Find it in Atlanta: ‘Foundation for the Future’ of dentistry

Education, exhibits, entertainment at 103rd Hinman

The Thomas P. Hinman Dental Meeting — one of the nation’s leading dental meetings and a comprehensive source of continuing education in dentistry — will provide a “Foundation for the Future” in Atlanta from March 26–28. The 103rd Hinman will feature more speakers than ever before, with 85 leading dental authorities, plus more than 230 courses; a new GOLD (Graduates of the Last Decade) Program, “Career Connections” to match employers with candidates, all-day educational tracks for dentists, dental hygienists, assistants, laboratory technicians and office staff, and more than 430 companies demonstrating the latest products, services and clinical techniques in dentistry.

“Hinman offers the very best in continuing education and world-class exhibits that help build a foundation for the future for everyone in attendance,” said Dr. Dave Lee, general chairman of the 2015 Hinman Dental Meeting. “We have assembled truly the best in the profession, more speakers than ever before, as well as special programs and courses designed to elevate learning for our more than 22,000 dentists and dental professionals who attend our annual meeting.”

Continuing education program
Across three days, Hinman will offer more than 230 courses, including 72 participatory and interactive courses, giving dental professionals an opportunity to learn new procedures, as well as fine-tune their skills. The new GOLD Program, designed for dentists graduating in the last 10 years, provides critical clinical and business guidance to enable long-term success in independent practice ownership. The program is on Friday, March 27, from 8 a.m.–5:30 p.m. and features key experts in dentistry, including Imtiaz Manji, John Connolly, Charles Loretto, Dr. Mark Hyman, Dr. Mollie Winston, Dr. Lee Ann Brady, Dr. Steve Ratcliff and Kirk Behrendt.

Special course topics range from live patient courses on TMJ occlusion and implants and disturbing trends in dentistry to a live court case and Botox and dermal fillers. This year, Hinman also offers unique course pairings that combine speakers who address both diagnosis and therapeutics for select topics. A “Hinman Study Club” program will be provided by Georgia Regents University speakers on

• Beavers’ teeth reveal way to toughen enamel
• Root Canal Awareness Week: Americans say, ‘I would rather have a root canal than the flu’

More than 430 companies demonstrating the latest in dentistry, will be in the exhibit hall at the 103rd annual Thomas P. Hinman meeting in Atlanta, March 26–28. Photo/Provided by www.dental-tribune.com

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Beavers reveal way to toughen enamel

Researchers find protection against caries in chemical structure of beavers' teeth

Beavers don’t brush their teeth, and they don’t drink fluoridated water, but a new Northwestern University study reports beavers do have protection against tooth decay built into the chemical structure of their teeth.

This pigmented enamel, the researchers found, is both harder and more resistant to acid than ‘regular’ tooth enamel, including that treated with fluoride. This discovery is among others that could lead to a better understanding of human tooth decay, earlier detection of the disease and improving on current fluoride treatments.

Material surrounding the nanowires

Layers of well-ordered hydroxylapatite “nanowires” are the core structure of enamel, but Derk Joester and his team discovered it is the material surrounding the nanowires, which makes enamel’s acid resistance and mechanical properties.

Enamel is a complex structure, which makes studying it challenging. Joester’s team is the first to show unambiguously that this “amorphous” (or unstructured) phase exists in enamel, and they are the first to show its exact composition and structure.

“We have made a really big step forward in understanding the composition and structure of enamel — the tooth’s protective outer layer — at the smallest length scales,” said Joester, lead author of the study and an associate professor of materials science and engineering in the McCormick School of Engineering and Applied Science.

The unprecedented imaging study of tooth enamel at the nanoscale was published Feb. 13 by the journal Science.

Dental caries is the breakdown of teeth due to bacteria. (“Caries” is Latin for “rottenness.”) It is one of the most common chronic diseases and a major public health problem, despite strides made with fluoride treatments.

According to the American Dental Association, $111 billion a year is spent on dental services in the United States, a significant part of that on cavities and other tooth decay issues. A staggering 60 to 90 percent of children and nearly 100 percent of adults worldwide have or have had cavities, according to the World Health Organization.

Experiments on rabbit, mouse, rat and beaver enamel

In a series of experiments with rabbit, mouse, rat and beaver enamel, Joester and his colleagues imaged the never-seen-before amorphous structure that surrounds the nanowires. They used powerful atom-probe tomography and other techniques to map enamel’s structure atom by atom. (Rodent enamel is similar to human enamel.)

The researchers subjected the teeth to acid and took images before and after acid exposure. They found the periphery of the nanowires dissolved (the amorphous material), not the nanowires themselves.

The researchers next identified amorphous biominerals in the structure, such as iron and magnesium, and learned how they contribute to both the mechanical hardness and resistance of enamel to acid dissolution. Of particular interest to Joester and his colleagues was the pigmented enamel of the beaver’s incisors. Their studies showed it to be an improvement over fluoride-treated enamel in resisting acid. (The presence of iron gives the teeth a reddish-brown color.)

“A beaver’s teeth are chemically different from our teeth, not structurally different,” Joester said. “Biology has shown us a way to improve on our enamel. The strategy of what we call ‘grain boundary engineering’ — focusing on the area surrounding the nanowires — lights the way in which we could improve our current treatment with fluoride.”

The full title of the paper is “Amorphous Intergranular Phases Control the Properties of Rodent Tooth Enamel.”

(Source: Northwestern University and the journal Science)

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Fig 1. Northwestern University research reveals that the pigmented enamel of beavers’ teeth, which contains iron, is both harder and more resistant to acid than ‘regular’ tooth enamel, including that treated with fluoride. Photo/Provided by Northwestern University

Fig 2: Scanning electron microscope image of inner enamel from rat incisor. Photo/Provided by Northwestern University

Figs 3, 4: Left, Polished mouse enamel. Right, after an acid bath, the grain boundaries dissolve quickly, leaving behind crystals that make up the nanowires. (Sources: Northwestern University and the journal Science)
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Americans say, ‘I would rather have a root canal than the flu’

According to a recent survey by the American Association of Endodontists (AAE), 78 percent of respondents say they would rather avoid getting the flu than having root canal treatment. The same number also say they would rather avoid losing a permanent tooth, which is something root canal treatment can help keep from happening.

“Maybe it’s time to change the old, ‘I’d rather have a root canal...’ saying to ‘I’d rather have the flu...’ for something I really don’t want to do,” said AAE President Dr. Robert S. Roda, an endodontist in Scottsdale, Ariz. “The root canal procedures of your parents or grandparents are no more. Thanks to advancements in techniques and technologies, today’s root canal treatment is virtually painless.”

During its ninth annual Root Canal Awareness Week, March 22-28, the AAE wants to dispel myths surrounding root canal treatment and encourage general dentists to involve endodontists in case assessment and treatment planning to save patients’ natural teeth.

“Being part of a team of generalists and specialists is the best way to develop true multidisciplinary treatment planning and provide the greatest chance for good outcomes,” Roda said. “Together we provide patients with comfortable treatment and positive experiences resulting in high-quality care to help them save their natural teeth.”

A recent AAE study found that 94 percent of general practitioners have a positive or very positive perception of endodontists, and the same percentage agree that endodontists are partners in delivering quality dental care. By partnering with endodontists, general dentists can help patients feel less anxious. The AAE’s Root Canal Awareness Week survey found that root canal treatment continues to be the dental procedure that makes patients most apprehensive, however, 89 percent of patients report being satisfied after root canal treatment by an endodontist.

To encourage collaboration between general dentists and endodontists, the AAE offers many free resources:

• The Root Canal Safety web page contains authoritative and reliable information about the safety of endodontic treatment, while debunking myths that root canals cause cancer or other health problems.
• Treatment Options for the Compromised Tooth: A Decision Guide includes case examples with radiographs of successful endodontic treatment in difficult cases and encourages general dentists to assess all possible endodontic treatment options to save the natural tooth.
• The Case Difficulty Assessment and Referral Form offers guidance to help evaluate a patient’s condition and assess risk factors that may affect the outcome of treatment.
• The ENDODONTICS: Colleagues for Excellence newsletter highlights clinical topics of interest to dentists who perform their own endodontic treatment and benefit from coverage of best practices and the latest advancements in the specialty.
• Endodontists: Partners in Patient Care is a video that explains what an endodontist is and how specialists work with general dentists to provide the highest levels of patient care. It is a great resource to show patients when a referral to a specialist is needed.

By using these tools during Root Canal Awareness Week and throughout the year, general dentists ensure they are developing the best treatment plans to save natural teeth and keep patients satisfied.

To help promote Root Canal Awareness Week, dental professionals can print the AAE poster to share in offices or clinics. For more information, visit www.aae.org and follow the AAE on Facebook and Twitter or search #rootcanal.