



Den Hubbig

## New Biological Clock Links Tooth Growth to Other Metabolic Processes

Timing, they say, is everything. And a recent study proves just that.

Timothy Bromage, MA, PhD, a dental professor at New York University, has found that a newly discovered biological clock, or biological rhythm, is based on the circadian rhythm that controls many metabolic functions such as respiration and heart rates to one's life span.

This clock is roughly a 24-hour cycle that plays a key role in shaping cell regeneration, the patterns of sleep and eating, as well as other biological processes in mammals.

Similar to the circadian rhythm, this biological clock starts in the hypothalamus, the part of the brain that is the control center for the autonomic nervous system. However, unlike the circadian rhythm, the clock is different in different organisms. The clock is longer for bigger

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### TrioDent Launches New Sectional Matrix Retainer Ring for Class II Composite Restorations

V3, the new V-Ring from TrioDent, offers superior retention, enhanced adaptation, and wider indications for use. The ring is formed entirely from super elastic nickel titanium, meaning it will not fatigue. V3 also has a greater angle between the tines and the ring to allow even easier stacking. V3 still features the



innovation that gave the original V-Ring its name: V-shaped tines. In addition, TrioDent has developed Narrow V3 which ensures optimal separation force on smaller teeth. To order, go to [www.triodent.com](http://www.triodent.com) or call 800-811-3949.

## General Anesthesia During Dental Treatment Deemed Safe for Special Needs Population

A new study that assessed the safety of general anesthesia for dental treatment of special needs patients as it related to the American Society of Anesthesiology Physical Status classification, procedure, and other factors, found it to be safe. The study was published in the latest issue of *Anesthesia Progress*.

When needing dental treatment, patients with physical and mental limitations frequently pose challenges such as a lack of cooperation and physical disabilities to combative behavior. These factors can make conventional treatment under local anesthesia very difficult if not impossible at times. Dentists often resort to managing their special needs patients with general anesthesia as a way to avoid injury and excessive stress. Although comprehensive dental rehabilitation is usually described as a minimally invasive procedure, the study's researchers said that the special needs population has its own unique challenges, which may not necessarily correlate with the general agreed criteria for anesthetic risks.

To read the entire study, go to <http://www.allenpress.com/pdf/i0003-3006-54-4-170.pdf>.





### Oral Health Tips for Overseas Trips

With the summer vacation season nearly here, are you or your patients planning an out-of-country trip to a resort or an exotic location? Better pack that toothbrush, toothpaste, and floss, the

Georgia Dental Association suggested. An article in an issue of *GDA Action* provides good pointers to those embarking on journeys away from home.

Since finding a good dentist abroad might not be possible, the journal cites some basic precautions recommended by the American Dental Association:

- Get a checkup and cleaning if it has been a while since your last appointment.
- Ask your dentist if he or she has contacts with dental organizations in the host countries or can refer you to a dental clinic.
- Check with your dental insurance company to see if you are covered when you are out of the country and about claim procedures.

■ When you arrive at your destination, check in with the U.S. embassy where you may be able to obtain information about local dental and medical services in the country.

■ It's always a good idea to check in at the embassy if the country you are visiting is politically unstable or adjoining a country experiencing civil unrest. While embassies do not provide personal services, they can provide information about local health resources and welcome your registering with them.

A Safe Dental Traveler's Guide is available from the Organization for Safety and Asepsis Procedures, [www.osap.org](http://www.osap.org). Other helpful organizations are the International Association for Medical Assistance to Travelers, [www.IAMAT.org](http://www.IAMAT.org); travelers to Europe can go to the American Dental Society of Europe, [www.ADSE.co.uk](http://www.ADSE.co.uk), or FDI World Dental Federation, [www.FDI-worlddental.org](http://www.FDI-worlddental.org).

## Free Online Emergency Response Course Available to Dentists

The American Dental Association has announced the availability of a free online continuing education course for dentists to become more effective in recognizing and responding to disasters.

The online course, "Core Disaster Life Support," is available through a cooperative effort between the ADA and the American Medical Association. Dentists interested in learning the basic concepts of disaster management that allows them to better assist during a disaster, also can earn four hours of continuing dental education credits upon successful completion of the course. Enrollment information and course requirements are available online at <http://www.ada.org/prof/prac/disaster/ecdls/index.asp>.

The ADA has actively promoted the ability of dentists to participate in emergency response situations and, as a member of the National Disaster Life Support Education Consortium, it has participated with a national coalition of professional organizations, academic centers, medical centers, government partners, and corporations to provide program content in a variety of National Disaster Life Support courses.

Questions can be directed to the ADA's Council on Dental Practice at (800) 621-8099, ext. 2895, or sent to Pamela M. Porembski, DDS, via e-mail at [porembskip@ada.org](mailto:porembskip@ada.org).



## FDA Issues Alert on Denture Cleansers

On Feb. 14, the U.S. Food and Drug Administration issued a notification about the risk of allergic reactions in users of denture cleansers and the risks of misusing these products. The FDA reported it has received nearly 75 reports of adverse events, including at least one fatality related to the use of denture cleansers. These adverse events have occurred both when the product has been used properly as well as from improper use. The allergic reactions can occur soon after the patient begins using the product or after years of use.

According to the FDA, the literature and research suggest that the ingredient in denture cleansers responsible for these reactions is persulfate, a known allergen. Persulfates are used in most denture cleansers to help clean and bleach the dentures.

For more information and recommendations, go to the FDA's medical device Public Health Notifications at [www.fda.gov/cdrh/safety.html](http://www.fda.gov/cdrh/safety.html).



### The World's First Self-disinfecting Thermometer

The innovators of the Exergen TemporalScanner temporal artery thermometer have introduced the next generation in noninvasive temperature reading. The imbedded silver destroys bacteria (including E. coli), mold, mildew and fungi naturally and safely. A technology

development based on the Exergen TAT-5000 Hospital Model, the home-model TAT-2000C new Silver Ion Exergen TemporalScanner is available nationwide with a manufacturer's suggested retail price of under \$50. For more information, go to [www.temporalscanner.com](http://www.temporalscanner.com).



- See the dentist on a regular basis and alert him or her of any changes in health status and medications.

- Inform the dentist of any sores, swellings, or areas of redness in the mouth, as well as any painful areas in the mouth.

- Eat a normal meal prior to the dental appointment, take all diabetic medications on schedule, bring a blood sugar monitoring device to the appointment, and inform the dentist if symptoms associated with low blood sugar are felt.

## Diabetics, Meds, and Potential Harmful Interactions

Diabetics usually are instructed to eat right, maintain regular physical activity, and if necessary, take medication. What many may not know is that these medications that help control healthy insulin levels may lead to unexpected events at the dentist's office.

Diabetic patients especially need to communicate special needs to their dentists. This is due to harmful interactions that could occur because of the materials and medications used at dental appointments, according to a study published in *General Dentistry*, the Academy of General Dentistry's clinical, peer-reviewed journal.

More than 194 million people worldwide, according to the study, have diabetes, and health officials estimate this figure will double or triple in less than two decades. "It is imperative that diabetic patients inform their dentist of their needs in order to anticipate medication interactions and physical reactions to treatment," says Lee Shackelford, DDS, FAGD, a spokesperson

for the AGD. "The doctor must know if the patient is taking insulin and has taken their daily dose of insulin in order to anticipate the length of the appointment."

It does not stop, however, with diabetic patients. Giving dentists as much information as possible about current medications is essential for everyone's oral health. "It is important that your dentist is aware of all of the medications that you are taking, including prescription drugs, over-the-counter medications, and herbal drugs as they may interact with agents that your dentist may use for your dental treatment," advised lead author of the study, James Little, DMD, MS.

"Talk with your dentist if you are concerned about how the medications you are taking could affect your oral health," Shackelford said. "Open communication is the best way to ensure that your dentist gives you the best treatment possible."

*Steps Diabetic Patients Can Take to Ensure Optimal Dental Care:*

- Find a dentist who is aware of the needs of diabetic patients.

## Honors

**Cindy Lyon, DDS**, of Murphys, Calif., associate professor and acting chair of the department of dental practice at the University of the Pacific Arthur A. Dugoni School of Dentistry, was named a fellow of the 2008-2009 ADEA Leadership Institute and awarded the Omicron Kappa Upsilon Charles Craig Teaching Award.



Cindy Lyon, DDS

### ADA: Let's Work Together to Help Medicaid Fulfill its Mission

The American Dental Association has called on all concerned public agencies and private parties to work together to help Medicaid fulfill its mission to provide dental care to vulnerable populations, particularly low-income children.

In a statement provided to the House Committee on Oversight and Government Reform Subcommittee on Domestic Policy, the ADA called on health professionals, policymakers, parents, and others to work to remove barriers that block access to oral health care services.

The death of Deamonte Driver, whose family had lost their Medicaid benefits, galvanized public and congressional attention to the problems associated with lack of access to oral health care. But a year later, public concern and congressional outrage have not yielded significant results.

"Fundamental changes to the Medicaid program are long overdue to ensure

that low-income children have the same access to oral health care services that most Americans enjoy," said ADA President Mark Feldman, DDS. "It is time to help Medicaid meet its obligation to help vulnerable groups get necessary services."

While remaining committed to much more sweeping changes, the ADA, for the purposes of this hearing, urged the passage of two critical pieces of legislation.

The "Essential Oral Health Care Act" (HR 2472), sponsored by Reps. Albert Wynn (D-Md.) and Mike Simpson (R-Idaho) would draw more private practicing dentists into Medicaid and the State Children's Health Insurance Program by significantly increasing federal matching funds for states to improve their plans. Second, Rep. Elijah Cummings' (D-Md.) "Deamonte's Law" (HR 2371), addresses dental workforce needs by providing grants to dental schools and qualified hospitals to increase the pursuit of pediatric dentistry.

### Study Shows Bad Teeth May Pose Heart Disease Risk in Younger Men

Researchers at Boston University have been able to show conclusively that periodontal disease is a risk factor for coronary heart disease in men less than 60 years-old — separate of established cardiovascular risk factors — according to a study released in *Circulation*, a publication of the American Heart Association.

"This is the first study to find a significant association between chronic periodontitis and the risk of coronary heart disease, even after adjusting for important confounding factors," says Thomas Dietrich, MD, DMD, MPH, associate professor in the Department of Health Policy and Health Services Research at Boston University Goldman School of Dental Medicine and one of the study's authors.

Taking into account factors such as body mass index, age, smoking, cholesterol, alcohol consumption, and blood pressure in 1,203 males in the Veterans Administration Normative Aging and Dental Longitudinal Studies, the men were given comprehensive dental and medical examinations every three years for up to 35 years. The research was supported by the U.S. Department of Veterans Affairs.

The full text of the study, "Age-dependent Associations Between Chronic Periodontitis/Edentulism and Risk of Coronary Heart Disease," is available online at <http://circ.ahajournals.org/cgi/reprint/117/13/1668>.



## UPCOMING MEETINGS

## 2008

July 16-20	56th Annual Meeting and Exhibits, Academy of General Dentistry, <a href="http://www.agd2008orlando.org">www.agd2008orlando.org</a> .
Sept. 12-14	CDA Fall Scientific Session, San Francisco, 800-CDA-SMILE (232-7645), <a href="http://cda.org">cda.org</a> .
Sept. 24-27	FDI Annual World Dental Congress, Stockholm, <a href="mailto:congress@fdiworldental.org">congress@fdiworldental.org</a> .
Oct. 16-19	American Dental Association 149th Annual Session, San Antonio, Texas, <a href="http://ada.org">ada.org</a> .
Oct. 25-29	American Public Health Association Oral Health Section's annual meeting and exposition, San Diego, <a href="http://www.apha.org/meetings">www.apha.org/meetings</a> .

## 2009

May 14-17	CDA Spring Scientific Session, Anaheim, 800-CDA-SMILE (232-7645), <a href="http://cda.org">cda.org</a> .
Sept. 11-13	CDA Fall Scientific Session, San Francisco, 800-CDA-SMILE (232-7645), <a href="http://cda.org">cda.org</a> .
Oct. 1-4	American Dental Association 150th Annual Session, Honolulu, Hawaii, <a href="http://ada.org">ada.org</a> .

To have an event included on this list of nonprofit association continuing education meetings, please send the information to *Upcoming Meetings*, CDA Journal, 1201 K St., 16th Floor, Sacramento, CA 95814 or fax the information to 916-554-5962.



**THE WRITE STUFF** The Pierre Fauchard Academy Southern California Section recently gave its Pierre Fauchard Honor Award to Robert E. Horseman, DDS, to recognize his 30 years of "legendary literary work" in the Journal of the California Dental Association. Jack F. Conley, DDS, CDA editor emeritus, was the essayist.

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mammals, shorter for smaller animals. This means humans have an eight-day interval, it's six for chimps, and one for rats.

Bromage, an adjunct professor of basic science and craniofacial biology and of biomaterials and biomimetics at NYU's College of Dentistry, made the discovery while examining the incremental growth lines in tooth enamel. Additionally, he saw a related pattern of incremental growth in skeletal bone tissue, the first time incremental rhythm has ever been seen in bone.

"The same biological rhythm that controls incremental tooth and bone growth also affects bone and body size, and many metabolic processes, including heart and respiration rates. In fact, the rhythm affects an organism's overall pace of life, and its life span," said Bromage, reporting his findings during the recent 37th annual meeting of the American Association for Dental Research.

"So, a rat that grows teeth and bone in one-eighth the time of a human also lives

faster and dies younger," he said.

Humans, Bromage said, have by far the most variation in these long-term incremental growth rhythms, with some humans clocking as few as five days, others as many as 10. Relatedly, humans have the most variability in body size among mammals.

In a previously published interview, Bromage said, that depending on your perspective, rats do live as long as humans. "For instance, a rat can expect the same number of heartbeats in their lifetime as you and me.

"In broad strokes, larger bodies are produced by slowing down growth and developing for longer," he said. "Life span has to be longer if a species has a later age at sexual maturity. Otherwise too many individuals will die before they can replace themselves."

Future research will assess whether there is a link between slower growth rhythms and growth disorders, he said.



Since the autonomic nervous system controls human behavior, future research will also assess whether growth rhythms can be linked to variations in human behavior.

Bromage directs the mineralized tissue preparation and imaging technology development laboratory of NYU's College of Dentistry's department of biomaterials and biomimetics.

### Grant to Fund Advanced Training to Manage Rare Dental Emergencies



The ADA Foundation is taking a proactive step to help ensure patient safety advances are in step with tomorrow's dental science through a \$100,000 grant to the American Dental Society of Anesthesiology Research Foundation, Inc.

The grant will fund development of curriculum materials and advanced training to help dentists better prevent, recognize, and treat exceedingly rare complications and emergencies that may arise in a dental setting from sedation and anesthesia.

The training will be a combination of electronic-mediated written materials and a laboratory practice component based on the latest scientific knowledge and techniques on the use of sedation and anesthesia, giving special emphasis to

airway management and emergencies.

“At a time when dentists are increasing their use of sedation and anesthesia in the dental office,” said ADA Foundation President Arthur Dugoni, DDS, MS, “there is a critical need for an advanced course that focuses on emergency management. As dentistry’s premier philanthropic and charitable organization, the ADA Foundation is taking this opportunity to meet that need, and to fulfill its mission of educating dentists and promoting public and oral health.”

The grantee also will carry out pilot testing of the proposed course. The ADA Foundation will then partner with the American Dental Association to make the course widely available sometime next year.

ADA member dentists can call (312) 440-2694.

### Statement on Risk Assessment Released

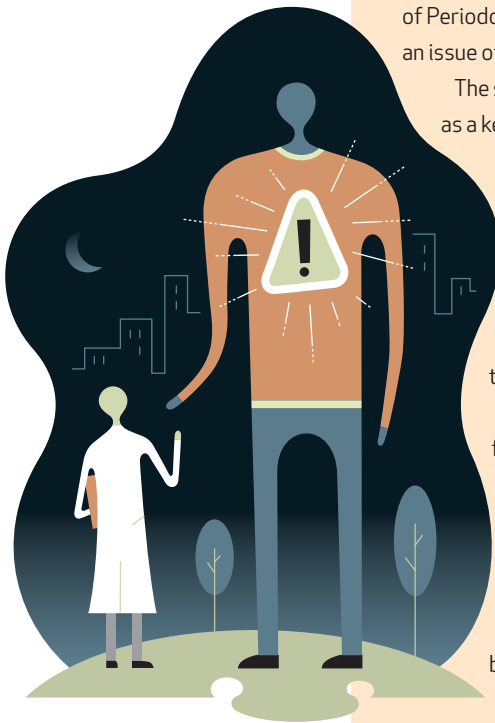
In its ongoing effort to treat and prevent periodontal diseases, the American Academy of Periodontology recently issued a statement on risk assessment, which was published in an issue of the *Journal of Periodontology*.

The statement is intended to encourage dental professionals to use risk assessment as a key component of all comprehensive dental and periodontal evaluations.

Studies have shown that the development, presentation, and the progression of periodontal disease can be influenced in many ways. Risk factors range from poor oral hygiene to smoking, as well as the presence of other diseases such as heart disease, gender, number of missing teeth, and age.

In assessing the patient’s risk factors, the dental professional is better able to predict the likelihood that the patient will develop periodontal disease and therefore assist in early identification or prevention of the disease.

“It is advantageous for a dental professional to evaluate a patient’s various risk factors for periodontal disease,” said Susan Karabin, DDS, president of the AAP. “Considering risk factors as part of the treatment planning process allows for proactive management of the patient’s oral health, and can potentially reduce the need for more complex periodontal procedures in the future. The AAP statement hopes to compel more dental professionals to take a full inventory of their patients’ health, especially any applicable risk factors, when determining the best course of treatment.”



Matt Mullin