

# CDA

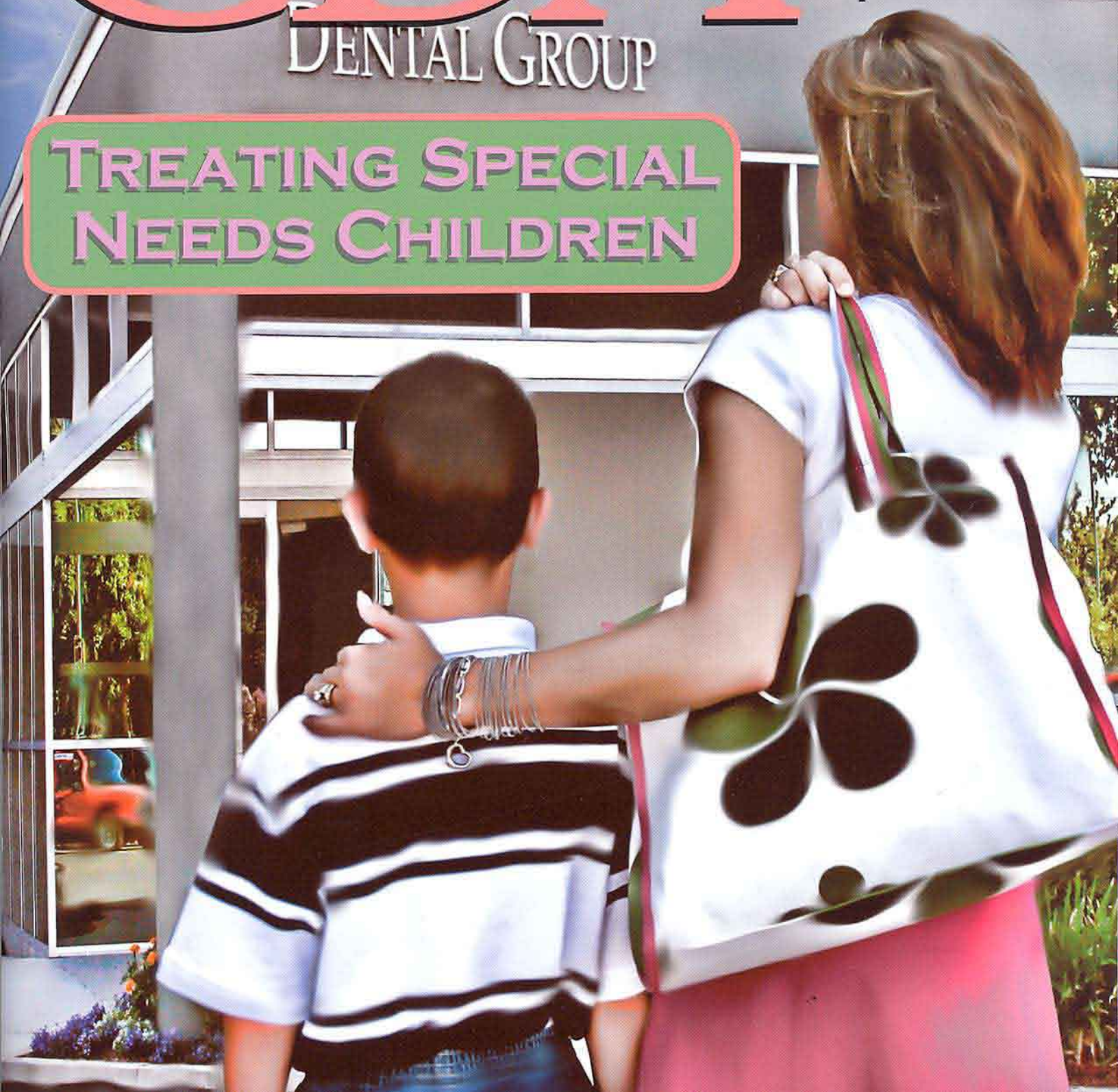
DENTAL GROUP

Unexpected Transition  
Toxicity Disorder  
Debris Extrusion

JOURNAL OF THE CALIFORNIA DENTAL ASSOCIATION VOL 32 NO 9

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TREATING SPECIAL  
NEEDS CHILDREN







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# An Incredible Personal and Professional Sacrifice

**W**e have not generally commented on personal-interest stories in this space. However, a recent story about one of our California component society leaders made such an impact on us that we felt it important to share.

The news these days features reports almost daily about Americans making personal and family sacrifices to serve this country in Afghanistan, Iraq, or other areas in the world in which the United States is engaged in conflict. Sacrifices and tragedies associated with military service have been commonplace in the past year and a half. Families are separated for lengthy periods, financial well-being is interrupted, and lives may be lost. We hear about these losses on a regular basis.

Although it has not always been true in previous world conflicts, it seems that today very few of us engaged in the profession of dentistry long term, serve in the military reserves and experience this kind of disruption in our lives. As a result, dentists are infrequently reminded about the sacrifices that some colleagues must unexpectedly make in the middle of their careers. And that is why this story is rather special. There may be other stories of dental colleagues that will emerge, but for now, this one can serve as a reminder of how fortunate we are to have individuals like Robert Hale, DDS, serving our country with skill and compassion, and representing our profession in exemplary fashion.

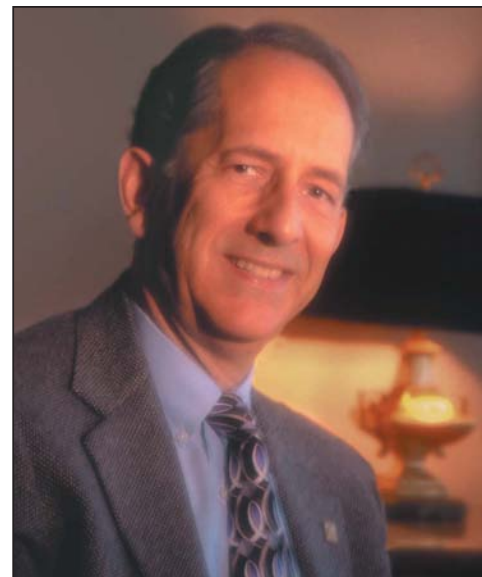
Lt. Col. Hale, an oral and maxillofacial surgeon in Northridge, Calif., is a reservist. He was active in San Fernando Dental Society moving toward president-elect of the dental society when he was called into active duty last October. He served in Kuwait and is currently in Afghanistan.

His story has come to light via two pathways, electronic mail transmission to family

and friends, and a story carried by CNN. The latter supplied us with some of the facts and the inspiration to share his story. It should come as no surprise that a skilled oral surgeon is an important and valuable commodity in a war zone where severe, life-threatening emergencies are confronted in multiples. In a CNN interview, he contrasted his previous office experience of treating one emergency at a time, with his wartime experiences in treating mass casualties, as many as 18 at once. The fact that Bob Hale has been on active duty for an extended period without an opportunity for time off, only underlines the fact that there are few individuals with his surgical skills currently available for active military duty. To add to his challenges, he has also had to dust off some of his general dentist skills when general dentist support has not been available.

Interruption of an individual's personal and family life is a major sacrifice. The impact on his professional career has also been severe. His practice, which he worked hard to build for 18 years, was forced to lay off dedicated personnel; and it had to be put up for sale. His family of four has faced an 85 percent reduction in income during this time. He seemed most concerned about the lifestyle changes his family was facing back home. The impact of these sacrifices will probably require significant time and effort to overcome when his active duty commitment finally ends.

To these sacrifices, the personal risks and dangers faced by Dr. Hale and those serving with him in Afghanistan must be added. There are infectious or dangerous insects and reptiles, and as he stated recently, "Worst of all, are the 1 million mines ...



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“Worst of all,  
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we even have our own minefield by the hospital.” Imagine having to avoid land mines on the way to work. In a war zone, one might also expect that there are constant dangers to all personnel from unexpected gunfire and other weaponry. The facilities are apparently very basic or, probably in many cases, substandard when compared with what we would normally expect.

Recently, he even experienced a “professional” emergency most of us would dread. At the very least, we might lack the strength and mental composure to deal with the dilemma he ultimately faced: He cracked a tooth! Having another dentist available to help would offer a reasonable solution to such a problem. That was not the case. He was forced to provide his own therapy. When self-administered antibiotics did not prevent infection, he was forced to extract his own tooth. Thirty minutes later, he was back in the operating room treating a 12-year-old with an AK-47 wound to the face.

When Dr. Hale was interviewed by CNN, he reminded those who would hear the interview that his work to save lives was important and that he needed to be there. He stated this with conviction, despite the lengthy separation from his family, the horrible conditions he has faced on a daily basis, the potential dangers to his health and well-

being, and the major sacrifices to his professional career. His young sons, distanced from him at this important time in their lives, also stated their belief that their father was doing important work. One son cited the civilian children who were injured for whom their father provided much-needed care.

As this was written, his family received word that he would probably be relieved from active duty in early August, 10 months after his commitment began. Dr. Hale and his family will have endured great sacrifice during this period. We hope his remaining days of duty and his return were safe.

In enduring the hardships and sacrifices he faced, Dr. Robert Hale demonstrated a different kind of professional leadership, a type that is frequently missing these days. His only agenda was to serve humankind, whether military or civilian, without thought of personal gain. At the same time, he seemed almost oblivious to his own personal and professional sacrifice, not to mention his own personal safety. We hope his colleagues and friends will honor him for his selfless contributions and for his outstanding representation of his profession. It is also our hope that other members of the dental profession who make similar contributions will be similarly recognized as they complete their active duty commitments. **CDA**



# Table Clinic Winners

Each year, the California Dental Association invites dental and dental hygiene students from across the state to enter the Table Clinic Competition at the Anaheim Scientific Session. The first-place finishers in each category receive certificates, cash awards, and an invitation to write an abstract of their work to appear in the *Journal of the California Dental Association*. Following are the winners of the 2004 competition.

## Dental Student Winners

### *The Development of an Oral Cancer Pain Mouse Model*

S.Y. Liu, and B. Schmidt, University of California at San Francisco School of Dentistry, Department of Oral and Maxillofacial Surgery

**Objectives:** For patients with oral cancer, pain is the primary determinant of a poor quality of life. To date, little research has been done to understand the pain associated with oral cancer. The purpose of this study was to develop a mouse model of oral cancer pain.

**Methods:** The hind paw reflex of mice was used as the nociceptive assay. HSC3 squamous carcinoma cells were injected in the hind paws of Foxn1nu mice. Quantification of acute allodynia was performed by calculating the 50 percent withdrawal threshold using Dixon's method. Ongoing allodynia was assessed by measuring the amount of non-weight bearing time for a paw with tumor within a two-minute period. The experimental group was comprised of mice inoculated with HSC3 cells in the right hind paw (n=10). The control groups consisted of mice injected with media in the right hind paw (n=4) and mice with no inoculation (n=6). Nociceptive testing was performed over 28 days at 11 time points. At Day 30, the anti-nociceptive effects of systemic morphine were measured.

**Results:** In the carcinoma group, the paw with tumor (right) exhibited significantly lower pain threshold than left paws after Day 9 (Wilcoxon,  $p<0.01$ ). No significant differences between paws were observed within the control and sham-operated groups. When comparing the right paws of the



CDA Executive Director Peter DuBois, left, and Dr. Russell Webb, right, congratulate Stanley Liu, a dental student at the University of California at San Francisco. Liu, along with and B. Schmidt, developed an oral cancer pain mouse model.

carcinoma group to those of the control and sham-operated groups, a significant decrease in pain threshold was observed after Day 9 (Mann-Whitney,  $p<0.01$ ). A significant increase in pain threshold (Wilcoxon,  $p=0.005$ ) was observed in the paw with tumor 15 min after morphine administration.

**Conclusion:** This is the first demonstration of an oral cancer pain mouse model. Acute and ongoing mechanical allodynia were demonstrated in the mouse model and were reversible with systemic morphine administration.



***The purpose of this study was to determine if stem cells aspirated from bone marrow in combination with collagen matrix provide a preferable alternative method to repairing the alveolar ridge by restoring bone as well as reducing morbidity.***

## *Evaluating Closure of Alveolar Cleft Defects with a Resorbable Collagen Matrix*

Manisha Sisodia<sup>1</sup>, Catherine O'Hara<sup>2</sup>, and James P. Bradley, MD<sup>2</sup> (<sup>1</sup>University of California at Los Angeles School of Dentistry; <sup>2</sup>UCLA School of Medicine, Division of Plastic and Reconstructive Surgery)

**Introduction:** Reconstruction of alveolar defects in cleft patients is commonly accomplished using secondary alveolar bone grafts to stabilize the maxilla before a definitive orthodontic and restorative dental treatment. Bone grafting not only improves support for the lip and nose by restoring continuity of the dental arch, but also facilitates in spontaneous eruption of the permanent teeth adjacent to the cleft. Several reports suggest that bone harvested from iliac crest is the current gold standard to which all other types of alveolar grafts should be compared. However, there are considerable limitations and complications associated with the use of autograft, including high degree of postoperative morbidity. The purpose of this study was to determine if stem cells aspirated from bone marrow in combination with collagen matrix provide a preferable alternative method to repairing the alveolar ridge by restoring bone as well as reducing morbidity.

**Methods:** Patients with alveolar cleft defects were prepared orthodontically and randomly divided into two equal treatment groups: 1) iliac crest bone graft or 2) bone marrow aspirate seeded onto a collagen matrix. Preoperative and follow-up evaluations, intraoral photographs, panorex, and NewTom Volumetric scans were used to compare the two groups. Wound and bone healing, tooth eruption and volu-



*Manisha Sisodia is flanked by DuBois and Webb, in recognition of the winning table clinic entry she submitted with Catherine O'Hara and James P. Bradley, MD.*

metric closure of the alveolar defect were assessed.

**Results:** There was better wound healing and comparable volumetric bone healing noted in the group that received collagen matrix supplemented with bone marrow aspirate. Also, there was significant reduction in hip pain and reduced infection at the donor site compared to traditional iliac bone graft.

**Conclusions:** Our study concludes that bone marrow derived stem cells seeded appropriately on a collagen matrix heal alveolar cleft defects better and significantly minimize the donor site morbidity associated with the iliac bone graft.



## Dental Hygiene Student Winners

### *Chlorhexidine Unplugged*

Dina Mikhail and Jennifer Ivers, Cerritos College Dental Hygiene

**Abstract:** You may think you know everything there is to know about Chlorhexidine, but there are some recent studies that may have you doubting yourself. Chlorhexidine is currently the most widely used bactericidal agent, and until today has been thought to have substantivity even when in the presence of other agents. Recently, research studies have shown there are certain agents that deactivate Chlorhexidine and therefore should not be used in conjunction; they are sodium laurel sulfate, fluoride, and nystatin. Each agent interferes with the ability of Chlorhexidine to attach itself to bacteria, making both Chlorhexidine and the agent used ineffective. Hygienists should be cautious of these agents when using or prescribing Chlorhexidine to patients in order to maximize its therapeutic properties.



*Dina Mikhail and Jennifer Ivers, dental hygiene student winners, take a moment with DuBois and Webb during the Spring Session in Anaheim.*



## CDA • SAN FRANCISCO

*Moscone West (top left), completed last year, offers a sophisticated and spacious venue for the Fall Scientific Session. The membership celebration at the Fall Session will be at the San Francisco Museum of Modern Art, pictured at top right.*

## Fall Scientific Session: We Love It for So Many Reasons

Forget April in Paris and consider September in San Francisco.

California is home to one of the world's greatest cities; and as Golden State residents will attest, September is the best month to visit the City by the Bay. Autumn in San Francisco means refreshing Pacific breezes, coastal atmosphere and sunshine tempered by occasional morning fog.

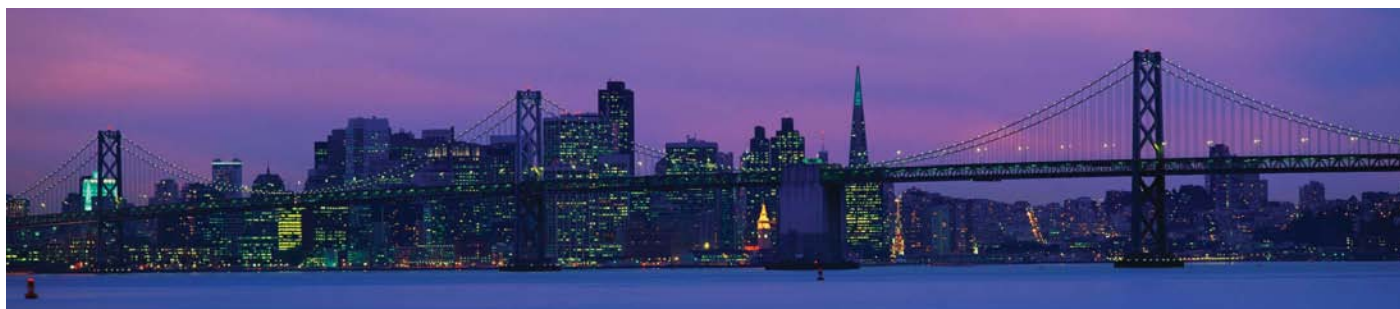
The weather is the first of many reasons to attend Fall Scientific Session in San Francisco Sept. 10-12 at the Moscone West Convention Center. Here's our list of top reasons to visit CDA's premier Northern California show:

**Climate:** The average San Francisco temperature in September is 62.7 degrees. This cool and comfortable reading comes from the Western Regional Climate Center at San Francisco Mission Dolores, where the temperature has been tracked since 1914.

The center does report a record high of 101 degrees in 1971 and a low of 48 degrees in 1926; but barring extremes, San Francisco climate is historically superb in September.

**Dynamic 'Uniting' conference:** Fall Session will kick off with the "Uniting Our Community Conference" on the afternoon of Sept. 9. The conference is a celebration of the dental profession and will feature several outstanding speakers including a special address by Richard Carmona, MD, MPH, surgeon general of the U.S. Public Health Service. Carmona will share his personal story of going from high-school dropout to combat-decorated Vietnam veteran, medical doctor and ultimately, U.S. surgeon general. Other speakers include Harold Slavkin, DDS, dean of USC School of Dentistry; Phil Borges, DDS, cultural photographer; Sheila Thorne, expert in multiethnic health-care market-





The reception  
offers a rare  
opportunity to  
savor the stylish  
urban setting in  
an uncrowded  
atmosphere  
with exclusive  
viewing of four  
featured exhibits.

ing; and Nike's Kevin Carroll, who is known as the "Katalyst" due to his ability to spark change. The conference offers an innovative and inspirational way to begin a productive weekend in the City.

**Moscone West:** The new Moscone West Convention Center is reserved solely for CDA during Fall Session. With a 110-foot glass wall soaring above the front lobby areas, Moscone West extends a dramatic welcome to guests. The lobby frames the legendary San Francisco skyline, and the center offers 300,000 square-feet of space to deliver a sophisticated and spacious venue for workshops, lectures and exhibits.

**Member reception at SFMOMA:** CDA members and their guests are invited to a private reception at the San Francisco Museum of Modern Art on Sept. 11 from 7 to 9:30 p.m. The reception offers a rare opportunity to savor the stylish urban setting in an uncrowded atmosphere with exclusive viewing of four featured exhibits including contemporary paintings, design, pop art and works by Frank Stella. Private access to the second and fourth floors of the museum will be available throughout the evening, and docents will be available to provide guided tours. Appetizers, beverages and dessert will be served. The BOGO quartet will set the mood for evening with live music drawing from a variety of genres including world beat, African, techno and acid jazz.

**Restaurants:** San Francisco has so many restaurants that every single CDA member could go to a different culinary establishment and still not make a dent in the gastronomic offerings. When the *San Francisco Chronicle* lists the best restaurants, it begins with the Top 100. No need for a scrawny Top 10 list when it comes to restaurants in the City by the Bay. Visit <http://www.sfgate.com/cgi-bin/article.cgi?f=/c/a/2004/04/04/CM100MAIN.DTL> for a taste of the finest restaurants.

**Special events:** Fall Session offers a sampling of the City's endless bounty including

North Beach, the Bay and Napa Valley wines.

With the seminar "The Wines of the Napa Valley" attendees can taste six chardonnays or six cabernets while learning about the fundamentals of wine. The seminar is Sept. 10 from 2 to 4 p.m. at the San Francisco Marriott.

Enjoy a classic Italian dinner in San Francisco's renowned North Beach, and cap Friday evening with a visit to Club Fugazi to see the long-running "Beach Blanket Babylon." Now in its 30th year of sold-out performances, "Beach Blanket Babylon" is a zany musical spoof of pop culture with extravagant costumes and outrageous hats. The North Beach adventure is Sept. 10 from 6:45 to midnight. Transportation is provided by motorcoach.

Set sail on the magnificent San Francisco Bay on a public brunch cruise Saturday morning. The cruise offers spectacular views of the city's world-famous landmarks as well as a customized brunch of California cuisine served in an elegant setting. The cruise is Sept. 11 from 10:15 a.m. to 1:45 p.m. Motorcoach transportation provided.

"If I were not working the session, I would be attending along with my staff, as many of the events for leisure as possible," said Carol Summerhays, DDS, chair of Scientific Sessions Board of Managers. "What could be more fun than a bay cruise, wine tasting in the city, and 'Beach Blanket Babylon'?"

For more information on special events at Fall Session, visit [www.cda.org](http://www.cda.org) or call the CDA Contact Center at (866) CDA-MEMBER 232-6362.

**Comprehensive program:** Central to Scientific Session is a selection of workshops and lectures to appeal to a variety of interests. From nutritional information to disaster preparedness to customized direct composite techniques, Fall Session offers a program that makes continuing education a pleasure. The program also includes two sessions each day of California Law and Infection Control courses, which are

required for license renewal in California. For a full course listing, visit [www.cda.org](http://www.cda.org).

**Exhibits:** Nearly 350 exhibiting companies will display the latest in dental technology and services in Moscone West. Dental office software, instruments, pharmaceuticals, scrubs, dental labs, intraoral cameras, record keeping systems, practice sales, toys, fluoride products, you name it, you can find it on the exhibit floor. The grand opening of

the exhibit hall is Friday, Sept. 10 at 9:30 a.m. The exhibit hall is open until 6 p.m. on Friday and Saturday. Sunday exhibit hall hours are 9:30 a.m. to 2 p.m.

**Camaraderie:** Fall Session presents an opportunity to meet and socialize with thousands of professionals in the dental field. Exchange stories, ask questions, learn, grow, laugh and have fun with colleagues in your chosen profession.

## Routine Recognition Motivates Employees

A 10-year study recently revealed that dental office employees cited consistent recognition for a job well done and an interesting career as major motivators in the workplace and not necessarily cash bonuses, higher salaries or expanded benefits.

According to Ronald F. Arndt, DDS, MBA, in the February issue of Ohio Dental Association's *Today*, five easy tips can enhance the daily habit of recognizing employees.

### The Four Quarters Technique

Employers place four quarters in their right pocket. Throughout the day, they look for team members doing something right. At that moment, employers should offer the team member words of praise and then transfer one quarter to the other pocket. This is an easy way to establish a positive habit.

### Create Awards

Awards make people feel special and fuel a positive attitude. It also physically demonstrates acknowledgement of a positive attitude. The more an employee is recognized, the more the practice attracts happy patients and team members.

### Handwritten Notes

Employers should pen a note to an employee for doing a remarkable job such as going the extra mile, saving the dentist's time or from an embarrassing moment. A handwritten note of thanks or letter of appreciation can be powerful.

### Vocalize Why Team Members Are Important

Employees who understand their contributions make a difference in the

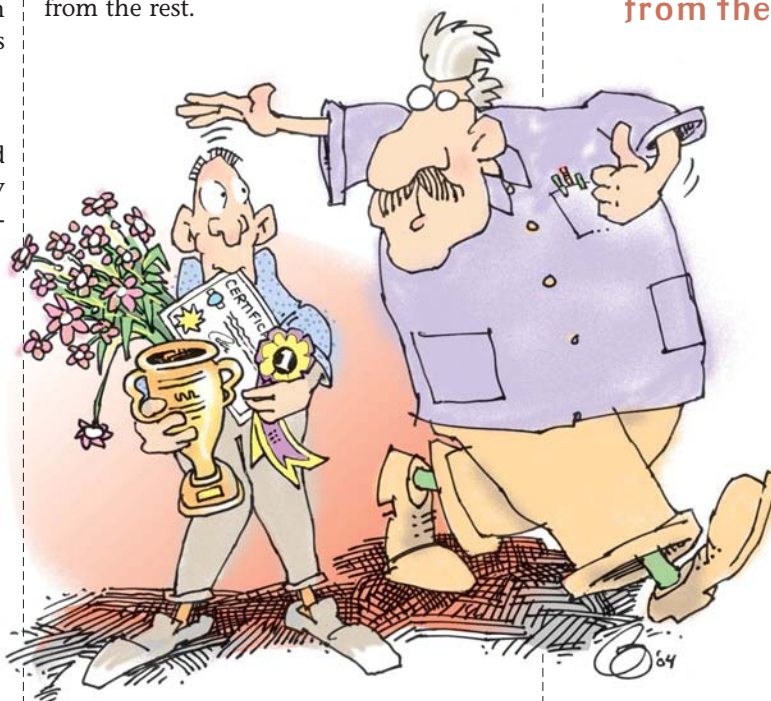
workplace are likely to strive harder to ensure their team's success. Employers should make it a daily habit to voice how employees are important to the office.

### Leave Messages

Has a team member done something noteworthy? Leave a message on their home or cell phone voice mail acknowledging a job well done.

Drawing and retaining dental auxiliaries has become an increasing concern for many dental business owners. The situation will only worsen as baby boomers age and retire. The key to retaining employees in a competitive market may be a caring and supportive workplace that is different from the rest.

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**“As a physician,  
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medical care.”**

Mark B. McClellan, MD, PhD

## HHS Approves California Plan to Get More Kids Enrolled in State Health Insurance Program

California's plan to raise the income level for eligibility for the State Children's Health Insurance Program to include more children was backed by U.S. Health and Human Services Secretary Tommy Thompson.

Coverage will expand to children up to the age of 19 in families whose income is up to 300 percent of the federal poverty level in four selected counties: Alameda, San Francisco, San Mateo and Santa Clara.

The state currently covers children in families with incomes up to 250 percent of federal poverty level (\$18,850 for a family of four). Through the C-CHIP, or county children's health insurance program, the state hopes to enroll an estimated 33,000 children. Approval of the plan also raises the income level in California to 300 percent of federal poverty level for children up to age 2 whose mothers are enrolled in the Access for Infants and Mothers program. The state expects to add nearly 5,000 AIM-eligible children.

“With today's change, California is expanding its commitment to the health care of children,” Thompson said. “The SCHIP program in California and across the country continues to provide health coverage to millions of low-income children.”

The SCHIP program's original plan was to help children up to 200 percent of the federal poverty level. HHS has since

approved 12 state plans providing coverage for children at higher income levels. Six of those states provide coverage for youths with incomes at or above 300 percent of the federal poverty level. Children in both programs will receive the same benefits as others in the California SCHIP program, known as Healthy Families. Cost-sharing charges for families vary from county to county and there is an annual cap on co-payments for health services at \$250 per family.

SCHIP, a state/federal partnership program signed into law in 1997, has a budget of \$40 billion over 10 years. All states, including the District of Columbia and U.S. territories, have a SCHIP program that provides health insurance coverage to children in families with incomes too high for traditional Medicaid, but yet not enough to afford private coverage. Nationally, the SCHIP program provided health coverage to an estimated 5.8 million children in fiscal year 2003.

“As a physician, I know how important it is for young children to have access to routine, preventive medical care,” said Mark B. McClellan, MD, PhD, administrator of the Centers for Medicare and Medicaid Services, the agency within HHS that oversees the SCHIP program. “This new plan will help more kids receive the kind of care that can prevent long-term health problems.”





## Fluoride Concentrations Vary Greatly in Bottled Water

A recent Denver study showed that fluoride content in bottled water sold in grocery stores had high rates of variability.

In the *Journal of the Colorado Dental Association's* spring issue, author Brian Carr reported that the analysis of 25 bottles of water obtained locally showed fluoride concentrations that ranged from less than 0.1 ppm to 4.0 ppm. Five of those tested had a content that differed from what the companies reported by more or less than 0.1 ppm. The differences are considered clinically significant, Carr wrote.

The differences in fluoride concentrations in bottled water may be attributed to its source. The source can determine the amount of naturally present fluoride in the water. Artesian and spring waters may not contain fluoride, or as much as 4.0 ppm, Carr noted. Fluoride content can depend on the mineral concentration at the source, and can be highly variable as well as fluctuate from season to season.

The methods used to purify the water and the manufacturer's addition of fluoride also are factors.

It is suggested that dental practitioners regularly determine the patient's primary source of drinking water especially if the patient takes fluoride supplements.



## Oral Health Problems May Signal Osteoporosis

Gum disease and tooth loss may be early indicators of decreased bone density and weakened bones, a disease that affects an estimated 10 million people.

"Early osteoporosis signs can be seen in the mouth," said Aida Chohayeb, DDS, MSD, author of a report that appeared in the May/June issue of *General Dentistry*, the journal of the Academy of General Dentistry.

"When the dentist observes that some teeth are loose, the gums are not attached to the teeth, and that dentures do not fit well, dental X-Rays will be taken to confirm the diagnosis. The X-rays will reveal the decrease in the jawbone density and bone around the teeth, as well as the remaining part of the jaws," Chohayeb said.

It is suggested the dentist refer the patient to their physician to confirm the diagnosis.

That's what Julie Barna, DMD, MAGD, spokeswoman for AGD, did when she noticed changes in a patient's mouth. After assessing the risk factors for developing osteoporosis, Barna referred the patient to a physician for a bone mineral density test to confirm her diagnosis.

More than one-third of women over the age of 65 display symptoms and signs of osteoporosis. And in most cases, the disease



is not diagnosed until after a fracture. Risk factors include age, calcium deficiency, excessive caffeine and alcohol, heredity, inactive lifestyle, menopause, and smoking.

Progression of the disease may cause the vertebral bones to weaken, resulting in a curvature of the backbone. Additionally, other bones such as the hip may become susceptible to fracture through normal activities.

Barna encourages patients with osteoporosis to maintain regular dental check ups for frequent cleanings, practice good oral hygiene, add weight training to their exercise routine, and take calcium and Vitamin D.



## Something to Smile About — Dental Careers

A 10-minute video, "Dentistry — A Unique Profession," is now available and complements the "Something to Smile About: Careers in the Dental Profession" campaign to educate youths about the benefits of dental careers in dentistry, dental hygiene, dental assisting and laboratory technology.

Campaign materials promote private practice, public health, the military, dental education and specialties. The goal is to reach traditionally underrepresented groups.

In addition to the new video, resources also include fact sheets, posters, CD-ROMs, brochures and a tabletop exhibit.

For more information go to the Career Resources content area of ADA.org or contact Beverly Skoog at (800) 621-8099, Ext. 2390, or via e-mail: skoogb@ada.org.



## UCSF Maintains High Rank in NIH Research Funding

Among all institutions last year, UCSF was the fourth-largest recipient of research funds from the National Institutes of Health, receiving more than \$400 million in the nationally competitive process.

For the fiscal year 2003, UCSF's School of Dentistry, School of Nursing and School of Pharmacy each ranked first nationally. UCSF School of Medicine was the fourth-largest recipient of NIH awards among all medical schools.

"There is no better indication of excellence than these rankings, which reflect rigorous peer review of research," said Mike Bishop, UCSF chancellor. "The public can be confident that UCSF is pursuing its mission of discovery in finest form."

Fifty-one awards totaling \$28 million went to UCSF's School of Dentistry. The

School of Nursing received 42 awards for \$13.4 million; the School of Pharmacy received 44 awards totaling \$19.8 million; and the School of Medicine received 785 awards totaling \$350.8 million.

Following UCSF's School of Dentistry award of \$28 million were University of Maryland (\$11.4 million), University of Minnesota (\$10.7 million), University of Washington (\$10.4 million) and University of Michigan (\$10.3 million).

The top five universities receiving NIH funding among all institutions were Johns Hopkins (\$555.9 million), University of Washington (\$440.9 million), University of Pennsylvania (\$434.5 million), UCSF, and Science Applications International Corporation, a research and engineering company (\$417.4 million).

## Upcoming Meetings 2004

<b>Sept. 8-11</b>	International Federation of Endodontic Association's sixth Endodontic World Congress, Brisbane, Queensland, Australia, <a href="http://www.ifea2004.im.com.au">www.ifea2004.im.com.au</a> .
<b>Sept. 10-12</b>	CDA Fall Scientific Session, San Francisco, (866) CDA-MEMBER (232-6362).
<b>Sept. 29-Oct. 2</b>	American Association of Oral and Maxillofacial Surgeons 86th annual meeting, Scientific Session and Exhibition, San Francisco, <a href="http://www.aaoms.org">www.aaoms.org</a>
<b>Sept. 30-Oct. 3</b>	ADA Annual Session, Orlando, Fla., (312) 440-2500.
<b>Nov. 7-13</b>	U.S. Dental Tennis Association Annual Meeting, Palm Desert, (800) 445-2524, <a href="http://www.dentaltennis.org">www.dentaltennis.org</a>

## 2005

<b>April 6-9</b>	Academy of Laser Dentistry 12th annual Conference and Exhibition, New Orleans, (954) 346-3776.
<b>April 12-16</b>	International Dental Show, Cologne, Germany, <a href="http://www.koelnmesse.de">www.koelnmesse.de</a>

To have an event included on this list of nonprofit association meetings, please send the information to Upcoming Meetings, *CDA Journal*, P.O. Box 13749, Sacramento, CA 95853 or fax the information to (916) 554-5962.



# Almost 300,000 Children (Ages 5 to 15) With Disabilities in California

H. Barry Waldman, DDS, MPH, PhD, and Steven P. Perlman, DDS, MScD

## ABSTRACT

The 2000 Census data on the numbers of children with disabilities in California are presented by city, metropolitan area and congressional districts. There are numerous difficulties associated with the delivery of dental care to these youngsters with special needs. Nevertheless, if all dentists were willing to help, each practitioner would need to care for 13 of these youngsters. This paper will cover demographics, children with disabilities, dental services, and politics.

The Census Bureau reported that of the more than 2.6 million noninstitutionalized U.S. children between the ages of 5 and 15 in 2000, 5.8 percent in that population group had one or more disabilities, including almost 300,000 children in California (Table 1). At the state level, the proportion of children with disabilities ranged from a low of 4.7 percent in Hawaii to a high of 7.6 percent in West Virginia. Compared to other states, California ranked the 48th lowest proportion of children with disabilities. The Census Bureau defines disability as a long-term physical, mental or emotional condition. Disability is determined for noninstitutionalized persons over the age of 5.

However, the use of national or statewide numbers and proportions, or the fact that California has a low rate of "only 4.8 percent" of children with disabilities tends to overlook the impact of any of these particular realities on individuals and their families. It is essential to somehow personalize these "numbers" and "proportions" to bring about increased attention to the youngsters with special needs — including their requirement for oral health services. There is a need to convey the message that these children

reside in all communities and many are members of families that already are treated in dental practices. The 2002 *Kids Count Census Data Online* produced by the Annie E. Casey Foundation<sup>1</sup> was used to develop a listing of the number of children with one or more disabilities in the cities, metropolitan areas, and the congressional districts of California. The Foundation is a private, charitable organization dedicated to helping build better futures for disadvantaged children in the United States.

## Residence

### Cities

As would be expected, the greatest number of children with disabilities reside in areas with the largest population. Among the 57 cities in California identified by the Census Bureau, the number of children with disabilities ranged from 390 in Daly City, to more than 8,000 children in San Diego, and more than 29,000 in Los Angeles (Table 2).

**Authors** / H. Barry Waldman, DDS, MPH, PhD, is professor of Dental Health Services, Department of General Dentistry, School of Dental Medicine, SUNY at Stony Brook, N.Y.

Steven P. Perlman, DDS, MScD, is global clinical director, Special Olympics, Special Smiles, and associate clinical professor of Pediatric Dentistry, Boston University Goldman School of Dental Medicine.





**Table 1**

## Disability State of Noninstitutionalized Children Ages 5 to 15 Years in the 2000 U.S. Census

	United States		California	
	Number	Percent	Number	Percent
Noninstitutionalized children	45,133,667	100.0%	5,813,105	100.0%
Children with no disability	42,518,748	94.2	5,535,602	95.2
Children with one disability	2,080,569	4.6	211,895	3.6
Sensory disability	238,498	0.5	28,714	0.5
Physical disability	161,401	0.4	20,150	0.3
Mental disability	1,604,363	3.6	147,963	2.5
Self-care disability	76,307	0.2	15,068	0.3
Children with two or more disabilities	534,350	1.2	65,608	1.1
Total number of children with disabilities	2,614,919	5.8	277,503	4.8

**Table 2**

## Number of Noninstitutionalized Children (5 to 15 years) With Disabilities by Cities in California: 2000

City	Number	City	Number
Anaheim	2,423	Oakland	2,762
Bakersfield	2,659	Oceanside	1,434
Berkeley	414	Ontario	1,576
Burbank	518	Orange	959
Chula Vista	1,125	Pasadena	775
Costa Mesa	1,465	Oxnard	1,668
Concord	809	Palmdale	1,676
Corona	573	Pomona	1,747
Daly City	390	Rancho Cucamonga	962
Downey	768	Riverside	2,532
East Los Angeles	1,376	Sacramento	4,010
El Monte	877	Salinas	1,329
Escondido	1,197	San Bernardino	2,339
Fontana	1,136	San Diego	8,201
Fremont	1,305	San Francisco	3,001
Fresno	5,312	San Jose	5,377
Fullerton	664	Santa Ana	2,688
Garden Grove	1,256	Santa Clara	539
Glendale	709	Santa Clarita	1,323
Hayward	952	Santa Rosa	1,048
Huntington Beach	902	Simi Valley	1,070
Inglewood	882	Stockton	3,088
Irvine	807	Sunnyvale	535
Lancaster	1,675	Thousand Oaks	1,015
Long Beach	4,335	Torrance	940
Los Angeles	29,483	Vallejo	1,026
Modesto	2,285	Ventura	905
Moreno Valley	1,755	West Covina	720
Norwalk	746		

### Metropolitan Areas

In addition, the Census Bureau identified 28 California Metropolitan Statistical Areas (MSAs) and Consolidated Metropolitan Statistical Areas (CMSAs) that encompass a general urbanized population (including and surrounding an inner city). The number of children with disabilities in these metropolitan communities ranged from more than 1,500 in Redding (MSA) and Yolo (Primary Metropolitan Statistical Areas) to more than 33,000 in Riverside-San Bernardino (PMSA), and more than 135,000 in Los-Angeles-Riverside-Orange County (CMSA) (Table 3).

### Rural Areas

Almost 11,000 children with disabilities reside in the nonmetropolitan areas of the state.<sup>2</sup> The number of children with disabilities in rural areas was not reported directly by the Census Bureau. It was developed by subtracting the number of children with disabilities in the reported MSAs and CMSAs from the overall state total.

### Political Jurisdictions

The 2002 *Kids Count Census Data Online* provides additional information about children with disabilities for each

**Table 3**

### Number of Noninstitutionalized Children (5 to 15 years) with Disabilities by Metropolitan Area: 2000

Metropolitan Area	Number	Metropolitan Area	Number
Bakersfield (MSA)	8,062	San Diego (MSA)	21,311
Chico-Paradise (MSA)	2,187	San Francisco (PMSA)	7,983
Fresno (MSA)	9,786	San Francisco-Oakland-San Jose (CMSA)	44,175
Los Angeles-Riverside-Orange County (CMSA)	135,539	San Jose (PMSA)	9,419
Los Angeles-Long Beach (PMSA)	77,040	San Luis Obispo-Atascadero-Paso Robles (MSA)	2,042
Merced (MSA)	2,403	Santa Barbara-Santa Maria-Lompoc (MSA)	2,860
Modesto (MSA)	5,138	Santa Cruz-Watsonville (PMSA)	1,897
Oakland (PMSA)	16,693	Santa Rosa (PMSA)	3,585
Orange County (PMSA)	18,414	Stockton-Lodi (MSA)	5,920
Redding (MSA)	1,566	Vallejo-Fairfield-Napa (PMSA)	4,598
Riverside-San Bernardino (PMSA)	33,070	Ventura (PMSA)	7,015
Sacramento (PMSA)	15,497	Visalia-Tulare-Porterville (MSA)	3,695
Sacramento-Yolo (CMSA)	17,070	Yolo (PMSA)	1,573
Salinas (MSA)	3,143	Yuba City (MSA)	1,686
Note: MSA = Metropolitan Statistical Area CMSA = Consolidated Metropolitan Statistical Area PMSA = Primary Metropolitan Statistical Area (a component of a CMSA)			

of the 58 counties in California, the 95 American Indian lands and the state's 53 U.S. congressional districts.<sup>1</sup> The availability of these details at the level of congressional districts provides a further opportunity to personalize the "numbers" and "proportions" of youngsters with special needs, particularly for those individuals who could affect increased financial support for dental services, i.e. members of Congress. Since "all politics is local," according to former Speaker of the House Tip O'Neill, then a recitation of localized numbers would be more meaningful to individual politicians, i.e. the needs and demands of their own voting constituents. Rather than the statement that there are millions of children with disabilities in the nation, members of the California congressional delegation would be pre-

sented with the realities of thousands of youngsters with special needs in each of their own districts. This includes more than 5,000 children with disabilities in 16,000 congressional California districts, more than 6,000 children with disabilities in six congressional California districts, more than 7,000 children with disabilities in five congressional California districts, and more than 8,000 children with disabilities in one congressional California district. (Table 4)

### The Challenge for Dentists

It is emphasized that many of these children reside in each of our communities. In addition, it may be concluded that they may be members of families of record in many dental practices. But the reality is, there are many barriers associated with the delivery of oral health ser-

vices to youngsters with special needs. These include:

- Limited educational opportunities in most dental schools to prepare practitioners for the care of these children.<sup>2</sup>

- Increased time requirements to provide preventive and restorative services.

- Inadequate third-party reimbursement.<sup>3</sup>

Nevertheless, these youngsters are in need of oral health services. Yet, one cannot anticipate that the 480 private practicing pediatric dentists in California can provide all the needed dental services for these children.<sup>4</sup>

The results from a recent study of pediatric dentists in Texas amplifies the difficulties faced by families in their attempt to secure needed dental services for their children with disabilities.


**Table 4**

### Number of Noninstitutionalized California Children (5 to 15 years) with Disabilities by Congressional District: 2000

Congressional	District Number	Congressional	District Number
1	5,726	28	4,962
2	6,428	29	3,409
3	5,688	30	2,679
4	5,758	31	5,478
5	7,079	32	4,938
6	4,312	33	5,249
7	5,766	34	6,259
8	2,569	35	6,596
9	4,032	36	4,124
10	4,914	37	6,997
11	5,311	38	5,890
12	2,668	39	5,530
13	4,138	40	4,351
14	3,508	41	6,610
15	3,541	42	4,366
16	4,110	43	7,922
17	5,045	44	5,964
18	7,660	45	5,471
19	6,361	46	3,340
20	8,141	47	5,064
21	6,563	48	3,491
22	7,039	49	5,816
23	4,877	50	3,986
24	5,906	51	5,446
25	7,351	52	5,592
26	4,550	53	4,144
27	4,787		

■ Despite the reported emphasis during pediatric dentistry residencies in the care of patients with special needs, "... less than 4 percent (of respondents) ... reported more than 30 percent of their (current practice) time and nearly 91 percent ... reported less than 20 percent of their (current practice) time was devoted to treating special needs patients."<sup>5</sup>

■ "It is commonly reported that these special needs children have a greater level of oral health problems, yet at the same time are less likely to receive dental care."<sup>5</sup>

■ The two most common responses (for not treating patients with special needs) were "insufficient financial reimbursement" and the perception that there are "not many special need patients in my geographic area."<sup>5</sup>

The reality is, that although general practitioners provide most dental services for children, children with particular dental complexities, special needs and/or management difficulties, they often are referred to pediatric dental specialists for services. The concentration of these young patients in the practices of a limited number of specialists

places barriers for the families to find available pediatric dentists and for the small number of these practitioners willing to accept the limited available financial remuneration to meet demand for care.

There is little doubt that insufficient funds are provided by government programs for dental services (in particular, Medicaid dental services — a primary source of support for the health services of children with special needs).<sup>3,6</sup> As to the perception of the limited number of patients with special needs in the communities, this view would seem to belie the realities reported for Texas, California, and all other states in the 2000 *Kids Count Census Data Online* using Census Bureau information.<sup>1</sup>

### Summary

Nevertheless, the challenge remains in California and the rest of the country — these youngsters are in need of oral health services. Although no national studies have been concluded to determine the prevalence of oral and craniofacial diseases among the various populations with disabilities, a series of local and regional reports provide relevant data in this regard.

Populations with mental retardation or other developmental disabilities have a significantly higher rate of poor oral hygiene and a need for periodontal disease treatment.

There is a wide range of caries rates among individuals with disabilities, but overall their rates are higher than among those people without disabilities.<sup>7</sup>

But there are other realities to be considered. In addition to insufficient third-party funding:

■ Repeated studies have shown that dental and dental hygiene school graduates do not gain the necessary experience to treat patients with mental retardation, developmental disabilities, and other special health care needs.<sup>3</sup>

■ Dental school graduates lack suf-



ficient awareness of the capabilities of individuals with mental retardation and other disabilities.<sup>8</sup>

At the present time, efforts are being made to encourage the Commission on Dental Accreditation to enhance educational programs to better prepare students for the care of patients with special needs.<sup>9</sup> Current practitioners may well need to explore continuing education programs (and any number of community voluntary agencies that provide services to individuals with disabilities), to better prepare them for the increasing number of youngsters with special needs — many of whom are members of family that currently are being treated by community practitioners.

Surely, the 21,129 dental practitioners in California,<sup>4</sup> in cooperation with pediatric dentists, can meet the needs of these youngsters. Mathematically, it's simple. If each private practitioner carried his or her fair share, there would be 13 youngsters with a disability per dentist. Nevertheless, the reality is that some practitioners are unwilling for a variety of reasons. But, with 1) increasing educational experiences for dental students and practitioners, 2) continuing political pressure on legislators to provide improved resources for constituents in their districts, and 3) increasing awareness that these children are in families of record in many practices, increased numbers of dental practitioners may be willing to provide care. It just seems reasonable to hope that each practitioner could provide care for a dozen so youngsters with special needs. **CDA**

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**To request a printed copy of this article, please contact /** H. Barry Waldman, DDS, MPH, PhD, Dental Health Services, Department of General Dentistry, School of Dental Medicine, SUNY at Stony Brook, N.Y., 11794-8706.



# Evaluation of Apically Extruded Debris in Conventional and Rotary Instrumentation Techniques

Maryam Bidar, DDS; Akbar Fallh Rastegar, DDS; Pari Ghaziani, DDS; and M. Sadegh Namazikhah, DMD, MSEd

## Abstract

**Objective:** The purpose of this in vitro study was to compare two common techniques, conventional and rotary instrumentation, in debris extrusion.

**Methods and materials:** Two hundred mature human teeth with mature apices and less than 15 degrees of root curvature as determined by Schneider's method were selected for use. Teeth were randomly divided into four groups of 50 teeth each and prepared using step-back instrumentation and profile 4 percent Taper Series 29 rotary system at three different speeds: 1,000 rpm, 8,000 rpm and 24,000 rpm. All of the speeds were reduced by contra angle to 1/6 rpm. Extruded debris were collected on pre-weighed vials containing distilled water through the apical foramen during instrumentation. The vials were then dried in a microwave oven at 150 degrees Celsius and weighed again. The difference was recorded as "the weight of

the extruded debris."

Eight control vials, two for each group, were weighed and filled with distilled water, dried, and reweighed.

The mean weight of extruded debris for each group was statistically analyzed. T-student, unilateral variance analysis and Pearson tests were used in this study.

**Results:** Step-back instrumentation (Group 1) produced significantly more debris than other groups. The difference in the amount of debris produced among rotary groups was not significant.

**Conclusion:** Rotary technique could reduce the amount of debris extrusion.

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**Authors /** Maryam Bidar, DDS, is an assistant professor, Department of Endodontics, Faculty of Dentistry, Mashhad University, Mashhad, Iran.

Akbar Fallh Rastegar, DDS, and Pari Ghaziani, DDS, are associate professors, Department of Endodontics, Faculty of Dentistry, Mashhad University.

M. Sadegh Namazikhah, DMD, MSEd, FICD, FACP, is a professor and former chair of the Department of Endodontics and director of the Advance Endodontic Program, University of Southern California School of Dentistry.

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**F**lare-up, which occurs as pain and swelling during or after treatment, is a considerable problem in endodontics. One of the causes of flare-up is extrusion of debris (necrotic tissue, remaining pulp tissues, infected dentinal shavings and bacteria, or irrigation solution) to the periapical area.<sup>1-3</sup> It is mandatory to look for a proper way to decrease extrusion of debris via the periapical area to reduce post-treatment problems.

Studies have shown that almost all techniques of instrumentation can cause extrusion of debris to the periapical area.<sup>4-11</sup>

Martin and Cuninghame (1982) showed that the technique of endosonic instrumentation, compared to the hand technique, would pass less debris to the periapical area.<sup>12</sup> The 1987 study of Ruiz-Hubard and Gutman showed that crown-down pressure-less technique in straight and curved canals noticeably caused less debris extrusion to the periapical area when compared to the step-back technique.<sup>13</sup>

Myers and Montgomery (1991) showed that in the step-back technique, more debris would extrude to the apical foramen compared to the Canal Master rotary system.<sup>14</sup>

Beeson and Hartwell (1998) observed that the passing of debris in the step-back technique was significantly more than Profile System (Series 29).<sup>4</sup> Hinrichs and Hartwell (1998) observed that the difference between rotary technique with Light Speed, Profile 4 percent Taper Series 29, and hand instrument technique (Balanced Force) in extrusion of debris via apical foramen was not significant.<sup>5</sup> The presence of

pros and cons in different studies is noticeable. The main goal of this study is to compare the quantity of extruded debris from the apical foramen with the use of the step-back technique and Profile GT rotary instrumentation at different speeds (1,000 rpm, 8,000 rpm, and 24,000 rpm). It also is to determine if there is any relationship between the length of root and the amount of debris passed in each technique and to compare them. The reason for using the various speeds is that debris extrusion varies at different speeds.

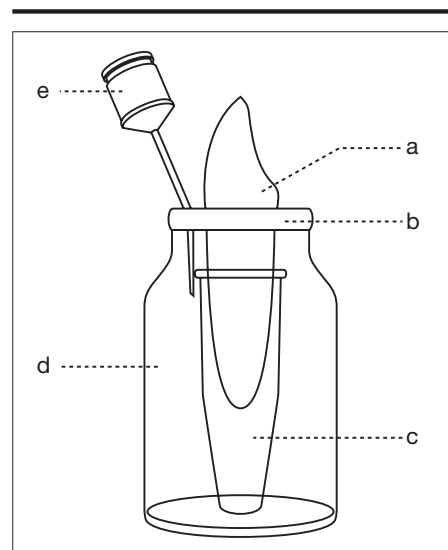
## Methods and Materials

**Case selection:** Two human extracted single-root anterior maxillary teeth with mature apices and less than 15 degrees of root curvature as determined by Schneider's method were selected for use.<sup>15</sup> A radiograph was taken to make sure all the teeth had single root canal and one apical foramen. Teeth with calcification and open apices were excluded, and teeth with minimum curvature were selected. Soft tissues on root surfaces were removed by 5.25 percent NaOCl and roots were stored in 100 percent humidity until the time of experiment.

With the help of an airmotor hand-piece and diamond bur, crowns of teeth were cut at the CEJ level and pulp tissue was removed with the help of broach. Then, one size 15 k-file was placed in the canal until the tip of the file became visible from apical foramen. The working length was selected 1 mm shorter than that.

## Instrumentation of the Canals

The prepared teeth were divided randomly into four groups of 50 teeth. All of the teeth were instrumented by a single practitioner. In each group, after



**Figure 1.** Diagram of apparatus collecting debris and irrigant during endodontic preparation.

use of each instrument, the canals were irrigated by the standard amount of distilled water with a 28-gauge needle without bounding the needle to the canal's wall.

**Group 1** — Hand step-back technique of instrumentation.

In this group, stainless-steel (k-files) were used. Preparing the canal was started with the first file, which bounded to the working length. Each file was used with push and pull movements until easy and loose movements of the same file in the canal was achieved. The next file was then used.

The apical area was prepared until size 35 file, then larger files were used with the step-back technique and two-thirds of the canal (coronal portion) was prepared with circumferential technique of filing until the size 60 file.

**Group 2** — Rotary instrumentation technique (profile 0.04 Taper Series 29 with speed of 1,000 rpm).

After determination of the working



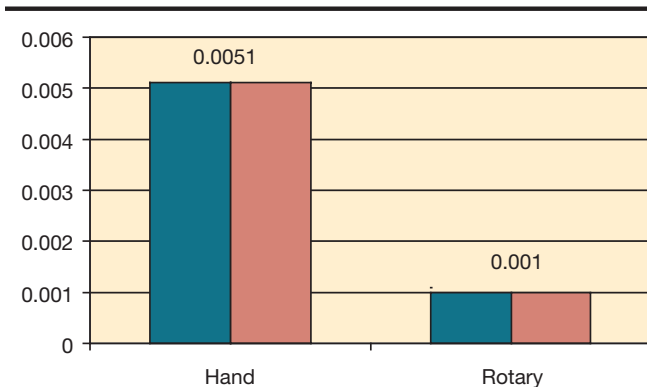
length, all the teeth were prepared according to the company's instruction. In the first stage of preparation, crown-down technique, (the size 20 file, 0.12 taper without any force) until the length with no blockage over it, was used. The size 20 file with reduction in tapering degree (0.10 taper, 0.08 taper, and the last 0.06 taper) was used.

The next stage was preparation of the apical portion with step-back technique that profile 0.04 taper with size 20 was used until  $\frac{1}{4}$  mm shorter than the canal's length. Then, profile size 25 with 0.04 taper until  $\frac{1}{2}$  mm shorter than canal's length, the size 30 file with 0.4 taper until  $\frac{3}{4}$  mm shorter, and file 35 with 0.04 taper until 1 mm shorter than canal's length, were used respectively.

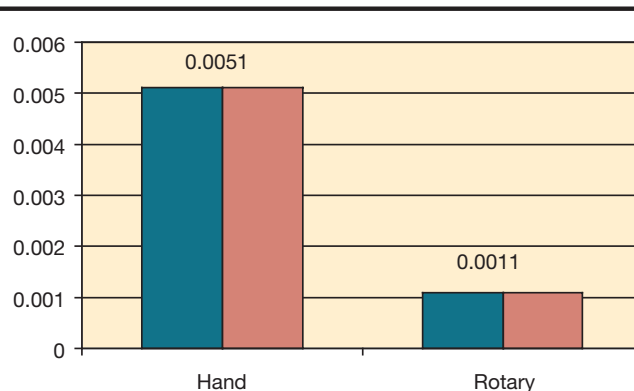
In Groups 3 and 4, the preparation was done the same as Group 2, and the speeds used were 8,000 rpm and 24,000 rpm. All of the speeds were reduced by contra angle to  $\frac{1}{2}$  rpm.

### **Debris Collection**

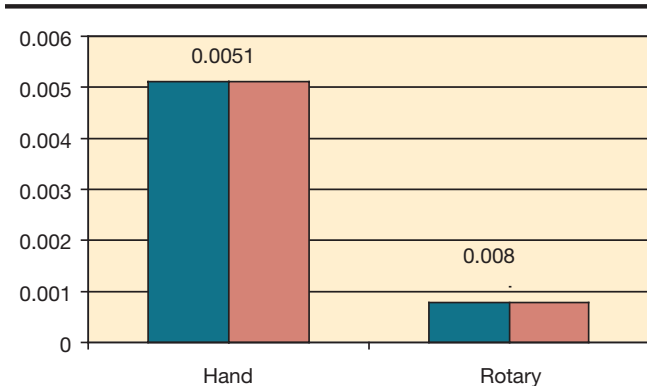
The data collection process was double-blinded. During the instrumentation, all debris and irrigant solutions extruded through the apical foramen of each tooth were collected in one separate vial. Each vial contained distilled water, which was inside a larger glass flask (according to the Myers and Montgomery techniques).<sup>14</sup> The vial had a plastic cover on top, which had one hole in the center, according to the size of each root. The root was fixed in that, and the root apex was inside the distilled water. All vials from 1 to 200 were numbered. Each one without distilled water was weighed with the use of a sensitive scale that could weigh an amount as



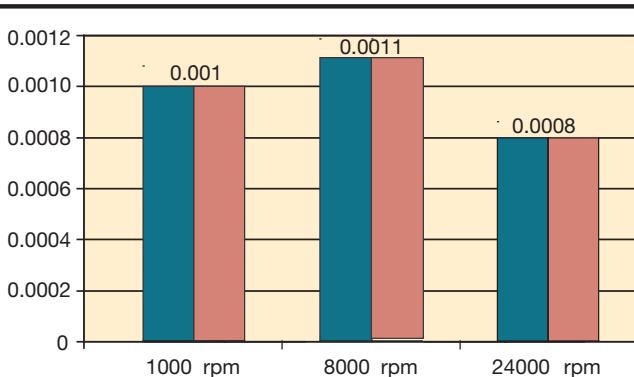
**Figure 2.** Comparison of average extruded debris in hand and rotary techniques with speed of 1,000 rpm.



**Figure 3.** Comparison of average extruded debris in hand and rotary techniques with speed of 8,000 rpm



**Figure 4.** Comparison of average extruded debris in hand and rotary techniques with speed of 24,000 rpm.



**Figure 5.** Comparison of average extruded debris mean in rotary technique with different speeds (1,000 rpm, 8,000 rpm, and 24,000 rpm).

little as 0.0001 g. For equality of the air pressure inside and outside of the flask, a needle with a 23-gauge was put inside of the plastic cover of the vial.

### Weighing Debris

After accomplishing all stages of instrumentation in each group, vials were removed from the flask and placed inside a microwave oven at 1,500 degrees Celsius for 12 hours until all liquids evaporated. All the vials then were placed in a

desicator containing  $\text{CaCl}_2$  to prevent moisture absorption, and then weighed. Weight of dry debris in comparison to the primary weight was obtained. For each group, two vials of distilled water were used as a control, which were dried at the same condition and weighed. Considering a 95 percent confidence interval, the data was analyzed with PSS statistical software using a student test, unilateral variance analysis and the Pearson test. The results were compared.

### Results

The data revealed there was a significant difference between the average of extruded debris in hand and rotary techniques,  $P=0.000$  (Figure 2)

In each of the hand or rotary techniques, the difference in debris extrusion between the speed of 8,000 and 24,000 rpm was significant.  $P=0.000$  (Figures 3 and 4).

The mean of extruded debris in the rotary technique between 1,000 rpm,

8,000 rpm and 24,000 rpm was not significant  $P=0.00(0.04)$  (Figure 5).

Linear correlation between length of the root and extruded debris showed that the increase in length of the root, increased the amount of debris extrusion significantly  $P=0.015$  (Figure 6).

## Discussion

In endodontics, the pain after instrumentation is usually because of periapical inflammation. During biomechanical instrumentation of the

root canal, necrotic debris, remnants of pulp tissue, microorganisms or irrigation solution can enter the periapical tissue and induce an inflammatory reaction and finally liquification necrosis.

Presence of infected dentinal shaves in periapical area can delay the healing procedure. It has also been revealed that inflammatory reaction can be the cause of edema, pain and bone resorption.<sup>5,6</sup>

During irrigation of the canals, there is also a risk of passing the debris

to the periapical area. Irrigation should be done passively.<sup>4</sup>

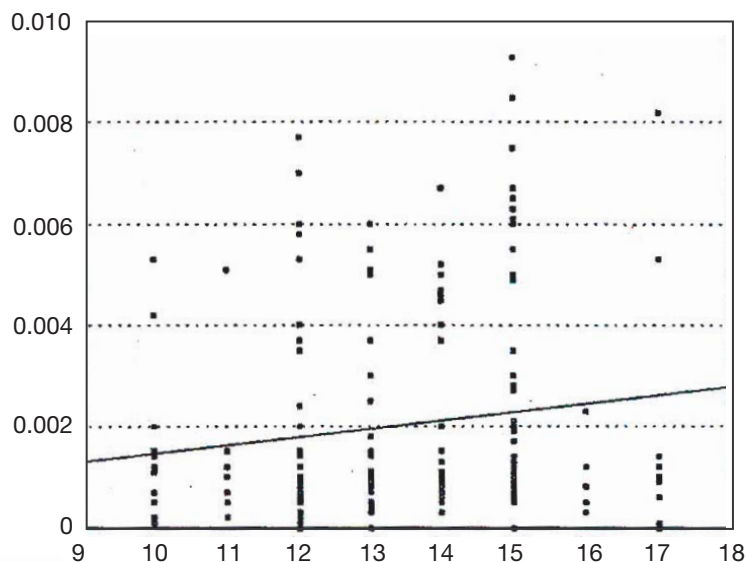
The coronal removing of debris is characteristic, which is present in profile 0.04 taper.

The reasons by which coronally removing of debris happens in profile 0.04 taper are as follows:

- 1 — Ni-Ti files have external blades that are flat and can place the file in center of the canal.

- 2 — 0.04 tapering can produce the funnel form in the crown-down technique.





**Figure 6.** The amount of linear correlation between root length and extruded debris in all experimental samples.

■ 3 — U-shaped flutes and slow motion of rotary technique (150 to 350 rpm) can cause blockage of dentinal cuts inside of file flutes and move toward coronal portion.

According to these characteristics, this technique is better than hand instrumentation technique (step-back), can minimize the amount of debris removed, and decrease all the reactions after the treatment.

Results in our study showed that linear filing increased the amount of entering debris to the periapical area but the rotary system, profile 0.04 taper, with rotary movement along crown-down or cervical flaring, caused minimal removal of debris to the periapical area. This is because the amount of dentin for entering to the periapical area decreases and produces a large space for irrigation of debris toward the coronal portion. These results are

in accordance with those of McKendry, Alomary, Beeson and Reddy.<sup>4-8</sup>

In this study, the average debris extrusion at different speeds of the machine was not different significantly, but debris extrusion in rotary groups was less significant than that of hand technique of instrumentation.

Our results showed that the increase in length of the root would increase the amount of debris extruded, and all the results are in accordance with those of Vandevisse.<sup>9</sup> The findings presented in this study confirm that using rotary technique is useful in decreasing the amount of debris extrusion to the periapical area since in the rotary technique, debris is blocked in file flutes and moves to the coronal portion. In the push and pull technique, debris goes to the periapical area.<sup>8</sup>

Since our study is an in vitro

research, different results may be achieved using in vivo models, because periapical tissue may act as a natural bridge and prevent the passage of debris. Even the difference between negative and positive forces can produce different results.<sup>3</sup>

It should be determined how much this natural bridge resists the removed debris and debris present in an irrigation solution. In an in vivo condition, debris will be removed along with bacteria.<sup>6</sup>

The type and virulence of bacteria pushed during instrumentation and the host defense can influence the inflammatory reaction.

According to studies, instrumentation with the rotary profile system could reduce the amount of debris extrusion to the periapical area.<sup>4-8</sup> Therefore, inflammatory reaction and post-treatment problems could be reduced. Consequently, the use of the rotary technique to minimize the extrusion of debris is recommended. **CDA**

To request a printed copy of this article, please contact / M. Bidar, DDS, assistant professor, Department of Endodontics, Faculty of Dentistry, Mashhad University, Mashhad, Iran, or via e-mail: mbidar2001@yahoo.com.

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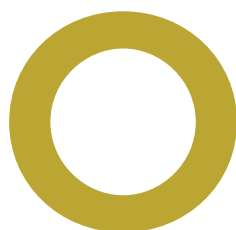


Photos: Hugo Schmidt, DDS

# Kiev: An Unexpected Transition

*St. Sophia Cathedral, built by order of Prince Yaroslav the Wise in 1037, is located in the center of town close to the ancient Golden Gate, which is 1,000 years old.*

Hugo Schmidt, DDS



On a casual stroll with Max, my 12-year-old black Labrador retriever, I felt a strong pull on the leash as he came face to face with a small monkey dressed in a red jacket and short black pants. For a moment, I witnessed an intense staring contest as both dog and monkey tried to size each other up. The street photographers in Kiev, Ukraine, use monkeys, owls, hawks, a raccoon, a pony and costumed humans to entice strollers to pay for a once-in-a-lifetime Polaroid picture. In many ways, Max's experience with the monkey mirrors my experience with the dental culture as we both try to size each other up.

Four long blocks of the beautiful Kreschatyk Avenue in central Kiev are closed to auto traffic on holidays and weekends to accommodate the folks who drink beer, listen to and watch musicians, balloon sellers, jugglers, break dancers, acrobats, and each other. Rock concerts, sponsored by commercial interests to market their products (LifeStyle condoms for example), often compete with the city-sponsored recorded music blaring onto the street, lending a movie-like feel to the scene.

My story comes to you with a degree of concern that some of my observations and experiences may be interpreted in an unintended negative way. Ukraine and Russia were isolated from Western dental research and practice for more than 70 years during the Soviet era. As a result of this isolation, dentists developed beliefs and assumptions regarding dental education, research and treatment that are often quite different from ours. Here, the major emphasis by dentists, and also the general population, is on pain relief and fixing dental problems and not on preventing them. That may be one reason why most dentists limit themselves to restoring holes in the teeth, tooth removal or replacement. Additionally, most people do not come in for routine cleaning and care, but wait until they have substantial pain before seeing a dentist for treatment. This tendency is strengthened by difficult economic conditions which impact dental care in a variety of ways. For example, one of the older dentists who attended my

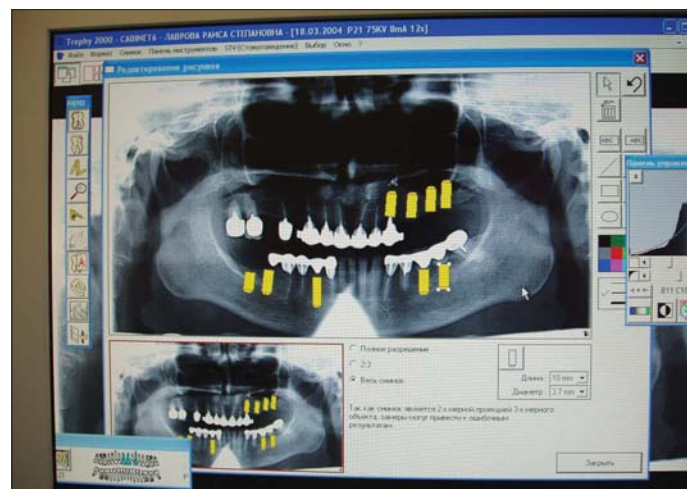
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**Author** / Hugo Schmidt, DDS, is an international educator. He was in private practice of general restorative dentistry for 40 years in Newport Beach, Calif., and a part-time professor at the University of Southern California School of Dentistry.





Operative dentistry, Porcelain Clinic, Kiev, Ukraine. Two handed in the mouth with usually one assistant for back up on the side.



Digital panorama film with planned implant sites at the Porcelain Clinic. Implant placement is increasing as the economy improves.

course on anterior porcelain crown preparations at the Post Graduate Academy in Kiev commented that he enjoyed the slide and video program, but that he never has the opportunity to provide such “expensive” therapy.

There are other examples of how dental treatment has been impacted by the long history of isolation. I frequently observe that differential diagnosis of pain is not evidence-based, and X-ray interpretation is vague and often underutilized. Some practitioners do excellent crown and bridge procedures but most pay little attention to the impact of their restorations on the periodontium. Extensive rehabilitation is rarely accomplished with a semi-adjustable articulator and therapeutic occlusion as we understand it. Occlusion is not understood here, except by my students. Additionally, while composite resin restorations are usually skillfully accomplished, over-treatment in endodontia is prevalent. When I ask my students and doctors for evidence that indicates a need for endodontic therapy, I receive such responses as “It is a big cavity,” “The tooth needs a crown,” “The tooth is painful,” or, “There is infection.” In the case of the latter, the etiology is usually periodontal!

I may be a slow learner, but after more than three years of living in the former Ukrainian Soviet Socialist Republic, I still frequently experience culture shock. I was not conscious of my American cultural beliefs until reading “American Beliefs” by John Harmon McElroy. But now, I attempt to see the big and the smaller picture as I often encounter cultural roadblocks.

For example, the dental clinic director and the chief dentist in the clinic in Kiev where I volunteer as a consultant recently told me they could not advise their female patients

**A scaler costs \$30,  
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amount in a month.**

regarding periodontal disease/infection and pre-term birth. This information, to me, seemed quite important, and treatment would be good for their reputation as a progressive clinic. However, they felt treatment would be too scary for patients and might negatively affect the pregnancy. Since periodontal disease is ignored by most dentists here, this should not have surprised me even though my clinic is progressive and cleans teeth and cuts gums 1950's style. Periodontal scalers and pocket measuring probes are scarce items. One reason for this scarcity, I am told, is a scaler costs \$30, which is a large sum in this economy where schoolteachers and doctors make that amount in a month.

I function as a volunteer, unpaid consultant in this clinic and this allows me opportunities to share information with the more progressive dentists. Sometimes this information has unintended consequences. This has become quite apparent when it comes to removable partial denture design. Dentists are accustomed to sending the working cast to the laboratory without a prescription, and the technician designs and fabricates an RPD. Since fit and function are frequently unsatisfactory, the dentists are excited by my design suggestions and the resulting improved RPDs. However, the laboratory technicians are not happy with my interference and especially with the published partial designs in American publications.

You may be wondering how a Newport Beach dentist, after 40 years of private practice, ended up in Kiev. My presence here is due to a series of unpredictable events, one a near

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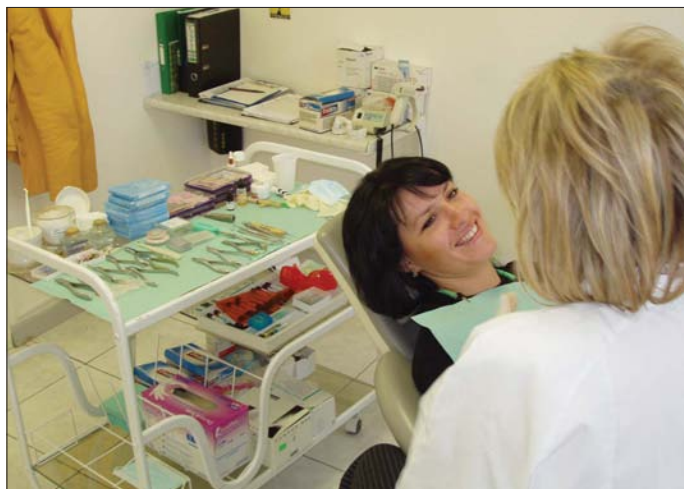
Author at the gate of National O.O. Bohomotets Medical University, Kiev, Ukraine, founded in 1841.

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tragedy. In summer 1998, my wife Diana and I were cycle touring in southern France and she was hit by a car and severely injured. Lying on the road, waiting for the ambulance, she reflected on her life's accomplishments. Missing in this accounting was the chance to be a Peace Corps volunteer. As a UC Berkeley student in the 1960s when President John Kennedy established the Peace Corps, she had vowed to join. Thirty-seven years later, she asked me if I would join her as a volunteer if she recovered from her injuries. So in February 2000, we came to the Ukraine as Peace Corps volunteers and after three months of language and cross-cultural training, were assigned to work at a business center in southern Ukraine. After returning to Laguna Beach, Diana was offered the position of deputy director of Peace Corps Ukraine, the largest of the 70 Peace Corps posts around the world.

I became the unemployed spouse and found myself on the streets of Kiev looking for adventure. In Ukraine, if you are from the West, especially from America, you may be seen as intimidating (think new ideas), you may arouse suspicion (think Cold War), and most of the time are given the label of "guest" (think food and vodka). How do Ukrainians react to an intimidating, suspicious guest? Not knowing these things, I couldn't understand the cultural "NO" I had received from the dean of a southern Ukraine dental school when I offered my services free of charge as a Peace Corps volunteer. I was fed tea (vodka declined) and cookies, wasn't I? His non-invitation to work with students or faculty disappointed and disturbed me. However, two years later in Kiev, I began to make progress with the dental community while exploring

**I learned that  
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Orthodontia patient at the Porcelain Clinic. Orthodontia is a new, fast-growing specialty in Ukraine.

opportunities with dental clinics. From my Peace Corps experience, I learned that a valuable personal relationship is the key to accomplishment in this society. This requires time and patience, and lots of tea and cookies (vodka, if you wish).

I was introduced to a young dentist who became my interpreter and she was helpful with her comments to the university prosthetics department head that I was an "expert" in occlusion. Since the conversation was in

Russian, I did not realize what she was saying. As his English was worse than my Russian, the casual discussions in his office (tea and cookies) were subtle interrogations aided by my dentist friend's translation. The breakthrough came when, on his invitation, I agreed to consult with one of his very difficult patients. This proved quite challenging working with an interpreter while learning

that cues a former Soviet citizen presents are similar to those we get from an emotionally challenged patient in the United States. The conclusion of my written report, after many appointments, was that we had accomplished all that dentistry could provide at this time and that psychiatric consultation would be helpful and necessary in order to complete treatment. Unfortunately, this professor is still working with this patient, trying to satisfy her complaints as referring a patient for psychiatric treatment is not the norm here.

However, since I had successfully passed my "test," I was asked how much time I would need to teach a course in occlusion. (The ritual had stepped up to offers of cognac,

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*Presentation of attendance of occlusal seminar "diplomas" by dental school dean, Professor Nespryadko, front row, third from left. Front row: the author, and Dr. Karpenko (translator), prosthetics professor. Back row, center, is Professor Klitinsky, prosthetics department head, with four interns.*

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without cookies.) I told the professor I had been studying and learning about this topic for 40 years as a private practitioner, but that maybe a year with his students would be a good introduction. We negotiated four, two-hour lectures as a starter. Now, I was on the hot seat and had to deliver. After lots of research, a personal brain search, PowerPoint slide organization, learning about digital photography, and editing a few video clips from Peter Dawson and Gordon Christensen, I was ready. Oral biology has always been interesting for me and I had a chance to demonstrate the need for an understanding of the neuromuscular aspects of occlusal function. This was like a solved mystery for many of these students, with some of the faculty included.

The dean became curious and attended when time permitted. We now have small group seminars once a week, and we are all learning together as I require input from the graduate interns. As they become more comfortable with my Western ways, I will give gradually more challenging assignments. This is a NEW style of education here as I attempt to bring down the wall that is common between teacher/professor and students. The Soviet educational system did not allow independent thinking or questioning of the instructor. While Ukraine is 13 years into transition from the Soviet system, the educational system, like everything else, has been slow to change. I wonder if my school professors and CE lecturers have had the same joy and fun I am experiencing.

In April 2004, we had the pleasure of a visit from two distinguished professors — Dr. Ray Williams from the University of North Carolina and Dr. Hessam Nowzari from

**I had a chance to demonstrate the need for an understanding of the neuromuscular aspects of occlusal function.**



*Upensky Cathedral, main attraction at the UNESCO World Heritage Site named Pechersk Lavra. Cathedral dates from 1073. There are approximately 70 churches on this site which includes catacombs dating from 600 AD. Picture taken from the adjacent bell tower after a 300-step climb.*

the University of Southern California. Their two-day, eight-hour combined course in periodontia added much to the impact of Western dental science on the local dental scene. The professors were questioned after their lectures, and I have been constantly questioned as well since I am still available. I have told the students that I also learned from these lectures, and that continued learning is required of any health professional who want to provide the best possible

care (another new idea). Other speakers<sup>1</sup> have presented here and they have all contributed to a dramatic change in the acceptance of Western dental science and clinical therapy. Another example of support comes from three Newport Beach colleagues who provided Internet answers for questions in their specialties.<sup>2</sup> I predict the catch-up point is coming soon in this society that is 99 percent literate and highly values education.

My cultural adjustment continues, but there is no need for interpretation to appreciate the architecture of the astonishing 200- to 1,000-year-old cathedrals, the 100- to 200-year-old buildings, a 1,000-year-old city gate, and the two beautiful botanical gardens that explode with color in the spring and summer. This city has 1,500 years of history and is located on the Dnipro River, long a transportation corridor to ancient Ukraine when Kiev was the first capital of Russia. Many concert halls are in operation, our favorite being the classic 1800s era Opera House where we often enjoy world-class opera, ballet and classical music. A tourist visiting Kiev will realize in a few days that this city is equal in beauty and history to many better-known European cities. However, Ukraine still presents a village atmosphere,



economy and lifestyle once you leave Keiv. It is not hard to fantasize that you will see the Fiddler on the Roof just around the next bend.

One of the important principles I learned as a Peace Corps volunteer is that sustainable changes are more valuable than doing the work myself. It is the old "teach a person to fish" idea. So in my time here, I have been attempting to practice "sustainable volunteerism." After months of seminars and the visits from my American colleagues, my graduate interns and some of my clinic colleagues now understand there is more to see in the oral cavity than holes in teeth and missing teeth. I have the students using articulators that were generously donated<sup>3</sup> to evaluate their classmates, after careful examination and diagnosis, some with early signs and symptoms of TMD. The professor will carry on when I leave. The student doctors are urged to share their knowledge and continue to study. My

collection of journals<sup>4</sup> and videos<sup>5</sup> will stay with the university library. My collection of articulators will find new homes with young Ukrainian doctors. I have often been asked, "Why do American doctors send this valuable equipment, books and journals to students/doctors they do not know?" My answer comes easily, "They want to share knowledge and improve patient care."

I don't want to give the impression that all dental continuing education comes through visitors from America. In Ukraine, dentists maintain their licenses to practice by attending the Ukrainian Medical Post Graduate Academy in Kiev for one month of study and a written examination every five years. They can also get credit hours by attending courses at the frequent dental meetings of the Ukrainian Dental Association. I have attended several of these courses and came away with beautiful certificates, signed and stamped with a seal, all in the Ukrainian language.



The author with 'Sweet Little Tooth' doll at the U.S. Embassy-sponsored orphanage oral hygiene extravaganza.

In addition to working with dental students, professors and practicing dentists, I have also had the gratifying experience of working with children and teenagers at an orphanage near Kiev. This orphanage has been "adopted" by some folks from the U.S. Embassy who play with the children, do artwork, and sometimes take the children to the Kiev Circus or zoo on a monthly basis. When I announced my planned visit to several American colleagues, I received an amazing mailing of toothbrushes, toothpaste and a Zoo Animal doll with a big toothbrush and a big mouth. Some of this was donated from commercial sponsors, and some was out of pocket from generous friends.<sup>6</sup> At first, I was concerned that the stuffed toy would be boring to these children. After all, many American children spend their time playing computer games or participating in sophisticated organized sporting activities. But "Zubichka" (translation: Sweet Little Tooth) was so popular I had to gently protect him from children who might have torn him apart in their desire to touch or hold him.

Living here has not been all work. As long-term residents of Kiev, my wife and I have developed a life where we can pursue many of our longtime interests. Since we enjoy cycling, canoeing, and skiing, we take many opportunities to pursue them here. We live walking or cycling distance from the Dnipro River and the island aquatic camp where local athletes train. For a few dollars, the coach rents us a canoe that puts us on this beautiful, large river. We can cross-country ski in our neighborhood park most of the winter, and a day's drive to the west will get us to the

**HVO offers  
many overseas  
opportunities in all  
dental specialties  
either as a clinician  
or lecturer.**



Bessarabska Rynuk (market), established 1901, is a marvelous building that appears from the outside and inside is an old world train station, but was built for use as a market. Ukraine agriculture is well represented with fruits and vegetables only hours from the field or orchard.

Carpathian mountain ski resorts near the Polish border. Travel to western Europe is less than two hours by air to many destinations such as Budapest, Vienna, Prague, Zurich, Frankfurt and Amsterdam. For more exotic travel, Istanbul also is two hours away by air.

Many colleagues have asked me how they can volunteer without making the move to live in another country. One opportunity comes from working with Health Volunteers Overseas (HVO). Through membership in HVO and the ADA,

I have traveled to Chisinau, Moldova, to present seminars at their dental university. HVO offers many overseas opportunities in all dental specialties either as a clinician or lecturer. Charitable or volunteer dentistry internationally has provided me with a boundless possibility for adventure and personal growth. Now, it is very apparent to me that we, who have been educated in and practiced in the U.S., are a most fortunate group. We have knowl-

edge and opportunity envied by many of our foreign colleagues. Much of our routine daily dentistry is considered advanced and we are well-paid professionals. We enjoy a lifestyle uncommon in most places of the world and we are respected members of our communities. We have continuing education opportunities unparalleled anywhere and we have amazing benefits available to us as members of our local and state societies and the ADA. I have received prompt response from the ADA for requests of dental education opportunities for foreign students and doctors.

My unexpected transition to a dental consultant and lecturer came about by chance but has added an exciting dimension to a wonderful career. It has allowed me to contribute

not only to students but also to dental faculty, practicing dentists and to patients. My Ukrainian interpreter, Dr. Marianna Evans, is now enrolled in the foreign dentist degree program at the University of Pennsylvania. She was the only periodontist practicing in Kiev (3 million population), educating patients and dental colleagues. Her goal is a periodontal residency program in a U.S. university and my goal is to help her make it happen.

Support from dental colleagues, the ADA, as well as commercial companies<sup>7</sup> in the U.S. has been generous and gratifying. I told one of my friendly contributors that receiving the packages, journals, articulators, Give Kids A Smile supplies for the orphanage, videos, and textbooks is like receiving presents from home when at summer YMCA Camp many years ago.

My wife and I will leave Kiev this December, but we will take with us great memories of friends and adventures while here. And who knows where the next adventure will take us! **CDA**

**References** / 1. Fadi Bedoun, New Jersey; Dr. Larry Wynn, Long Island, N.Y.; Dr Cliff Szaphir, N.Y.; Dr. Stanley Malamed, Los Angeles (USC).

2. Rob Cavalieri, Don Dornan, and John Brady.

3. Jack Ericsson and Dan Burkhead, Newport Beach, Calif.; Robert Kriegsman, Greensboro, N.C.; Whip Mix, Corp, Louisville, Ky.; Panadent, Grand Terrace, Calif.

4. Carl Rieder, Newport Beach, Calif.; Steve Mackler, Greensboro, N.C.; Dick Lewis, Torrance, Calif.

5. Gordon Christensen, Provo, Utah; Terry Tanaka, San Diego, Calif.; Cheryl Sheets, Newport Beach, Calif.; Howard Ferran, Ariz.

6. Larry Wynn, Long Island, N.Y.; Steve Mackler, Greensboro, N.C.; Colgate; Crest.

7. B.C. Decker, Mosby and Thieme.

**To request a printed copy of this article, please contact /** Hugo V. Schmidt, DDS, (University of Southern California School of Dentistry, Class of 1959) at hugovschmidt@yahoo.com.

# Disposal Fees and Extended Warranties: Milking the Cash Cow

*"Do you — state your name — hereby solemnly swear to take this patient as your own, to have and to hold in sickness and health, through sore spots and relines, in adjustments and remakes from this day forth as long as you both shall live?" ... Excerpt from the Bioform Oath*



You may not always know where your kids are, but the full immediate patient is always there.

Any dentist who has ever performed an immediate denture service for a patient knows the following to be true: The patient becomes an ex officio member of your family for a minimum of a year. You may not always know where your kids are, but the full immediate patient is always there.

Sometimes the relationship is forever, or until the dentist mercifully succumbs to self-inflicted wounds. A frequently used option is the out-of-state move, leaving no forwarding address.

For most procedures, there is a beginning, middle and an end. For immediate dentures, there is no end, at least not one that is mutually recognized by both dentist and patient.

The dentist, in his naiveté, is simultaneously suffused with frustration, despair and anger because he knows that once again professional retailers

have made him realize what a chump he has been all these years.

First, our dental colleagues discovered that in the real world, hazardous wastes are disposed of for a fee. Car batteries, for example, and used oil from his automobile and his old tires are hauled away at his expense. In his own office, hazardous wastes generated by his patients' needs are hauled away, also at his expense. Never appearing on the dentists' bills are the words:

Sharps Disposal \$25

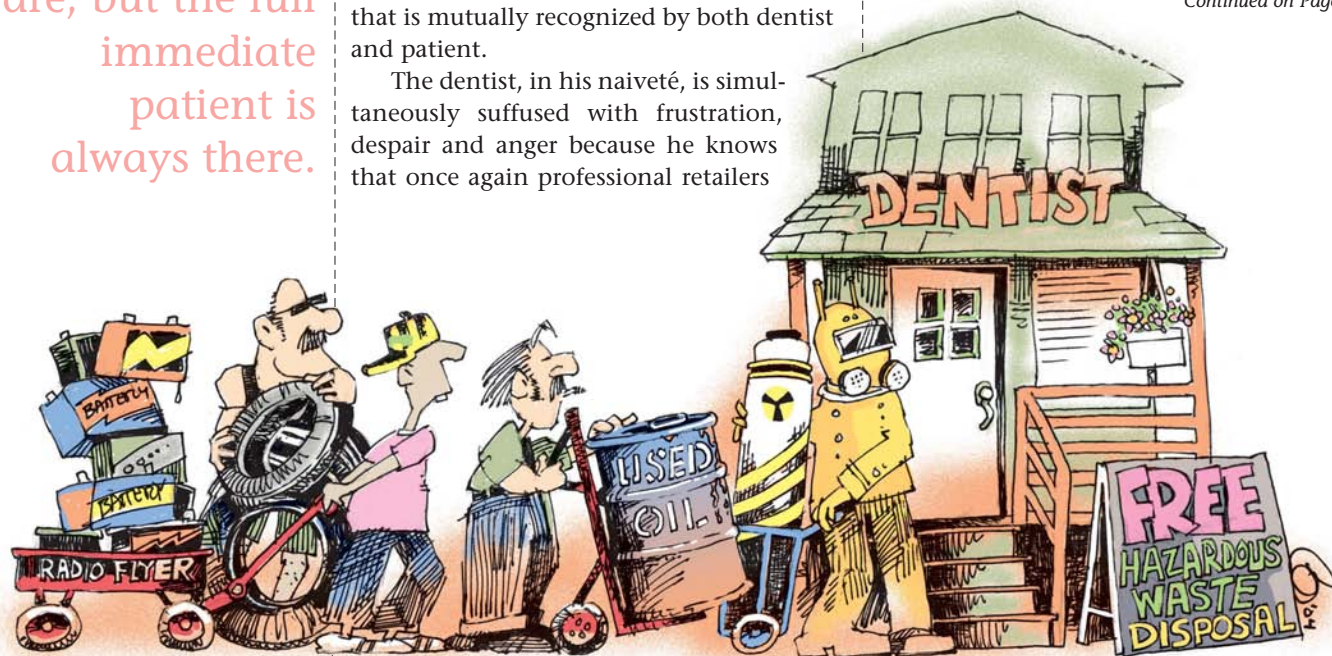
X-Ray Solution Silver

Recovery Fee \$16

Disposables Disposal \$12.95

Second, one of the most lucrative schemes retailers ever concocted has been operating successfully for ages and once again, the dental profession has missed the boat. We speak, of course, of the *Extended Warranty or Service Agreement*.

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Dentists have always been very careful to avoid guaranteeing anything they do. "It's human tissue," we point out. "Who knows what it's going to do?"

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You've just purchased your Kenmore washing machine from Sears. There is no way you will exit the store without being "offered" (see *The Godfather*, parts I through III) a service agreement. The service agreement says in effect that although you have purchased this marvelously engineered precision masterpiece of modern-day technology from us, it's going to break. The cost of just one visit, say, to replace the interhybaric spin cycle configuration module is more than twice the extended warranty fee. So you buy it.

There is more pressure to take the service agreement than you would encounter at 40 fathoms without a diving suit.

Not once has a configuration module failed during the first four years of service even if you had four kids and the interhybaric spin cycle thing goes 24/7. But you don't know that. If you should have the moxie to depart the store without surrendering to the salesperson's blandishments, one of their account reps will phone you every three months for the rest of your life warning you about the perils of going without the extended warranty. Retailers love the service agreement. So would dentists.

Suppose your fee for a full immediate included the denture itself, the insertion and a 20-minute lecture on shrinkage and healing plus the standard warranty of 10 days or 10 meals, whichever comes first. The extended warranty, or "cash cow" as we professional tooth per-

sons will come to call it, covers sore spots adjustments up to four the first year, two the second and one on your birthday. It also includes relines and a box of denture adhesive attractively gift boxed. And last, but certainly not least, are two *occlusal equilibration* visits available on request even if you haven't the faintest idea of what that means.

This overlooked bonanza would apply equally to crowns, bridges and fillings of every sort. Dentists have always been very careful to avoid guaranteeing anything they do. "It's human tissue," we point out. "Who knows what it's going to do?" Nonsense!

What if Sears felt that way about its Craftsman table saws? All that extended warranty/service agreement money would be down the tubes, foolishly spent on food or rent, or some other frivolous frittering.

If a patient wearing one of our cast partials, or equipped with a mouthful of orthodontic appliances gets the uneasy feeling that without the protection of an extended warranty, the whole thing may explode at any moment, then our professional obligation has been met. We've come a long way. Dentists of 30 years ago would never have thought of that.

It is our fond hope that eventually we will be able to sell service agreements to patients who have no trouble at all. We may poke fun at lawyers and question their activities sometimes, but consider this: Who thought up retainer fees?

CDA