



# Georgia Smiles

Unofficial Newsletter, GA Oral Health Prevention Program

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## INSIDE:

<b>WELCOME Adam J. Doss, DMD, Dental Director Northwest District!</b>	<b>1</b>
<b>2011 DENTAL QUIZ BOWL</b>	<b>2</b>
<b>News Excerpts</b>	<b>3</b>
<b>BENZOCAINE: potentially fatal adverse effect</b>	<b>4</b>
<b>WATER FLUORIDATION: Responding to Common Arguments</b>	<b>5</b>
<b>ANAPHYLAXIS TOOL-KIT AAAAI.org</b>	<b>9</b>
<b>SHARON WILSON, EDDA receives 2011 Merit Award</b>	<b>10</b>
<b>CE POST-TEST for 1 CEU</b>	<b>12</b>



Who is This?  
See p. 3

Ah, Summertime! Schools visits slow down, but clinics fill up. Summer is also a time of change and growth. HB 214 is now law creating an independent, cabinet-level Department of Public Health and Brenda Fitzgerald, MD has been officially sworn in as Commissioner. We look eagerly to and in anticipation of the opportunities the new agency will hold for the public health of Georgians.

Also, now *Georgia Smiles* has become a source for acquiring CE Units. By reading the newsletter and answering the enclosed Quiz, you can earn 1 CEU for each newsletter. Enjoy!



Welcome Adam J. Doss, DMD,  
Dental Director, Northwest District!



Adam J. Doss, DMD, is the new Dental Director of the Northwest District in Rome. Dr. Doss graduated from the Medical College of Georgia's School of Dentistry in May of this year. Born and raised in Kansas, he came to Georgia in 2000 when stationed at Ft. Gordon as an Intelligence Analyst in the Army. He still serves part time as a dental officer in the Georgia Army National Guard.

He and his wife, Laura, have been blessed with six children (three boys and three girls) in their eight years of marriage. They are expecting Number 7 in January. Three of the six children were born during dental school! In his spare time (although there is not much of it with six children aged seven and under) he enjoys outdoor activities including hiking, camping, gardening, hunting, fishing, sailing and walking.

No stranger to being around children, Dr. Doss says he loves pediatric dentistry including prevention and education for kids. Asked what led him to dentistry, he explains, "I chose to go into healthcare because of a desire to work with and heal patients through direct interactions on a personal level. I focused on dentistry because I felt that it best suited me and my family within the realm of patient-focused healthcare. Plus I like teeth!" His decision to work in Public Health stemmed from a passion for the underserved and a (continued p. 10)

## ✓ Mark Your Calendars!

**Coordinators Meeting (Telephone Conference),  
Friday, July 22, 2011, 10:00 AM to 12:00 Noon**

### Toomer Elementary Student Wins 2011 Dental Quiz Bowl

It took 70 questions, but Toomer Elementary fifth grader Jaden Jackson eventually prevailed as the winner of the 2011 Dental Quiz Bowl. What was the 70th question? It was "Fluoride helps prevent cavities and can be found in either certain foods, water, toothpaste or in all of these?" Jaden knew that fluoride is present in all of these, including foods such as some seafood.

The DeKalb County Board of Health's Dental Health Services sponsored the quiz bowl. The competition began in January, with over 900 students from nine elementary schools participating. The bowl required learning, then being able to recall, dozens of oral health facts. The other finalists were first runner-up Zacchaeus Jackson from Murphey Candler, second runner-up Kayla Cressey from Indian Creek, third runner-up Madison Williams from Midway and fourth runner-up Jacob Starks from Dunwoody.

State Representative Rahn Mayo (District 91) presented the awards and emphasized how key a healthy smile is now and in the future. He reminded the students, "Having a nice smile is important for everyone, especially as you become an adult and enter the work world."

According to the American Dental Association, dental cavities remain the most common chronic disease in children. The association's most recent data, from 2004, indicate that 42 percent of children ages 2 to 11 years have cavities in their primary (baby) teeth. In addition, 67 percent of 16 to 19 years olds already have cavities in their permanent (adult) teeth. **Press Release: Vickie Elisa, 4-25-11**



Front row (L to R) 1st runner-up Zacchaeus Jackson from Murphey Candler, 2nd runner-up Kayla Cressey from Indian Creek, 3rd runner-up Madison Williams from Midway, winner Jaden Jackson from Toomer and 4th runner-up Jacob Starks from Dunwoody. Joining them are DeKalb County Board of Health Services Director Dr. Dwayne Turner, State Representative Rahn Mayo, and District Health Director Dr. S. Elizabeth Ford.

## News Excerpts of Interest

**More Evidence Vitamin D Boosts Immune Response** (Science Daily, 6-18-11) The June 2011 issue of *Infection and Immunity* details a study involving vitamin D-treated lab grown gingival cells. These cells increased their production of white blood cells to produce natural proteins with antibiotic activity and killed more bacteria than the control. The study suggests that vitamin D can help protect gingiva from gingivitis and periodontitis. "Gill Diamond of the UMDNJ -- New Jersey Dental School, Newark, showed that vitamin D could stimulate lung cells to produce LL-37, a natural antibiotic protein, and kill more bacteria. In light of these findings, vitamin D might help cystic fibrosis patients. In the new research, he showed that vitamin D has the same effect on gingival cells." He also found that "vitamin D stimulates gingival cells to produce another protein thought to be made by white blood cells". To read more, visit <http://www.sciencedaily.com/releases/2011/06/110617185105.htm>.

**Nearly Half of HCW Ignore Critical Hand Hygiene Protocol** (Dimensions of Dental Hygiene, June 2011) <http://www.dimensionsofdentalhygiene.com/print.asp?id=11055>

A WHO global survey showed that almost 50% of HCW do not wash their hands before providing care. The survey was presented in late May, at the 21st European Congress of clinical Microbiology and Infectious Diseases in Milan, Italy. Data collected included 327 health care facilities in 47 countries. WHO's *My 5 Moments for Hand Hygiene* is part of the campaign to *Save Lives: Clean Your Hands*. Moment 1 is the time frame before touching the patient and protects patients from the germs on HCW's hands after touching other patients and other surfaces. The 5 Moments include:

1. Before touching a patient.
2. Before cleaning or aseptic procedures.
3. After body fluid exposure/risk.
4. After touching a patient.
5. After touching patient surroundings.

Newsletter Editor's comment: "I add one more moment: "After touching self and/or PPE".

**Soap isn't Always as Clean as it Seems, Study Says** (Discovery News – Emily Sohn, 5-6-11) Every soap dispenser at an Ohio Elementary School were found contaminated. When the children washed up, microbe levels greatly increased! Findings suggested a re-examination of the kinds of soap dispensers used, as well as, how they are cleaned, especially in gyms and other public places. Another recent and large nationwide study found contamination with infectious bacteria in one out of four soap dispensers in public bathrooms. It is mandated that hospitals have dispensers with replaceable bags or cartridges with their own nozzle and sealed so they can't be contaminated. But many public places refill their dispensers repeatedly with pourable liquid soap. These dispensers are rarely, if ever, cleaned. Researchers in the journal *Applied and Environmental Microbiology* reported that when people washed with more highly contaminated the soap, more bacteria stuck to their hands after they finished washing. When more bacteria were on people's hands, more were transferred to the surfaces they touched. To read more: [http://www.msnbc.msn.com/id/42935271/ns/health-health\\_care/t/soap-isnt-always-clean-it-seems-study-says/](http://www.msnbc.msn.com/id/42935271/ns/health-health_care/t/soap-isnt-always-clean-it-seems-study-says/)

More Excerpts on page 10



If you recognized **Judy A. Stephenson, RDH**, from the Northeast Health District in Athens, as the dancing partner with "Hairy Dawg", you were absolutely right!  
Photo from her son's wedding, 2007

FDA: Reports of a rare, but serious and potentially fatal adverse effect with the use of over-the-counter (OTC) benzocaine –submitted by Dr. Lense

### Safety Announcement from FDA

**[04-07-2011]** The U.S. Food and Drug Administration (FDA) is warning the public that the use of benzocaine, the main ingredient in over-the-counter (OTC) gels and liquids applied to the gums or mouth to reduce pain, is associated with a rare, but serious condition. This condition is called methemoglobinemia and results in the amount of oxygen carried through the blood stream being greatly reduced. In the most severe cases, methemoglobinemia can result in death.

Benzocaine gels and liquids are sold OTC under different brand names such as Anbesol, Hurricane, Orajel, Baby Orajel, Orabase, and store brands. Benzocaine is also sold in other forms such as lozenges and spray solutions. These products are used to relieve pain from a variety of conditions, such as teething, canker sores, and irritation of the mouth and gums.

Methemoglobinemia has been reported with all strengths of benzocaine gels and liquids, including concentrations as low as 7.5%. The cases occurred mainly in children aged two years or younger who were treated with benzocaine gel for teething. People who develop methemoglobinemia may experience pale, gray or blue colored skin, lips, and nail beds; shortness of breath; fatigue; confusion; headache; lightheadedness; and rapid heart rate. In some cases, symptoms of methemoglobinemia may not always be evident or attributed to the condition. The signs and symptoms usually appear within minutes to hours of applying benzocaine and may occur with the first application of benzocaine or after additional use. **If you or your child has any of these symptoms after taking benzocaine, seek medical attention immediately.**

Benzocaine products should not be used on children less than two years of age, except under the advice and supervision of a healthcare professional. Healthcare professionals and consumers are advised to consider the American Academy of Pediatrics' recommendations for treating teething pain instead of using the benzocaine teething products:<sup>1,2</sup>

- Give the child a teething ring chilled in the refrigerator.
- Gently rub or massage the child's gums with your finger to relieve the symptoms of teething in children.

If these methods do not provide relief from teething pain, consumers should talk to a healthcare professional to identify other treatments.

...The onset of symptoms or diagnosis of methemoglobinemia generally ranged from a few minutes to one or two hours following the application of the benzocaine gel. Symptoms occurred with the first or subsequent applications of benzocaine gel. For the gel and oral liquid methemoglobinemia cases, cyanosis was the most often reported sign that alerted the patients or caregivers to the condition. In particular, reports describe blue discoloration of the lips and nail beds, as well as ashen extremities. Other signs and symptoms reported included irritability, lethargy, difficulty walking, inability to feel hands and feet, and syncope. For more information regarding this Safety Announcement, to read it in entirety, and access the sources: <http://www.fda.gov/Drugs/DrugSafety/ucm250040.htm>



## How to Respond to Common Arguments Against Water Fluoridation

—submitted by Dr. Lense

### 1. "Once you've entered adulthood, it no longer matters whether you drink fluoridated or not."

Respond this way:

- Fluoridation provides dental benefits to people of all ages, from young children to seniors.
- Fluoridation helps more seniors keep their teeth. Studies have shown that older Americans living in fluoridated communities suffer lower rates of tooth decay.

*Fact: Before water fluoridation was common, most people over age 65 had lost most or all of their teeth. Between 1971 and 2004, the percentage of seniors aged 65 to 74 who had lost their teeth declined from about 50 percent to only 24 percent.*

*Fact: A 2010 study confirmed that a child who receives fluoridated water in their early years experiences benefits that last far into the adult years. The study's co-author stated, "Your fluoridation exposure at birth is affecting your tooth loss in your 40s and 50s, regardless of what your fluoridation exposure was like when you were 20 and 30 years old."*

### 2. "Our state/community can't afford the cost of fluoridating water."

- Fluoridation is a health strategy that provides a solid return on investment. In fact, reaching more residents with fluoridated water will save taxpayers money by lowering our state's Medicaid costs and reducing families' health care expenses.

*Fact: Texas is saving \$24 per child, per year in Medicaid expenditures for children because of the cavities that have been prevented by drinking fluoridated water.*

*Fact: The national average cost of filling one cavity (\$145) is more than twice the cost of providing optimally fluoridated water to an individual for a lifetime.*

*Fact: Every \$1 invested in water fluoridation saves about \$38 in unnecessary dental treatment costs.*

### 3. "I watched a video on the Internet in which a chemistry professor says that fluoride can cause all kinds of health problems in human beings. Someone like that must know what he's talking about."

Respond this way:

- The most respected medical and health organizations endorse water fluoridation as a safe, effective way to prevent tooth decay.

*Fact: The last five U.S. Surgeons General — representing administrations of both parties — have publicly endorsed fluoridation as a wise health strategy.*

*Fact: The last five U.S. Surgeons General — representing administrations of both parties — have publicly endorsed fluoridation as a wise health strategy.*

*Fact: The American Dental Association, the American Academy of Pediatrics and the American Medical Association are only some of the many organizations that support fluoridation.*

Continued next page

How to Respond, continued

*Fact: The Centers for Disease Control and Prevention has called fluoridation one of "ten great public health achievements of the 20th century."*

#### **4. "There's no real proof that water fluoridation prevents tooth decay."**

Respond this way:

- Studies confirm that fluoridation reduces tooth decay by 18 to 40 percent.
- A 2010 study confirmed that a child who receives fluoridated water in their early years receives benefits that last far into the adult years.

#### **5. "Why do we need fluoridation? Americans have healthy teeth. We no longer have lots of people with dental problems."**

- Although dental health has improved overall in recent decades, tooth decay remains the most common chronic disease of childhood. And much of that disease is concentrated in those children who do not have access to fluoridated water.

*Fact: A study of two similar, adjacent communities in Arkansas showed that residents without access to fluoridated water had twice as many cavities as those with access to fluoridated water.*

#### **6. "Fluoridation is a 'freedom of choice' issue. People should be able to choose when or if they have fluoride in their drinking water."**

Respond this way:

- Fluoride exists naturally in virtually all water supplies, so it isn't a question of choosing to get fluoride. The only question is whether they receive the optimal level that's documented to prevent tooth decay.
- There are several examples of how everyday products are fortified to enhance the health of Americans — iodine is added to salt, and Vitamin D is added to milk.
- It is completely unrealistic to make water fluoridation a person-by-person or household-by-household choice. The cost efficiency comes from a public water system fluoridating its entire supply.
- Maintaining an optimal amount of fluoride in water is based on the principle that decisions about public health should be based on what is healthy for the entire community, not based on the fears of a handful of individuals who have extreme opinions about their drinking water.

#### **7. "Fluoride is a poison that doesn't belong in drinking water."**

Respond this way:

- Fluoride is *already* in water. Fluoride is a mineral that exists naturally in water supplies and even in some brands of bottled water. If the people making this "poison" statement truly believed it, they would no longer drink water or eat fish, eggs, meat or other food products that contain small levels of fluoride.
- Opponents often make this kind of statement about fluoride, but they never bother to admit that the optimal level of fluoride in drinking water will not "poison" anyone.

Continued next page

How to Respond, continued

- The experts strongly disagree. The Centers for Disease Control and Prevention, the American Dental Association and other respected groups point out that the optimal level of fluoride in drinking water is safe and effective for improving dental health.
- An environmental researcher and chemist with 35 years of experience examined this kind of argument and declared it to be "inflammatory and misleading rhetoric."

**8. "We already can get fluoride in toothpaste, so we don't need it in our drinking water."**

Respond this way:

- The benefits from water fluoridation build on those from fluoride in toothpaste. Studies conducted in communities that fluoridated water in the years after fluoride toothpastes were common have shown a lower rate of tooth decay than communities without fluoridated water.
- A Colorado study concluded that there "appears to be a net benefit in caries reduction from drinking water fluoridation over and above that from toothpaste and other sources of fluoride."
- Fluoride treatments at a dentist's office won't make up for the benefits of water fluoridation. A 2005 study concluded, "Fluoride toothpaste does a great job in helping to prevent dental decay, but only provides a temporary topical benefit to the tooth surfaces. Fluoride toothpaste, by itself, also does not prevent decay as well as fluoride from the previously mentioned systemic sources [including fluoridation]."

**9. "Fluoride is especially toxic for small children."**

Respond this way:

- Medical experts disagree. In fact, the American Academy of Family Physicians recommends that parents consider using dietary fluoride supplements for children from ages 6 months through age 16 "when drinking water levels are suboptimal" — meaning when their water isn't fluoridated.

**10. "Fluoride must be bad for kids. Even the labels on fluoride toothpaste tell you to 'keep out of reach of children'."**

Respond this way:

- This statement on a toothpaste label reflects the fact that the level of fluoride in toothpaste is much higher than the level in drinking water. These words on a toothpaste label are a simple way to encourage parents to monitor their young children during tooth-brushing. The idea is to encourage these kids to learn good habits — brushing teeth without swallowing the toothpaste.
- The American Dental Association has stated that "a child could not absorb enough fluoride from toothpaste to cause a serious problem."
- Many vitamin labels (see next page) have similar statements: "Keep out of reach of children." That's because almost anything can be harmful if left in the hands of unsupervised, young children.

**11. "Fluoride causes bone cancer and lots of other major health problems."**

Respond this way:

- This is what opponents always say — and without offering any proof. According to the American Council on Science and Health, "Historically, anti-fluoride activists have claimed, with no evidence, that fluoridation causes everything from cancer to mental disease." Continued next page

## How to Respond, continued

Vitamin D is a fat-soluble vitamin that helps maintain healthy bones by stimulating the absorption of calcium in the body. The body has the ability to make vitamin D naturally when exposed to sunlight. During the winter months, however, the body's vitamin D stores are low, increasing the risk of deficiency. Sunscreens also block the body's ability to make vitamin D from sunlight. Vitamin D deficiency can contribute to accelerated bone loss and reduced calcium utilization. Our Vitamin D softgels provide a natural source of this important fat-soluble vitamin.

**WE GUARANTEE OUR SUPPLEMENTS FOR POTENCY AND PURITY**

These statements have not been evaluated by the Food and Drug Administration. This product is not intended to diagnose, treat, cure, or prevent any disease.

**ANABOLIC LABORATORIES**

**VITAMIN D 400 IU**

Dietary Supplement

Supports Healthy Bones **100 SOFTGELS**

Professional Formula

**Supplement Facts**

Serving Size 1 Softgel

Amount Per Softgel	% Daily Value
Vitamin D (from fish liver oil)	400 IU 100%

Other Ingredients: Capsule (gelatin), glycerin, soybean oil.

**SUGGESTED USE:** Take one softgel daily with food.

**CONTAINS NO** sugar, starch, artificial colors, flavors, preservatives, corn, yeast, wheat, gluten, egg, or milk products.

**DO NOT USE IF TAMPER EVIDENT SEAL AROUND BOTTLE IS BROKEN OR MISSING. KEEP OUT OF REACH OF CHILDREN. VL 832D**

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7

## 12. "I heard that the EPA is reviewing the maximum fluoride level because fluoride can cause fluorosis. That's reason enough to oppose fluoridated water."

### Respond this way:

- Dental fluorosis is a rare condition, and the chances of this occurring will decrease thanks to the new federal recommendations for the optimal fluoride level in drinking water.
- Severe dental fluorosis is extremely rare condition.

***Fact:** According to the American Academy of Family Physicians, there have been "only a handful of cases reported during the past 30 years."*

- The report that prompted EPA's review was not focused on the fluoride level used to optimally fluoridate public water supplies.

***Fact:** As the Centers for Disease Control and Prevention has explained, EPA's review is based on a National Research Council report that "addresses the safety of high levels of fluoride in water that occur naturally, and **does not** question the use of lower levels of fluoride to prevent tooth decay." (emphasis added)*

## 13. "It isn't constitutional for our state to require communities to fluoridate their water."

### Respond this way:

- Nothing in our state's constitution can be cited to support this point of view.
- In more than a dozen rulings, state courts — many decades ago — looked at the issue of whether fluoridation violates U.S. Constitution. In every instance, the court of last resort in these states upheld the constitutionality of fluoridation.

***Fact:** These rulings include decisions by the Louisiana Supreme Court (1954), the Oklahoma Supreme Court (1954), the Indiana Supreme Court (1956), the Oregon Supreme Court (1956), the Missouri Supreme Court (1961) and the Kentucky Court of Appeals (1969).*

***Fact:** In the Louisiana case, *Chapman v. City of Shreveport*, the state supreme court ruled that the Constitution "does not deprive a state or its subdivisions" of the right to "protect the health of the people." The court noted that adding fluoride "does not affect the color, odor or taste of the water" and called fluoridation the "same kind of procedure" by which many communities add chlorine to swimming pools.*

**Sources:** Page 13



## Anaphylaxis Tool-kit: What's Your Action Plan?

The American Academy of Allergy, Asthma, and Immunology's tool-kit for use in case of an anaphylactic reaction that may occur chairside is shown below. For more information and resources: [http://www.aaaai.org/professionals/school\\_tools.stm](http://www.aaaai.org/professionals/school_tools.stm)



### Anaphylaxis Emergency Action Plan

Patient Name: \_\_\_\_\_ Age: \_\_\_\_\_

Allergies: \_\_\_\_\_

Asthma  Yes (*high risk for severe reaction*)  No

Additional health problems besides anaphylaxis: \_\_\_\_\_

Concurrent medications: \_\_\_\_\_

	<b>Symptoms of Anaphylaxis</b>
MOUTH	itching, swelling of lips and/or tongue
THROAT*	itching, tightness/closure, hoarseness
SKIN	itching, hives, redness, swelling
GUT	vomiting, diarrhea, cramps
LUNG*	shortness of breath, cough, wheeze
HEART*	weak pulse, dizziness, passing out

*Only a few symptoms may be present. Severity of symptoms can change quickly.  
\*Some symptoms can be life-threatening. ACT FAST!*

#### Emergency Action Steps - DO NOT HESITATE TO GIVE EPINEPHRINE!

1. Inject epinephrine in thigh using (check one):  Adrenaclick (0.3 mg)  Adrenaclick (0.15 mg)  
 EpiPen Jr (0.15 mg)  EpiPen (0.3 mg)  
 Twinject (0.15 mg)  Twinject (0.3 mg)

Other medication/dose/route: \_\_\_\_\_

**IMPORTANT: ASTHMA INHALERS AND/OR ANTIHISTAMINES CAN'T BE DEPENDDED ON IN ANAPHYLAXIS.**

2. Call 911 or rescue squad (before calling contact)

3. Emergency contact #1: home \_\_\_\_\_ work \_\_\_\_\_ cell \_\_\_\_\_

Emergency contact #2: home \_\_\_\_\_ work \_\_\_\_\_ cell \_\_\_\_\_

Emergency contact #3: home \_\_\_\_\_ work \_\_\_\_\_ cell \_\_\_\_\_

Comments: \_\_\_\_\_

\_\_\_\_\_  
 Doctor's Signature/Date/Phone Number

\_\_\_\_\_  
 Parent's Signature (for individuals under age 18 yrs)/Date

10/2010



### 2011 GDPH Award of Merit

**Sharon P. Wilson, EDDA**, District 3.5, dental program operations specialist and personal assistant to Dr. Dwayne Turner, Dental Director, received the 2011 Georgia Dental Public Health Award of Merit at the GPHA Annual Meeting and Conference

Welcome Dr. Doss continued



sense of calling to the clinic in Rome. "I chose to come to Rome because of the outstanding staff, patients and clinic in the Northwest District. I was excited to come here and I am proud of my team and the work we do."

More Excerpts of Interest

**Biologist Discovers Key Regulators for Biofilm Development** (Infection Control Today, June 2011)

Biofilms are responsible for some of the most virulent, antibiotic-resistant infections. Science has not always understood how they develop communities. Syracuse University biologist sheds new light on the process in a recent study. A complex cascade of enhancer binding proteins (EBPs) was discovered that are responsible for turning on genes that initiate the formation of a biofilm. The study was published June 13 in the *Proceedings of the National Academy of Sciences*. Anthony Garza and a team of scientists from the University of Miami School of Medicine, the University of Wisconsin-Madison, and Stanford University School of Medicine, discovered a complex regulatory cascade of EBPs that is designed to be highly responsive to environmental signals. Garza is an associate professor of biology in SU's College of Arts and Sciences and corresponding author for the study. "The regulatory circuit we identified is very different from that which has previously been seen." He says, "Bacterial cells that form biofilms require cooperative behavior similar to cells in more complex organisms. We knew EBPs were important in initiating biofilm development, and that there was a connection between EBPs and specific biofilm genes. But we didn't know how the EBP regulatory circuit was put together." He continues that the work uncovers how biofilms are genetically initiated and is key to developing new ways to prevent and/or treat infected surfaces, "Biofilms can be up to a thousand times more antibiotic resistant than free-living bacteria," Garza says. "Once established, biofilms are extremely resistant to killing agents—chemicals, cleaners, antibiotics. The key to preventing their development is in understanding how they get started." <http://www.infectioncontrolday.com/news/2011/06/biologist-discovers-key-regulators-for-biofilm-development.aspx>

**Newcastle University Researcher Invents Less Painful Dental Injection** (Rachel Wearmouth, The JournalLive.co.uk, Jun 20 2011) Dr John Meechan has invented a syringe will lessen the pain of dental injections by reducing their acidity. The Newcastle University researcher says the device works by pushing down the plunger which opens a valve and mixes neutralizer moments before an injection is administered. The cartridge, developed by researchers Chris Lawrence and Phil Harley from the university, could have far-reaching implications across all areas of medicine. Although is still a prototype, it won Best Overall Winner in the Dental and Oral Health section of the Medical Futures Innovation Awards. <http://www.journallive.co.uk/north-east-news/todays-news/2011/06/20/>

## News Excerpts continued

**Simple Saliva Test Detects Your 'Real' Age** (HealthDay News, June 22, 2011) A new saliva test uses a process called methylation to predict a person's age within a five-year range. The test may help solve crimes and improve patient care. University of California, Los Angeles geneticists say their test is a chemical modification of one of the four building blocks that make up DNA. Dr. Eric Vilain, a UCLA professor of human genetics, pediatrics and urology, and his colleagues analyzed saliva samples from 34 pairs of identical male twins, aged 21 to 55. They were able to identify 88 sites on their DNA that strongly linked methylation to age. They replicated their findings in the general population with 31 men and 29 women, aged 18 to 70. The geneticists were able to create a predictive model using two of the three genes with the strongest age-related link to methylation. When they entered the data from the samples taken, the test correctly predicted their ages within five years.

"Methylation's relationship with age is so strong that we can identify how old someone is by examining just two of the 3 billion building blocks that make up our genome," said Sven Bocklandt, study author and former UCLA geneticist. Vilain said, "Doctors could predict your medical risk for a particular disease and customize treatment based on your DNA's true biological age, as opposed to how old you are. By eliminating costly and unnecessary tests, we could target those patients who really need them." Police could also use the test to get an idea of a criminal suspect's age, on traces of saliva found at a crime scene, such as that on a coffee cup or cigarette. To read more: [http://www.nlm.nih.gov/medlineplus/news/fullstory\\_113516.html](http://www.nlm.nih.gov/medlineplus/news/fullstory_113516.html)

**Smoking Could Kill 8 Million a Year by 2030: WHO** (Reuters, Kate Kelland, May 31, 2011) The World Health Organization (WHO) has said that tobacco will kill nearly six million people this year, including 600,000 non-smokers as governments are not doing enough to persuade people to quit or protect others from second-hand smoke. The epidemic of tobacco-related disease and death has just begun, they say, since there is often a lag of many years between when people start smoking and when it affects health. By 2030, the annual death toll could reach 8 million. More governments are being urged to sign up to implement the United Nations health body tobacco control treaty, and are being warned that tobacco use could cause up to a billion deaths in the 21st century, much higher than the 100 million deaths it caused in the previous century if current trends persist. For World No Tobacco Day on May 31, 2011, the World Lung Foundation campaign group launched a website containing graphic images of the health effects of smoking that health officials can download for use as warnings on tobacco packaging. They say that on average, smokers see images on tobacco packs 15 times a day. This adds up to almost 5,500 times a year making the pictures "a highly effective channel to inform smokers about the dangers of tobacco." <http://www.medscape.com/viewarticle/743629?src=mp&spon=42>

**Deadly Variant Creutzfeldt-Jakob Disease May Have Link to Tooth Decay** (Wales Online-May 16, 2011) The human form of variant Creutzfeldt-Jakob Disease (vCJD) could be linked to caries. It may be caused by the same infectious agent that causes Mad Cow Disease. The hypothesis, published in the journal *Dental Hypotheses*, suggests tooth decay may be the way people became infected with it as a result of eating contaminated meat during the 1980s. As cases are highest in Scotland and the North-East of England, where rates of dental decay are high, it may explain the geographical spread of the disease. Between 1990 and the start of May 2011 there have been 171 confirmed and probable vCJD deaths reported. The hypothesis: <http://www.dentalthypotheses.com/index.php/dhj/article/view/33> To read more: <http://www.walesonline.co.uk/news/wales-news/2011/05/16/deadly-vcjd-may-have-a-link-to-tooth-decay-91466-28697962/>

*I consider my ability to arouse enthusiasm among men the greatest asset I possess. The way to develop the best that is in a man is by appreciation and encouragement.*  
~ Charles Schwab

### CE Quiz (Summer 2011 edition)

To receive 1 CEU, print this page and circle your answers.

Fax to: Jennie M. Fleming at (770) 339-4267

Name: \_\_\_\_\_ District: \_\_\_\_\_

1. According to a paper in the June 2011 issue of *Infection and Immunity*, vitamin D treated gingival cells, grown in a lab, increased their production of white blood cells to:
  - A. Produce higher levels of LDL cholesterol in the bloodstream
  - B. Produce natural proteins with antibiotic activity and killed more bacteria than the control
  - C. Stimulate brain cells to produce LL-37, a natural antibiotic protein
2. A WHO survey showed that almost 50% of HCW do not wash their hands before providing care. HCW need to wash their hands for each "moment" except:
  - A. Before and after touching a patient or patient surroundings
  - B. Before cleaning or aseptic procedures
  - C. After using hand sanitizer
3. A nationwide study found contamination with infectious bacteria in one out of four soap dispensers in public bathrooms.
  - A. True
  - B. False
4. Methemoglobinemia has been reported in all strengths of benzocaine gels / liquids and may cause all except:
  - A. Pale, gray or blue colored skin, lips, and nail beds
  - B. Shortness of breath; rapid heart rate; and fatigue
  - C. Intrinsic pale gray stain
5. Fluoridated water should be apposed as the EPA is reviewing the maximum fluoride level because fluoride can cause fluorosis. You should respond with:
  - A. Dental fluorosis is a rare condition, and the chances of this occurring will decrease thanks to the new federal recommendations for the optimal fluoride level in drinking water.
  - B. Severe dental fluorosis is extremely rare condition and that according to the American Academy of Family Physicians, there have been "only a handful of cases reported during the past 30 years.
  - C. The report that prompted EPA's review was not focused on the fluoride level used to optimally fluoridate public water supplies. The EPA's review is based on a National Research Council report that "addresses the safety of high levels of fluoride in water that occur naturally, and does not question the use of lower levels of fluoride to prevent tooth decay.
  - D. All of the above
6. Asthma inhalers and/or antihistamines can be depended on in anaphylaxis.
  - A. True
  - B. False
7. Which statement is false regarding biofilms?
  - A. Bacterial cells forming biofilms don't need cooperative behavior as cells in more complex organisms
  - B. Biofilms are responsible for some of the most virulent, antibiotic-resistant infections.
  - C. Enhancer binding proteins are responsible for turning on genes that initiate the formation of a biofilm.
  - D. Bacterial cells that form biofilms require cooperative behavior similar to cells in more complex organisms
8. Police could use the saliva test on a coffee cup or cigarette to get an idea of a criminal suspect's age, on traces of saliva found at a crime scene.
  - A. True
  - B. False
9. WHO has said that tobacco will kill nearly six million people this year, including 400,000 non-smokers.
  - A. True
  - B. False
10. Mixing neutralizer moments before an injection is administered will lessen the pain of dental injections.
  - A. True
  - B. False

## How to Respond to Opponents

## Sources

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- <sup>3</sup>The quote is by Matthew Neidell, a health policy professor at the Mailman School of Public Health at Columbia University. For more information, see: M. Neidell and K. Herzog, "The association between community water fluoridation and adult tooth loss," *American Journal of Public Health*, Vol. 100(October 2010).
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- <sup>10</sup>Mouden, L. "Fluoride: The Natural State of Water." *Arkansas Dentistry* (Summer 2005) Vol. 77, No. 2, 15-16.
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- <sup>12</sup>"Report of the Fort Collins Fluoride Technical Study Group" (April 2003), accessed on October 21, 2011 at [http://www.fcgov.com/utilities/img/site\\_specific/uploads/summary.pdf](http://www.fcgov.com/utilities/img/site_specific/uploads/summary.pdf).
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