to adacatalog.org.

 Correction
The April 2010 issue of the Journal of the California Dental Association highlighted a new product by WOW Oral Care — SPRAY WHITE PRO. The website information for the product was incorrect. To find out more information about WOW Oral Care’s SPRAY WHITE PRO, visit woworalcare.com.
**P. Gingivalis Pulls No Punches in its Persistence**

*P. gingivalis* is one ornery and offensive organism.

Scientists at the University of Louisville have just uncovered how the bacteria impair the immune system and employ inflammation as its survival mechanism.

In the February issue of *Science Signaling*, the research team led by George Hajishengallis, DDS, PhD, a dentistry researcher, said the discovery may be significant for treating periodontal disease that can lead to bone and gum disease and, eventually, tooth loss.

The project serves patients who are disabled or immobilized in underserved areas. Subar’s research project will specifically focus on institutionalized patients.

“I’m honored that the dental school’s Research Committee has acknowledged this project with the Research Enhancement Award,” said Subar in a news release. “The information we gather through these assessments will allow the dental profession to better understand preventative care for institutionalized patients in our communities.”

**Paul E. Subar, DDS**

**Patrick J. Ferrillo Jr., DDS**

**Nader Nadershahi, DDS**

**P. gingivalis** is very sophisticated, in that it activates aspects of white blood cell function that will help it and inhibits aspects that hurt it,” Hajishengallis said. “This is the first report of a pathogen capable of proactively instigating and exploiting communication signaling between complement and toll-like receptors, rather than undermining either system independently. It’s like infiltrating between your enemy’s lines.”

Research has shown that impeding the C5a receptor thwarts further destruction by *P. gingivalis* and prevents swelling. The team would like this mechanism to translate to humans in an effort to prevent periodontal disease, as well as have applications to other systemic illnesses.
Stress Early on in Life May Hasten Death

Researchers at Emory University said traumatic events occurring in utero or early in one’s life may be linked to premature mortality.

“Prehistoric remains are providing strong, physical evidence that people who acquired tooth enamel defects while in the womb or early childhood tended to die earlier, even if they survived to adulthood,” said George Armelagos, Emory University anthropologist.

Under Armelagos’ lead, a systematic review of untimely death and defects in teeth enamel was conducted. The findings, published in *Evolutionary Anthropology*, are the first summary of prehistoric evidence for the Barker hypothesis, the idea that many adult diseases originate during fetal development and early childhood.

In the 1980s, David Barker, an epidemiologist, started studying links between early infant health and later adult health. The theory, also known as the Developmental Origins of Health and Disease Hypothesis, has expanded into wide acceptance.

“Teeth are like a snapshot into the past,” said Armelagos, who examines skeletal remains to determine how disease and diet impacted populations.

“The science is changing,” Throckmorton said. “Based on what we know, we don’t have evidence to suggest this chemical is a threat to human health. However, we have to understand better the health effects, and we have to work with other agencies to collect that information and decide whether or not we need to change how it’s regulated.”

Triclosan: FDA, EPA Re-evaluating Anti-bacterial Ingredient

Triclosan is getting another look from the Food and Drug Administration, as well as from the Environmental Protection Agency. In the years since its original development as a surgical scrub, it has been added to more consumer products. Many hand sanitizers and liquid soaps contain triclosan.

According to the Centers for Disease Control and Prevention, an estimated 75 percent of the population has triclosan in their urine. Research indicates the anti-bacterial may upset the human endocrine system. Five years ago, an FDA advisory panel said there was no evidence that soap and water were outperformed by anti-bacterial soaps.

“The proliferation of triclosan in everyday consumer products is so enormous, it is literally in almost every type of product,” said Rep. Edward J. Markey (D-Mass.) The European Union, as well as other countries have restricted or prohibited the use of triclosan.

Brian Sansoni, vice president of Communication and Membership of the Soap and Detergent Association, said concerns about triclosan are unfounded. “It’s more important than ever that consumers continue to have access to these products. It’s a time of increased threats from disease and germs.”

Sarah Janssen, staff scientist at the Natural Resources Defense Council, disagreed, saying that the soap industry was reaping advantage of consumer fears. “Especially with the H1N1 outbreak, people get really scared and think they need to take extra precautions without thinking that soap and water works just as well.”

Doug Throckmorton, MD, deputy director of the FDA’s Center for Drug Evaluation and Research, said the FDA is also revisiting the 1997 approval it gave for the use of triclosan in toothpaste because at the time, scientists had not yet raised concerns that triclosan can disrupt the endocrine system.

“The science is changing,” Throckmorton said. “Based on what we know, we don’t have evidence to suggest this chemical is a threat to human health. However, we have to understand better the health effects, and we have to work with other agencies to collect that information and decide whether or not we need to change how it’s regulated.”
Please note new days: Thursday – Saturday, September 9–11, 2010
HEADLINING SPEAKERS

Victoria L. Wallace, CDA, LDA (Roundtable)

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Brian P. LeSage, DDS, FAACD; Edward A. McLaren, DDS

| Esthetic Dentistry          | Esthetic Continuum Workshop                                                   | Friday and Saturday two-day workshop |

Sascha Jovanovic, DDS, MS

| Implants                   | Hands-on Porcine Workshop: Optimal Implant Placement and Bone and Soft Tissue Grafting | Saturday workshop |

Henry A. Gremillion, DDS; DeWitt C. Wilkerson, DMD

| Occlusion                  | Two-Day Continuum Lecture: The Dynamics and Function of the Masticatory System: The Multiple (Inter)Faces of Occlusion | Thursday and Friday two-day lecture |

John A. Svirsky, DDS, MEd

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## Robert C. Fazio, DMD

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## Harold L. Crossley, DDS, PhD

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## Mark A. Latta, DMD, MS

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CDA Presents will feature more than 400 exhibiting companies showcasing the latest in dental technology, products and services. Stay ahead of the curve by checking out the innovative new products being launched in the exhibit halls.

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**New Exhibit Hall Days and Hours**
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Friday, Sept. 10, 9:30 a.m.–5:30 p.m.
Saturday, Sept. 11, 9:30 a.m.–4 p.m.

**Grand Opening**
Thursday, 10 a.m.

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Daily, opening of exhibit hall until noon.

**Hosted Happy Hour**
Thursday, 4:30–6 p.m.
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“The mouth is connected to the rest of the body” is a phrase often used as an important reminder of the systemic connection between an individual’s oral health and their general health and well-being. Research over the past several decades has solidified the evidence base for this connection and is exemplified when looking at the benefits of oral health care services to pregnant women and the improved health outcomes to mother and child.

The ideal prevention of oral disease can begin no earlier than during the fetal development of a child and postpartum period after birth. Ensuring that pregnant women receive proper preventive education and appropriate oral health services during this period can significantly benefit an infant’s trajectory toward positive oral health.

Yet, many women do not seek – and are not advised to seek – dental care as part of their prenatal care. Barriers to improving oral health and utilizing oral health services for pregnant women and their children are multifaceted and complex. In most cases, these factors are influences by the system of care as well as the patient herself.

This entire issue of the Journal is focused on this very subject: Oral Health During Pregnancy and Early Childhood: Evidence-based Guidelines for Health Professionals. In this edition, readers will discover the most current, evidence-based perinatal oral health guidelines for practitioners. The guidelines are intended to assist health care professionals in collaborating with one another to provide oral health services to pregnant women and their children.

These guidelines were developed by a convening of state and national medical, dental and public health experts and organizational representatives who were brought together through collaboration between the California Dental Association Foundation and the American College of Obstetricians and Gynecologists, District IX. The CDA Foundation initiated the partnership with the goal of providing the most up-to-date science on perinatal oral health research as well as the commitment to producing guidelines that were displayed in a user-friendly format for quick reference and use by health professionals. Following the summary guidelines are the in-depth science reviews and supporting evidence for each of the protocols. Finally, recommendations for systems improvements and public policy changes that support expanded oral health care for pregnant women accompany the clinical guidelines.

The CDA Foundation would like to thank the California HealthCare Foundation; First 5 California; Anthem Blue Cross Foundation; and the Sierra Health Foundation for the generous funding that made this project possible. Special thanks to the project co-chairs, Jane Weintraub, DDS, and Ellen Stein, MD, as well as the entire advisory committee and expert panelists for their commitment to this project and the betterment of perinatal oral health.

For an electronic version of these guidelines, please go to cdafoundation.org.
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ORAL HEALTH DURING PREGNANCY AND EARLY CHILDHOOD: EVIDENCE-BASED GUIDELINES FOR HEALTH PROFESSIONALS

Executive Summary

These Perinatal™ Oral Health Practice Guidelines are intended to assist health care professionals in private, public and community-based practices in delivering oral health services to pregnant women and their children, and are based on a review of the current science-based literature. Their development was guided by a group of state and national medical, dental and public health experts and organizational representatives brought together through a collaborative process by the California Dental Association Foundation and the American College of Obstetricians and Gynecologists, District IX. This document first presents the Guidelines in a quick-to-read bullet format, and then follows with the supporting evidence and references for readers interested in the rationale behind the Guidelines. Several useful forms, such as a client referral form for pregnant women, are included in the Appendices as is a glossary of terms. Recommendations for systems improvement and public policy changes are addressed in a document accompanying these Guidelines.

* While the term “perinatal” generally refers to the period around childbirth (i.e., three months prior to and a month following), it is used in this document to more broadly include the entire prenatal and postpartum periods. In its broader sense of maternal and child health, “perinatal” could include time after and between pregnancies.
Background

Good oral health and control of oral disease protects a woman’s health and quality of life before and during pregnancy, and has the potential to reduce the transmission of pathogenic bacteria from mothers to their children. Yet many women do not seek — and are not advised to seek — dental care as part of their prenatal care, although pregnancy provides a “teachable moment” as well as being the only time some women are eligible for dental benefits. Barriers and limits to improving oral health and utilizing oral health services for pregnant women and their children are multifaceted and complex, and the factors relate both to the health care system and to the client herself.

Prenatal and oral health providers are limited in providing oral health care during pregnancy by their lack of understanding about its impact and safety. Many dentists needlessly withhold or delay treatment of pregnant patients because of fear about injuring either the woman or the fetus — or because of fear of litigation. Because they have not been trained to understand the relationship between oral health and overall health, many prenatal providers fail to refer their patients regularly to dental providers. A coordinated effort between the oral health and prenatal communities can benefit maternal and child oral health outcomes.

Key Findings

Current understanding of maternal and fetal physiology indicates that the benefits of providing dental care during pregnancy far outweigh potential risks. Prevention, diagnosis and treatment of oral diseases, including needed dental radiographs and use of local anesthesia, are highly beneficial and can be undertaken during pregnancy with no additional fetal or maternal risk when compared to the risk of not providing care. The American Academy of Periodontology, for example, urges oral health professionals to provide preventive services as early in pregnancy as possible and to provide treatment for acute infection or sources of sepsis irrespective of the stage of pregnancy. The timing of such care is vital given that the oral health of pregnant women has the potential to impact the oral health status of their children. Further, assessment of oral health risks in infants and young children with appropriate intervention, along with anticipatory guidance for parents and other caregivers, has the potential to prevent the transmissibility and development of early childhood caries (ECC).

The most common complications of pregnancy include spontaneous abortion (miscarriage), preterm birth, preeclampsia and gestational diabetes. The current scientific studies, referenced in this document, regarding these conditions related to dental care indicate:

- Control of oral diseases in pregnant women has the potential to reduce the transmission of oral bacteria from mothers to their children.
- There is no evidence relating early spontaneous abortion to first trimester oral health care or dental procedures.
- Preeclampsia is a challenging condition in the management of the pregnant patient, but preeclampsia is not a contraindication to dental care.
- While research is ongoing, the best available evidence to date shows that periodontal treatment has no effect on birth outcomes of preterm labor and low preterm birthweight and is safe for the mother and fetus.
- Best practice suggests that because it has been shown to be safe and effective in reducing periodontal disease and periodontal pathogens, periodontal care should be provided during pregnancy.

Consequently, the following consensus statement (see box) was developed by the expert panel convened to create these Guidelines:

PERINATAL ORAL HEALTH CONSENSUS STATEMENT

Prevention, diagnosis and treatment of oral diseases, including needed dental radiographs and use of local anesthesia, are highly beneficial and can be undertaken during pregnancy with no additional fetal or maternal risk when compared to the risk of not providing care. Good oral health and control of oral disease protects a woman’s health and quality of life and has the potential to reduce the transmission of pathogenic bacteria from mothers to their children.
These Perinatal Oral Health Practice Guidelines are based on the clinical evidence for the importance of oral health care for women and their children before and during pregnancy and early childhood. They apply to health care providers and other professionals in public, private and community-based practices. The Guidelines are organized by provider type (with some unavoidable duplication). Where possible, the material was adapted from the 2006 New York State Department of Health “Oral Health Care During Pregnancy and Early Childhood Practice Guidelines,” and supplemented, updated and rewritten based on current evidence.
Prenatal Care Professionals

Oral health care services should be routinely integrated with prenatal care services for all pregnant women. Prenatal care professionals are encouraged to take the following actions for pregnant women:

- Educate the pregnant woman about the importance of her oral health, not only for her overall health, but also for the oral health of her children.

- Provide education and dental referrals for oral health care, understanding that such care may have relatively low priority for some women, particularly those challenged by financial worries, unemployment, housing, intimate partner violence, substance abuse or other life-stressors.

- Ask the woman if she has any concerns/fears about getting dental care while pregnant. Based on her response, be ready to inform her that dental care is safe during pregnancy and address specific concerns.

- Advise the pregnant woman that:
  - Prevention, diagnosis and treatment of oral diseases (including needed dental X-rays and use of local anesthesia) are highly beneficial and can be undertaken any time during pregnancy with no additional fetal or maternal risk as compared to not providing care.
  - Dental care can improve her overall health and the health of her developing fetus and her children.

- Determine and document in the prenatal record whether the patient is already under the care of an oral health professional; if a referral is needed, make a referral and document this in the prenatal record.

- Encourage all women at the first prenatal visit to schedule a dental examination if one has not been performed in the past six months, or if a new condition has developed or is suspected.

- Facilitate dental care by providing written consultation or an oral health referral form (see sample in Appendix A). While many medical providers understand there is no need for dentists to consult with an MD for routine dental care on a healthy patient, such a form from the obstetrical provider reassures the patient as well as the dentist that dental care is acceptable/ permissible during pregnancy. Include this form as part of routine new-prenatal patient paperwork.

- Obtain or develop and maintain a list of community dental referral sources that will provide services for pregnant women, particularly for women enrolled in publicly funded programs (e.g., Medicaid).

- As a routine part of the initial prenatal examination, conduct and document an oral health assessment of the teeth, gums, tongue, palate and mucosa.

- Share appropriate clinical information with the oral health professional and answer questions that the oral health professional may ask about a patient or condition.

- Encourage and support all women to adhere to the oral health professional’s recommendations for appropriate treatment and follow-up care for oral disease.

- Encourage and support a woman’s decision to breastfeed, providing appropriate oral hygiene instructions for after feeding, and have ready access to resources.
Educate women and encourage behaviors that support good oral health:

- Brushing teeth twice daily with fluoridated toothpaste, especially before bedtime, and flossing daily.
- Taking prenatal vitamins, including folic acid to reduce the risk of birth defects such as cleft lip and palate, and eating foods high in protein, calcium, phosphorus and vitamins A, C and D.
- Chewing xylitol-containing gum or other xylitol-containing products, four to five times a day, after eating.
- Not delaying necessary dental treatment.
- Limiting foods containing fermentable carbohydrates — sugars (including fruit sugars), cookies, crackers, chips — to mealtimes only. Frequent between-meal consumption of these foods increases caries risk.
- Limiting drinking juice, soda, sports drinks or carbonated drinks (including diet soda) between meals. These drinks contain sugar that can cause caries. Even diet sodas contain acids that can weaken the enamel of teeth, especially those containing caffeine and citric acid.

Advise pregnant women experiencing frequent nausea and vomiting to reduce erosion of tooth surfaces by:

- Eating small amounts of nutritious yet noncariogenic foods — snacks rich in protein, such as cheese — throughout the day.
- Using a teaspoon of baking soda (sodium bicarbonate) in a cup of water to rinse and spit after vomiting, avoiding tooth brushing directly after vomiting as the effect of erosion can be exacerbated by brushing an already demineralized tooth surface.
- Using gentle tooth brushing and fluoride toothpaste twice daily to prevent damage to demineralized tooth surfaces.
- Using a fluoride-containing mouthrinse immediately before bedtime to help remineralize teeth.

Advise women that the following actions may reduce the risk of caries in their children:

- Wiping an infant’s gums or teeth, especially along the gum line, with a soft cloth after breast or bottle feeding.
- Helping a child brush their teeth until they are about 7 years old.
- Avoiding putting the infant to bed with a bottle or sippy cup containing anything other than water.
- Avoiding saliva-sharing behaviors, such as kissing the baby on the mouth, sharing a spoon when tasting baby food, cleaning a dropped pacifier by mouth or wiping the baby’s mouth with a cloth moistened with saliva. For older children, avoiding the sharing of straws, cups or utensils.
- Using a bottle or sippy cup between meals containing only water.
- Begin weaning children from at-will bottle and sippy cup use (such as in an effort to pacify a child’s behavior) by about 12 months of age.
- Choosing fresh fruit rather than fruit juice to meet the recommended daily fruit intake.
- Regularly lifting the lip and looking in their child’s mouth for white or brown spots on the teeth.

Encourage women to learn more about oral health during pregnancy and early childhood by accessing available consumer information including reputable websites.

Advise and encourage the woman to obtain necessary follow-up dental care and oral health maintenance during the postpartum period and thereafter.
Oral Health Care Professionals — Pregnant Women

The role of oral health professionals includes providing preventive services and restorative treatment along with anticipatory guidance for pregnant women and their children. Oral health professionals should render all needed dental services to pregnant women.

Pregnancy is not a reason to defer routine dental care or treatment of oral health problems.

It is not necessary to have approval from the prenatal care provider for routine dental care of a healthy patient.

Oral health professionals are encouraged to take the following actions for pregnant women:

- Provide education and dental referrals for oral health care, understanding that such care may have relatively low priority for some women, particularly those challenged by financial worries, unemployment, housing, intimate partner violence, substance abuse or other life-stressors.

- Ask the woman if she has any concerns/fears about getting dental care while pregnant. Based on her response, be ready to assure her that dental care is safe during pregnancy and address specific concerns.

- Advise the pregnant woman that prevention, diagnosis and treatment of oral diseases, including needed dental X-rays and use of local anesthesia, are highly beneficial and can be undertaken with no additional fetal or maternal risk when compared to not providing care.

- Plan definitive treatment based on customary oral health considerations, including:
  - Chief complaint and health history
  - History of tobacco, alcohol or other substance use
  - Clinical evaluation
  - Radiographs and other diagnostics when indicated

- Develop and discuss a comprehensive treatment plan that includes preventive, treatment and maintenance care throughout pregnancy. Discuss the benefits, risks and alternatives to treatments.

- Provide emergency/acute care at any time during pregnancy as indicated by oral condition.

- Perform a comprehensive periodontal examination, which includes a periodontal probing depth record.

- Consider the following as strategies to decrease maternal cariogenic bacterial load:
  - Recommend brushing teeth twice daily with fluoridated toothpaste along with fluoride mouth rinses, especially before bedtime, and flossing daily.
  - Restore untreated caries.
  - Recommend chlorhexidene mouth rinses and fluoride varnish as appropriate.
  - Recommend the use four to five times a day of xylitol-containing chewing gum or other xylitol products.
  - Encourage drinking optimally fluoridated tap or bottled water.
Use the following when clinically indicated (See TABLE 2 for acceptable and unacceptable drugs):

- Radiographs with thyroid collar and abdominal apron.
- Local anesthetic with epinephrine.
- Analgesics, preferably acetaminophen, not to exceed daily dosages.
- Antibiotics including penicillin, cephalosporins and erythromycins.

Do not use the following medications (See TABLE 2 for acceptable and unacceptable drugs):

- Nonsteroidal anti-inflammatory drugs (NSAIDs) are not routinely a part of prenatal care, however in rare clinical situations they can be used for 48 to 72 hours; avoid use in the first and third trimesters.
- Avoid erythromycin estolate and tetracycline.

Ask all women of childbearing age if they take a multivitamin supplement containing folic acid, and recommend initiation if they do not.

Support a woman’s decision to breastfeed and have ready access to patient education resources. Address the topic by integrating it into regular patient education, such as saying “After breast or bottle feeding, be sure to wipe your baby’s gums.”

Reinforce medical recommendations at oral health office visits, including tobacco and alcohol cessation.

During treatment of a pregnant patient:

- Place pregnant women in a semireclining position as tolerated, encourage frequent position changes, and/or place a small pillow under her hip to prevent postural hypotensive syndrome.
- Utilize a rubber dam during restorative procedures and endodontic procedures.
- Use safe amalgam and safe composite practices when placing restorative materials intraorally.

Consult with the perinatal care provider when considering:

- Deferring treatment because of pregnancy. (Note: There is no need to consult with the prenatal care provider for routine dental care of a healthy patient.)
- Comorbid conditions that may affect management of dental problems such as diabetes, pulmonary issues, heart or valvular disease, hypertension, bleeding disorders, or heparin-treated thrombophilia.
- The use of nitrous oxide as an adjunctive analgesic to local anesthetics.
- Anesthesia other than a local anesthesia such as intravenous sedation, nitrous oxide or general anesthesia needed to perform the dental procedure.

Provide any necessary follow-up evaluation to determine if the oral health care interventions have been effective.

Provide health education or anticipatory guidance about oral health practices for her children to prevent early childhood caries.

Encourage women to learn more about oral health during pregnancy and early childhood by accessing available consumer information including reputable websites. (See list in Appendices.)

Advise and encourage the woman to obtain necessary follow-up dental care and oral health maintenance during the postpartum period and thereafter.

Provide dental care for other family members to prevent transmission of cariogenic bacteria to her infant or other children.
Oral Health Care Professionals — Infants and Young Children

Oral health professionals are encouraged to take the following actions for infants and young children:

- Assess the risk for oral diseases in children starting by age 1 by identifying risk indicators including:
  - Inadequate or inappropriate fluoride exposure.
  - Past or current caries experience of child, siblings, parents and other caregivers.
  - Restorations placed in children within past two years.
  - Insufficient or lack of age-appropriate oral hygiene efforts by parents/caregivers.
  - Frequent or prolonged exposure to fermentable carbohydrates especially between meals.
  - Use of nighttime bottle or sippy cup containing anything other than water.
  - Frequent use of medications that contain sugar or that inhibit salivary flow (e.g., anticholinergics, asthma, seizure and attention-deficit hyperactivity medications or antibiotics with added sugary syrup).
  - Clinical findings of heavy accumulation of plaque or any signs of decalcification (white spot lesions).
  - Low socioeconomic status.
  - Special health care needs (developmental delays or disabilities).

- Provide necessary treatment for children assessed to be at increased risk for oral disease or in whom carious lesions or white spot lesions are identified.

- Engage caregivers, whenever possible, in providing anticipatory guidance to increase the potential for changing oral health behaviors.

- Impress upon the parents or caregiver the importance of the child’s primary dentition (e.g., avoid pain and suffering, for proper nutrition, avoidance of caries in permanent dentition, loss of school attendance, to save space for permanent teeth, for proper speech development).

- Apply fluoride varnish two to three times per year for children at moderate to high caries risk starting at 1 year of age.

- Advise parents about the most appropriate type of water to use to reconstitute infant formula. While occasional use of water containing optimal levels of fluoride should not appreciably increase a child’s risk for fluorosis, mixing powdered or liquid infant formula concentrate with fluoridated water on a regular basis for infants primarily fed in this way may increase the chance of a child’s developing enamel fluorosis.
Advise parents and other caregivers about the following interventions to disrupt the chain of events that is implicated in the development of early childhood caries:

- Reduce the bacterial reservoir in mothers and caretakers by using therapeutic agents such as chlorhexidine solutions and xylitol and restoring untreated dental caries.
- Avoid saliva-sharing behaviors of mothers and other caregivers, such as kissing the baby on the mouth, tasting food before feeding, cleaning a dropped pacifier by mouth or wiping the baby's mouth with a cloth moistened with saliva. For older children, avoiding the sharing of straws, cups or utensils.
- Avoid saliva-sharing behaviors between children via their toys, pacifiers, utensils, etc.
- Encourage drinking optimally fluoridated tap or bottled water. If not possible, prescribe fluoride drops or tablet supplements. (See Fluoride Supplementation, Table 3, p. 48.)
- Limit exposure to fermentable carbohydrates (e.g., crackers, chips, cookies, dry cereals) to mealtimes only — and limit the amount — and to caries-promoting sugars such as fruit juices, infant formula preparations, and sugary snacks.
- Never allow at-will and nighttime use of bottles and sippy cups unless they contain only water. The last thing to touch the child’s teeth before bedtime should be a toothbrush or water.
- Wipe an infant’s teeth after breast or bottle feeding, especially along the gum line, with a soft cloth or soft-bristled toothbrush.
- Brush the child’s teeth using a pea-sized (the size of a child’s pinky nail) amount of toothpaste, especially before bedtime. Children older than 2 should use fluoride toothpaste; children younger than 2 should use a smear of fluoride toothpaste on the brush only if they are at moderate to high risk of caries.
- Help the child with brushing their teeth until they are about 7 years old.
- Visit an oral health professional beginning when the child is 12 months of age, or when the first tooth erupts.
- Encourage parents to lift the lip and look in their child’s mouth for white or brown spots on the teeth, showing them how to do this if necessary.

- Explain the importance of each family member having their own toothbrush.
- Regularly clean toys in the dental office waiting room, using an antibacterial solution.
Child Health Care Professionals

Child health care professionals should develop the knowledge to perform oral risk assessments on children beginning at 6 months of age (American Academy of Pediatrics). In addition, children at moderate to high risk for caries should receive an aggressive anticipatory guidance and intervention program.

Child health care professionals are encouraged to:

- Assist parents/caregivers in establishing a regular source of dental care (a "dental home") for the child and for themselves. The first visit should occur when the child is 12 months of age or when the first tooth erupts.

- Provide counseling and anticipatory guidance to parents and other caregivers concerning oral health and protective behaviors during well-child visits.

- Impress upon the parents/caregivers the importance of the child's primary dentition.

- Assess the risk for oral diseases in the child beginning at 6 months of age by identifying risk indicators such as:
  - Inadequate or inappropriate fluoride exposure.
  - Past or current caries experience in child, siblings, parents and other caregivers.
  - Restorations placed in a child within the past two years.
  - Insufficient or lack of age-appropriate oral hygiene efforts by parents/caregivers.
  - Frequent and prolonged exposure to sugary substances especially between meals including bottle or sippy cup use.
  - Use of at-will and nighttime bottle or sippy cup containing anything other than water.
  - Frequent use of medications that contain sugar or cause xerostomia (inhibit saliva flow) (e.g., anticholinergics, asthma, seizure and attention-deficit hyperactivity medications or antibiotics with added sugary syrup)
  - Clinical findings of heavy accumulation of plaque or any signs of decalcification (white spot lesions).
  - Low socioeconomic status.
  - Special health care needs (developmental delays or disabilities).

- Facilitate appropriate referral for management of children assessed to be at increased risk for oral disease or in whom carious lesions or white spot lesions are identified.

- Obtain or develop and maintain a list of community oral health referral sources that will provide services to young children and children with special health care needs.

- Encourage drinking optimally fluoridated tap or bottled water. If not possible, prescribe fluoride drops or tablet supplements. (See Fluoride Supplementation Table 3, p. 48.)

- Advise parents about the most appropriate type of water to use to reconstitute infant formula. While occasional use of water containing optimal levels of fluoride should not appreciably increase a child’s risk for fluorosis, mixing powdered or liquid infant formula concentrate with fluoridated water on a regular basis for infants primarily fed in this way may increase the chance of a child’s developing enamel fluorosis.
Advise parents (and demonstrate as needed) that the following actions may reduce the risk of caries in children:

- Wipe an infant’s teeth, especially along the gum line, with a soft cloth after feeding from the breast or bottle.
- Brush the child’s teeth using a pea-sized (the size of a child’s pinky nail) amount of toothpaste, especially before bedtime. Children older than 2 should use fluoride toothpaste; children younger than 2 should use a smear of fluoride toothpaste on the brush only if they are at moderate to high risk of caries.
- Help children with brushing until they are about 7 years old.
- Give each family member their own toothbrush.
- Never put the child to bed with a bottle or sippy cup containing anything other than water. The last thing to touch the child’s teeth before bedtime should be a toothbrush or water.
- Begin weaning children from at-will bottle and sippy cup use (such as in an effort to pacify a child’s behavior) by about 12 months of age.
- Feed the child foods containing fermentable carbohydrates (e.g., crackers, cookies, dry cereals) at mealtimes only and limit the amount.
- Avoid saliva-sharing behaviors, such as kissing the baby on the mouth, sharing a spoon when tasting baby food, cleaning a dropped pacifier by mouth, or wiping the baby’s mouth with a cloth moistened with saliva. For older children, avoiding the sharing of straws, cups or utensils.
- Avoid saliva-sharing behaviors between children via their toys, pacifiers, utensils, etc.
- Lift the lip and look in the child’s mouth for white or brown spots on the teeth.
- Visit an oral health professional beginning when the child is 12 months of age, or when the first tooth erupts.
- Apply fluoride varnish applications two to three times a year for children at moderate to high risk of caries.

Educate pregnant women and new parents about care that will improve their own oral health:

- Brush teeth twice daily with a fluoride toothpaste and floss daily, especially before bedtime.
- Eat foods containing fermentable carbohydrates at mealtimes only and in limited amounts.
- Avoid sodas and other sugary beverages of any type, especially between meals.
- Choose fresh fruit rather than fruit juice to meet the recommended daily fruit intake.
- Obtain necessary dental exam and treatment before delivery when possible.
- Chew sugarless or xylitol-containing gum or other xylitol-containing products, four to five times a day, after eating.
- Do not smoke or use tobacco products.
Community-Based Programs

Successful intervention to improve oral health during pregnancy and early childhood is benefited by comprehensive community-based efforts. A “health commons approach” to oral health — where community-based, primary care safety net practices include medical, behavioral, social, public and oral health services — can enhance dental service capacity and increase access for low-income populations. Professionals working in these settings, including agencies such as Women, Infants and Children and Head Start, should provide anticipatory and other guidance to parents and integrate parent oral health curriculum into their client education services.

Public health and community-based organization professionals are encouraged to:

- Assist parents/caregivers in establishing a regular source of dental care (a “dental home”) for the child and for themselves. The first visit should occur when the child is 12 months of age or when the first tooth erupts.

- Provide counseling and anticipatory guidance to parents and other caregivers concerning oral health during well-child visits.

- Impress upon the parents the importance of the child’s primary dentition (e.g., avoid pain and suffering, for proper nutrition, avoidance of caries in permanent dentition, loss of school attendance, to save space for permanent teeth, for proper speech development).

- Facilitate appropriate referral for management of children assessed to be at increased risk for oral disease or in whom carious lesions or white spot lesions are identified.

- Follow up on referrals to ensure that timely dental care has been provided.

- Obtain or develop and maintain a list of oral health referral sources that will provide services to young children and children with special health care needs.

- Encourage parents with children at moderate to high risk of caries to receive fluoride varnish applications two to three times per year.

- Encourage drinking optimally fluoridated tap or bottled water. If not possible, prescribe fluoride drops or tablet supplements. (See Fluoride Supplementation TABLE 3, p. 48.)

- Advise parents about the most appropriate type of water to use to reconstitute infant formula. While occasional use of water containing optimal levels of fluoride should not appreciably increase a child’s risk for fluorosis, mixing powdered or liquid infant formula concentrate with fluoridated water on a regular basis for infants primarily fed in this way may increase the chance of a child’s developing enamel fluorosis.

- If making home visits, conduct an in-home assessment of oral health practices. For example:
  - Inquire whether each family member has his or her own toothbrush.
  - Ask if an adult helps children younger than 8 with tooth brushing.
Advise parents (and demonstrate where necessary) that the following actions may reduce the risk of caries in children:

- Wipe an infant’s teeth after bottle or breastfeeding, especially along the gum line, with a soft cloth.
- Brush the child’s teeth using a pea-sized (the size of a child’s pinky nail) amount of toothpaste, especially before bedtime. Children older than 2 should use fluoride toothpaste; children younger than 2 should use a smear of fluoride toothpaste on the brush only if they are at moderate to high risk of caries.
- Help children with brushing until they are about 7 years old.
- Give each family member their own toothbrush.
- Never put the child to bed with a bottle or sippy cup containing anything other than water. The last thing to touch a child’s mouth at bedtime should be a toothbrush or water.
- Begin weaning children from at-will bottle and sippy cup use (such as in an effort to pacify a child’s behavior) by about 12 months of age.
- Limit foods containing fermentable carbohydrates — cookies, crackers, chips, dry cereals, candy (including fruit sugars) — to mealtimes only.
- Avoid saliva-sharing behaviors, such as kissing the baby on the mouth, sharing a spoon when tasting baby food, cleaning a dropped pacifier by mouth, or wiping the baby’s mouth with a cloth moistened with saliva. For older children, avoiding the sharing of straws, cups or utensils.
- Avoid saliva-sharing behaviors between children via their toys, pacifiers, utensils, etc.
- Lift the lip and look in the child’s mouth for white or brown spots on the teeth.
- Visit an oral health professional the with child by 12 months of age or when the first tooth erupts.

Educate pregnant women and new parents about care that will improve their own oral health:

- Brush teeth twice daily with a fluoride toothpaste and floss daily, especially before bedtime.
- Eat foods containing fermentable carbohydrates at mealtimes only and in limited amounts.
- Avoid sodas and sugary beverages (including juices and sports drinks), especially between meals.
- Choose fresh fruit rather than fruit juice to meet the recommended daily fruit intake.
- Obtain necessary dental treatment before delivery when possible.
- Chew sugarless or xylitol-containing gum or other xylitol-containing products, four to five times a day, after eating.
- Do not smoke or use tobacco products.
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Oral health care is particularly important for the health of infants, young children, new mothers, and women who are pregnant or may become pregnant. There is sufficient, strong evidence to recommend appropriate oral health care for these groups of patients. These Perinatal* Oral Health Practice Guidelines are intended to assist health care practitioners in private, public and community-based settings in understanding the importance of providing oral health services to pregnant women and their children and making appropriate decisions regarding their care.

* While the term “perinatal” generally refers to the period around childbirth (i.e., three months prior to and a month following), it is used in this document to more broadly include the entire prenatal and postpartum periods. In its broadest sense of maternal and child health, “perinatal” could include time after and between pregnancies.
The Guidelines are based on a review of current medical and dental literature related to perinatal oral health, and their development was guided by a group of national experts. Because these Guidelines do not represent a static standard of community practice and are established based on current scientific evidence, the recommendations in this document should be reviewed regularly by medical and dental experts in the light of scientific advances and improvement in available technology, approaches or products.

Good oral health has the potential to improve the health and well-being of women during pregnancy, and contributes to improving the oral health of their children. Pregnancy and early childhood are particularly important times to access oral health care since the consequences of poor oral health can have a lifelong effect — and because pregnancy is a “teachable moment” when women are receptive to changing behaviors that can benefit themselves and their children.

However, oral health care in pregnancy is often avoided and misunderstood by dentists, physicians and pregnant women because of the lack of information or perceptions about the safety and importance of dental treatment during pregnancy. Dental and obstetrical professionals who care for women during pregnancy need evidence-based and practical information concerning the risks and benefits of dental treatment to oral and overall health, and an understanding of the factors that affect a woman’s dental care used to support more effective practice behaviors. While evidence-based practice guidelines, such as those developed by the New York State Department of Health and other professional advisories, are evolving to support practitioners, many dentists withhold or delay treatment of pregnant patients because of a fear of injuring either the woman or the fetus. And, because they have not been trained to understand the relationship between oral health and overall health, many prenatal providers fail to refer their patients regularly for dental care.

A coordinated effort between the oral health and prenatal care communities can benefit maternal and child oral health outcomes. In addition to obstetricians, family physicians and other primary care providers play a pivotal role in preventing oral disease, especially among minority and underserved populations who have limited access to dental services and poorer oral health status; and they in a unique position to fill gaps in access to care. Emerging data on important oral-systemic linkages suggest an increasing need for dental-medical collaboration and cross-training.

Although pregnancy places women at higher risk for some oral conditions, such as tooth erosion and periodontal disease, various studies suggest that only about one-quarter to one-half of women in the United States receive any dental care, including prophylaxis, during their pregnancies.

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Dental caries is well documented as the most prevalent chronic disease of children — especially among low-income families — despite the fact that tooth decay is largely preventable. Nationally, 28% of 2 to 5-year-olds show visual evidence of dental caries; and in California, more than half (53%) of all children have experienced dental caries by the time they reach kindergarten, with 28% having untreated caries.

Poor oral health also impacts academic achievement as dental problems result in millions of lost school days each year.

Guidelines Development Process

In addition to the 2006 New York State Practice Guidelines — which have served as an early model — a number of organizations have recently undertaken efforts to address oral health care during pregnancy and early childhood. To reinforce these recommendations and to add to the growing repository of evidence, the California Dental Association Foundation (CDA Foundation) and the American College of Obstetricians and Gynecologists, District IX (ACOG District IX) collaborated on an effort to substantiate the relationship between health and oral health status, treatment of oral disease and pregnancy outcomes. An expert panel of medical and dental professionals was engaged to review the scientific literature and, on the basis of evidence and professional consensus, derive practice guidelines.

An Advisory Committee of professionals representing statewide organizations in public and private clinical practice, research, health education, and policy was formed to work with the CDA Foundation, ACOG District IX, and the project co-chairs to guide the process.
The committee was composed of professionals representing organizations such as the American Academy of Pediatrics, California Primary Care Association, California Nurse-Midwives Association, American Dental Association, American Association of Public Health Dentistry, National Network for Oral Health Access, and American Academy of Pediatric Dentistry. Its role included helping to identify the expert panel, developing the agenda for the consensus conference and reviewing, and giving feedback on the Guidelines during their development.

The interdisciplinary expert panel was selected for their subject matter expertise in oral health and perinatal medicine and represented medical and dental specialties such as maternal-fetal medicine and periodontology. Panel members were charged with performing a literature search on the available science and presenting a summary of evidence-based studies that provided the framework for developing the Guidelines according to the following definition of evidence-based decision making: practices and policies guided by documented scientific evidence of effectiveness, particular to and accepted by the specific field of practice. The experts were charged with identifying existing interventions, practices and policies; assessing issues of concern; and developing recommendations.

Consensus Conference

The expert panel made their presentations at a two-day consensus conference held in Sacramento, Calif., on Feb. 20-21, 2009. In addition to the Advisory Committee members, the conference was also attended on the first day by representatives of about 50 multidisciplinary stakeholder groups involved in maternal and child health. Many of these representatives — from such organizations as the California Department of Public Health’s Maternal, Child and Adolescent Health program; Kaiser Permanente; and the California Primary Care Association Dental Director’s Network — have direct involvement in the care of pregnant women and young children. The engagement of stakeholders early in the process encouraged buy-in and gave these groups the opportunity to provide feedback about the practicality of implementing the Guidelines as they were being developed.

Following the research presentations on the first day, the panelists and Advisory Committee on the second day reviewed numerous comments submitted from the audience the previous day and identified common themes, unanswered questions, key messages and recommendations. Major findings pertaining to each topical area were then re-reviewed relative to specific clinical Guidelines for prenatal, oral health and child care professionals to identify areas of agreement as well as ambiguity. The group relied on expert consensus when controlled studies were not available or conclusive to address specific issues and concerns.

The documentation and proceedings from this conference were summarized and supplementary material added to create these Guidelines, and several drafts were reviewed by the expert panel and Advisory Committee. Prior to dissemination, the final draft was revised to reflect additional feedback from “reality testing” focus groups with local dentists and physicians from private, public and community-based practices that provided valuable feedback about their content, utility and prospective acceptance, as well as suggestions for dissemination.

The Guidelines are organized around key issues addressed during the consensus conference to reflect a patient-centered model of care — a model that takes into account the various factors that influence a woman’s individual needs, personal circumstances, and ability to access services, in addition to advice and counsel from health professionals.

Perinatal Oral Health Consensus Statement

The key consensus statement developed by the expert panel and Advisory Committee conference participants is in the box above.
**THE IMPORTANCE OF ORAL HEALTH FOR WOMEN AND YOUNG CHILDREN**

**Oral Health Care as an Integral Part of Perinatal Health**

Control of oral disease is important because it protects a woman’s health and quality of life and has the potential to reduce the transmission of pathogenic bacteria from mothers to their children. A woman’s preconception as well as pregnancy experience not only influences her own oral health status but also may increase her risk of other diseases. Health care professionals providing preconception care, including primary and general women’s health care, between pregnancies should be educated to recognize the relationship between oral health and pregnancy, and maternal oral health status and future caries risk during early childhood.

Maintaining good oral health during pregnancy can be critical to the overall health of both pregnant women and their infants. As part of routine prenatal care, pregnant women should be referred to oral health professionals for examinations and any needed preventive care or dental treatment. Despite clear links between oral and overall general health, oral health is not accorded the same importance in health care policy as is general health. Reimbursement models and clinical practice typically view the oral cavity as separate from the rest of the body. While oral health should be an integral part of comprehensive care for pregnant women, variations in oral health practice patterns reflect the fact that oral health screening and referral are not routinely included in prenatal care. Moreover, some oral health professionals are hesitant to treat pregnant women because of misconceptions, fear of lawsuits or lack of evidence-based information.

**Preconception**

Maintaining a healthy lifestyle, including optimal oral health, is essential for women who are currently pregnant or who may become pregnant. The most critical periods of fetal development occur in the earliest weeks following conception, before many women even know they are pregnant. Because at least one-third of pregnancies are estimated to be unplanned, women frequently conceive while experiencing less than optimal health. While oral health should be a goal in its own right, preconception prevention and treatment of oral health conditions as a mechanism to improve both women’s oral and general health and their children’s dental health must be considered. Improving preconception health by providing health promotion, screening and interventions can result in improved reproductive health outcomes, with potential for reducing societal costs as well. Ensuring that evidence-based interventions are implemented to further improve infant and maternal pregnancy outcomes among women living with chronic conditions, which includes poor oral health, should also be a priority preconception care activity.

**During Pregnancy and Early Childhood**

Pregnancy and early childhood are particularly important times to access oral health care because the consequences of poor oral health can have a lifelong impact. Improving the oral health of pregnant women prevents complications of dental diseases during pregnancy (e.g., abscessed teeth, toothache), and has the potential to subsequently decrease early childhood caries (ECC) in their children.

Poor periodontal health is associated with chronic conditions such as diabetes, cardiovascular disease and some respiratory diseases. For women with diabetes diagnosed prior to pregnancy, for example, oral health is essential because acute and chronic infections make control of diabetes more difficult. Diabetes control is particularly important during the first trimester. Rates of congenital anomalies increase as the degree of uncontrolled diabetes increases. Ongoing control of diabetes during pregnancy further decreases the risk of adverse pregnancy outcomes such as preeclampsia and large-for-gestational-age newborns.

It is well-documented that the use of folic acid before and during pregnancy reduces the risk of neural tube defects. Some studies suggest it may also reduce the risk of oral congenital defects such as cleft lip, cleft palate and cleft lip with cleft palate. Oral clefts are among the most common congenital malformations, with an estimated prevalence of 1.5 per 1,000 births. Primary prevention of birth defects by adequate preconception and prenatal maternal folic acid supplementation is particularly important during the first trimester. Rates of congenital anomalies increase as the degree of uncontrolled diabetes increases. Ongoing control of diabetes during pregnancy further decreases the risk of adverse pregnancy outcomes such as preeclampsia and large-for-gestational-age newborns.

*Also known as “baby bottle caries” or “baby bottle tooth decay,” Early Childhood Caries (ECC) is a common bacterial infection characterized by decay in the teeth of infants or young children. According to the American Academy of Pediatric Dentistry, ECC is defined (2003) as: one or more decayed, missing (due to caries), or filled tooth surfaces in any primary tooth in a child <71 months (i.e., age 6). In children <age 3, any sign of smooth-surface caries is indicative of severe ECC.*
More than 8% of women reported that the main reason they did not get dental services was that their providers advised against care.

Utilization of Oral Health Services During Pregnancy

While for some women pregnancy is the only time they have medical and dental insurance — thus providing a unique opportunity to access care — reports indicate that dental care use by women during pregnancy is less than optimal. In four states where oral health data are collected as part of the Pregnancy Risk Assessment Monitoring System (PRAMS, an ongoing, population-based survey that obtains information from mothers who recently delivered live-born infants), reports of dental care use during pregnancy ranged from 22.7% to 34.7%. In three states, 12.2% to 25.4% of respondents reported having a dental problem and, of these, 44.7% to 54.9% went for care. Among mothers reporting a dental problem, insurance through public funding and late prenatal care entry were significantly associated with their not getting dental care.

Among women surveyed in another PRAMS study about the likelihood of women using dental services during pregnancy, 58% reported no dental care during their pregnancy. Among women with no dental problems, those at increased risk of not receiving dental care during pregnancy included women who received no counseling on oral health care, were overweight or obese, or reported smoking.
MATERNAL PHYSIOLOGIC CONSIDERATIONS IN RELATION TO ORAL HEALTH

Because of the two-fold (mother and fetus) responsibility that dental professionals face in treating the pregnant patient, it is essential that they understand the physiology of pregnancy, fetal development, normal changes during pregnancy, potential oral complications of pregnancy, and the effects that dental intervention may have on the woman, her fetus or her neonate.45

Normal Changes

Maternal cardiovascular response to pregnancy involves enormous changes. During gestation, plasma volume and cardiac output increase, peripheral vascular resistance decreases, and there is a modest decline in mean blood pressure during midgestation. Myocardial contractility increases during all trimesters of pregnancy resulting in the development of a mild ventricular hypertrophy. The increased load, which develops in tandem with additional blood volume, leads to an increase in left atrial diameter.46 Due to the enlarging uterus from about midpregnancy, women in the supine position are at risk for aortic and venal caval compression by the gravid uterus. Thus, avoiding the flat supine position, particularly in a dental chair, by displacing the uterus laterally is important.47

As pregnancy progresses, the enlarging uterus assumes a more important role in the alteration of respiratory functions. Conformational changes in the chest (e.g., rise in the diaphragm) may affect sleep patterns. Shortness of breath reflects increased respiratory drive and airway edema.49 Total lung volume and lung capacities are not greatly changed by pregnancy; changes are primarily limited to the functional residual capacity (FRC), which is decreased 15-20% in the woman at term, and tidal volume, which is increased 30-40%. While vital capacity, taken in the upright position, remains essentially unchanged during normal pregnancy, obesity or cardiovascular or pulmonary dysfunction can cause a decrease in vital capacity.50 Respiratory changes that occur during pregnancy are of special significance concerning anesthesia. The supine position impairs respiratory function late in pregnancy, worsening hypoxemia by aorto-caval compression. Reduced FRC, especially when compromised by the supine position, commonly falls below the closing capacity of the lungs (lung volume during expiration) in late pregnancy.

Pregnancy is also associated with pressure on the stomach caused by the enlarged uterus. Heartburn, nausea and vomiting and rapid satiety (feeling of fullness) are common. Heartburn is primarily a result of decreased gastroesophageal junction tone and increased gastric reflux.51

Stomach acid refluxed up through the esophagus and into the oral cavity is a concern because excessive vomiting can result in enamel erosion.52

Common hematologic changes during pregnancy include a mild decrease in mean platelet count (gestational thrombocytopenia), mild increases in mean white blood cell counts, and increased iron demands secondary to increased erythropoiesis which requires iron supplementation to maintain hemoglobin level and avoid depletion.53 Other vascular changes include “spider angiomata” and palmar erythema. Pregnancy also increases procoagulants and reduces anticoagulants although neither clotting nor bleeding times are abnormal. All women are at increased risk for venous thromboembolism during pregnancy.54

There are substantial changes in the maternal innate and adaptive immunity systems that affect the maternal-fetal relationship. The immune system can respond through numerous pathways depending on a multitude of factors, including the nature and concentration of the offending agent, the conditions that prevail in the immediate microenvironment of the responsive cells, and the host’s functional capacity to respond. In view of these varying conditions, the system must constantly be adaptive, mobilizing and functionally integrating its numerous cell types for rapid response.55 Reduced resistance of the oral tissues to disease from a reduction in blood levels of immunoglobulins (IgG) in the second half of pregnancy often leads to increased colonization by oral pathogens with increased potential for severe, sustained oral infections such as periodontal disease, for example.56

Common Complications of Pregnancy

The most common complications of pregnancy include spontaneous abortion (miscarriage), preterm birth, preeclampsia and gestational diabetes. Pregnancy loss of less than 20 weeks’ gestation occurs in approximately 15 to 25% of pregnancies.5758 Most are not preventable. The etiologies of spontaneous abortion include endocrine factors, uterine malformations, and chromosomal abnormalities, which account for the greatest majority (60-80%) of losses.
Preeclamptic women present a high prevalence of periodontitis, suggesting that active periodontal disease may play a role in the pathogenesis of preeclampsia.

There is no evidence relating early spontaneous miscarriage to first trimester oral health care or dental procedures.

Preterm birth is the delivery of an infant before 37 completed weeks’ gestation, and accounts for about 11% of all deliveries in the United States. Factors that contribute to the etiology of preterm labor are infection, increased uterine volume, indicated iatrogenic causes and idiopathic factors. There are no proven primary prevention interventions for all women for preterm labor or birth. Secondary prevention includes tocolytics (medications used to arrest or slow down premature labor) in an attempt to obtain additional gestational time, and the use of antibiotics to prolong the latency period in the setting of preterm rupture of the membranes. Preterm premature rupture of membranes occurs in 3% of pregnancies and is responsible for approximately one-third of all preterm births; the etiology may be subclinical infection. Three recent large, well-designed randomized clinical trials, all of which involved nonsurgical periodontal therapy during the second trimester, have failed to demonstrate that treatment of periodontal disease decreases the incidence of preterm labor and low preterm birthweight. Other periodontal intervention strategies involving different timing and/or treatment intensity have not been rigorously tested.

While research is ongoing, the best available evidence to date shows that periodontal treatment during pregnancy does not alter the rates of preterm birth or low birth weight and is safe for the mother and fetus.

Preeclampsia — pregnancy-induced hypertension (>140/90) plus proteinuria usually presenting after 20 weeks of gestation — affects 3-7% of pregnant women, usually primigravidas and women with pre-existing hypertension or vascular disorders (e.g., renal disorders, diabetic vasculopathy). While the causes and pathophysiology of preeclampsia are unknown, the greater the pre-pregnancy blood pressure or pre-pregnancy weight, the greater is the risk for preeclampsia. Immunogenic risk factors include multiple gestations, change in paternity, paternal family history and differing parental ethnicity. Severe preeclampsia is associated with blood pressure >160/110, pulmonary edema, >5 gram of proteinuria in 24 hours, HELLP syndrome (hemolysis, elevated liver enzymes, and low platelet count), and increased risk of fetal IUGR (intrauterine growth restriction). Treatment considerations must balance the risks for the mother and those of the baby with that of preterm delivery. While the best treatment is delivery, primary prevention strategies for some subgroups include aspirin, antiplatelet agents, calcium supplementation, and heparin. Secondary prevention includes careful monitoring of blood pressures, laboratory tests, and symptoms of severe preeclampsia to prevent complications of the disease. Diabetic pregnancies complicated by preeclampsia are of concern because of poor perinatal outcome.

Periodontitis is associated with preeclampsia in pregnant women. Studies have shown that preeclamptic women present a high prevalence of periodontitis, suggesting that active periodontal disease may play a role in the pathogenesis of preeclampsia. Oral pathogens have been found in placertas of women with preeclampsia, which imply a possible contribution of periopathogenic bacteria to the pathogenesis of this syndrome.

Despite the complexity of symptoms and challenges of preeclampsia in patient management, preeclampsia is not a contraindication to dental care. Common oral problems in the general population of people with diabetes include tooth decay, periodontal disease, salivary gland dysfunction, infection and delayed healing. Gestational diabetes mellitus (GDM) — diabetes with initial onset or recognition during pregnancy — occurs in 3-7% of all pregnancies and is increasing, paralleling the obesity epidemic. Longer term outcomes include increased risk of Type 2 diabetes for the mother. According to a six-year prospective cohort study, GDM is associated with increased likelihood of macrosomia (newborns with excessive birthweight), increased cord-blood serum C-peptide, higher primary caesarean delivery rate, and neonatal hypoglycemia. Pregnant women who develop GDM are also at greater risk for periodontal disease than women who do not develop GDM. Once periodontal disease occurs, it makes control of diabetes more difficult. Appropriate detection and active management and treatment of periodontal disease can improve glycemic control of the diabetic patient.
ASSOCIATION OF PREGNANCY AND ORAL CONDITIONS

Common Oral Conditions

The physiologic changes in the mouth that occur during pregnancy are well-documented. Combined with lack of routine exams and delays in treatment for oral disease, these changes place pregnant women at higher risk for dental infections. Clinically important alterations in the woman’s immune system during pregnancy have important implications for oral health. Pregnancy-associated immunologic changes, particularly suppression of some neutrophil functions, are the probable explanation for the exacerbation of plaque-induced gingival inflammation during pregnancy, for example. Inhibition of neutrophils is particularly important in pregnancy-periodontal disease associations.76,77

Nausea and vomiting during pregnancy (Nter. Although NVP is predominantly associated with early pregnancy, some women continue to VP) are very common; 70-85% of women experience these symptoms, which tend to be self-limiting after the first trimester. Hyperemesis gravidarum is a severe form of NVP that occurs in about 0.3-2.0% of pregnancies,78 and may lead to surface enamel loss primarily through acid-induced erosion.79

Changes in salivary composition in late pregnancy and during lactation may temporarily predispose to erosion as well as dental caries,80 however there are no convincing data to show that dental caries incidence increases during pregnancy or during the immediate postpartum period, though existing, untreated caries will likely progress.

Gingivitis due to accumulation of plaque is the most common clinical periodontal condition of women during pregnancy, occurring in 60-75% of women,81 which speaks to the importance of establishing periodontal preventive and treatment measures during pregnancy. Gingival changes generally occur between three and eight months of pregnancy and gradually decline after delivery. While gingival changes usually occur in association with poor oral hygiene and local irritants, especially bacterial flora of plaque, the hormonal and vascular changes that accompany pregnancy often exaggerate the inflammatory response to these local irritants.82 The most marked changes are seen in gingival vasculature. This type of gingivitis, known as pregnancy gingivitis, is characterized by gingiva that is dark red, swollen, smooth and bleeds easily.83 Generalized supra- and/or subgingival periodontal therapies should be initiated to eliminate plaque buildup along with intensive, effective oral hygiene education.

In addition to generalized gingival changes, pregnancy may also cause single, tumor-like growths of gingival enlargement referred to as a “pregnancy tumor,” “epulis gravidarum,” or “pregnancy granuloma.” This lesion occurs most frequently in an area of inflammatory gingivitis or other areas of recurrent irritation, or from trauma or any source of irritation.84 It often grows rapidly, although it seldom becomes larger than 2 cm in diameter. Poor oral hygiene invariably is present, and often there are deposits of plaque or calculus on the teeth adjacent to the lesion. Scaling and root planing, as well as intensive oral hygiene instruction, should be initiated before delivery to reduce the plaque retention.85 Generally, the pregnancy granuloma will regress somewhat postpartum. There are situations, however, when the lesion needs to be excised during pregnancy, such as when it is uncomfortable for the patient, disturbs the alignment of the teeth, or bleeds easily on mastication. However, the patient should be advised that the pregnancy granuloma excised before term may recur.86

Generalized tooth mobility in the pregnant patient is probably related to the degree of gingival diseases disturbing the attachment apparatus, as well as to mineral changes in the lamina dura.87 Longitudinal studies demonstrate that as the gingival inflammation increases do so do the probing depths, attributable to the swelling of the gingiva.88 While most research concludes that generally no permanent loss of clinical attachment occurs during pregnancy,89,90 in some individuals the progression of periodontitis can and does occur91 and can be permanent.

Physiologic xerostomia (abnormal dryness of the mouth) is a common oral complaint. The most frequently reported cause of xerostomia is the use of medications that produce dryness as a side effect,92 including antispasmodics, antidepressants, antihistamines, anticonvulsants and others. Adults or children using these medications long term may benefit from increased oral hygiene efforts and more frequent fluoride exposure to reduce the increased risk of caries.93 Physiologic xerostomia also occurs during sleep, when salivary glands do not secrete spontaneously. With little or no saliva to buffer pH and clear away fermented bacterial products from teeth during sleep, the most important time for plaque removal is just before bedtime for both mothers and children.

Periodontal Disease and Adverse Pregnancy Outcome

Destructive periodontal disease affects about 15% of women of childbearing age and up to 40% of pregnant women, with a dispropor-
Gingivitis due to accumulation of plaque is the most common clinical periodontal condition of women during pregnancy, occurring in 60-75% of women.

These randomized clinical trials — which are a stronger research design than the earlier work of observational studies (cross-sectional, cohort, and case-control) — also showed that routine, essential dental care, nonsurgical periodontal care, and the use of topical or local anesthesia for dental procedures were not associated with any adverse serious medical events or adverse pregnancy outcomes. Additionally, periodontal therapy can be effective in reducing signs of periodontal disease and reducing periodontal pathogens, providing evidence to support the provision of periodontal care during pregnancy.

Because it has been shown to be safe and effective in reducing signs of periodontal disease and reducing periodontal pathogens, best practice suggests that periodontal care should be provided during pregnancy.

Transmission of Cariogenic Bacteria

It is well-established that dental caries is a bacterial infection, and studies during the past 25 years clearly indicate that the bacteria involved are transmissible. Dental caries involves multiple acidogenic species of bacteria that consume fermentable carbohydrates — sugars (including fruit sugars) and cooked starch (bread, cereal, crackers, chips) — and produce acid byproducts that diffuse into the tooth and dissolve minerals; the two principal groups of bacteria that have been implicated are the mutans streptococci and the Lactobacilli species. The principal species in the mutans streptococci group are Streptococcus mutans and Streptococcus sobrinus. Early colonization in an infant’s mouth by S. mutans is a major risk factor for early childhood caries as well as future dental caries.

It is helpful for health care providers to view caries as an ongoing and often changing balance between pathological factors and protective factors: If the pathological
factors outweigh the protective factors, then caries progresses. In the reverse situation, caries may be arrested or an incipient lesion reversed. The pathological factors include the acidogenic bacteria, reduced salivary function, and the frequency of ingestion of fermentable carbohydrates. The protective factors include saliva and its numerous caries-protective components; the saliva flow; antibacterials, both intrinsic from saliva and extrinsic from other sources; fluoride in multiple forms and other factors that can enhance enamel remineralization; good oral hygiene to remove plaque; and dental sealants for susceptible pits and fissures. In most individuals, there are numerous acid challenges daily as fermentable carbohydrates are ingested and the battle between the pathological factors and the protective factors takes place.352

Control of oral diseases in pregnant women has the potential to reduce the transmission of oral bacteria from mothers to their children.33 The transmission of mutans streptococci can be acquired and readily transferred through vertical transmission — from mother to child or caregiver to child333,335 — or through horizontal transmission — from child to child, including unrelated children such as in preschool,336,337,338 or adult to adult as between spouses.339,340 Cariogenic or decay-causing bacteria are typically transferred from the mother or caregiver to child by behaviors that directly pass saliva, such as sharing a spoon when tasting baby food, cleaning a dropped pacifier by mouth, or wiping the baby’s mouth with a cloth moistened with saliva. Early acquisition of S. mutans is a key event in the natural history of early childhood caries as children infected early have more caries later. Delaying or preventing primary infection by xylitol streptococci reduces the risk for future dental caries.343 Pregnant women who may not be concerned about their own oral health are generally very receptive to information about the consequences it can have on their children.344,345 again marking pregnancy as a teachable opportunity for improving health behaviors.

Evidence on effective interventions to reduce mother-to-child transmission of cariogenic bacteria supports recommendations for the appropriate use of fluorides, antibacterials and dietary control to reduce maternal salivary reservoirs of cariogenic bacteria, particularly for women who have experienced high rates of dental caries.346 Xylitol, a naturally occurring sugar alcohol approved for use in food by the U.S. Food and Drug Administration since 1963, has been shown to reduce S. mutans levels in plaque and saliva and to markedly reduce tooth decay.347 Xylitol can inhibit bacterial transfer and is also antibacterial and nonfermentable. Maternal use of xylitol chewing gum or lozenges (four to five times a day) has been shown to be effective in reducing S. mutans colonization and caries in infants.348 Studies involving schoolchildren have demonstrated that habitual use of xylitol-containing products decreased dental caries. In a school-based randomized clinical trial, S. mutans and S. sobrinus were reported to be reduced among children when xylitol was consumed in specially formulated gummy bear candy, although there was no change in Lactobacillus levels.349

While the transmission of mutans streptococci and its link to caries has been shown to correlate with breastfeeding experience,350 human milk by itself does not promote tooth decay. Poor oral hygiene and health practices such as lack of a consistent and early oral hygiene regimen, supplementation or replacement of breast milk feedings with sugary liquids or solids,351 and falling asleep with the breast nipple in the mouth352 are the underlying causes of caries among breastfed infants. Continued breastfeeding — e.g., for more than one year and beyond eruption of teeth — may be positively associated with early childhood caries,353,354 but there are conflicting findings to support a definitive link, and the research is often blurred by many uncontrolled factors. Pediatricians should work collaboratively with the dental community to ensure that women are encouraged to breastfeed and use good oral hygiene practices.
PREGNANCY AND DENTAL CARE

Preventive Care

The American Academy of Periodontology has urged oral health professionals to provide preventive services as early in pregnancy as possible and to provide treatment for acute infection or sources of sepsis irrespective of the stage of pregnancy.156 Primary prevention is the prevention of dental caries and gingivitis in a completely healthy oral cavity. An important strategy in caries prevention includes measures to avoid infection and colonization of the oral cavity with primary cariogenic mutans streptococci, especially *S. mutans* and *S. sobrinus.*157

Establishing a healthy oral environment for the pregnant patient is the most important objective in planning dental care. This objective is achieved at home by the woman with adequate plaque control (brushing, flossing, toothpastes, and use of antimicrobial agents such as xylitol and chlorhexidine rinses) and with professional prophylaxis including coronal scaling, root planing and polishing.158

Although primarily used in caries prevention for children on unrestored permanent posterior teeth, dental sealants also benefit adults who have teeth with occlusal (biting) surfaces at risk for caries, and on the pits and fissures of susceptible primary teeth of children at risk for caries. In 2008, the American Dental Association released evidence-based sealant guidelines including a recommendation for sealant placement on both adult teeth and primary teeth at risk for caries. Evidence suggests that pregnant women similarly would benefit from pit-and-fissure sealants on teeth at risk of caries.159
Treatment Considerations

Informed Consent

The concept of informed consent is rooted in medical ethics and has been codified as legal principle. The dental patient must be provided with full information concerning risks, benefits and alternative procedures available to respond to her oral health condition. Specific consent should be obtained for any invasive/surgical procedures in compliance with the prevailing standard of care. No additional or special informed consent is necessary because of pregnancy.

Dental Treatment During Pregnancy

Dental treatment for a pregnant woman who has oral pain, an emergency oral condition or infection should not be delayed as the consequences of not treating an active infection during pregnancy outweigh the possible risks presented. The American Academy of Periodontology has urged oral health professionals to provide treatment for acute periodontal infection or sources of sepsis irrespective of the stage of pregnancy. Treatment for dental caries is recommended to reduce the level of caries-causing bacteria in the pregnant woman's mouth. If the woman does not receive treatment by the time of delivery, her infant could increase its own chance of early acquisition of cariogenic bacteria by transfer in saliva from the mother. There are practical considerations as well: After the baby is born, the mother may be too busy to attend to dental appointments or may lose pregnancy-related health insurance coverage.

While treatment of periodontal disease during pregnancy has not been shown to prevent preterm birth, fetal growth restriction or preeclampsia, the treatment itself is not hazardous to the woman or pregnancy, and the benefits from treatment and risks from lack of treatment must be considered. The treatment approach tested so far consists of nonsurgical periodontal therapy in the second trimester. Evidence supporting the potential benefits of periodontal treatment on pregnancy outcomes shows that essential dental treatment, including the use of topical and local anesthetics, is safe and is not associated with an increased risk of experiencing serious medical adverse events or adverse pregnancy outcomes. While the period covered in this study was 13 to 23 weeks' gestation, these findings do not imply that treatment earlier or later in pregnancy is not also safe. Higher anxiety levels associated with pregnancy may intensify the stress of a dental appointment. Dental care during pregnancy should accommodate these changes with short appointments, judicious use of drugs and radiographs, and avoidance of flat supine positioning.

Diagnostic Radiation

Radiographic imaging of oral tissues is not contraindicated in pregnancy and should be utilized as required to complete a full examination, diagnosis and treatment plan. Diagnostic radiographs are an important tool in the diagnosis and treatment of dental problems and are considered safe during pregnancy. Dental radiographic examinations require exposure to very low levels of radiation, which makes the risk of potentially harmful effects extremely small. Recommendations about radiographs developed by an expert panel from the dental profession under the auspices of the U.S. Food and Drug Administration do not need to be altered because of pregnancy. The number and type of radiographs will depend upon the clinical conditions and the patient's health history. As standard practice, the oral health professional should provide protection from radiation exposure for the pregnant woman's abdomen and neck using an abdominal and neck shield.

One new dental technology involving dental radiographs, which is also safe during pregnancy, is digital radiographs. They offer the advantage of a reduction in radiation, no need for film or processing chemicals, and production of a nearly instantaneous image. The dental office also can print or copy digital radiographs. The main disadvantage is the cost, limiting their use in many dental practice settings.

Positioning the Pregnant Patient

When the pregnant woman lies flat on her back, the uterus in the third trimester can press on the inferior vena cava and impede venous return to the heart, which can lead to the supine hypotensive syndrome. This syndrome (which only occurs in 15-20% of pregnant women) can be avoided during dental treatment by placing the patient in a semireclining position, encouraging frequent position changes, and/or by placing a wedge underneath one of her hips to displace the uterus. A small pillow or folded blanket under either hip moves the uterus off the vena cava to prevent postural hypotensive syndrome. Pregnant women are at increased risk for gastric aspiration as a result of reduced gastroesophageal sphincter tone. Additionally, gastric emptying may be delayed by narcotics, onset of labor, pain and trauma. Maintaining a semireclined position and avoiding excessive sedation are required to prevent aspiration.
Use of Nitrous Oxide

Nitrous oxide is used extensively to provide sedation and analgesia during labor and has been studied widely. Its widespread use in obstetrical analgesia is related to its ease of administration, minimal toxicity, minimal cardiovascular depression, lack of effect on uterine contractions, and the fact that it has not been implicated as one of the agents capable of causing malignant hyperthermia, a severe biochemical reaction triggered by exposure to certain general anesthetics. In obstetrics, nitrous oxide has been used alone or in combination with other methods of pain control. In dentistry, nitrous oxide/oxygen is the most commonly used inhalation anesthetic. It is commonly used in ambulatory surgery centers and emergency centers as well.170

As a single agent, nitrous oxide has impressive safety and is excellent for providing minimal and moderate sedation for apprehensive dental patients.171 Higher anxiety levels associated with pregnancy are not uncommon and may intensify the stress of a dental appointment for a pregnant woman.172 Where a patient’s anxiety may prevent cooperation with essential treatment, and behavioral management strategies are insufficient to manage her fear and anxiety, nitrous oxide may be regarded as the sedation agent of choice.173 Because the issue under consideration here is the use of nitrous oxide sedation during a single appointment for nonelective dental treatment of a pregnant patient — and the treatment is not prolonged — apprehension for these patients should be allayed by using the safest agents available; and the judicious use of nitrous oxide fulfills this requirement.174,175

To compare the relative potencies of anesthetic gases, anesthesiologists have accepted a measure known as MAC (minimum alveolar concentration) — a measure of the potency of inhalational anesthetic agents. A lowered MAC for the pregnant patient will require less

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nitrous oxide to be administered as compared to the nonpregnant patient. Because pregnancy is associated with decreased anesthetic requirements, lower concentrations of nitrous oxide may be adequate for sedation and patient comfort. Prolonged dental treatments and nitrous oxide exposure should be avoided if possible. Adequate precautions and monitoring must be taken to prevent hypoxia, hypotension and aspiration. Continuous monitoring of vital signs and adequate scavenging of exhaled gases are recommended. Proper use of scavenging devices while nitrous oxide is provided to patients in the dental setting eliminates any significant risk.

Reduced fertility has been implicated with long-standing or chronic occupational exposure to nitrous oxide without proper scavenging apparatus, and prolonged exposure to even ambient concentrations of nitrous oxide has the potential to inhibit cell division. Short exposure during general anesthesia with such anesthetic agents as nitrous oxide and thiopental has not been shown to have deleterious effects or to be teratogenic. Retrospective studies of nearly 6,000 general anesthetics in pregnant patients, which virtually all included nitrous oxide, failed to reveal any adverse outcomes for the patient or fetus.

Important maternal anatomic and physiologic changes, with implications for anesthetic management, cause pregnant women to differ from nonpregnant women. During pregnancy, oxygen consumption increases and functional lung capacity decreases. Consequently, reserve decreases and pregnant women may develop hypoxia and hypercapnia more easily with decreased ventilation. Airway management can be difficult in pregnant women due to weight gain, increased chest wall diameter, breast enlargement, and laryngeal edema. Plasma volume and cardiac output increase, and peripheral vascular resistance decreases. This explains why

from midgestation onward in women in the supine position are at risk for compression of the great vessels by the uterus, which may result in significant hypotension, a common complication that can be easily avoided during dental treatment by proper positioning of the patient as described previously. When used alone for mild to moderate sedation, nitrous oxide does not depress ventilation. However, when it is combined with sedatives or opioids that depress ventilation, a more pronounced and clinically important depression may result. Therefore, administration of nitrous oxide in combination with opioids or central nervous system depressants should be performed by knowledgeable and appropriately trained personnel only. Prior to planned use of nitrous oxide/oxygen during dental treatment, consultation with an obstetrician or maternal-fetal medicine subspecialist is recommended to check for any pulmonary concerns, in addition to standard nitrous oxide protocols in dentistry.

Restorative Materials

Safety considerations for treating dental caries arise in relation to the presence, placement, and removal of dental restorative materials, including amalgam, composite resin and the associated adhesive materials. Best practices in using dental restorative materials are based on perinatal and child outcomes from studies on pregnant women as well as from relevant research conducted on dental professionals who may, during their pregnancies, receive higher exposures to these same materials through their workplace activities. Amalgam, an alloy of silver, copper, tin and mercury, is the most commonly used dental restorative material for repairing posterior teeth. The elemental mercury found in dental amalgam is inorganic, in contrast to organic forms such as methyl mercury, found largely in fish and seafood, and thimerosal, an ethyl mercury-based preservative found in pharmaceuticals. Current-day exposures to mercury are predominantly to methyl mercury from food intake, with inorganic mercury present at much lower concentrations. Oral habits such as bruxism and gum chewing can lead to higher concentrations of inorganic mercury in blood. Similarly, use of teeth whitening products, which contain or generate hydrogen peroxide, results in release of inorganic mercury from dental amalgams and hence consideration should be given to avoiding these whitening products during pregnancy.

Placement and removal of amalgam restorations results in transiently higher blood mercury concentrations. Mercury vapor is inhaled during placement and removal and carried to the lungs where it can enter the bloodstream and cross the placental barrier. During both placement and removal, use of a rubber dam and high-speed suction can markedly reduce vapor inhalation during procedures. It is advisable to delay removal until after pregnancy or weaning if a rubber dam and high-speed suction cannot be used. However, even during placement and removal, studies do not show any adverse reproductive effects if safe amalgam practices are used.

Much of the research related to gestational mercury exposures has been conducted in women with occupational exposure; these studies have exam-
ined fertility level, spontaneous abortion and low birthweight. For example, a study of dental assistants found fertility was not compromised among assistants who placed a large number of amalgams per week if their workplace practices were hygienic. A Swedish study found a small elevation in risk for delivering a low birthweight baby in dental assistants but not in dentists or dental hygienists. Studies in Washington state and the United Kingdom focused on nonoccupationally exposed populations. In the former, births to enrollees in a dental insurance plan showed no increased risk for low birthweight if mercury-containing dental fillings were placed during pregnancy; but the analysis was flawed due to adjustment for a variable heavily influenced by intrauterine growth. In a large birth cohort from the United Kingdom, no increased risk of low birthweight was observed in association with placement, removal or presence of amalgams.

After review of about 200 scientific studies, the FDA on July 27, 2009, reaffirmed its view that dental amalgam is a safe, effective material for use in dental restorations. According to the FDA, the levels released by dental amalgam fillings “are not high enough to cause harm in patients,” and “the best available scientific evidence supports the conclusion that patients with dental amalgam fillings are not at risk.” It further determined that “long-term clinical studies in adults and children aged 6 and older with dental amalgam fillings have not established a causal link between dental amalgam and adverse health effects.” The FDA reversed an earlier caution against their use in certain patients, including pregnant women and children. It explored potential health effects of dental amalgam in developing fetuses, breast-fed infants and children younger than 6 and acknowledged that while research on these populations is more limited, “the scientific evidence that is available suggests that these populations also are not at risk.”

The FDA ruling classifies encapsulated amalgam as a class II medical device (moderate risk), which places it in the same class as gold and composite fillings. By classifying a device into class II, the FDA can impose special controls (in addition to general controls such as good manufacturing practices that apply to all medical devices regardless of risk) to provide reasonable assurance of the safety and effectiveness of the device. These special controls include recommended performance tests to ensure that essential information is provided to the FDA when devices are submitted for evaluation.

Composite resins, glass-ionomer, gold and porcelain restorations are alternative restorative dental materials. Composite resins are composed of a polymerized resin and inorganic filler. Recent research on methacrylate monomers, MMA, HEMA and TEGDMA, and on bisphenol-A (BPA), Bis-GMA, and Bis-DMA indicates that even after polymerization, monomers are released into the oral environment, diffuse through the dentin, and reach the pulp. These compounds have estrogenic properties, but the clinical relevance of the amounts released is unknown. While BPA may not be a direct ingredient in a dental sealant or resin material, it can be a byproduct of the degradation by salivary enzymes of other monomers used in these materials. In a study by Joskow et al. small amounts of BPA were found in saliva for about an hour after dental sealants were placed. Short-term exposures associated with the placement of dental sealants and composite restorations have not been shown to have any health risks; data is lacking on the effects of long-term exposures.

Given the risks associated with untreated dental caries in pregnant women, oral health professionals should recommend prompt treatment of dental caries and, in consultation with the pregnant woman, determine the appropriate options for treatment and restorative materials.

Pharmacologic Considerations

Pharmacologic treatment during pregnancy is of concern as the maternal metabolism of drugs is altered by the normal physiologic changes of pregnancy, and certain medications can reach the fetus and cause harm. The physiologic changes of pregnancy influence absorption, plasma levels, drug distribution, half-lives and elimination of drugs (Table 1). Consequently, drug concentrations may be higher than, equal to or lower than those found in nonpregnant women. Physiologic changes in the pulmonary, gastrointestinal and peripheral blood flow can alter drug absorption. Alterations in the gastrointestinal system include decreased hydrochloric acid production that affects ionization and absorption of drugs, and delayed gastric emptying that increases bioavailability of slowly absorbed drugs. Hepatic changes can alter biotransformation of drugs by the liver and clearance of drugs from the maternal serum: While first-pass metabolism is generally unchanged, second-pass metabolism is vari-
thalidomide, isotretinoin, warfarin, carbamazepine. Because many teratogens reach the fetus by the maternal bloodstream, exposure depends upon several critical factors such as gestational age, route of administration, absorption of the drug, dosage, maternal serum levels, and the maternal and placental clearance system. To cause a birth defect, a teratogen acts during critical periods of embryonic or fetal development and induces embryopathy or fetopathy. During organogenesis (five to 10 weeks after last menstrual period) fetal tissues begin to differentiate, and this interval is the period of greatest vulnerability for tetragenesis.

Research shows that drug-taking is common in women of childbearing age, and few women avoid drugs even when planning a pregnancy. Epidemiological studies have also shown that pregnant women continue to take substantial quantities of drugs, particularly those readily available to them without prescription. A drug survey from 22 countries showed that the average woman took 2.9 medications (range: one to 15) during pregnancy. According to a longitudinal study from the United States, pregnant women reported using an average 1.14 prescription drugs, excluding vitamins and iron; the U.S. women also took an average of 2.95 over-the-counter drugs and nearly half (45%) used herbal agents. Health care professionals should become accustomed to querying each pregnant patient about her medications, her use of herbal and natural supplements, and her health. The best time to ask is during a brief medical update at the beginning of each appointment.

Most of the common medications used in medical and dental settings have not been utilized in clinical trials with pregnant women. Very few drugs have been tested on pregnant women for obvious reasons. A number of resources describing drug effects during pregnancy are available, although not all answer the question of whether or not to treat, or which drug to use. A compilation of common drugs with FDA classifications and restrictions is displayed in Table 2. Tetracycline, for example, is a drug that should be avoided during pregnancy. If uncertain about drugs and medications during pregnancy, check with a pharmacist and the prenatal care provider to evaluate the benefits, risks and alternatives of using a particular drug. Additionally, neonatal withdrawal syndrome is a common side effect of prolonged use of certain analgesics (acetaminophen with codeine, codeine, hydrocodone, meperidine, morphine). Therefore, use of dental analgesics commonly used in dentistry should be considered a short-term option until definitive dental treatment can be performed.

### Table 1: Influence of Pregnancy on Physiologic Aspects of Drug Disposition

<table>
<thead>
<tr>
<th>Pharmacokinetic Parameter</th>
<th>Change in Pregnancy</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>ABSORPTION</strong></td>
<td></td>
</tr>
<tr>
<td>Gastric emptying</td>
<td>Decreased</td>
</tr>
<tr>
<td>Intestinal motility</td>
<td>Decreased</td>
</tr>
<tr>
<td>Pulmonary function</td>
<td>Increased</td>
</tr>
<tr>
<td>Cardiac output</td>
<td>Increased</td>
</tr>
<tr>
<td>Blood flow to skin</td>
<td>Increased</td>
</tr>
<tr>
<td><strong>DISTRIBUTION</strong></td>
<td></td>
</tr>
<tr>
<td>Plasma volume</td>
<td>Increased</td>
</tr>
<tr>
<td>Total body water</td>
<td>Increased</td>
</tr>
<tr>
<td>Plasma proteins</td>
<td>Decreased</td>
</tr>
<tr>
<td>Body fat</td>
<td>Increased</td>
</tr>
<tr>
<td><strong>METABOLISM</strong></td>
<td></td>
</tr>
<tr>
<td>Hepatic metabolism</td>
<td>Increased or decreased</td>
</tr>
<tr>
<td>Extrahepatic metabolism</td>
<td>Increased or decreased</td>
</tr>
<tr>
<td>Plasma proteins</td>
<td>Decreased</td>
</tr>
<tr>
<td><strong>EXCRETION</strong></td>
<td></td>
</tr>
<tr>
<td>Renal blood flow</td>
<td>Increased</td>
</tr>
<tr>
<td>Glomerular filtration rate</td>
<td>Increased</td>
</tr>
<tr>
<td>Pulmonary function</td>
<td>Increased</td>
</tr>
<tr>
<td>Plasma proteins</td>
<td>Decreased</td>
</tr>
</tbody>
</table>

# Pharmacological Considerations for Pregnant and Breastfeeding Women

<table>
<thead>
<tr>
<th>Drug</th>
<th>FDA Classification</th>
<th>Teratogenic Risk**</th>
<th>Quality of the Evidence**</th>
<th>Restrictions/Special Considerations</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>ANALGESICS</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Aspirin</td>
<td>C</td>
<td>Minimal</td>
<td>Good</td>
<td>• Short duration of use &lt;br&gt; • Avoid in 1st and 3rd trimester a&lt;br&gt; • Avoid if breastfeeding</td>
</tr>
<tr>
<td>Acetaminophen</td>
<td>B</td>
<td>None to minimal</td>
<td>Good</td>
<td>• Analgesic and antipyretic of choice</td>
</tr>
<tr>
<td>Ibuprofen</td>
<td>B</td>
<td>Minimal</td>
<td>Fair to good</td>
<td>• Short duration of use &lt;br&gt; • Avoid in 1st and 3rd trimester a&lt;br&gt; • Do not use for &gt;48–72 hours&lt;br&gt; • Compatible with breastfeeding</td>
</tr>
<tr>
<td>Naproxen</td>
<td>B</td>
<td>Minimal</td>
<td>Fair</td>
<td>• Short duration of use &lt;br&gt; • Avoid in 1st and 3rd trimester a&lt;br&gt; • Do not use for &gt;48–72 hours&lt;br&gt; • Compatible with breastfeeding</td>
</tr>
<tr>
<td>Codeine</td>
<td>C</td>
<td>Unlikely</td>
<td>Fair to good</td>
<td>• Compatible with breastfeeding &lt;br&gt; • At high maternal doses, may cause depression/drowsiness in breastfeeding infants</td>
</tr>
<tr>
<td>Morphine</td>
<td>B/D</td>
<td>Unlikely</td>
<td>Fair to good</td>
<td>• Withdrawal symptoms in neonate may occur with prolonged or chronic use&lt;br&gt; • At high maternal doses, may cause depression/drowsiness in breastfeeding infants&lt;br&gt; • Category D with prolonged use</td>
</tr>
<tr>
<td>Meperidine</td>
<td>B/D</td>
<td>Unlikely</td>
<td>Fair</td>
<td>• Category D with prolonged use&lt;br&gt; • Compatible with breastfeeding</td>
</tr>
<tr>
<td><strong>ANTIBIOTICS</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Penicillin</td>
<td>B</td>
<td>None</td>
<td>Good</td>
<td>• No restrictions</td>
</tr>
<tr>
<td>Amoxicillin</td>
<td>B</td>
<td>Unlikely</td>
<td>Good</td>
<td>• No restrictions</td>
</tr>
<tr>
<td>Cephalosporins</td>
<td>B</td>
<td>Unlikely</td>
<td>Fair to limited</td>
<td>• No restrictions</td>
</tr>
<tr>
<td>Clindamycin</td>
<td>B</td>
<td>Unlikely</td>
<td>Limited</td>
<td></td>
</tr>
<tr>
<td>Erythromycin</td>
<td>B</td>
<td>Minimal</td>
<td>Fair</td>
<td>• Erythromycin estolate is avoided due to potential maternal hepatotoxicity</td>
</tr>
<tr>
<td>Tetracycline</td>
<td>D</td>
<td>Moderate for tooth staining</td>
<td>Good</td>
<td>• Avoid during pregnancy; use after 25 weeks may result in staining of teeth and possible effects on bone growth</td>
</tr>
<tr>
<td>Fluorquinolones</td>
<td>C</td>
<td>Unlikely</td>
<td>Fair</td>
<td>• Avoid during pregnancy and lactation due to toxicity to developing cartilage in animal studies</td>
</tr>
<tr>
<td>Clarithromycin</td>
<td>Undetermined</td>
<td>Limited</td>
<td></td>
<td>• Alternative antibiotics are recommended because number of cases of pregnancy exposure is too small to conclude no risk</td>
</tr>
<tr>
<td><strong>ANESTHETICS</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lidocaine (local)</td>
<td>B</td>
<td>None</td>
<td>Fair</td>
<td>• No restrictions</td>
</tr>
<tr>
<td><strong>MISCELLANEOUS</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Chlorhexidine mouthrinse</td>
<td>C</td>
<td>Unlikely</td>
<td>Poor</td>
<td>• Has not been evaluated for possible adverse pregnancy effects</td>
</tr>
<tr>
<td>Xylitol</td>
<td>Undetermined</td>
<td>Unlikely</td>
<td>Not available</td>
<td>• No references available on possible adverse pregnancy effects</td>
</tr>
</tbody>
</table>

**FDA Category Ratings:**
- A = Controlled studies show no risk; adequate, well-controlled studies in pregnant women failed to demonstrate risk to fetus.
- B = No evidence of risk in humans; either animal studies show risk but human findings do not or, if no adequate human studies have been done, animal findings are negative.
- C = Human studies lacking and animal studies are either positive for fetal risk or lacking as well. However, potential benefits may justify the potential risk.
- D = Positive evidence of risk; investigational or post-marketing data show risk to fetus. Nevertheless, potential benefits may outweigh risks, such as some anticonvulsive medications.

*a* Recent studies have reported NSAIDs (nonsteroidal anti-inflammatory drugs) may be associated with gastroschisis if given in the first trimester. See for example: Kozer E, et al. Aspirin consumption during the first trimester of pregnancy and congenital anomalies: a meta-analysis. Am J Obstet Gynecol 2002 Dec;187(6):1623-30. Sustained use in the third trimester may be associated with closure of the fetal ductus arteriosus.

**a** Teratogenic risk and quality of the evidence is based on adapted information from the Teratogen Information System (TERIS) and Reprotox electronic databases.
Dental caries is the single most common chronic disease of childhood and a public health problem that continues to affect infants and preschool children worldwide. Any dental caries in the primary teeth occurring before age 6 is generally defined as early childhood caries (ECC). Dental caries impacts children’s functioning including eating, sleeping, speaking, learning and growth. Because most children have visited a child health professional close to a dozen times by age 3 — but may not have visited a dentist — medical providers as well as nurses, health educators and community health workers can play a significant role in reducing the burden of this disease if they have been properly trained. It has been estimated that primary care providers who provide care to children before age 2 have the opportunity of providing oral health screening seven times more frequently than dentists as a result of well-child visits.

Infant oral health care begins ideally with prenatal oral health counseling for parents, a service that should be provided by all health professionals. This early involvement will form the foundation on which positive experiences can be built. While mothers usually are the primary decision-makers on matters affecting their children’s health, it should be remembered that other family members, especially grandparents, can exercise a wide influence on children’s accessing dental care. Ideally a regular source of oral health care (a “dental home”) should be established at a young age (i.e., not later than 12 months of age).

Because dental caries is now recognized as a bacterial infection that can be transmitted from a parent or another intimate caregiver to an infant or child, health professionals should identify women at high risk for dental caries as early as possible, preferably prior to pregnancy, to provide anticipatory guidance and early intervention. Parents should also be advised that caries is an infectious disease, and caries-causing bacteria, including S. mutans, can be spread from mother, intimate caregiver, siblings and other children by saliva-sharing behaviors. Because S. mutans may colonize the child’s mouth even before the first tooth erupts, appropriate interventions can alter children’s risk for developing caries.

Evaluation of existing literature suggests a number of strategies for the prevention of ECC. The value of the therapeutic use of fluoride for children should be impressed upon parents, and at-home product use should focus on regimens that maximize topical content, preferably in lower-dose, higher-frequency approaches. (See TABLE 3.) A small amount of fluoride toothpaste should be used twice daily as a primary preventive procedure. While the appropriate amount of toothpaste and other fluoride products varies by a child’s age and weight, an amount “the size of the child’s pinky nail,” “the size of a pea,” or “a smear” are understandable descriptions to nearly all parents and provides general guidance. (Note: parents who are avid brushers for their children — even those with “high dental IQ” — may use too much fluoride, resulting in fluorosis on permanent teeth.) Parents or caregivers of children younger than 8 should brush children’s teeth or supervise brushing. Because children younger than 6 have not fully developed the swallowing reflex, using

<table>
<thead>
<tr>
<th>Table 3</th>
<th>Daily Dietary Fluoride Supplementation Schedule</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age</td>
<td>Fluoride Ion Level in Drinking Water (ppm)*</td>
</tr>
<tr>
<td></td>
<td>&lt;0.3 ppm F</td>
</tr>
<tr>
<td>Birth – 6 months</td>
<td>None</td>
</tr>
<tr>
<td>6 months – 3 years</td>
<td>0.25 mg/day</td>
</tr>
<tr>
<td>3 – 6 years</td>
<td>0.50 mg/day</td>
</tr>
<tr>
<td>6 years to at least 16 years</td>
<td>1.00 mg/day</td>
</tr>
</tbody>
</table>

*1.0 ppm = 1 mg/liter
**2.2 mg sodium fluoride contains 1 mg fluoride ion.

large quantities of toothpaste should be discouraged during the period of tooth development. Children younger than 2 should use fluoride toothpaste only after consultation with a dentist; however, children in this age group at moderate to high risk for caries may need to use a smear or pea-sized amount of fluoride toothpaste on a child-size toothbrush to help prevent ECC.221

Because feeding sugary liquids including milk and juice, especially at night, may increase the risk for caries, child health care professionals should focus on the message to reduce the exposure to fermentable carbohydrates (common sugars).222 The teeth should be cleaned after feeding (breastfeeding, bottle use and sippy cup use) and before putting the child to sleep. The last thing to touch the child’s teeth before bedtime should be a toothbrush or water.

Caregivers should be advised to begin weaning children from at-will bottle and sippy cup use (such as in an effort to modify or pacify a child’s behavior) by about 12 months of age. Health care professionals should exercise cultural sensitivity when discussing this topic with parents in communities where extended bottle usage is normative.

While every child should be seen by a dentist before the first birthday, or when the first tooth erupts, it is particularly important to refer and follow up on children who have risk indicators223 (e.g., low socioeconomic status, lack of age-appropriate oral hygiene efforts by parents). Three sample risk assessment forms are included in the Appendices (see Attachments 2, 3 and 4). Child health professionals should utilize community resources, where available, such as case-workers and community health workers for conducting follow-up and facilitating transportation to dental appointments.
Fluoride is a very effective caries preventive agent; but water fluoridation varies, and lack of fluoridation may disproportionately affect poor and minority children who do not have other sources of fluoride. Health providers should be aware of community water fluoridation, or lack of it, in the region where their patients live and go to school, and depending on the child’s age and risk for caries, prescribe fluoride drops or chewable fluoride tablets for children’s teeth.

Although only a small factor in the risk for enamel fluorosis, the American Dental Association and the Centers for Disease Control and Prevention have issued guidance for parents and caregivers of infants younger than 12 months of age to consult with their medical or dental provider on the most appropriate type of water to use to reconstitute infant formula. Recent evidence suggests that mixing powdered or liquid infant formula concentrate with fluoridated water on a regular basis for infants primarily fed in this way may increase the chance of a child’s developing the faint white markings of very mild or mild enamel fluorosis. Occasional use of water containing optimal levels of fluoride should not appreciably increase a child’s risk for fluorosis. Studies have not shown that teeth are likely to develop more esthetically noticeable forms of fluorosis, even with regular mixing of formula with fluoridated water.

One of the most important ways for health professionals to ensure that infants and young children enjoy optimal oral health is by performing risk assessments to identify those at risk for oral health problems, including dental caries, malocclusion and injury. The American Academy of Pediatrics recommends that all health care professionals develop the knowledge to perform oral health risk assessments on all patients beginning at 6 months of age. Risk assessment of infants and young children for oral health problems is based on the premise that all infants and children are not equally likely to develop such problems. Performing a risk assessment for infants and young children allows a plan to be developed to meet each infant’s or young child’s preventive and treatment needs and referral to a dentist. At each well-child visit, questions about oral health issues can be asked and anticipatory guidance provided while discussing other age-appropriate concerns. Children with chronic disease may require special assessment and treatment of oral diseases.

**ACCESS TO CARE**

**Barriers to Care**

Despite the importance of dental care during pregnancy, many women, including those with private insurance, fail to receive care during this time due to personal challenges and barriers in accessing the delivery system.

Access to oral health services for both pregnant women and young children is limited by a number of factors. On the health system side, these include lack of available resources, restrictive policies, provider attitudes and lack of cultural competency among dental providers. Common patient barriers are lack of perceived need and knowledge about the importance of oral health, financial (including lack of dental insurance), dental fear, lack of education, and limitations due to transportation, child care and work leave time issues. Public policies that reduce or eliminate barriers and support comprehensive dental services for vulnerable women of childbearing age need to be expanded, not only to safeguard their own oral and general health but also to reduce their children’s risk of caries.

**System/Structural and Provider Barriers**

Systems barriers to improving oral health and utilization of oral health services for pregnant women and their children are multifaceted. Low public-program reimbursement levels, lack of provider training, maldistribution of resources, capacity issues and provider attitudes limit access. Populations in which the greatest need/barriers exist include the uninsured and those covered by publicly funded programs. Women insured through medical and dental safety net programs often have difficulty finding participating providers. For instance, dentists may have concerns about treating low-income pregnant women because they may have a large burden of untreated dental disease and a short time period of eligibility for dental benefits.

Fear of lawsuits may also be one of the factors for dentists’ reluctance or refusal to see pregnant patients, although the incidence of lawsuits concerning pregnancy and dental care appears to...
Prenatal care providers can play a crucial role in breaking down barriers to access and raising awareness about the importance of oral health.

Many things occur during pregnancy that work against optimal oral health. Pregnancy is a life-changing event that can cause stress and uncertainty. Many factors can influence a woman’s decision not to seek oral health services during pregnancy such as: financial pressures, the perception that oral health is not an important component of overall general health, dental care not being high on the list of life priorities, and fear of dental services and perceptions of potential danger of care during pregnancy.

For low-income women, the cost of care can be prohibitive. Close to half of the 8,558 women surveyed in 2002-2007 in the California Maternal and Infant Health Assessment (MIHA) described earlier reported a dental problem of some sort during pregnancy. The main reasons for not receiving dental care during pregnancy among women with dental problems were financial barriers, cited by 28%; no perceived need, cited by 21%; and attitudinal barriers, cited by 21%. Having insurance did not guarantee access, particularly for women with Medicaid; 79% of women with Medicaid (who should have had financial access to at least a minimal range of dental benefits at some point during pregnancy) did not receive dental care during pregnancy.

Employer-based health insurance does not always include dental benefits. Even when it does, not all private plans cover all dental services. Most employers of low-wage workers do not offer a dental insurance benefit; if offered, the employee portion of the premium is generally not affordable. Lack of insurance leads many low-income pregnant women to avoid preventive dental visits for themselves and their children, and it puts added strain on emergency departments as patients resort to emergency services for serious dental problems.

Children from low-income families are at higher risk of dental caries, and it may be hard for them to comply with recommendations that require the purchase of additional rinses, chewing gum and other products. Dental providers and early childhood professionals should be aware of this limitation.

Transportation and getting time off from work are practical barriers frequently cited by low-income parents that contribute to the factors that
discourage providers from seeing these families: “No show” for appointments is a recognizable example. Accultura-
tion and language barriers — difficulty speaking English to effectively commu-
nicate with health care providers — have also been shown to have some impact on determining use of dental care.240

Lack of education about the im-
portance of dental care can result in
parents’ not understanding the connec-
tion between diet and tooth decay and failing to seek oral health services for young children. Many parents, including those who are well-educated, believe baby teeth are not important because they will be replaced by permanent teeth. The views of low-income and im-
migrant parents are especially impor-
tant as these families have more limited access to resources and face greater challenges when seeking care. Results from the First Smiles evaluation (a $7 million oral health education and training program funded by First 5 California in 2004-2008), for instance, showed that while most parents attending WIC and Head Start sites reported an awareness of early childhood caries, 30% did not associate it with sugary contents.241

Dental care and fear or anxiety have long been linked in popular culture,242 and a number of First Smiles care-
givers also disclosed this concern about themselves as a reason for not taking their child to a dentist. Personal experi-
ences with dental care when encountering pain may also influence caregivers’ attitudes about access and enthusiasm for dental care for young children.243

Beliefs and customs related to health also influence adoption of positive oral health practices. Use of nonfluoridated bottled and filtered water, besides being costly, may result in adverse dental health outcomes. For some families, drinking bottled water is a cultural norm. Latino immigrants for example, who have very high rates of caries, may be wary of drinking tap water and avoid it because they fear it causes illness.244,245 Dental and other health care profession-
als should be aware of this belief and encourage the use of tap water in fluo-
ridated areas, both for pregnant women and children, since community water fluoridation is a primary preventive intervention. Where the public water supply is not fluoridated, bottled water containing fluoride may be available.

Behavior change is a complex process. Understanding the process of change helps in ascertaining key influ-
ences that promote change and increase the likelihood of success in making positive changes. Various theories and belief models help to explain deter-
minants such as the role of normative beliefs, although values, beliefs and practices vary across different social and cultural groups. Psychosocial fac-
tors such as oral health beliefs, norms of caregiver responsibility, and positive caregiver dental experiences have been shown to be associated with children’s utilization of oral health services.246

Motivation plays an important role in recognizing the need for change, being willing to overcome barriers to seek services, and achieving successful, sus-
tained change. In general, motivation refers to the “personal considerations, commitments, reasons, and intentions that move individuals to perform cer-
tain behaviors.”247 For women who are pregnant, stage of pregnancy may be related to stage of readiness to change. Research related to quitting smoking, for example, suggests women in the first trimester show the greatest inten-
tion to stop smoking, signaling that pregnant women may be most receptive to quitting earlier in pregnancy than those who are further along.248 While health behavior models that focus on the individual have implications for reducing patient barriers and promot-
ing oral health behavior change, they tend to ignore the role of “macro-level influences within the larger frame-
work of political, economic and cultural forces”249 that limit the choices of women for whom societal inequities or ignorance reduce access to dental care.

**POLICIES NEEDED FOR IMPROVEMENT**

Systems improvement and public policy changes are needed to increase utilization and quality of perinatal oral health services by women and young children. A policy brief that accompanies these Guidelines in-
cludes recommendations for funders, policymakers, dental and medical schools, and other advocates of ma-
ternal and child health to increase access to services and promote greater collaboration between the oral health and obstetrical communities.
Appendices

GLOSSARY OF TERMS

ACOG
American College of Obstetricians & Gynecologists. A nonprofit organization of women’s health care physicians advocating high standards of practice and quality health care for women.

ADA
American Dental Association. A national association that promotes good oral health to the public.

Anticipatory guidance
A proactive developmentally based counseling technique that focuses on the needs of a child at each stage of life. Practical, timely information for parents and other caregivers allows them to anticipate impending changes and maximize their child’s oral and general health potential.

CDA Foundation
California Dental Association Foundation. The philanthropic affiliate of the California Dental Association whose mission is to improve the oral health of Californians by supporting the dental profession and its efforts to meet community needs.

Chlorhexidine
An antimicrobial agent used as a surgical scrub, mouthrinse and topical antiseptic. It is effective against gram-positive organisms, gram-negative organisms, aerobes, facultative anaerobes and yeast.

Decalcification
The loss of calcium from the bones or teeth. Tooth decalcification is caused by the excessive buildup of plaque on the tooth enamel.

Demineralization
The process of removing minerals, in the form of mineral ions, from dental enamel. Demineralization is another term for “dissolving the enamel.” It occurs when the bacteria that are normally found in the mouth use the sugars and carbohydrates from the food we eat to produce acids that dissolve the tooth structure, depleting it of calcium and phosphate.

Dental home
The ongoing relationship between the dentist who is the primary dental care provider and the patient, which includes comprehensive oral health care, beginning no later than age 1 (the official policy of the American Dental Association adopted October 2005). This relationship has beneficial consequences of appropriate care and reduced treatment costs, and provides access to otherwise unavailable services. The concept of a dental home is analogous to the “medical home” construct.

Early Childhood Caries
Also known as “baby bottle caries” or “baby bottle tooth decay,” early childhood caries (ECC) is a common bacterial infection characterized by decay in the teeth of infants or young children. According to the American Academy of Pediatric Dentistry, ECC is defined as: one or more decayed, missing (due to caries), or filled tooth surfaces in any primary tooth in a child <71 months (i.e., age 6). In children <age 3, any sign of smooth-surface caries is indicative of severe ECC.

Eclampsia
Seizures (convulsions) in a pregnant woman that are not related to brain conditions. Also referred to as “toxemia with seizures,” eclampsia follows preeclampsia. Treating preeclampsia may prevent eclampsia.

Fermentable carbohydrates
Foods containing all forms of sweets and sugars, cooked starches such as pasta and rice, bread, and chip products. These are the ideal substrate for microbial action that stimulates caries development. A food’s form influences how long it will be retained in the mouth and consequently the exposure of teeth to acids. Foods that contain fermentable carbohydrates when in contact with oral microorganisms can cause plaque pH to drop, thereby initiating the caries process.

Folic acid
A B vitamin that helps prevent birth defects of the brain and spinal cord when taken before pregnancy, or by the first months of pregnancy. It is available in most multivitamins, as a folic acid-only supplement and in some foods.
Gestational diabetes
A condition in which women without previously diagnosed diabetes exhibit high blood glucose levels during pregnancy. Pregnancy hormones and other factors are thought to interfere with the action of insulin, causing glucose to remain in the bloodstream and glucose levels to rise.

MCAH
Maternal, Child and Adolescent Health. A comprehensive program that supports services and educational programs to maximize the health and quality of life for women, infants, children and adolescents and their families.

MIHA
Maternal and Infant Health Assessment.

Mutans streptococci
Cariogenic bacteria found in dental plaque and one of two index organisms (Lactobacillus is the other) used to assess caries susceptibility.

NSAIDs
Nonsteroidal anti-inflammatory drugs are drugs with analgesic, antipyretic (lowering an elevated body temperature and relieving pain without impairing consciousness) and, in higher doses, anti-inflammatory effects. The most prominent members of this group of drugs are aspirin, ibuprofen, and naproxen, partly because they are available over-the-counter in many areas. There is little difference in clinical efficacy among the NSAIDs when used at equivalent doses. Differences among compounds tend to be with regards to dosing regimens (related to the compound’s elimination half-life), route of administration, and tolerability profile.

Perinatal
Generally the period around childbirth (i.e., 3 months prior to and a month following). The term is used in this document to more broadly include the entire prenatal and postpartum periods. In its broadest sense of maternal and child health, “perinatal” could include time after and between pregnancies.

Periodontal disease
Also known as gum disease, periodontal disease is caused by infection and inflammation of the gingiva (gum), the periodontal connective tissues and the alveolar bone, which can lead to tooth loss.

Postural hypotensive syndrome
An abnormal decrease in blood pressure when a person stands up that may lead to fainting. A slight fall in systolic blood pressure is normal upon rising. Abnormal postural hypotension involves a decrease in both systolic and diastolic pressures with changes in heart rate.

PRAMS
Pregnancy Risk Assessment Monitoring System. A surveillance project of the Centers for Disease Control and Prevention and state health departments that collects state-specific, population-based data on maternal attitudes and experiences before, during, and shortly after pregnancy.

Preeclampsia
High blood pressure and protein in the urine that develops after the 20th week of pregnancy. Some women develop high blood pressure without the proteinuria (protein in urine); this is called pregnancy-induced hypertension (PIH) or gestational hypertension. Both preeclampsia and PIH are regarded as very serious conditions and require careful monitoring of mother and baby.

Remineralization
Remineralization is the process of replacing the essential minerals lost from teeth by demineralization.

Supine position
A position of the body: lying down with the face up, as opposed to the prone position, which is face down.

Xylitol
A “tooth friendly” nonfermentable sugar alcohol with indicated dental health benefits in caries prevention.
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**ATTACHMENT 1**  
**Oral Health Referral Form**  
for Pregnant Women*

<table>
<thead>
<tr>
<th>Patient Name</th>
<th>DOB</th>
<th>Primary Care Provider</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Date:** ____________________  
**Referred to:** ____________________________________________________

**Reason for referral:**  
- [ ] Routine  
- [ ] Bleeding gums  
- [ ] Pain  
- [ ] Other ____________________________________________________

**Weeks' gestation (at time of referral):** __________  
**Estimated delivery date:** __________  
**Patient phone:** ____________________

**Primary language spoken:** ____________________________________________

- [ ] This patient is cleared for routine evaluation and dental care, which may include but is not limited to:
  - Dental X-rays as needed for diagnosis (with abdominal and neck lead shield)
  - Oral health examination
  - Dental prophylaxis
  - Scaling and root planing
  - Restoration of untreated caries
  - Extraction
  - Standard local anesthetic (lidocaine with or without epinephrine)
  - Analgesics (if needed): acetaminophen and/or acetaminophen with codeine (Nonsteroidal anti-inflammatory drugs are not recommended during pregnancy)
  - Antibiotics (if needed and no known allergies): penicillin, amoxicillin, cephalosporin, clindamycin, erythromycin — not estolate form (Cipro and tetracycline are not recommended during pregnancy.)

**Significant Medical Conditions:**  
- [ ] NONE  
- [ ] YES (e.g., heart condition, liver disease, kidney disease, etc.)

**Current Medications:**  
- [ ] NONE  
- [ ] Prenatal vitamins  
- [ ] Iron  
- [ ] Calcium  
- [ ] OTHERS (Attach updated list of active Rx)

**Known Allergies:**  
- [ ] NONE  
- [ ] YES

**Drug(s)/Reactions(s):** ____________________________________________

**Any Precautions:**  
- [ ] NONE  
- [ ] SPECIFY (List if any comments or instructions)

**Prenatal care provider** (print name): ____________________________  
**Phone/pager:** ____________________________  
**Fax #:** ____________________________  
**Signature:** ____________________________  
**Date:** ____________________________

**Dentist:** Please fax information back (to prenatal care provider, fax # above) after initial dental visit:  
- [ ] Exam date: __________  
- [ ] Normal exam/recall  
- [ ] Missed appointment  
- [ ] Needs additional treatment visits for:  
  - [ ] Caries  
  - [ ] Periodontitis  
  - [ ] Referral to oral surgery  
  - [ ] Other: ____________

**Comments:** ____________________________________________________

**Dentist signature:** ____________________________  
**Date:** ____________________________  
**Phone:** ____________________________

*Adapted from San Francisco General Hospital and Trauma Center, Community Health Network*
## Caries Risk Assessment Form (Ages 0-6)

<table>
<thead>
<tr>
<th>Patient Name:</th>
<th>Score:</th>
<th>Birth Date:</th>
<th>Date:</th>
<th>Age:</th>
<th>Initials:</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Contributing Conditions

<table>
<thead>
<tr>
<th>I. Fluoride Exposure (through drinking water, supplements, professional applications, toothpaste)</th>
<th>Low Risk (0)</th>
<th>Moderate Risk (1)</th>
<th>High Risk (10)</th>
<th>Patient Risk</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td></td>
<td>Frequent or prolonged between meal exposures/day</td>
<td>Bottle or sippy cup with anything other than water at bed time</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>II. Sugary or Starchy Foods or Drinks (including juice, carbonated or non-carbonated soft drinks, energy drinks, medicinal syrups)</th>
<th>Low Risk (0)</th>
<th>Moderate Risk (1)</th>
<th>High Risk (10)</th>
<th>Patient Risk</th>
</tr>
</thead>
<tbody>
<tr>
<td>Primarily at meal times</td>
<td></td>
<td>Frequent or prolonged between meal exposures/day</td>
<td>Bottle or sippy cup with anything other than water at bed time</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>III. Eligible for Government Programs (WIC, Head Start, Medicaid or SCHIP)</th>
<th>Low Risk (0)</th>
<th>Moderate Risk (1)</th>
<th>High Risk (10)</th>
<th>Patient Risk</th>
</tr>
</thead>
<tbody>
<tr>
<td>No</td>
<td></td>
<td>Frequent or prolonged between meal exposures/day</td>
<td>Bottle or sippy cup with anything other than water at bed time</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>IV. Caries Experience of Mother, Caregiver and/or Other Siblings</th>
<th>Low Risk (0)</th>
<th>Moderate Risk (1)</th>
<th>High Risk (10)</th>
<th>Patient Risk</th>
</tr>
</thead>
<tbody>
<tr>
<td>No caries lesions in last 24 months</td>
<td></td>
<td>Frequent or prolonged between meal exposures/day</td>
<td>Bottle or sippy cup with anything other than water at bed time</td>
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<table>
<thead>
<tr>
<th>V. Dental Home: established patient of record in a dental office</th>
<th>Low Risk (0)</th>
<th>Moderate Risk (1)</th>
<th>High Risk (10)</th>
<th>Patient Risk</th>
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</thead>
<tbody>
<tr>
<td>Yes</td>
<td></td>
<td>Frequent or prolonged between meal exposures/day</td>
<td>Bottle or sippy cup with anything other than water at bed time</td>
<td></td>
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### General Health Conditions

<table>
<thead>
<tr>
<th>I. Special Health Care Needs*</th>
<th>Low Risk (0)</th>
<th>Moderate Risk (1)</th>
<th>High Risk (10)</th>
<th>Patient Risk</th>
</tr>
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<tbody>
<tr>
<td>No</td>
<td></td>
<td>Frequent or prolonged between meal exposures/day</td>
<td>Bottle or sippy cup with anything other than water at bed time</td>
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### Clinical Conditions

<table>
<thead>
<tr>
<th>I. Visual or Radiographically Evident Restorations/Cavitated Carious Lesions</th>
<th>Low Risk (0)</th>
<th>Moderate Risk (1)</th>
<th>High Risk (10)</th>
<th>Patient Risk</th>
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<tbody>
<tr>
<td>No caries lesions or restorations in last 24 months</td>
<td></td>
<td>Frequent or prolonged between meal exposures/day</td>
<td>Bottle or sippy cup with anything other than water at bed time</td>
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<table>
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<tr>
<th>II. Non-cavitated (incipient) Carious Lesions</th>
<th>Low Risk (0)</th>
<th>Moderate Risk (1)</th>
<th>High Risk (10)</th>
<th>Patient Risk</th>
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<tbody>
<tr>
<td>No new lesions in last 24 months</td>
<td></td>
<td>Frequent or prolonged between meal exposures/day</td>
<td>Bottle or sippy cup with anything other than water at bed time</td>
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<table>
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<tr>
<th>III. Teeth Missing Due to Caries</th>
<th>Low Risk (0)</th>
<th>Moderate Risk (1)</th>
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<tbody>
<tr>
<td>No</td>
<td></td>
<td>Frequent or prolonged between meal exposures/day</td>
<td>Bottle or sippy cup with anything other than water at bed time</td>
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<table>
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<th>IV. Visible Plaque</th>
<th>Low Risk (0)</th>
<th>Moderate Risk (1)</th>
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<th>Patient Risk</th>
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<tbody>
<tr>
<td>Yes</td>
<td></td>
<td>Frequent or prolonged between meal exposures/day</td>
<td>Bottle or sippy cup with anything other than water at bed time</td>
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<table>
<thead>
<tr>
<th>V. Dental/Orthodontic Appliances Present (fixed or removable)</th>
<th>Low Risk (0)</th>
<th>Moderate Risk (1)</th>
<th>High Risk (10)</th>
<th>Patient Risk</th>
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</thead>
<tbody>
<tr>
<td>No</td>
<td></td>
<td>Frequent or prolonged between meal exposures/day</td>
<td>Bottle or sippy cup with anything other than water at bed time</td>
<td></td>
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</table>

<table>
<thead>
<tr>
<th>VI. Salivary Flow</th>
<th>Low Risk (0)</th>
<th>Moderate Risk (1)</th>
<th>High Risk (10)</th>
<th>Patient Risk</th>
</tr>
</thead>
<tbody>
<tr>
<td>Visually adequate</td>
<td></td>
<td>Frequent or prolonged between meal exposures/day</td>
<td>Bottle or sippy cup with anything other than water at bed time</td>
<td></td>
</tr>
</tbody>
</table>

### Instructions for Caregiver:

1. Patients with developmental, physical, medical or mental disabilities that prevent or limit performance of adequate oral health care by themselves or caregivers.

See instructions on Page 433.
Instructions for Attachment 2, Page 432

Indicate 1 or 10 in the last column for each risk factor. If the risk factor was not determined or is not applicable, enter a 0 in the patient risk factor column. Total the factor values and record the score at the top of the page.

A score of 0 indicates that a patient has a low risk for the development of caries. A single high risk factor, or score of 10, places the patient at high risk for development of caries. Scores between 1 and 10 place the patient at a moderate risk for the development of caries. Subsequent scores should decrease with reduction of risks and therapeutic intervention.

The clinical judgment of the dentist may justify a change of the patient’s risk level (increased or decreased) based on review of this form and other pertinent information. For example, missing teeth may not be regarded as high risk for a follow-up patient; or other risk factors not listed may be present.

The assessment cannot address every aspect of a patient’s health and should not be used as a replacement for the dentist’s inquiry and judgment. Additional or more focused assessment may be appropriate for patients with specific health concerns. As with other forms, this assessment may be only a starting point for evaluating the patient’s health status.

This is a tool provided for the use of ADA members. It is based on the opinion of experts who utilized the most up-to-date scientific information available. The ADA plans to periodically update this tool based on: 1) member feedback regarding its usefulness, and; 2) advances in science. ADA member-users are encouraged to share their opinions regarding this tool with the Council on Dental Practice.
### Table 1

**Caries Risk Assessment Form — Children Age 6 and Over/Adults**

<table>
<thead>
<tr>
<th>Disease Indicators (Any one &quot;YES&quot; signifies likely &quot;High Risk&quot; and to do a bacteria test**)</th>
<th>YES = CIRCLE</th>
<th>YES = CIRCLE</th>
<th>YES = CIRCLE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Visible cavities or radiographic penetration of the dentin</td>
<td>YES</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Radiographic approximal enamel lesions (not in dentin)</td>
<td>YES</td>
<td></td>
<td></td>
</tr>
<tr>
<td>White spots on smooth surfaces</td>
<td>YES</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Restorations last 3 years</td>
<td>YES</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Risk Factors (Biological predisposing factors)</strong></td>
<td>YES</td>
<td></td>
<td></td>
</tr>
<tr>
<td>MS and LB both medium or high (by culture**)</td>
<td>YES</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Visible heavy plaque on teeth</td>
<td>YES</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Frequent snack (&gt; 3x daily between meals)</td>
<td>YES</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Deep pits and fissures</td>
<td>YES</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Recreational drug use</td>
<td>YES</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Inadequate saliva flow by observation or measurement (**If measured, note the flow rate below)</td>
<td>YES</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Saliva reducing factors (medications/radiation/systemic)</td>
<td>YES</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Exposed roots</td>
<td>YES</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Orthodontic appliances</td>
<td>YES</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Protective Factors</strong></td>
<td>YES</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lives/work/school fluoridated community</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fluoride toothpaste at least once daily</td>
<td>YES</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fluoride toothpaste at least 2x daily</td>
<td>YES</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fluoride mouthrinse (0.05% NaF) daily</td>
<td>YES</td>
<td></td>
<td></td>
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<tr>
<td>5,000 ppm F fluoride toothpaste daily</td>
<td>YES</td>
<td></td>
<td></td>
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<tr>
<td>Fluoride varnish in last 6 months</td>
<td>YES</td>
<td></td>
<td></td>
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<tr>
<td>Office F topical in last 6 months</td>
<td>YES</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Chlorhexidine prescribed/used one week each of last 6 months</td>
<td>YES</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Xylitol gum/lozenges 4x daily last 6 months</td>
<td>YES</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Calcium and phosphate paste during last 6 months</td>
<td>YES</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Adequate saliva flow (&gt; 1 ml/min stimulated)</td>
<td>YES</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Bacteria/Saliva Test Results: MS: LB: Flow Rate: ml/min. Date:</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**VISUALIZE CARIES BALANCE**

(Use circled indicators/factors above)

(EXTREME RISK = HIGH RISK + SEVERE SALIVARY GLAND HYPOFUNCTION)

CARIRES RISK ASSESSMENT (CIRCLE): EXTREME HIGH MODERATE LOW

Doctor signature/#: ___________________________________________ Date: __________________________
**TABLE 1**

CAMBRA for Dental Providers (0-5) Assessment Tool

Caries Risk Assessment Form for Age 0 to 5

| Patient name: ___________________________ | I.D.#________ | Age __________ | Date __________ |
| Initial/base line exam date: ___________________________ | Caries recall date: ___________________________ |

Respond to each question in sections 1, 2, 3, and 4 with a check mark in the “Yes” or “No” column

**1. Caries Risk Indicators — Parent Interview**

- (a) Mother or primary caregiver has had active dental decay in the past 12 months
- (b) Child has recent dental restorations (see 5b below)
- (c) Parent and/or caregiver has low SES (socioeconomic status) and/or low health literacy
- (d) Child has developmental problems
- (e) No dental home/episodic dental care

**2. Caries Risk Factors (Biological) — Parent Interview**

- (a) Child has frequent (greater than three times daily) between-meal snacks of sugars/cooked starch/sugared beverages
- (b) Child has saliva-reducing factors present, including:
  1. Medications (e.g., some for asthma or hyperactivity)
  2. Medical (cancer treatment) or genetic factors
- (c) Child continually uses bottle - contains fluids other than water
- (d) Child sleeps with a bottle or nurses on demand

**3. Protective Factors (Nonbiological) — Parent Interview**

- (a) Mother/caregiver decay-free last three years
- (b) Child has a dental home and regular dental care

**4. Protective Factors (Biological) — Parent Interview**

- (a) Child lives in a fluoridated community or takes fluoride supplements by slowly dissolving or as chewable tablets
- (b) Child’s teeth are cleaned with fluoridated toothpaste (pea-size) daily
- (c) Mother/caregiver chews/sucks xylitol chewing gum/lozenges 2-4x daily

**5. Caries Risk Indicators/Factors — Clinical Examination of Child**

- (a) Obvious white spots, decalcifications, or obvious decay present on the child’s teeth
- (b) Restorations placed in the last two years in/on child’s teeth
- (c) Plaque is obvious on the child’s teeth and/or gums bleed easily
- (d) Child has dental or orthodontic appliances present, fixed or removable: e.g., braces, space maintainers, obturators
- (e) Risk Factor: Visually inadequate saliva flow - dry mouth

**If yes to any one of 1(a), 1(b), 5(a), or 5(b) or any two in categories 1, 2, 5, consider performing bacterial culture on mother or caregiver and child. Use this as a base line to follow results of antibacterial intervention.**

Parent/Caregiver Date: ___________  
Child Date: ___________

(a) Mutans streptococci (Indicate bacterial level: high, medium, low)

(b) Lactobacillus species (Indicate bacterial level: high, medium, low)

**Child’s overall caries risk status: (CIRCLE) Extreme Low Moderate High**

Recommendations given: Yes ________ No ________ Date given __________ Date follow up __________

**SELF-MANAGEMENT GOALS**

1) _____________________________________________________________________________  
2) _____________________________________________________________________________

Practitioner signature ______________________________________________________ Date ___________

Table reprinted from *Journal of the California Dental Association*, October 2007, p. 689.
HELPFUL WEBSITES FOR PATIENTS

ccfc.ca.gov/parents
Information on health, education, services and support for children younger than 5 and their families from First 5 California.

first5oralhealth.org
Site of First Smiles, a California initiative to address the “silent epidemic” of early childhood caries affecting children ages 0-5.

aapd.org/foundation/hints.asp
Answers to commonly asked questions from the Foundation of the American Academy of Pediatric Dentistry’s “Healthy Smiles, Healthy Children.”

cdp.ca.gov/certlic/drinkingwater/Documents/Fluoridation/Fluoridationdatafor2008.pdf
California statewide fluoridation table provides information by county on water systems that add fluoride to the optimal level.

cda.org/page/patient_education_tools
Patient education tools on a variety of topics available in English, Spanish, Hmong, Chinese, Russian and Vietnamese.

cda.org/clinics
Search for clinics in California that offer free or discounted dental services.

everywomancalifornia.org
Developed by the Preconception Health Council of California in collaboration with the Maternal Child and Adolescent Health Division of the California Department of Public Health, this website provides information about health considerations for women and their partners before they become pregnant for the first time or between pregnancies, often called preconception health.

mchoralhealth.org/materials/perinatal.html

cavityfreeatthree.org/GetMaterials/PatientEducationMaterials
Patient education materials in English and Spanish developed by “Cavity Free at Three,” a project of the Caring for Colorado Foundation.

cdhp.org/resource/surprisingTruth_about_cavities
October 2006 article that appeared in Parents Magazine, accessed through the Children’s Dental Health Project.

womenshealth.gov/faq/oral-health.cfm
Frequently asked questions about oral health answered by the National Women’s Health Information Center.

dhcs.ca.gov/services/chdp/Pages
The Child Health and Disability Prevention is a preventive program that delivers periodic health assessments and services to low income children and youth in California.

sharethecaredental.org/website/resources/dentalhealth
The Dental Health Initiative of San Diego/Share the Care offers a number of educational resources featuring their dental mascot, Baxter Beaver.
References

39. Offenbacher S, Beck J, Jared H, Mauriello SM, Mendoza LC, Cooper DJ, Stewart DB, Murtha AP, Cochran DL, Dudley DJ, Reddy MS, Geurs NC, Hatch JC. Effects of periodontal therapy...


155. Van Palenstein Helderman WH, Soe W. van’t Hof MA. Risk factors of Early Childhood Caries in a Southeast Asian popula-


159. Li Y, Caufield PW et al. Mode of delivery and other mater-


163. JADA 2006;355:1885-1894.


167. American Dental Association, U.S. Food and Drug Admin-


169. Rosen MA. Nitrous oxide for relief of labor pain: A systemat-


# Continuing Education Courses

C.E. courses offered by California's dental schools, local dental societies, ethnic dental societies and specialty organizations, from July through December 2010. For more information, please contact the course provider.

<table>
<thead>
<tr>
<th>Topic</th>
<th>Date</th>
<th>Lecturer(s)</th>
<th>Location</th>
<th>Cost</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>ARTHUR A. DUGONI SCHOOL OF DENTISTRY</td>
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<tr>
<td>C.E. Courses</td>
<td></td>
<td>Certification in Radiation Safety</td>
<td>July 17; Aug. 14</td>
<td>Gurmander Sidhu, BDS, MS, DDS</td>
<td>San Francisco</td>
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<tr>
<td></td>
<td></td>
<td>Hospital Dentistry</td>
<td>July 24, 25</td>
<td>Paul Glassman, DDS, MA, MBA; Allen Wong, DDS, FACD, DABSCD</td>
<td>San Francisco</td>
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<tr>
<td></td>
<td></td>
<td>Certification in Radiation Safety</td>
<td>Sept. 24; Oct. 22</td>
<td>Elena Francisco, BSDH, RDHAP, Deborah Horlak, RDH, BA, MS</td>
<td>Stockton</td>
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<tr>
<td></td>
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<td>BUTTE-SIERRA DISTRICT DENTAL SOCIETY</td>
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<tr>
<td></td>
<td></td>
<td>Office, Oral Surgery and Medical Emergencies</td>
<td>Aug. 20</td>
<td>James A. Garibaldi, BS, DDS, MA</td>
<td>Grass Valley</td>
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<tr>
<td></td>
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<td>Oral Cancer and Leukoplakia Revisited</td>
<td>Sept. 10</td>
<td>Sol Silverman, Jr, MA, DDS</td>
<td>Yuba City</td>
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<td></td>
<td></td>
<td>California Dental Practice Act</td>
<td>Sept. 10</td>
<td>TBD</td>
<td>Yuba City</td>
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<td></td>
<td></td>
<td>CPR/BLS Refresher Course for HCP</td>
<td>Oct. 8</td>
<td>TBD</td>
<td>Yuba City</td>
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<td></td>
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<td>Infection Control</td>
<td>Oct. 8</td>
<td>TBD</td>
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<td>OSHA - BBP Refresher Course</td>
<td>Oct. 8</td>
<td>TBD</td>
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<td></td>
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<td>Online Continuing Education at cs pd.org</td>
<td>Year round</td>
<td>Multiple</td>
<td>Online</td>
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<td>FRESNO-MADERA DENTAL FOUNDATION</td>
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<tr>
<td></td>
<td></td>
<td>Update in Endodontic Therapy</td>
<td>Sept. 10</td>
<td>Dr. Ove Peters</td>
<td>Fresno</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Update on Cone Beam CT Radiology</td>
<td>Oct. 8</td>
<td>TBD</td>
<td>Fresno</td>
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<tr>
<td></td>
<td></td>
<td>TBD</td>
<td>Nov. 5</td>
<td>Dr. William Carpenter; Dr. Charles Carpenter</td>
<td>Fresno</td>
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<td>Topic</td>
<td>Date</td>
<td>Lecturer(s)</td>
<td>Location</td>
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<td>Units</td>
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<td><strong>FRESNO-MADERA DENTAL SOCIETY</strong></td>
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<tr>
<td>Clinical Decision-Making About When To Do Direct vs. Indirect Restorations</td>
<td>Aug. 20</td>
<td>Ed McLaren, DDS</td>
<td>Fresno</td>
<td>$150 Member/ $275 Non-Member</td>
<td>7, Cat. I</td>
</tr>
<tr>
<td>Cone Beam CT — An Introduction To Acceptable X-rays</td>
<td>Aug. 20</td>
<td>Gurmander Sidhu, BDS, MS, DDS</td>
<td>Fresno</td>
<td>$100 Staff</td>
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<tr>
<td>Medical Emergencies in the Dental Office</td>
<td>Oct. 19</td>
<td>Jack Heir, DDS</td>
<td>Fresno</td>
<td>$35 CDA Member/ $80 Non-CDA Member/ $25 Staff</td>
<td>3</td>
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<tr>
<td><strong>HERMAN OSTROW SCHOOL OF DENTISTRY OF USC</strong></td>
<td></td>
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<tr>
<td>Clinical Intravenous Sedation</td>
<td>July 8-11, 16-18</td>
<td>Stanley Malamed, DDS; Faculty</td>
<td>Los Angeles</td>
<td>$10,950 Dentist</td>
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<tr>
<td>Avoiding and Managing Complications Associated with Implant Therapy: Lecture and Impact Panel</td>
<td>July 10</td>
<td>Bach Le, DDS, MD, FICD; Faculty</td>
<td>Los Angeles</td>
<td>$325 Dentist/ $205 Auxiliary</td>
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</tr>
<tr>
<td>Contemporary Applications of Porcelain Veneers: A New Paradigm for the 21st Century (Part I — Lecture)</td>
<td>July 16</td>
<td>Abdi Sameni, DDS; Faculty</td>
<td>Los Angeles</td>
<td>$295 Dentist</td>
<td>21</td>
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<tr>
<td>Contemporary Applications of Porcelain Veneers: A New Paradigm for the 21st Century (Part I &amp; II — Lecture &amp; Hands-On Workshop)</td>
<td>July 17-18</td>
<td>Abdi Sameni, DDS; Faculty</td>
<td>Los Angeles</td>
<td>$1,995 Dentist</td>
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<tr>
<td>Esthetic Full-Mouth Implant Reconstruction: Advanced Prosthodontic Techniques for Challenging Patients (Module I)</td>
<td>July 23</td>
<td>Harel Simon, DMD; Faculty</td>
<td>Los Angeles</td>
<td>$255 Dentist/ $155 Auxiliary</td>
<td>7</td>
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<tr>
<td>Esthetic Full-Mouth Implant Reconstruction: Advanced Prosthodontic Techniques for Challenging Patients (Module I, II &amp; III)</td>
<td>July 23, 30, 31</td>
<td>Harel Simon, DMD; Faculty</td>
<td>Los Angeles</td>
<td>$1,795 Dentist/ $1,595 Auxiliary</td>
<td>21</td>
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<tr>
<td>Esthetic Full-Mouth Implant Reconstruction: Advanced Prosthodontic Techniques for Challenging Patients (Module II)</td>
<td>July 30</td>
<td>Harel Simon, DMD; Faculty</td>
<td>Los Angeles</td>
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<tr>
<td>Esthetic Full-Mouth Implant Reconstruction: Advanced Prosthodontic Techniques for Challenging Patients (Module III)</td>
<td>July 31</td>
<td>Harel Simon, DMD; Faculty</td>
<td>Los Angeles</td>
<td>$1,645 Dentist</td>
<td>7</td>
</tr>
<tr>
<td>36th Annual Review of Continuing Education in Dentistry</td>
<td>Aug. 1-4</td>
<td>Jacinte M. Paquette, DDS; Cherilyn G. Sheets, DDS</td>
<td>Maui, Hawaii</td>
<td>$595 Dentist</td>
<td>16</td>
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<td>Clinical Intravenous Sedation</td>
<td>Aug. 5-8, 13-15</td>
<td>Stanley Malamed, DDS; Faculty</td>
<td>Los Angeles</td>
<td>$10,950 Dentist</td>
<td>49</td>
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<tr>
<td>The Artistic Dentist: Excellence in Direct Anterior and Posterior Composites</td>
<td>Aug. 20-21</td>
<td>Jose-Luis Ruiz, DDS, FAGD; Faculty</td>
<td>Los Angeles</td>
<td>$1,175 Dentist/ $295 Auxiliary</td>
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<tr>
<td>Esthetic Management of Extraction Sites (Module IA &amp; IB)</td>
<td>Aug. 28</td>
<td>Bach Le, DDS, MD, FICD</td>
<td>Los Angeles</td>
<td>$875 Dentist/ $595 Auxiliary</td>
<td>8</td>
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<tr>
<td>Fundamentals of Implant Surgery and Restoration</td>
<td>Sept. 10-12, Oct. 2-3, Nov. 6-7</td>
<td>Homayoun H. Zadeh, DDS, PhD; Faculty</td>
<td>Los Angeles</td>
<td>$4,195 Dentist/ $1,950 Auxiliary</td>
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<tr>
<td>Topic</td>
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<td>Team Driven Diagnosis, Treatment Planning and Acceptance for a Successful Esthetic Practice</td>
<td>Sept. 24-25</td>
<td>Jose-Luis Ruiz, DDS, FAGD; Faculty</td>
<td>Los Angeles</td>
<td>$545 Dentist/ $255 Auxiliary</td>
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<tr>
<td>Esthetic Periodontal Surgery for the General Practitioner (Module I)</td>
<td>Sept. 25</td>
<td>Ziv Simon, DMD, MSc</td>
<td>Sacramento</td>
<td>$245 Dentist/ $115 Auxiliary</td>
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<tr>
<td>Mastering Bone Grafting for Implant Site Development (Module I)</td>
<td>Oct. 8</td>
<td>Bach Le, DDS, MD, FICD; Faculty</td>
<td>Los Angeles</td>
<td>$995 Dentist/ $555 Auxiliary</td>
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<tr>
<td>Mastering Bone Grafting for Implant Site Development (Module I &amp; II)</td>
<td>Oct. 8-9</td>
<td>Bach Le, DDS, MD, FICD; Faculty</td>
<td>Los Angeles</td>
<td>$2,640 Dentist/ $1,510 Auxiliary</td>
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<tr>
<td>The USC Third International Restorative Dentistry Symposium</td>
<td>Oct. 8-9</td>
<td>Abdi Sameni, DDS; Faculty</td>
<td>Los Angeles</td>
<td>$495 Dentist/ $325 Auxiliary</td>
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<tr>
<td>Emerging Diseases, Infection Control and California Dental Practice Act</td>
<td>Oct. 23</td>
<td>Joyce Galligan, RN, DDS; Gerald Vale, DDS, JD</td>
<td>Los Angeles</td>
<td>$175 Dentist/ $125 Auxiliary</td>
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<tr>
<td>The USC Third Geriatric Dentistry Symposium: In Sickness and in Health: Providing Dental Care for Geriatric Patients Across the Functional Spectrum</td>
<td>Oct. 29-30</td>
<td>Roseann Mulligan, BA, DDS, MS, FADPD, DABSCD; Faculty</td>
<td>Los Angeles</td>
<td>$395 Dentist/ $215 Auxiliary</td>
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<tr>
<td>Esthetic Full-Mouth Implant Reconstruction: CAD/CAM Restorations and Computer Guided Technology (Module I)</td>
<td>Nov. 12</td>
<td>Harel Simon, DMD; Faculty</td>
<td>Los Angeles</td>
<td>$255 Dentist/ $155 Auxiliary</td>
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<tr>
<td>Esthetic Full-Mouth Implant Reconstruction: CAD/CAM Restorations and Computer Guided Technology (Module I, II &amp; III)</td>
<td>Nov. 12-14</td>
<td>Harel Simon, DMD; Faculty</td>
<td>Los Angeles</td>
<td>$1,795 Dentist/ $1,595 Auxiliary</td>
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<tr>
<td>Esthetic Full-Mouth Implant Reconstruction: CAD/CAM Restorations and Computer Guided Technology (Module II)</td>
<td>Nov. 13</td>
<td>Harel Simon, DMD; Faculty</td>
<td>Los Angeles</td>
<td>$255 Dentist/ $155 Auxiliary</td>
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<tr>
<td>Esthetic Full-Mouth Implant Reconstruction: CAD/CAM Restorations and Computer Guided Technology (Module III)</td>
<td>Nov. 14</td>
<td>Harel Simon, DMD; Faculty</td>
<td>Los Angeles</td>
<td>$1,645 Dentist</td>
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<td>Pediatric Oral Sedation Certification Program</td>
<td>Nov. 17-19</td>
<td>Stanley Malamed, DDS; Faculty</td>
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<td>$2,795 Dentist/ $295 Auxiliary</td>
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<tr>
<td>The USC Ninth International Endodontic Symposium</td>
<td>Nov. 19-20</td>
<td>Ilan Rotstein, DDS; Faculty; Guest speakers</td>
<td>Los Angeles</td>
<td>$445 Dentist/ $245 Auxiliary</td>
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<td>Pediatric Advanced Life Support (PALS)</td>
<td>Nov. 20-21</td>
<td>Stanley Malamed, DDS; Faculty</td>
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<td>$185</td>
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<td>A Contemporary Approach to Diagnosis, Treatment Planning and Therapy in Periodontics</td>
<td>Dec. 3</td>
<td>Ziv Simon, DMD, MSc; Casey Chen, BDS, PhD, DDS</td>
<td>Los Angeles</td>
<td>$235 Dentist/ $145 Auxiliary</td>
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<td>Implant Therapy for Edentulous Patients</td>
<td>Dec. 4-5</td>
<td>Homayoun H. Zadeh, DDS, PhD; Faculty</td>
<td>Los Angeles</td>
<td>$1,295 Dentist/$695 Auxiliary</td>
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<tr>
<td>Supra-Gingival Dentistry Workshop: Easy, Predictable, Porcelain Veneer Onlays and Full Crowns</td>
<td>Dec. 10-11</td>
<td>Jose-Luis Ruiz, DDS, FAGD; Faculty</td>
<td>Los Angeles</td>
<td>$1,750 Dentist</td>
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<td>HUMBOLDT-DEL NORTE DENTAL SOCIETY</td>
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<td>Update on Dentin Bonding and Root Restorations</td>
<td>Oct. 22</td>
<td>Michal Staninec, DDS, PhD</td>
<td>Bayside</td>
<td>$135 Member</td>
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<td>KERN COUNTY DENTAL SOCIETY</td>
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<td>Infection Control, Dental Practice Act, OSHA Compliance</td>
<td>July 30</td>
<td>Rodney Stine</td>
<td>Bakersfield</td>
<td>$180 Member/$280 Non-Member/$65 Auxiliary</td>
<td>6, Cat. II</td>
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<td>Medical Emergencies &amp; Post-Operative Complication</td>
<td>Sept. 17</td>
<td>James Garibaldi, DDS</td>
<td>Bakersfield</td>
<td>$200 Member/$300 Non-Member/$75 Auxiliary</td>
<td>6, Cat. II</td>
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<td>Predictible, Durable Adhesion in Esthetic Restorative Dentistry</td>
<td>Oct. 22</td>
<td>Edmond R. Hewlett, DDS</td>
<td>Bakersfield</td>
<td>$200 Member/$300 Non-Member/$75 Auxiliary</td>
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<td>LOMA LINDA UNIVERSITY SCHOOL OF DENTISTRY</td>
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<td>Complete Mouth Rehabilitation: Principles, Concepts and Treatment Options</td>
<td>Sept. 12</td>
<td>Tony Daher, DDS, MSED, FACP</td>
<td>Loma Linda</td>
<td>$160 Dentist/$110 Auxiliary</td>
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<tr>
<td>MTA Symposium: Why, When and How to Use MTA</td>
<td>Sept. 19</td>
<td>Mahmoud Torabinejad, DMD; George Bogen, DDS; et al.</td>
<td>Loma Linda</td>
<td>$195 Dentist/$135 Auxiliary</td>
<td>8</td>
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<tr>
<td>Esthetic Essentials</td>
<td>Oct. 3</td>
<td>Nick Davis, DDS</td>
<td>Loma Linda</td>
<td>$160 Dentist/$110 Auxiliary</td>
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<td>Cone Beam Computed Tomography (CBCT) Symposium</td>
<td>Oct. 17-18</td>
<td>Yoon Kim, DDS; Joseph Caruso, DDS; et al.</td>
<td>Loma Linda</td>
<td>$350 Dentist/$250 Auxiliary</td>
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<td>Infection Control and California Practice Act</td>
<td>Nov. 14</td>
<td>Eugene Rathbun, DDS; Bette Robin, DDS, JD</td>
<td>Loma Linda</td>
<td>$160 Dentist/$110 Auxiliary</td>
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<td>All Ceramic Crowns</td>
<td>Dec. 5</td>
<td>Nadim Baba, DDS</td>
<td>Loma Linda</td>
<td>$160 Dentist/$110 Auxiliary</td>
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<td>MARIN COUNTY DENTAL SOCIETY CONTINUES ON NEXT PAGE</td>
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<td>TBD</td>
<td>Sept. 21</td>
<td>TBD</td>
<td>San Rafael</td>
<td>$45 Member, Staff/$90 Non-Member, Staff</td>
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<td>Health Care Provider CPR Class</td>
<td>Sept. 30</td>
<td>Certified BLS Instructors</td>
<td>San Rafael</td>
<td>$60 Member, Staff/$120 Non-Member, Staff</td>
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<td>Early Childhood Assessment</td>
<td>Oct. 26</td>
<td>A. Jeffrey Wood, DDS</td>
<td>San Rafael</td>
<td>$45 Member, Staff/ $90 Non-Member, Staff</td>
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<td>BLS/CPR Health Care Provider CPR</td>
<td>Oct. 28</td>
<td>BLS/CPR Certified Instructors</td>
<td>San Rafael</td>
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<td>The Art of Dental Therapeutics</td>
<td>Dec. 14</td>
<td>Peter L. Jacobsen, PhD, DDS</td>
<td>San Rafael</td>
<td>$45 Member, Staff/ $90 Non-Member, Staff</td>
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<td><strong>NAPA-SOLANO DENTAL SOCIETY</strong></td>
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<td>Immediate Implant Placement in the Esthetic Zone</td>
<td>Sept. 3</td>
<td>Moshe Goldstein, DDS</td>
<td>Fairfield</td>
<td>$295</td>
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<td>Imaging for Implant Treatment</td>
<td>Oct. 7</td>
<td>Craig Dial</td>
<td>Fairfield</td>
<td>$60</td>
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<td>Dental Law, OSHA and Infection Control</td>
<td>Nov. 18</td>
<td>Art Curley, JD</td>
<td>Fairfield</td>
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<td><strong>NORTHERN CALIFORNIA DENTAL SOCIETY</strong></td>
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<td>Practice Management</td>
<td>Sept. 24</td>
<td>William Vandyk, DDS</td>
<td>Red Bluff</td>
<td>$125 Member/ $225 Non-Member/ $55 Auxiliary ($15 late registration fee)</td>
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<td>Comfort Zone Cosmetics — Digital Portrait to Completed Case</td>
<td>Oct. 15</td>
<td>Martin B. Goldstein, DMD</td>
<td>Red Bluff</td>
<td>$125 Member/ $225 Non-Member/ $55 Auxiliary ($15 late registration fee)</td>
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<td>Understanding and Managing Dental Caries Using CAMBRA</td>
<td>Nov. 5</td>
<td>Steven Steinberg, DDS</td>
<td>Red Bluff</td>
<td>$125 Member/ $225 Non-Member/ $55 Auxiliary ($15 late registration fee)</td>
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<td><strong>ORANGE COUNTY DENTAL SOCIETY</strong></td>
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<td>Predictable Orthodontics for the GP</td>
<td>Sept. 7</td>
<td>James J. Hilgers, DDS, MS</td>
<td>Irvine</td>
<td>$49 Member, Staff/ $139 Non-Member</td>
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<tr>
<td>Esthetic Periodontal Surgery for the GP</td>
<td>Oct. 7</td>
<td>Ziv Simon, DMD, MSc</td>
<td>Irvine</td>
<td>$49 Member, Staff/ $139 Non-Member</td>
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<td>Fear of Dentistry... A Contemporary Look at Sedation Techniques</td>
<td>Nov. 9</td>
<td>Stanley Malamed, DDS</td>
<td>Irvine</td>
<td>$49 Member, Staff/ $139 Non-Member</td>
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<td>PCSO Annual Session</td>
<td>Oct. 9-13</td>
<td>Various</td>
<td>Honolulu, Hawaii</td>
<td>Registration Fee</td>
<td>Up to 20 CEs</td>
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### PUNJABI DENTAL SOCIETY

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<tr>
<td>Creating Endodontic Excellence</td>
<td>Aug. 22</td>
<td>Jerome H. Stroumza, DDS, MS, DSC</td>
<td>San Jose</td>
<td>$99 Member / $109 Non-Member</td>
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<tr>
<td>Endodontics for General Dentists</td>
<td>Aug. 22</td>
<td>Jerome H. Stroumza, DDS, MS, DSC</td>
<td>San Jose</td>
<td>$89 Member / $99 Non-Member</td>
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<td>Periodontics for General Dentists</td>
<td>Sept. 26</td>
<td>Dr. Simon</td>
<td>Brea</td>
<td>$79 Member / $89 Non-Member</td>
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<tr>
<td>Creating Endodontic Excellence</td>
<td>Nov. 21</td>
<td>Alex Fleury, DDS, MS</td>
<td>Brea</td>
<td>$79 Member / $89 Non-Member</td>
<td>7</td>
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<tr>
<td>Endodontics for General Dentists</td>
<td>Nov. 21</td>
<td>Alex Fleury, DDS, MS</td>
<td>Brea</td>
<td>$79 Member / $89 Non-Member</td>
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### SACRAMENTO DISTRICT DENTAL SOCIETY

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<td>CPR Renewal - Basic Life Support (BLS)</td>
<td>Aug. 7</td>
<td>SDDS Instructors</td>
<td>Sacramento</td>
<td>$55 Member / $110 Non-Member</td>
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<tr>
<td>CPR First Timer Basic Life Support Course</td>
<td>Aug. 28</td>
<td>SDDS Instructors</td>
<td>Sacramento</td>
<td>$70 Member / $140 Non-Member</td>
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<td>Sleep Disorders, Sleep Medicine and Dentistry</td>
<td>Sept. 14</td>
<td>Peter Chase, DDS</td>
<td>Sacramento</td>
<td>$57 Member / $117 Non-Member</td>
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<td>Navigating the Wage/Hour Minefield (HR Issues) — HR Audio Conference</td>
<td>Sept. 21</td>
<td>Mari Bradford, California Employers Association</td>
<td>Sacramento</td>
<td>$35 Member / $70 Non-Member</td>
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<td>Hiring and Firing Boot Camp</td>
<td>Sept. 23</td>
<td>Mari Bradford, California Employers Association</td>
<td>Sacramento</td>
<td>$69 Member / $138 Non-Member</td>
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<tr>
<td>Adult Oral Conscious Sedation Recertification Course — Intro, Update and Renewal</td>
<td>Oct. 8</td>
<td>Michael Silverman, DMD</td>
<td>Sacramento</td>
<td>$450 Member / $750 Non-Member</td>
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<td>Crown Lengthening for Restorability and Esthetics</td>
<td>Oct. 12</td>
<td>William Lundergan, DDS, MA</td>
<td>Sacramento</td>
<td>$57 Member / $117 Non-Member</td>
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<td>CA Dental Practice Act, Infection Control and OSHA Refresher</td>
<td>Oct. 22</td>
<td>LaDonna Drury-Klein, RDA, CDA, BS</td>
<td>Sacramento</td>
<td>Contact SDDS</td>
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<td>Bras, Boyfriends and Tattoos (HR Issues)</td>
<td>Oct. 28</td>
<td>Mari Bradford, California Employers Association</td>
<td>Sacramento</td>
<td>$69 Member / $138 Non-Member</td>
<td>2</td>
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<tr>
<td>Direct and Indirect Restorative (Nash) and Ultrasonics (Hays)</td>
<td>Nov. 5</td>
<td>Ross Nash, DDS; Karen Hays, RDH</td>
<td>Sacramento</td>
<td>Contact SDDS</td>
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<td>CPR Renewal — Basic Life Support (BLS)</td>
<td>Nov. 6</td>
<td>SDDS Instructors</td>
<td>Sacramento</td>
<td>$55 Member / $110 Non-Member</td>
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<tr>
<td>Patient First: Maximize Every Interaction!</td>
<td>Nov. 9</td>
<td>Debbie Castagna; Virginia Moore</td>
<td>Sacramento</td>
<td>$57 Member / $117 Non-Member</td>
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<td>Investigate Employee Misconduct</td>
<td>Nov. 17</td>
<td>Mari Bradford, California Employers Association</td>
<td>Sacramento</td>
<td>$35 Member / $70 Non-Member</td>
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### SAN FERNANDO VALLEY DENTAL SOCIETY

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<tr>
<td>Achieving Success in Endodontics</td>
<td>Nov. 17</td>
<td>Illan Rotstein, DDS</td>
<td>Van Nuys</td>
<td>$100 Member / $200 Non-Member / $65 Student, Auxiliary / $50 Retired</td>
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<td><strong>SAN FRANCISCO DENTAL SOCIETY</strong></td>
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<tr>
<td>Bone Regeneration: Clinical Applications for the Dental Practice</td>
<td>Aug. 12</td>
<td>Martin Chin, DDS</td>
<td>TBD</td>
<td>$69 Member/ $110 Non-Member/ $45 Auxiliary, Student/ $50 PGM</td>
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<tr>
<td>CE Express: Infection Control, Bloodborne Pathogens &amp; Hazardous Communication Refreshers</td>
<td>Aug. 20, Nov. 5</td>
<td>Marcella Oster, RDA; Diane Morgan, BS</td>
<td>San Francisco</td>
<td>$95 Member, Auxiliary, Staff/ $140 Non-Member</td>
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<tr>
<td>CPR Basic Life Saving (BLS) Course</td>
<td>Aug. 28</td>
<td>Adrian Curry, EMT</td>
<td>San Francisco</td>
<td>$65 Member, Auxiliary, Staff/ $100 Non-Member (additional cost for text)</td>
<td>7</td>
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<tr>
<td>CPR Renewal</td>
<td>Sept. 29, Oct. 27</td>
<td>Adrian Curry, EMT</td>
<td>San Francisco</td>
<td>$65 Member, Auxiliary, Staff/ $100 Non-Member</td>
<td>4</td>
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<tr>
<td>Restorative Care: Endo, Implants or Fixed Partial Dentures?</td>
<td>Oct. 14</td>
<td>Warden H. Noble, DDS</td>
<td>San Francisco</td>
<td>$69 Member, Auxiliary/ $110 Non-Member/ $45 Student/ $50 PGM</td>
<td>2</td>
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<tr>
<td>TMD Can Be A Pain In The Neck</td>
<td>Dec. 2</td>
<td>Charles McNeill, DDS; Patricia Rudd, PT, DPT, CTT</td>
<td>San Francisco</td>
<td>TBD</td>
<td>2</td>
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<tr>
<td><strong>SAN GABRIEL VALLEY DENTAL SOCIETY</strong></td>
<td></td>
<td></td>
<td></td>
<td>626-285-1174</td>
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<tr>
<td>Occlusion — The Solution for the Confusion</td>
<td>Sept. 21</td>
<td>Mark Yamamoto, DDS, MAGD</td>
<td>Alhambra</td>
<td>$65 Member/ $100 Non-Member</td>
<td>3</td>
</tr>
<tr>
<td>TBD</td>
<td>Oct. 19</td>
<td>TBD</td>
<td>Alhambra</td>
<td>$65 Member/ $100 Non-Member</td>
<td>3</td>
</tr>
<tr>
<td>Head and Neck Pathology</td>
<td>Nov. 16</td>
<td>Parish Sedghizadeh, DDS, MS</td>
<td>Alhambra</td>
<td>$65 Member/ $100 Non-Member</td>
<td>3</td>
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<tr>
<td><strong>SAN JOAQUIN DENTAL SOCIETY</strong></td>
<td></td>
<td></td>
<td></td>
<td>209-951-1311</td>
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<tr>
<td>Small Implants Provide Big Returns</td>
<td>Sept. 16</td>
<td>Eugene Labarre, DMD</td>
<td>Lodi</td>
<td>TBD</td>
<td>3</td>
</tr>
<tr>
<td>Coming Live — A Jam-Packed Evening of Employment Law Tips</td>
<td>Nov. 18</td>
<td>Sue Ann Van Dermyden, Esq.</td>
<td>Stockton</td>
<td>TBD</td>
<td>3</td>
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<tr>
<td><strong>SAN MATEO COUNTY DENTAL SOCIETY</strong></td>
<td></td>
<td></td>
<td></td>
<td>650-637-1121</td>
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</tr>
<tr>
<td>AUG Cal-OSHA &amp; Regulatory Requirements</td>
<td>Aug. 27</td>
<td>Julian Goduci, CHMM</td>
<td>Redwood City</td>
<td>$70 Member/ $80 Non-Member</td>
<td>4</td>
</tr>
<tr>
<td>AUG Dental Board of California Requirements</td>
<td>Aug. 27</td>
<td>Julian Goduci, CHMM</td>
<td>Redwood City</td>
<td>$60 Member/ $70 Non-Member</td>
<td>4</td>
</tr>
<tr>
<td>BLS CPR Renewal Course</td>
<td>Sept. 21</td>
<td>Stephen R. John, DDS</td>
<td>Redwood City</td>
<td>$45 Member/ $60 Non-Member</td>
<td>4</td>
</tr>
<tr>
<td>Staff Resilience: Stress-Busting Humor</td>
<td>Sept. 23</td>
<td>Kelli S. Vrla, CSP</td>
<td>San Carlos</td>
<td>$50 Member/ $60 Non-Member</td>
<td>3</td>
</tr>
<tr>
<td>Getting The Most Out Of Your Organized Dentistry Membership</td>
<td>Sept. 30</td>
<td>Conor McNulty; Robyn Thomason</td>
<td>Redwood City</td>
<td>$10 Member/ $25 Non-Member</td>
<td>0</td>
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</table>
### San Mateo County Dental Society

<table>
<thead>
<tr>
<th>Topic</th>
<th>Date</th>
<th>Lecturer(s)</th>
<th>Location</th>
<th>Cost</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>BLS CPR Renewal Course</td>
<td>Oct. 11</td>
<td>Richard A. Fagin, DDS</td>
<td>Redwood City</td>
<td>$45 Member/$60 Non-Member</td>
<td>4</td>
</tr>
<tr>
<td>Treatment Planning Decision-Making: Endo, Implants or Fixed Partial Dentures?</td>
<td>Oct. 21</td>
<td>Warden H. Nobel, DDS, MS</td>
<td>Foster City</td>
<td>$45 Member/$55 Non-Member</td>
<td>3</td>
</tr>
<tr>
<td>Financial Planning Strategies for a Challenging Economy</td>
<td>Oct. 28</td>
<td>Robert Cheney, Financial Planner</td>
<td>Redwood City</td>
<td>$10 Member/$25 Non-Member</td>
<td>0</td>
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<tr>
<td>Cal-OSHA &amp; Regulatory Requirements</td>
<td>Nov. 5</td>
<td>Julian Goduci, CHMM</td>
<td>Redwood City</td>
<td>$70 Member/$80 Non-Member</td>
<td>4</td>
</tr>
<tr>
<td>Dental Board of California Requirements</td>
<td>Nov. 5</td>
<td>Julian Goduci, CHMM</td>
<td>Redwood City</td>
<td>$60 Member/$70 Non-Member</td>
<td>4</td>
</tr>
<tr>
<td>BLS CPR Renewal Course</td>
<td>Nov. 16</td>
<td>Stephen R. John, DDS</td>
<td>Redwood City</td>
<td>$45 Member/$60 Non-Member</td>
<td>4</td>
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<tr>
<td>Strengthen Your Team, Client Base, &amp; Bottom Line</td>
<td>Nov. 18</td>
<td>Tiffany Smith Nielsen</td>
<td>Foster City</td>
<td>$45 Member/$55 Non-Member</td>
<td>3</td>
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<tr>
<td>BLS CPR Renewal Course</td>
<td>Dec. 13</td>
<td>Richard A. Fagin, DDS</td>
<td>Redwood City</td>
<td>$45 Member/$60 Non-Member</td>
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### Santa Barbara-Ventura County Dental Society

<table>
<thead>
<tr>
<th>Topic</th>
<th>Date</th>
<th>Lecturer(s)</th>
<th>Location</th>
<th>Cost</th>
<th>Units</th>
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<tbody>
<tr>
<td>New Approaches for Antimicrobial Treatment of Periodontal Disease</td>
<td>July 14</td>
<td>Jorgen Slots, DDS, DMD, PhD, MS, MBA</td>
<td>Santa Barbara</td>
<td>$185</td>
<td>7</td>
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<tr>
<td>Infection Control and Dental Practice Act</td>
<td>Aug. 11</td>
<td>Noel Kelsch, Wood &amp; Delgado</td>
<td>Westlake Village</td>
<td>$150</td>
<td>4</td>
</tr>
<tr>
<td>The Wonderful World of Lasers in Dentistry</td>
<td>Sept. 10</td>
<td>Donald J. Coluzzi, DDS</td>
<td>Oxnard</td>
<td>$185</td>
<td>7</td>
</tr>
<tr>
<td>Infection Control and Dental Practice Act</td>
<td>Oct. 8</td>
<td>Noel Kelsch, Wood &amp; Delgado</td>
<td>Santa Barbara-Goleta</td>
<td>$150</td>
<td>4</td>
</tr>
<tr>
<td>Current Concepts in Adhesion Dentistry</td>
<td>Nov. 5</td>
<td>Raymond L. Bertolotti, DDS, PhD</td>
<td>Oxnard</td>
<td>$185</td>
<td>7</td>
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### Santa Clara County Dental Society

<table>
<thead>
<tr>
<th>Topic</th>
<th>Date</th>
<th>Lecturer(s)</th>
<th>Location</th>
<th>Cost</th>
<th>Units</th>
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</thead>
<tbody>
<tr>
<td>Provisional Restoration: Materials, Techniques and Updates</td>
<td>Sept. 9</td>
<td>George Cho</td>
<td>Campbell</td>
<td>$35 Non-Member</td>
<td>2</td>
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<tr>
<td>How to Refer and Work with Physical Therapists for the TMD Patient</td>
<td>Oct. 14</td>
<td>Dr. Charles McNell; Dr. Patricia Rudd</td>
<td>Campbell</td>
<td>$35 Non-Member</td>
<td>2</td>
</tr>
<tr>
<td>Periodontal Microsurgery and Periodontal Endoscopy: Seeing is Believing!</td>
<td>Nov. 11</td>
<td>Dr. John Kwan</td>
<td>Campbell</td>
<td>$35 Non-Member</td>
<td>2</td>
</tr>
<tr>
<td>Oral Surgery/TBD</td>
<td>Dec. 9</td>
<td>Dr. Brian Schmidt</td>
<td>Campbell</td>
<td>$35 Non-Member</td>
<td>2</td>
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### Southern California Orofacial Academy

<table>
<thead>
<tr>
<th>Topic</th>
<th>Date</th>
<th>Lecturer(s)</th>
<th>Location</th>
<th>Cost</th>
<th>Units</th>
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</thead>
<tbody>
<tr>
<td>Harvesting Stem Cells for Bone Graft Success</td>
<td>Oct. 20</td>
<td>Dennis G. Smiler, DDS, MScD</td>
<td>Pasadena</td>
<td>$350</td>
<td>8</td>
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### TRI-COUNTY DENTAL SOCIETY

<table>
<thead>
<tr>
<th>Topic</th>
<th>Date</th>
<th>Lecturer(s)</th>
<th>Location</th>
<th>Cost</th>
<th>Units</th>
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</thead>
<tbody>
<tr>
<td>Infection Control, The Dental Practice Act and Patient Benefit Through Staff Motivation</td>
<td>Sept. 17</td>
<td>Dr. Gene Rathbun; Bette Robin, DDS, JD; Debra Quarles</td>
<td>Colton</td>
<td>$225 Member/ $325 Non-Member/ $225 Student/ $95 Auxiliary, Retired</td>
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### TULARE-KINGS DENTAL SOCIETY

<table>
<thead>
<tr>
<th>Topic</th>
<th>Date</th>
<th>Lecturer(s)</th>
<th>Location</th>
<th>Cost</th>
<th>Units</th>
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</thead>
<tbody>
<tr>
<td>Advanced Lawsuit Protection and Tax Reduction Strategies for Dentists</td>
<td>Aug. 13</td>
<td>G. Kent Mangelson, BS, CFP</td>
<td>Visalia</td>
<td>TBD</td>
<td>4</td>
</tr>
<tr>
<td>California Dental Practice Act &amp; Infection Control; HIPAA</td>
<td>Oct. 22</td>
<td>Leslie Canham, RDS, CDA Speaker’s Bureau</td>
<td>Visalia</td>
<td>TBD</td>
<td>6</td>
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### UNIVERSITY OF CALIFORNIA OF LOS ANGELES CONTINUES ON NEXT PAGE

<table>
<thead>
<tr>
<th>Topic</th>
<th>Date</th>
<th>Lecturer(s)</th>
<th>Location</th>
<th>Cost</th>
<th>Units</th>
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</thead>
<tbody>
<tr>
<td>Pre-Conference Hawaii 2010</td>
<td>June 26</td>
<td>Gerard Chiche, DDS</td>
<td>Princeville, Kauai, HI</td>
<td>$198</td>
<td>4</td>
</tr>
<tr>
<td>Aesthetic Continuum 2010</td>
<td>July 22-25, Aug. 19-22, Sept. 16-19</td>
<td>Jimmy Eubank, DDS; Brian LeSage, DDS; Others</td>
<td>Los Angeles</td>
<td>$6995</td>
<td>90</td>
</tr>
<tr>
<td>Complete Dentures: Back to the Future</td>
<td>July 31</td>
<td>Eleni Roumanas, DDS</td>
<td>Los Angeles</td>
<td>$198</td>
<td>7</td>
</tr>
<tr>
<td>Orofacial Pain and Fly Fishing Mammoth, CA</td>
<td>Aug. 6-8</td>
<td>Robert Merrill, DDS, MS; Donald Primack, DDS</td>
<td>Mammoth Lakes</td>
<td>$298</td>
<td>6</td>
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<tr>
<td>RDA: Infection Control</td>
<td>Aug. 14</td>
<td>Cara Batson, RDA; Charlene Flowers-Taylors, RDA</td>
<td>Los Angeles</td>
<td>$250</td>
<td>8</td>
</tr>
<tr>
<td>Dentoalveolar Surgery</td>
<td>Aug. 21</td>
<td>Earl G. Freymiller, DMD, MD; Alan L. Felsenfeld, DDS</td>
<td>Los Angeles</td>
<td>$198</td>
<td>7</td>
</tr>
<tr>
<td>Periodontal Surgery Workshop</td>
<td>Aug. 28-29</td>
<td>Paulo Camargo, DDS, MS; Philip Melinck, DDS</td>
<td>Los Angeles</td>
<td>$895 before July 31/ $995 after July 31</td>
<td>16</td>
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<tr>
<td>New Registered Dental Assistants in Extended Functions — Module 2</td>
<td>Starts Aug. 28-29</td>
<td>Richard Stevenson, DDS; Barbara Blade-Jacobs, RDAEF; Joseph Cooney, DDS; Others</td>
<td>Los Angeles</td>
<td>$4495</td>
<td>128</td>
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<tr>
<td>Sleep Medicine Mini-Residency</td>
<td>Sept. 10-11, Oct. 15-16, Nov. 12-13</td>
<td>Dennis R. Bailey, DDS; Robert Merrill, DDS, MS</td>
<td>Los Angeles</td>
<td>$3495</td>
<td>10</td>
</tr>
<tr>
<td>Dental Ethics for a Changing Profession</td>
<td>Sept. 25</td>
<td>Gary Herman, DDS</td>
<td>Los Angeles</td>
<td>$198</td>
<td>7</td>
</tr>
<tr>
<td>Certification In Pediatric Oral Sedation</td>
<td>Sept. 30-Oct. 3</td>
<td>John A. Yagiela, DDS, PhD; Christine Quinn, DDS, MS</td>
<td>Los Angeles</td>
<td>$2995 Dentist/ $225 Auxiliary</td>
<td>26</td>
</tr>
<tr>
<td>Re-Certification in Pediatric Oral Sedation</td>
<td>Oct. 2</td>
<td>John A. Yagiela, DDS, PhD; Christine Quinn, DDS, MS</td>
<td>Los Angeles</td>
<td>$295</td>
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</tbody>
</table>
### UNIVERSITY OF CALIFORNIA OF LOS ANGELES

**Recent Advances in Detection Management of PreCancer Lesions**
**Oct. 2**
- Dakota V. Messadi, DDS, MMSc, DMSc
- John Yagiela, DDS, PhD
- Fred Dennis, MD
**Los Angeles**
- $135
- 4 units

**CA Dental Practice Act & Infection Control**
**Oct. 9**
- Andy Wong, DDS
**Los Angeles**
- $135 Dentist/ $95 Auxiliary
- 4 units

**Medical Emergencies for Your Dental Team**
**Oct. 16**
- Cara Batson, RDA
- Charlene Flowers-Taylors, RDA
**Los Angeles**
- $575
- 16 units

**RDA: Pit & Fissure Sealants**
**Oct. 16-17**
- Cara Batson, RDA
- Charlene Flowers-Taylors, RDA
**Los Angeles**
- $575
- 16 units

**Practical Occlusion for Esthetics & Function**
**Oct. 22-24**
- Jimmy Eubank, DDS
**Los Angeles**
- $4495
- 20 units

**HIV Infection: An Update on Management & Emerging Issues**
**Oct. 23**
- Fariba S. Younai, DDS
**Los Angeles**
- $198 Dentist/ $98 Auxiliary
- 7 units

**6th Annual Distinguished Lecture Series: Pulp Biology Regenerative Approaches**
**Oct. 30**
- Songtao Shi, DDS, PhD
- Martin Trope, DMD
- Cun-Yu Wang, PhD
**Los Angeles**
- $250
- 7 units

**Hot Topics in Dentistry**
**Nov. 6**
- Henry Takei, DDS, MS
- Edmond Hewlett, DDS
- Bernice Ko, DDS
- George Perri, DDS
- Robert Merrill, DDS
- Todd Schoenbaum, DDS
**Los Angeles**
- $59 Delta Dental Dentist/ $198 Dentist, Auxiliary
- 7 units

**Advanced Implant Therapy: Live Surgery and Hands-On Workshop**
**Nov. 8-12**
- Sascha A. Jovanovic, DDS, MS
- Henry H. Takei, DDS, MS
- Others
**Los Angeles**
- $3995
- 40 units

**Diagnostic Box: Esthetics, Occlusion, Comprehensive Care**
**Nov. 19-21**
- Jimmy Eubank, DDS
**Los Angeles**
- $3995 Dentist/ $395 Staff
- 24 units

**Your Patient's Medical History: What You Don't Know Can Hurt You**
**Nov. 20**
- Earl G. Freymiller, DMD, MD
- Alan L. Felsenfeld, DDS
**Los Angeles**
- $198
- 7 units

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**UNIVERSITY OF CALIFORNIA SAN FRANCISCO**

**Orofacial Pain Study Group**
**Sept. 17-18, Oct. 29-30, Dec. 10-11, 20**
- Charles McNeill, DDS
**San Francisco**
- TBD
- 42 units

**Review of Oral Conscious Sedation: A Renewal Course**
**Oct. 1**
- Frank Grimaldi, DDS
**San Francisco**
- TBD
- 7 units

**Roundtable Seminars in General Dentistry**
**Oct. 8**
- Various
**San Francisco**
- TBD
- 42 units

**Healthy Mouth, Body, Practice and the Fattening of America**
**Oct. 9**
- Lisa F. Harper Mallonee, BSDH, MPH, RD/LD
**San Francisco**
- TBD
- 7 units

**Sleep Apnea**
**Oct. 15**
- Glen Clark, DDS, MS
**San Francisco**
- TBD
- 7 units

**Esthetic Dentistry**
**Oct. 22**
- Cherilyn Sheets, DDS
**San Francisco**
- TBD
- 7 units

**Oral Health Products**
**Nov. 6**
- Karen Baker, BS, MS
**San Francisco**
- TBD
- 7 units
Roadblocks


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rpalumbo@calpracticesales.com
WWW.CALPRACTICESALES.COM

John Knipf & Robert Palumbo

<table>
<thead>
<tr>
<th>Area</th>
<th>Practice Details</th>
</tr>
</thead>
</table>
| **LOS ANGELES COUNTY** | *
| **ARCADIA GP** | - 5 eq. ops., 1,465 sq.ft. ste, 2 story professional medical bldg. 7 yrs goodwill. Grossed $390,420 for 2009. ID #3121 |
| **BALDWIN PARK** | - Turn-key, 4 eq. ops., 1 plmbd not eq. op., 1,200 sq. ft. office, 1 story med/dent bldg. ID #2651 SOLD |
| **ENCINO GP** | - 3 eq. ops., 1,200 sq. ft. suite, 7 story professional building. Collected approx. $514,348 for 2009. NET OF $149K. ID #2631 |
| **LAWNDALE GP & Bldg** | - Excellent practice w/8 eq. ops., 3,000 sq. ft., free standing bldg. Collected $919,578 in 2009. ID #2901 |
| **LOS ANGELES GP** | - 1,300 sq. ft. practice in a strip shopping center w/5 eq. ops. Collected approx. $360,151 in 2009. ID #2771 |
| **LOS ANGELES GP** | - Turn-key, 3 eq. ops., multi story med/dent bldg. Collected approx. $197,238 in 2009. Great views. ID #2831 |
| **MONTEBELLO** | - Long Established Practice, equip. & charts only! 2 eq. ops., in single story busy shopping center. ID #2701 |
| **REDONDO BEACH GP** | - 3 eq. ops. in large remodeled shopping center. Collected approx. $276,831 in 2009. NET $84K. ID #2821 |
| **ROLLING HILLS GP** | - Long established practice w/5 eq. ops., 1,760 sq. ft. suite in a 2 story med/prof. bldg. NET $140K. ID #2981 |
| **SAN ANA GP** | - 36 years of goodwill. 3 eq. ops., 2 plmbd not eq ops., 3 story medical bldg. at busy intersection. ID #3101 |
| **SANTA ANA GP** | - 36 years of goodwill. 3 eq. ops., 2 plmbd not eq ops., 3 story medical bldg. at busy intersection. ID #3101 |

| **ORANGE COUNTY** | *
| **FULLERTON GP / Bldg** | - 4 eq. ops., 1,100 sq. ft. office located in downtown in a 1 story free standing historical bldg. ID #3111 |
| **GARDEN GROVE GP** | - Equipment w/charts, 2 eq. ops., 1 plmbd not eq., 1,000 sq. ft. ste., 2 story bldg in busy strip center. ID #3091 |
| **SAN JUAN CAPISTRANO GP** | - Well designed & modern office w/4 eq. ops., 3 plmbd not eq., in a 2 story prof. bldg. ID #3021 |
| **SAN JUAN CAPISTRANO GP** | - Leasehold improvements & equip. only! Suite located in a 2 story prof. bldg w/3 eq. ops. ID #3071 |
| **SANTA ANA GP** | - 36 years of goodwill. 3 eq. ops., 2 plmbd not eq ops., 3 story medical bldg. at busy intersection. ID #3101 |

| **RIVERSIDE / SAN BERNARDINO COUNTIES** | *
| **APPLE VALLEY GP** | - 3 eq. ops., 1,000 sq. ft. office located in a 1 story bldg w/6 suites. Established in 1978. NET $52K. ID #2461 |
| **LA QUINTA** | - Leasehold & equip. only! 3 eq. ops., 1,000 sq. ft. suite in a strip shopping center. Established in 1995. ID #3011 |
| **ONTARIO GP** | - Excellent growth potential office w/4 eq. ops. in a single strip plaza at major intersection. ID #2791 |
| **PALM SPRINGS Perio/GP** | - Leasehold improv. & equip. only! 2 eq. ops., 1 plmbd not eq., 1,510 sq. ft. office, 1 story bldg. ID #3151 |
| **RANCHO CUCAMONGA GP** | - 6 eq. ops., 1,800 sq. ft. suite, 2 story med/dent blg. Leasehold improvements & equip only! ID #3191 |
| **SAN BERNARDINO GP** | - 4 eq. ops., 1 plmbd not eq. located off the freeway w/beautiful courtyard in a 3 story glass prof. bldg. ID #3201 |

| **SAN DIEGO COUNTY** | *
| **EL CAJON** | - Solo practice, 3 eq. ops., 1 plmbd not eq. 2,200 sq. ft. office, free standing bldg. Seller owns bldg. NET $123K. ID #3031 |
| **OCEANSIDE** | - 4 eq. ops., 1,500 sq. ft. office, one story med/dent bldg. Collected approx. $345,049. ID #1641 Great Location! |
| **SAN DIEGO** | - Leasehold improvement with some charts & building for sale! 5 fully eq. ops., 1,300 sq. ft. office. ID #3141 |

| **VENTURA / SANTA BARBARA / SAN LUIS OBISPO COUNTIES / KERN** | *
| **BAKERSFIELD GP** | - 6 eq. ops., 2,000 sq. ft. suite, 1 story strip center. Collected approx. $323K for 2009. NET $124K. ID #3081 |
| **SANTA BARBARA COUNTY GP (New)** | - Long Established Practice, 3 eq. ops., 1,010 sq.ft, 2 story strip mall. NET OF $219K. ID #2881 |
| **VENTURA GP** | - 6 eq. ops., 2 story med/dent bldg. Great corner location with excellent street visibility. NET OF $200K. ID #2741 |

| **SPECIALTY PRACTICES** | *
| **EL CAJON/CORONADO (Ortho)** | - 2 locations included. Primary location: 4 eq. ops., 1,400 sq. ft. office located in one story shopping center. Seller rent space in Coronado and owns approx. 80 active patient charts. NET OF $83K. ID #3171 |

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California Dental Association
P. O. Box 13749
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CONTINUES ON 454
DENTAL SUITES FOR LEASE —
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RANCHO BERNARDO — POWAY AREA — Pomerado Medical Building. Present dentists include general dentists and specialists. One is built out for pediatric use. Near major hospital in high-income area of San Diego County. Call agent 858-822-9215 or Dr. John Sottosanti 858-245-0560. E-mail: rgraves@cbcworldwide.com.

EXCLUSIVE DENTAL SUITES FOR LEASE — Short/long term lease, state of the art equipment and accommodations. Conveniently located off the 101 freeway. Carlos Vazquez 818-758-3557.


S.F. PRIME FINANCIAL DISTRICT OFFICE — Ground level suite with five ops, computer and digital radiography equipped. Large sterilization area, small lab, private lunchroom and bathroom. Available to share with a dentist with current patient base or looking to start a practice. Great opportunity for buy-in or purchase in the next three years. Flexible and open for discussion. Contact: Dr. Paul Hoyt at 415-399-9999 or 415-516-9670, e-mail: paulhoyt@aol.com.
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- **APTONS**: For Sale - General Dentistry Practice. Highly desirable location. 2008 Gross Receipts over $1M. w/adjusted overhead at 31%. Operatories in 1,200 sq ft. Pano & Mod computerized software. 9-hygience days per week. Practice operated for past 33 years in same location. Open 5 days a week. Owner willing to work back for new owner 2 days/wk. #14305
- **ATWATER**: For Sale - General Dentistry Practice. Gross receipts $177K w/adjusted net income of $67,495. Practice has been in its present location for the past 30 years. 1,080 sq ft. 2-equipped operatories. Owner to retire. #14310
- **LOS ANGELES**: For Sale - General Dentistry Practice: This practice 80% Dental and has approximately 2000 active patients. Owner has operated in same location for 31 years. 2009 receipts were $709,000. 6 equipped tx rooms, intra-oral camera Pano and Ceph. Call for details.
- **MODESTO**: For Sale - General Dentistry Practice. 5 operators, 32-years in present location. Gross Receipts $884K w/adjusted net income of $346, Dentrix, Cerec, and Intra-oral camera. Owner to retire. #14308
- **MURRIETA/ESCONDIDA**: For Sale - 2009 gross receipts were $648,000. This 4 op. 2,200 sq ft. office space with 4.5 days of hygiene. Age of Dental equip is 1 year. #14313
- **NORTHERN CALIFORNIA**: For Sale - Pediatric practice. Owner has operated in same location for 32 years. Approx. 1,760 active patients, 1,160 sq ft. panoramic X-ray, Dextris Digital and Dentrice software in this 5-chair office. 2009 Gross Receipts $713K w/48% overhead. Owner retiring. Call for details.
- **NO. CA WINE COUNTRY**: For Sale - 2009 gross receipts of $763K 4 Op. 1,500 sq ft. Overhead 29% Owner to retire #14296
- **OROVILLE**: For Sale - General Dentistry Practice. Owner dentist recently deceased. 2009 collections $770K, very nice stand alone building with basement. 7 ops digital x-ray 5 days of hygiene. Bidg. 3,000 sq ft. Basement 540 sq ft. Inpatient Dentist in place. #14310
- **PALM SPRINGS**: For sale immediate sale - General Dentistry Practice. 2008 Gross Receipts $906K w/adj. net income of $346K. Highly desirable location with 4 ops. Laser, and Intra-oral camera. 5 days of hygiene. Owner recently deceased.
- **PLUMAS COUNTY**: For Sale - 3 equipped ops. Space available for 4th op. 1,254 sq ft of office in good location. 2009 gross receipts $475K. Practice in present location over 50 years. Owner is retiring.
- **PONTEVILLA**: For Sale -One of two partners is retiring

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in this highly successful General Dentistry Practice. Receipts $2Mil. adj. net $1,257,000. 2,000 sq ft 6 ops. Intra-Oral camera, Pano, Dentrix. 10 days of hygiene. #14,291

- **RED BLUFF**: For Sale-General Dental Practice **REDUCED PRICE** Facility overlooks the Sacramento River, 3,500 sq ft, has 8 ops, 10 hygiene days. Appraised value or Best Offer. Historically Gross Receipts have been over $1 Mil per year. 100% financing available. Sale of Building (optional) #142522

- **REDDING**: For sale-Owner looking for Assoc. trans. into Partnership w/Boy-Out. GR $1 Million dollars income $436K. 5.5 days hygiene, L.200 sq. ft. #14,293

- **RENO**: For immediate Sale: **DECEASED DENTIST** - General Dentistry Practice (2 ops), 17yrs. present location ‘07 GR $763K w/adj. net $263K w/65% overhead. Bldg. also for sale. Owner deceased.


- **SAN FRANCISCO**: For Sale-District 4 ops, 1,500 sq. ft. MURGAR - Buyer needs financing in Pt. base #14288

- **SAN FRANCISCO**: For Sale-Patient Base for Sale-Owner passed away last June and the practice has continued on for 4 days a week with an associate. Can’t be renewed. There are approx. 1,000 active patients in the practice. The patient base can be purchased at no risk to buyer since the purchase price is paid according to the receipts collected on the patients that transfer. #14312

- **SAN DIEGO**: For Sale-General Dentistry Practice. This office is planned for 4 ops. 3 ops. are equipped with Promo Equipment. Lease is $2,200 per month. 2009 receipts were $185,645. PPO and Fee for service practice.

- **SAN DIEGO/CITY HEIGHTS**: For Sale-General Dentistry practice. Owner has operated in same location for 12 years. Approx. 1,000 active patients, panoramic X-ray. Intra Oral Camera, in this 3-chair office.

- **SOUTH LAKE TAHOE**: For Sale-General Dentistry Practice. Office is 647 square ft. Practice has been in its present location for the past 26 years. Owner to retire. #14277

- **TORRANCE**: For Sale- General Dentistry Practice: Owner has operated in same location for 20 years. Approx. 1,000 active patients, 1,080 sq. ft. Branc System, and Camath software in this 2 equipped , 3 available-chair office. 2009 Gross receipts $434K with 38% overhead. Owner retiring.
SOUTH SAN FERNANDO VALLEY
3 op GP located in a busy strip shopping center. The office has computers in each op and utilizes a Digital Schick X-ray system. 2009 collections $357,000+.

ORANGE COUNTY COASTAL COMMUNITY - (Perio)
Busy periodontal practice with a highly desirable location. 5 op, very profitable business with long term goodwill and a great staff. 2009 collections $900,000+. The seller is retiring.

LANCASTER
Long established, 4 op GP with an excellent location in a professional complex. Strong patient base developed over 34 years. 2009 collections exceeded $670,000. The seller is retiring.

SAN JOAQUIN COUNTY (Pedo)
Price Reduction - Motivated Seller!
Long established pediatric dental practice with a fantastic presence in a busy and popular location. The large "child friendly" office includes 11 equipped ops. The seller is retiring.

INLAND ORANGE COUNTY
Motivated Seller!
Newer, 3 op GP start-up opportunity. Located in a shopping mall, the practice is currently open only two days per week and is positioned for growth.

SAN DIEGO AREA
Multi office opportunity. Contact us for more details.

SACRAMENTO COUNTY (Ortho)
Spacious 6 op, well established orthodontic practice in a full service easily accessible office building. 2009 collections $440,000+.

LOS ANGELES (Endo)
Price Reduction!
4 op, long established endodontic practice. Located in an easily accessible professional building next to a major intersection

MORENO VALLEY
Spacious, 2,700 sq ft, 7 op (6 equipped), GP with a busy location, 25 years goodwill, strong patient base & plenty of room for growth.

VENTURA COUNTY
Long established 3 op GP with a convenient suburban location. Well trained staff. Collections are consistently growing with 2009 gross $431,000+.

SOLANO COUNTY
Price Reduction!
4 op (3 equipped) GP with strong patient base. Efficient facility and proven systems.

CHINO
Price Reduction
4 op GP in a dental complex. Stand alone building. 2009 collections $368,000+.

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ALHAMBRA – (2) op G.P. Mostly cash pts. w some Ins/PPO. 2009 Collect $140K on a very limited schedule. Seller quotes 1,200 active pts. Seller retiring, but will assist w transition. NEW


ARCADIA – (4) op computerized G.P. Cash/Ins/PPO only. Gross Collect $315K+/yr on a (4) day week. In a well known, easily accessible medical/dental bldg on a main bldv. SOLD

BAKERSFIELD #22 – (5) op G.P. (4) eqt’d. Strip Ctr. Gross Collect ~ $200K/yr p.t. NEW

BAKERSFIELD #23 – Partner Wanted! 50% Ownership! NEW

CALABASAS – "Build to Suit" Dental space avail for long term lease. 1,200 – 3,600 sq. ft. NEW

FRESNO – (3) op G.P. (4) yr old eqt. Mixed patients. 2009 Collections $220K+ p.t. NEW

FRESNO SUBURB – (3) op G.P. Gross Collect. $375K/yr. No competition. PENDING

HIGHLAND #2 – (3) op compt. G.P. in a shop ctr. Mixed Pt. Base. '09 Collect. $447K. NEW

ARCADIA – (4) op compt. G.P. Dentrix s/w. Located in a strip ctr. Cash/Ins/PPO only. 2009 Collect. ~ $477K. NEW

LOS ANGELES (KOREA TOWN) – (3) op computerized G.P. Cash/Ins/PPO only. Gross Collect $315K+/yr on a (4) day week. Seller retiring, but will assist w transition. NEW

L.A. Cty, San Diego Cty, Orange Cty & Riverside Cty.

NEW HIGHLAND #2 – (3) op compt. G.P. in a highly desirable area. (3) ops eq’t’d. Digital x-rays. Drop Dead Gorgeous! Cash/Ins/PPO only! '09 Gross Collections ~ $629K. PENDING

NEW WESTLAKE VILLAGE – (4) op compt. G.P. in a highly desirable area. (3) ops eq’t’d. Digital x-rays. Drop Dead Gorgeous! Cash/Ins/PPO only! '09 Gross Collections ~ $629K. PENDING

VENTURA Multi-Specialty – (5) op comput paperless office, digital x-rays/Pano. Newer Eq’t. 2009 Gross $623K+. 2 days/wk Pedo, 3 days/mos O.S., 2 days/wk Endo, 1 day/mos Perio. REDUCED VENTURA – (3) op G.P. and a free standing bldg. located in a highly desirable area. Cash/Ins/PPO and small amount of HMO. Seller is a 1-800 DENTIST provider. Dentiress/s/w and Pano eq’t’d. 20-25 new pts. per mos. Annual Gross Collections ~$400K+. NEW

WOODLAND HILLS – (3) op comput. G.P. Dentiress/s/w. Located in a strip ctr. Cash/Ins/PPO only. 2009 Gross Collect. ~ $570K. Newer eq’t., digital x-rays/intra oral camera. SOLD

UPCOMING PRACTICES: Covina, L.A., Orange Cty., Oxnard, SFV, Simi Valley & Torrance

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• Medical/Dental Bldg. Sales & Leasing
• Pre - Sale Planning

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DENTIST — SHAFTER, CALIFORNIA — Well established group seeking general dentist. Send CV to National Health Services Inc., c/o Aurora Cooper, Associate Director of Personnel, acooper@nhsinc.org.

OPPORTUNITY AVAILABLE — Dental
Assisting Program Director wanted to develop curriculum/teach at new center in Tarzana, California. Experience required. Call Laura 818-758-3557.

OPPORTUNITY AVAILABLE — NORTH-WESTERN WASHINGTON — Seeking experienced dentist for busy, established, rapidly growing, fee-for-service group dental practice. Excellent immediate income opportunity ($180,000 to $375,000 + per year) depending on productive ability and hours worked. Secure long-term position. You can concentrate on optimum patient treatment without practice management duties. Newly equipped, modern office with excellent staff and lab services provided. If you are bright, energetic with a desire to be productive, very personable, people oriented and have great general and specialty clinical skills, fax resume to Otto J. Hanssen at 425-484-2110.

CONTINUES ON 462
3028 NAPA-SOLANO COUNTY GP
Owner retiring from well-est. practice in 1,400 sq. ft. facility with 5 ops. All fee-for-service pts. with great word-of-mouth reputation. 2009 GR $731K+, June 2010 FY on schedule for $771K+ with just 4/doctor-days. Asking $518K.

3006 MONTEREY COUNTY ORTHO
Est. Ortho practice in 2,668 sq. ft. of ce with 5 open bay chairs in a professional dental complex. Panorex and Cephalometric X-ray machines. Stable and loyal referral base. Annualized GR as of Oct 2009 are $335K+. Owner retiring and willing to help for a smooth transition. Asking 227K.

2986 SAN JOSE FACILITY & EQUIP
A 3 year-old stunning facility with small pt. base that has all the bells and whistles. 2,000 sq. ft. office. Located in desirable comm./residential neighborhood close to O’Connor Hosp. & Valley Fair Mall. 6 ops and new equip. For the est. GP who is looking to move into a larger facility or for the assoc. GP who is ready to start out on their own. Asking $475K.

3017 SOUTH BAY
Est. Cosmetic and Restorative Practice in desirable area. Seller is able to help for a smooth transition. 1,530 sq. ft. office with 4 fully equipped ops. 2009 GR $829K+. Asking Price $658K

3013 SOUTH VALLEY, GP
Clean air, quiet living and a small town atmosphere are found in this bedroom community to Northern California’s San Jose/Silicon Valley. Quality, well-est. GP offering 31 years of goodwill in a state-of-the-art, fully equipped, attractive 6 op practice in 2,246 sq. ft. Seller is the originator of "Alternative Lightwire Functional" appliances but the practice includes every aspect of whole person dentistry at the cutting edge from Cerec to PRGF augmented surgery. Approx. 2,500 active pts. with a waiting list for new patients to join the practice!!! 2008 GR $870K+. Asking $563K.

3016 CONTRA COSTA COUNTY PERIO
Est. 1990 in desirable bedroom community 20 miles from SE 1,068 sq. ft. beautifully remodeled office w/’fully-equipped ops., & excellent staff. Assignable 5 year lease w/5 year option. Seller willing to help in the transition of the practice. 2008 GR $441K+, 2009 GR projected to $460K+ as of Oct. Terrific upside potential. Asking $275K.

3022 MODESTO GP
Owner retiring from well est. friendly, family practice w/3 ops. in 1,150 sq. ft. office + spacious storage. Avg. GR for past 5 years $379K+. Low overhead & great upside potential. Quality staff. Owner willing to help w/smooth transition. Partnership in building available. Asking $278K for practice.

3023 NORTH BAY
Seller retiring from service oriented practice with loyal patients and seasoned staff. ~2K sq. ft. office w/6 fully-equipped ops. & excellent lease. ~200 active pts. all fee-for-service. Avg. GR $438K+ Avg. overhead 64% w/ 3.5 doctor days/wk. Great upside potential. Asking $273K.

UPCOMING
South Bay GP
BAY AREA

A-6781 SAN FRANCISCO - New equipment-hardly used. VIRTUALLY NEW practice! 1,000 sf/3 ops. $60k

A-7751 SAN FRANCISCO - Space Sharing. GP seeks DDS to share office in renowned 450 Sutter St bldg. Call Now!

A-807 SAN FRANCISCO - Well-known Medical/Dental Prof. bldg in heart of downtown financial district. Quality, state-of-the-art practice. 800sf w/2 fully equipped ops. Plumbed for 1 add’l $250k

BAY AREA CONTINUED

D-842 PLEASANTON - General Dentistry. 1,488sf w/ 2 ops $295k

D-779 SUNNYVALE - Well established GP in heart of Silicon Valley! 4 ops, 1050sf. Call for more information! $225k

D-790 MORGAN HILL FACILITY - SPECTACULAR! Dental Prof Plaza on busy intersection. 1,730 sf/5ops, 3 of which are fully equipped. This is an Ideal Satellite Office for Specialty Practice! $75k

D-824 SANTA CLARA - 35+ new patients/mo by word-of-mouth referrals. Just 6 years old w/ 1,500 sf & 3 fully equipped ops. Plumbed for 1 add’l op $485k

D-8301 SAN JOSE - Facility - Spectacular and pristine Professional plaza. Office is ~ 2,400sf and consists of 6 fully equipped ops. $425k

D-857 MOUNTAIN VIEW - New Practice! 1,000 sf/3 ops. Dental Prof Bldg. 2,100sf w/ 3 fully equipped ops. Plumbed for 2 add’l ops $300k

D-870 CUPERTINO - CAT6 fully computerized office. 2100sf & 3 ops. ’09 collections over $800k! $650k

D-877 LOS ALTOS - Located in a spectacular and pristine Professional plaza. Office is ~ 2,400sf and consists of 6 fully equipped ops. $425k

NORTHERN CALIFORNIA

E-729 AUBURN - Busi retail shp ctr w/ excellent signage & good traffic flow. Well maintained FFS practice. 1750sf, 4ops. Plumbed for 2 add’l ops $300k

E-7121 SACRAMENTO AREA - Largely FFS. 1800sf, 4ops (+2 add’l plumbed). 2-story Prof bldg. $695k

E-818 SACRAMENTO - Increase the part-time, relaxed workweek and watch the practice grow! Loyal Patient Base. Collections over $350k in 2007. 1,200sf & 4 ops. Building previously appraised @ $260k in 2004. $315k for Practice AND Building

E-865 FOLSOM - Newly equipped Assoc Driven practice. Generate higher revenue w/owner dentist! Collections in 09 over $600k! 1650sf, 5 ops office. $525k

E-872 ROCKLIN - Remarkable opportunity w/ a steady increase in monthly collections! 2450sf w/ 6 ops. $495k

E-873 ROSEVILLE - This remarkable practice Doctor averages 10 patients w/ 8 Hygiene patients per day and generates ~ 12-15 new patients per month. ~ 1,000 sf , 2 . Plumbed for 1 add’l op $380k.

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NO. CALIFORNIA CONTINUED

G-751 RED BLUFF/CHICO- Known for special sense of community & small town living. Complete remodel ~5 yrs ago. FFS GP. 2350sf / 4 ops equipped. Plumbed for 2 add’1. Current Lender Willing to Carry Qualified Buyer. Practice Offered at $175k / Real Estate $250k

G-875 YUBA CITY- Sets the bar for excellence! Established 30 + years, GP, FFS, 3575 sf / 9 ops, great location. $1.5m—Associate Buy Opportunity!

F-7651 COASTAL EUREKA AREA- Near Thriving University. Vibrant student/staff population. Seller retiring. 2700sf, 6 ops. $480k

H-634 WEST OF RENO - On the Feather River in Plumas Co. 1500 sf/ 4 ops, excellent location. Lease below market value. $250k

H-668 NORTHEASTERN CA- GP with over 30 yrs goodwill. 4 ops 1600sf office. 2007 gr.rcpts exceed $650k $395k

I-772 Facility STOCKTON-Desirable, affluent health care area. 2,140sf/4 ops $250k

SOUTHERN CALIFORNIA

K-735 ALISO VIEJO FACILITY - Upscale 2 story Prof Bldg. 1,800sf/4 ops. $4k sublet income at this location too! $225k

K-762 INDIAN WELLS- Well Respected practice w/loyal patient base. Newly remodeled, 1400+ sf, 5 ops REDUCED!! $425k

K-816 MISSION VIEJO- Reputation as one of the best dentists in this vibrant OC Comm. Top-notch office in popular Rtl Shp Ctr. Close proximity to Gov. amenities & schools. 1,300 sf & 2 ops ONLY $290k

K-858 CHATSWORTH- Seasoned Staff supported by Excellent Specialists. Stable Loyal Patient Base. 2150 sf & 4 fully equipped ops $295k

CENTRAL VALLEY

I-685 TURLOCK - 1700sf, 7 ops. Avgs 14 patients & 11 Hyg Pts/day! Practice recently remodeled. Highly attractive free standing building. Mostly Adec Eqptmnt. $350k

I-838 MODESTO- Retail Shopping Center adjacent to a popular Supermarket, drawing walk-in patients from traffic flow & word-of-mouth referrals. 1,200 sf & 4 fully equipped ops $295k

I-840 TRACY- Must See to Appreciate! Major thoroughfare / desirable area. 2,165 sf & 6 ops. Plumbed for 1 add’l op. REDUCED!! $345k

I-866 TRACY - This amazing opportunity can be yours! ~ 6-8 patients, 25-40 + new patient per month, 4 ops, ~1,300sf. $320k

J-801 FRESNO - Facility. ~ 1300sf and 4 ops. Traditional Décor. ONLY $70k

NEVADA

LV-756 LAS VEGAS- Brand new 1,600sf/ 3 op office (Plumbed for 1 addl op) Attractive & well-equipped in Rtl Shpg Ctr. $150k

LV-796 HENDERSON - Master-planned community! Excellent location & easy freeway accessibility. Spacious, like-new office. 2,080 sf w/3 fully equipped ops & plumbed for 3 add’l ops $295k

LV-694 LAS VEGAS- Well established, large GP. 2200 sf & 6 ops. Gross Receipts over $900k. Equipment less than 5 years old. Office recently painted & carpeted. $545k

LV-800 LAS VEGAS- Well Established FFS practice. Emphasis on prevention. Seasoned Staff. 3350 sf & 6 ops. $785k

LV-861 LAS VEGAS – FFS Quality Practice—Stable Patient Base & Seasoned Staff. Professionally Remodeled 1750sf, 5 op office. Call for Info! $180k

R-810 DAYTON- Gross Rcpts over $1mil in 08! Amazing, quality, well-estab w/loyal, stable patient base & seasoned staff. Excellent signage, easy freeway accessibility, ample parking. 1,500sf & 5 ops. $595k

SPECIALTY PRACTICES

C-6821 SOLANO CO. PROSTHO- Personalized treatment in warm caring environment. 1040 sf with 3 ops. $225k

I-7861 CTRL VLY ORTHO- 2,000sf, open bay w/8 chairs. Garden View. Antique Exam Room. 45 years of goodwill. FFS practice sees 60-70 patients daily. Prof Plaza. $370k

I-8481 TWO Perio Practices CENTRAL VALLEY-Office1: 1,100sf & 2 ops. Office2: 1,660sf & 2 ops $90k

I-688 CENTRAL VALLEY


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on the bottle’s label that is intentionally enhanced with positive words in several languages. The company says it “uses words, colors, music and vibrations as the inspiration and driving force behind our intention-infused, interactive natural spring water.” To those who demand even more from their water, please note it is “thermal friendly,” i.e., can be made either hot or cold, and comes already wet.

In Hollywood, where powerful intentions are frequently matched by an innocence largely devoid of logic, reasoning and good manners, being thirsty is not necessarily relevant. Rather, in a milieu where detoxing is a popular pastime, and personal maintenance is a full-time dedication, an exotic water intensified by love, perfect health, gratitude, propriety, willpower, joy, or peace, has found instant popularity.

Word gets around. A leader in the revolutionary field of intention-enhanced food is Intentional Chocolate, a Canadian company dedicated to the concept that intention offers measurable power and energy that can manifest itself across time and space. Googling this phenomenon provides further explanation: "Experienced meditators at the Deer Park Buddhist Monastery in Madison, Wisconsin, project positive intention into a device developed by the HESA Institute that is designed to capture, hold, and then transfer intention into food.” This “device” is apparently not available online, or everybody would be clamoring for one. At present, my only intention with food is to eat it. Clearly, I am missing the Big Picture.

Mars Inc., makers of Mars Bars, choreographed M&Ms and other caries-friendly confections must be regretting their intensive advertising didn’t focus on “joy” and “peace” rather than the forthright appeal to go out and buy candy right now! Experts agree that with the right marketing, embedded foods could be huge, as could the customers unless combined with a vigorous exercise program not involving bulimia.

There are skeptics, of course. Packaging spirituality raises the eyebrow of James Fallon, a professor of psychiatry at the University of California, Irvine, School of Medicine. “Nah,” he says briefly. Likewise is Oscar Wilde, who observed, “The worst work is always done with the best intentions.” Turns out Oscar is already permanently embedded, having died in 1900, so intention focusing on him is largely wasted.

Up in Canada, a trio of ladies named Janet, Alison, and Jocelyn formed a small company named Creo Mundi International Clothing that embraces the intention-infusion idea to include made-to-order clothing.

Their website enthusiastically states, "Now you, too, can wear the clothing that intuitives, healers, yoga practitioners, naturopathic doctors, reiki masters and others in touch with their energy have described as positively bursting with energy!" Dentists are not specifically mentioned, maybe because we are not normally in touch with our energy, especially around 4:30 p.m. I am, however, close to being an "intuitive." There are times I experience a psychic-like feeling of being positively bursting with something, but I’m sure it isn’t energy. Dentists are not in the same class as reiki masters who have auras, crystals, drums, and touchless healing as part of their armamentarium. Touchless healing never caught on big in dentistry.

One of the prime offers of Creo Mundi is a T-shirt hand-crafted from made-in-USA yarns that doesn’t feature a clever pronouncement on the front such as “I’m With Stupid,” but has all the printing on the inside of the garment. Besides the thoughtful suggestion to launder in cold water and tumble dry on the gentle cycle, there are more than 200 other positive words in 15 different languages embracing your skin. If my dermatologist convinces me that powerful words against my skin will not result in some irreparable damage, I intend to get one of these. The shirt can be machine-washed, hopefully without sending my Maytag into orbit because the power of intention was more than it could handle.

Unfortunately, as usual, dentistry lags behind the rush to infuse our lives with positive energy. Clinging to old-fashioned concepts of hard-wired science, we need to open our narrow viewpoints for the benefit of our patients, if not all mankind.

We can start with encouraging the personnel in our local water departments to gather solemnly around the device that dispenses fluoride into our water systems. With an appropriate mantra of pax vobiscum and the combined focusing of their minds on the words “sugar-free” and “see-your-dentist-twice-a-year,” the benefits of the fluoride would be intensified to its full capacity.

No dental laboratory would deliver any porcelain restoration that didn’t have embedded in it beyond the usual silica, the powerful focused intentions of a concerned group of ceramists. Infused with the energized vibes of not wishing to do a remake, coupled with the dulcet music of Lawrence Welk quietly playing “Smile” in the background, dental labs, along with their products and clients would be on the threshold of a whole new life.

It couldn’t hurt. I’m just saying.
Nosh for the Body, Fuel for the Soul

To those who demand even more from their water, please note it is “thermal friendly,” i.e., can be made either hot or cold, and comes already wet.

Robert E. Horseman, DDS

INTENTIONS

Intention \in-‘ten-chan\ n b. the object for which a prayer, mass, or pious act is offered.

Ask any adherent of a mixed, but growing group of citizens what the most important thing in life is and the seriously enthusiastic answer is “intention, intention, intention!” In essence, this amounts to having a major stare down with an object, focusing good thoughts and positive words on it until the object absorbs the “intentions” and starts to vibrate happily with newfound energy. Mind over matter with benefits. Eat the “embedded” food, use the infused object and all the benefits accrue to you. I like it!

According to Time (April 6, 2009 issue), the latest wrinkle in nutrition is “embedded” foods infused with “positive intentions via prayer and music.” In some cultures, like the Navajo, this is a centuries-old concept involving peyote, a stimulant drug derived from mescal cactus buttons. More a consciousness-expanding practice than a commercial enterprise, it is surprising it took so long to embed everything else from water to chocolate to clothing with the power of “intentionizing” them.

Harken to the words of the CEO co-founder Lex Lang of a bottled water company called H2Om: “Intention is the foundation of all creation. Our slogan is ‘think it while you drink it.’” In line with H2Om’s claim as being the “world’s first interactive bottled water with intention,” drinkers are instructed to focus

CONTINUES ON 465
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