



Illustration: Dan Hubig

Test Developed for Forecasting Caries in Children

Is it possible that an uncomplicated saliva test can be a highly accurate prognosticator of whether children will get caries, how many cavities, and which teeth are most at risk? The answer is yes and the future is now, say researchers at the University of Southern California School of Dentistry.

The test quantifies the genetic component of caries and can be used to determine early on who's most at risk so that preventive measures can be taken.

"When we apply this to young children, it allows us to predict what might be their future caries history — the number of cavities that they'll get by, say, their late 20s or early

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30s,” said Paul Denny, USC researcher.

According to researchers, the financial and physical burden of caries escalates with the aging process. Dental care costs, which Medicare doesn’t cover, can be pricey. As one ages, larger fillings may need to replace deteriorated ones, potentially leading to root canals, crowns, and unfortunately, tooth loss.

It’s why preventing caries is important, said Denny, who led the USC research team. “It’s the initial cavity or caries that we’re worried about,” he said. “If we can prevent that, then we prevent this whole lifelong process from occurring.”

The Caries Assessment and Risk Evaluation test measures the proportions in saliva of the various types of oligosaccharides, also known as sugar chains. Identical sugar chains are present on tooth surfaces.

The sugar chains’ effect on the tooth’s ability to ward off disease is similar to that of blood vessels, and the impact of “good” and “bad” cholesterol. The “good” sugar chains are predisposed to fend off caries-causing bacteria, while the “bad” sugar chains permit the bacteria bond to the tooth, thus starting the process of decay.

Unfortunately, the makeup of a human’s sugar chain cannot be changed as it is genetically set. Even in areas with fluoridation and adequate oral hygiene education, there are people who are prone to have bad teeth.

Researchers found that the sugar chain makeup in saliva could forecast a child’s cavity history — plus or minus one cavity — with more than 98 percent certainty. Children, particularly those with strong or weak nutritional and oral hygiene practices, may develop fewer or more caries than the test predicts.

While poor oral care can lead to tooth decay, it has been shown, according to researchers, that eliminating sugar from one’s diet may not prevent cavities and enamel erosion can be caused by over-brushing.

The USC test indicates tooth decay is influenced largely by genetics. As such, it is now possible to determine a child’s dental future. Another version of the test is able to identify certain teeth at risk, offering an opportunity to boost the effectiveness of prevention.

“It’s possible that in the future, even though a kid might be at very high risk for getting a large number of caries, with the proper preventive dental care he or she can arrive at adulthood without any,” Denny said.

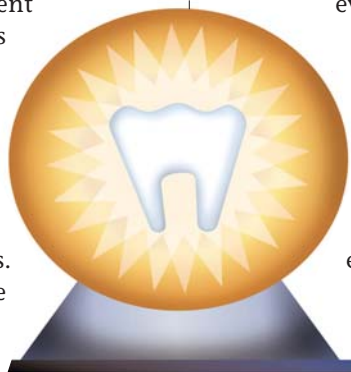
The research was supported by a grant from the National Institute of Dental and Craniofacial Research, part of the National Institutes of Health.

An advanced version of the test also can identify children with current tooth decay. Considering there are areas where families cannot afford routine dental exams, this is an important development.

“This is going to help people who are not dental professionals,” said Mahvash Navazesh, DMD, associate professor in the USC School of Dentistry and co-inventor of the Caries Assessment and Risk Evaluation test with USC research scientist Patricia Denny.

Navazesh said school nurses could administer the test, emphasizing that any of the tests do not replace good dental care.

“This is not a test to diagnose caries,” Navazesh said. “This is a test that can be used to evaluate susceptibility and risk. If we can identify those people who are at risk and put in place preventive measures, it is going to prevent them from suffering.”



Patients Can and Do Change Their Minds

Dental professionals shouldn't assume a patient will stick to a low dental budget, noted Sandy Roth, a dental communications specialist, in the winter issue of *The Journal of Cosmetic Dentistry*.

Assumptions "are mistakes because they deny the patient the opportunity to consider accepting your best care," Roth said.

She recounted a story of a woman who sought treatment for several dental problems, including cosmetic, because she had a new job and wanted to feel better about herself. The patient told her dentist she was ready to pay "about \$500 or \$600."

At a subsequent treatment planning session, the dentist explained every option and that full treatment was estimated at

\$30,000.

Initially shocked at her own cost underestimation, she opted for the treatment and arranged two loans to pay for it.

"When you make assumptions based on a patient's preliminary statements, you limit that patient's choices," Roth said. "The dilemmas they face are theirs to resolve, not yours. You can help patients best by identifying those dilemmas and remaining supportive and nonjudgmental throughout."



Dental Mission to Belize

Now in its 12th year, the Belize Mission Project is planning a dental mission trip for Oct. 21-29.

Volunteers will set up clinics in various areas in Belize, both on the mainland and on island locales, to perform preventive and restorative dentistry. An average of 50 volunteers, including dentists, dental lab technicians, dental assistants and hygienists; physicians, physician assistants and nurse practitioners; and general helpers, travel with each program.

For more information about the program, history and mission, or to download an application, visit www.belizemissionproject.com, or call Frank Whipps, DMD, (618) 532-1821.

Additionally, the ADA Center for International Development and Affairs offers a new 78-page guide, "International Dental Volunteer Organizations: A Guide to Service and a Directory of Programs." The guide contains an in-depth introduction to overseas volunteerism for dental professionals, plus listings of some 80 international programs for dental professionals. The guide is free to ADA Members and available to nonmembers for \$15. To request a copy of the guide, contact the ADA Center for International Development and Affairs, (800) 621-8099, Ext. 2726 or via e-mail, szymczyk@ada.org.

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U.S. Surgeon General
Richard H. Carmona

National Health Advisory Issued on Radon

U.S. Surgeon General Richard H. Carmona recently issued a warning about the risks of breathing indoor radon.

The advisory was issued to prevent the silent radioactive gas from seeping into American homes and reaching dangerous levels. The warning came on the heels of the surgeon general's workshop on healthy indoor environments.

"Indoor radon is the second-leading cause of lung cancer in the United States, and breathing it over prolonged periods can present a significant health risk to families all over the county," Carmona said. "It's important to know that this threat is completely preventable. Radon can be detected with a simple test and fixed through well-established venting techniques."

Odorless, tasteless and invisible with no immediate health symptoms, the gas comes from the breakdown of uranium inside the earth. According to estimates by the Environmental Protection Agency, one in every 15 homes nationwide have a high radon level at or above the recommended action level of 4 picoCuries (pCi/L) per liter of air.

Radon indoors poses serious health risks. More than 20,000 Americans die of radon-related lung cancer annually. Smokers who have elevated radon levels in the home have a higher risk for lung cancer.

Nationally, one in five schools have indoor air quality problems, which can trigger asthma and various allergies. Asthma alone accounts for 14 million missed school days each year. In the last 15 years, the asthma rate in young children has increased 160 percent. One out of every 13 school-age children has asthma. Promoting 2005 as The Year of the Healthy Child, Carmona is especially focusing on how unhealthy indoor environments affect children.

Test kits can reveal the amount of radon

in any building, and those with high levels can be fixed with simple and affordable venting techniques. Testing for radon is recommended every two years, and retesting any time residents move or make structural changes to the home.

"Americans need to know about the risks of indoor radon and have the information and tools they need to take action," said Jeffrey R. Holmstead, assistant administrator, Office of Air and Radiation, U.S. Environmental Protection Agency. "If families do find elevated levels in their homes, they can take inexpensive steps that will reduce exposure to this risk."

For more information about radon, go to the EPA's Web site, www.epa.gov/radon. In California, call (800) 745-7236; or the national toll-free hotline, (800) SOS-RADON.



Frequent Fast-Food Dining Increases Risk for Type 2 Diabetes

Recurrent cholesterol- and caloric-laden dining habits of today's youth will lead to health problems years later.

After 15 years, those who ate fast food more than twice a week (compared to once-a-week-dieters), each gained an extra 10 pounds and had twice the chance to develop insulin resistance, a risk factor for Type 2 diabetes, a major cause for heart disease.

"Obesity and diabetes are on the rise in this country and this important study highlights the value of healthy eating habits," said Barbara Alving, MD, acting director of the National, Heart, Lung and Blood Institute.

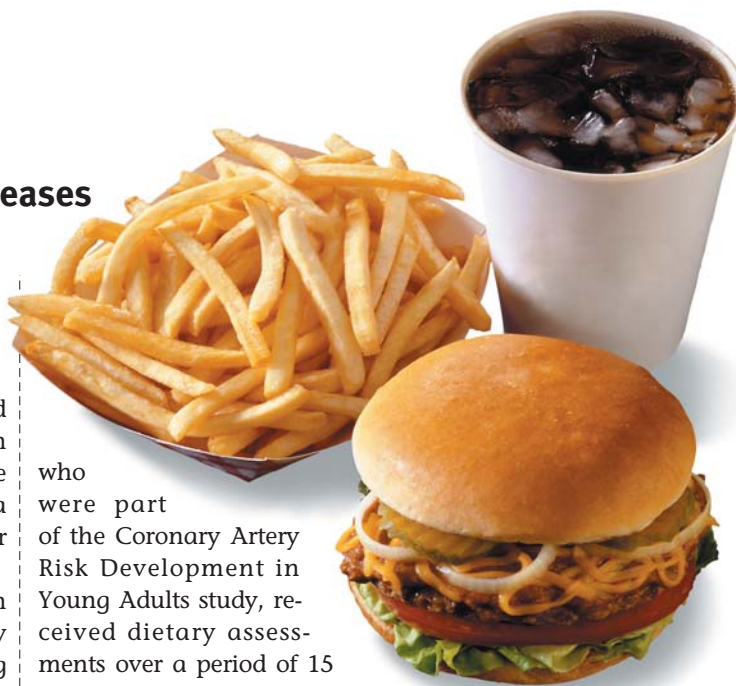
A contributing factor for weight gain may be that just one fast-food meal frequently contains a person's entire caloric requirement for the day. Fast-food consumption has increased in the United States over the last 30 years.

"It's extremely difficult to eat in a healthy way at a fast-food restaurant. Despite some of their recent healthful offerings, the menus still tend to include foods high in fat, sugar and calories and low in fiber and nutrients," said Mark Pereira, PhD, lead author and assistant professor of epidemiology at the University of Minnesota.

The multicenter study, published in the January issue of *The Lancet*, was funded by the National, Heart, Lung and Blood Institute.

Participants were asked during the physical examinations how often they dined at fast-food restaurants for breakfast, lunch or dinner. Even after adjustments for other lifestyle habits, researchers found the weight gain and insulin resistance was seen in both blacks and whites who regularly ate fast food.

Study participants included 3,031 young white and black adults between the ages of 18 and 30 in 1985-1986. The participants,



who were part of the Coronary Artery Risk Development in Young Adults study, received dietary assessments over a period of 15 years. Coronary Artery Risk Development in Young Adults centers are in Birmingham, Ala.; Chicago; Minneapolis; and Oakland, Calif.

The study also found that men frequented fast-food eateries more than women; and blacks more than whites. Black men reported an average frequency of 2.3 visits per week in 2000-01. In the same period, white women had the lowest frequency, an average of 1.3 weekly visits.

"It is important to watch carefully what you eat, especially at a fast-food restaurant," said Gina Wei, MD, National, Heart, Lung and Blood Institute's project officer for Coronary Artery Risk Development in Young Adults. "Knowing the nutritional content is important. Consumers may want to ask for this information."

Wei also recommended smaller portion sizes, asking that high-fat sauces and condiments, such as mayonnaise and salad dressing be served on the side, and that the sauces be used sparingly to reduce calories.

For more information, visit the Aim for a Healthy Weight web site at www.nhlbi.nih.gov/health/public/heart/obesity/lose_wt/patmats.htm; and Portion Distortion, <http://hin.nhlbi.nih.gov/portion>.

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Honors

Elisa Chavez, DDS, of Redwood City, assistant professor of removable prosthodontics at University of the Pacific, Arthur A. Dugoni School of Dentistry, was named a fellow of the Health Care Leadership Program by the California Health Care Foundation.

ADA Report Needs Member Input

The American Dental Association Council on Scientific Affairs is seeking feedback for its new evaluation program for professional products.

"Clinical input from members will be critical to the success and credibility of the new ADA Professional Product Report," says Domenick Zero, DDS, MS, Council on Scientific Affairs chair.

"Each quarterly report will review three product categories and we want the recommendations in each report to reflect the most accurate and up-to-date scientific and clinical data," Zero said.

As a clinical group member, you would be asked to answer telephone, online or written product-use surveys.

To participate, e-mail your name and contact information to pprclinical@ada.org or fax to (312) 440-2536.



Delivering Messages Electronically

Good communication between patients and their dentists has always been important in ensuring proper oral hygiene. The advent of the Internet now provides another way for dental practitioners to get the word out.

In the fall issue of *Colorado Dentistry*, practice management specialist Penny Reed noted a number of Internet-based ideas, including an "E-newsletter" to patients. Routine e-mails to patients could help a dentist deliver a message about dental procedures and oral hygiene care, for example. This method helps keep up the professional, yet friendly, relationship treasured by doctors and patients.

To start an e-mail list, simply include a place for an e-mail on a new, patient form with a box asking if the patient is interested in receiving e-mail messages.

Upcoming Meetings

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| Aug. 17-20 | Sixth Annual World Congress of Minimally Invasive Dentistry, San Diego, (800) 973-8003. |
| Sept. 9-11 | CDA Fall Scientific Session, San Francisco, (866) CDA-MEMBER (232-6362). |
| Sept. 25-28 | Pacific Coast Society of Orthodontists/Rocky Mountain Society of Orthodontists Joint Annual Session, San Diego, www.pscortho.org |
| Oct. 6-9 | ADA Annual Session, Philadelphia, (312) 440-2500. |

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| April 27-30 | CDA Spring Scientific Session, Anaheim, (866) CDA-MEMBER (232-6362). |
| Sept. 15-17 | CDA Fall Scientific Session, San Francisco, (866) CDA-MEMBER (232-6362). |
| Oct. 16-19 | ADA Annual Session, Las Vegas, (312) 440-2500. |
| Dec. 3-6 | International Workshop of the International Cleft Lip and Palate Foundation, Chennai, India, (91) 44-24331696. |

To have an event included on this list of nonprofit association 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.