Increasing number of pregnant

Women seek dental care

A survey conducted by non-profit organisation Delta Dental Plans Association among over 1,300 parents of children aged 6–12 has shown that more expectant women in the US are paying attention to oral health, an important area of health that is frequently overlooked during pregnancy. According to the survey, the number of pregnant women going to the dentist has increased by nearly 7 per cent over the last year.



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In 2015, 57.5 per cent of mothers in the US reported that they had visited the dentist during their pregnancy. The 2016 survey results show that the number has now increased to 63 per cent. Owing to hormonal changes, pregnant women are at an increased risk of developing dental conditions, including gingivitis and periodontitis. In order to avoid these diseases, expectant women should consult with a dentist on a regular basis.

Delta Dental Plans Association conducted the Children's Oral Health Survey between Dec. 16, 2015, and Jan. 14, 2016, among a nationally representative sample. The data was released to coincide with Pregnancy Awareness Month, which was established in 2008 to provide support for expectant women and their families and is celebrated annually during May. The campaign focusses on four key initiatives: education, exercise, nutrition and wellness, as well as nurture.

Brånemark performs first

Osseointegration Surgery on amputee in US

Discovered by Prof. Per-Ingvar Brånemark, the concept of osseointegration has become the basis for implant dentistry and revolutionised the treatment of edentulous patients worldwide. Continuing the work of his late father, Dr Rickard Brånemark has adapted the concept to orthopaedic surgery in order to improve the treatment of amputees. His approach has been developed and applied for over 20 years, mainly outside the US, however. Together with his colleagues at the University of California, San Francisco (UCSF), Brånemark has now performed the first osseointegration surgery in the country.

Similar to dental implants, Osseointegrated Prostheses for the Rehabilitation of Amputees (OPRA) consist of an external prosthesis anchored directly to the patient's remaining bone through a permanently implanted titanium screw. Therefore, the prosthesis always attaches correctly and remains firmly in place, preventing patients from suffering pressure sores, pain, heat, chafing and general discomfort often found with traditional solutions using a socket.

The patient, George Kocelj, lost most of his right leg owing to a rare nerve tumor caused by neurofibromatosis. The 54-year-old had tried several external prostheses before, but without success. As the sockets of these prostheses were unworkable for him, he largely had to rely on a wheelchair.

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Dental tourism and lasers to fuel

Growth of dental equipment market

Market research company Transparency Market Research has reported that the global dental equipment market is expected to reach US$7.6 billion by 2018, from US$5.5 billion in 2011, growing at a compound annual rate of 4.7 per cent from 2012 to 2018. Technological innovations and increasing awareness of dental hygiene are contributors to the segment's growth, but high initial costs for dental equipment remain. The report analyses different types of dental equipment, including dental radiology equipment, systems and parts, laboratory machines and hygiene maintenance devices.

Dental lasers are predicted to grow at an accelerated pace owing to the increasing adoption of minimally invasive surgical procedures that remove dental decay without harming the soft and hard tissue. The growing ageing population and the baby boomers are additional factors for the rising demand for dental procedures.

The full report is available for purchase at www.transparencymarketresearch.com/dental-devices-market.html. The Grand View Research report can be bought at www.grandviewresearch.com/industry-analysis/dental-equipment-market.



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Certain oral bacteria may indicate

Increased pancreatic cancer risk



Researchers have found that the risk of developing pancreatic cancer is associated with specific bacteria in the mouth. They hope that the findings could enable earlier and more precise treatment of the disease. Other studies have shown that pancreatic cancer patients are susceptible to periodontal disease, cavities and poor oral health in general. Therefore, the research team at the NYU Langone Medical Center set out to search for direct links between the makeup of bacteria driving oral disease and subsequent development of pancreatic cancer. The researchers compared bacterial contents in mouthwash samples from 361 American men and women who had developed pancreatic cancer with samples from 371 people of matched age, sex and ethnic origin who did not. They found that men and women whose oral microbiome included *Porphyromonas gingivalis*, a major contributor to periodontal disease, had an overall 59 per cent greater risk of developing pancreatic cancer than those whose microbiome did not contain the bacterium. Similarly, people with oral microbiomes containing *Aggregatibacter actinomycetemcomitans*, which has been associated with severe periodontitis, were at least 50 per cent more likely overall to develop the disease. The findings were first presented on April 19 at the annual meeting of the American Association for Cancer Research in New Orleans.

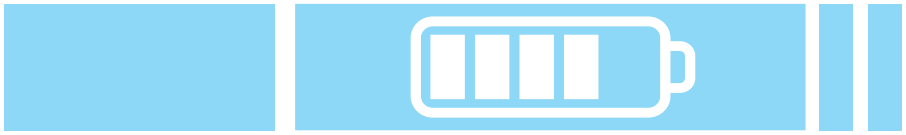
How electronic cigarettes affect

Oral health

New York researchers have received a grant to determine the adverse health effects of e-cigarette use on oral health for the first time. "Based on compelling data from our preliminary research, we hypothesise that e-cig aerosol mixtures disrupt the oral cavity's microenvironment, increasing vulnerability to periodontal disease," said Dr. Deepak Saxena from the New York University College of Dentistry, which was awarded a four-year $1.6 million grant by the National Institute of Dental and Craniofacial Research (NIDCR).

"Smoking is a major risk factor for periodontal diseases, immuno-suppression, and impairment of soft tissue and bone cell function," added co-researcher Dr. Xin Li. "The prospective study we proposed to the NIDCR entails the enrollment of 120 individuals."

The researchers will recruit and stratify members of the e-cigarette group by the type of disposable e-cigarette and number of cartridges they consume per week. "To determine the mechanism by which e-cig aerosol affects oral health we will design a novel 3-D epigingival tissue model to mimic the oral microenvironment," Li explained.



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EU dentists concerned about

Future of dentistry

On 20 and 21 May, representatives of member and observer organisations of the Council of European Dentists (CED) gathered for the first general meeting under the chairmanship of its new president, Dr Marco Landi, in The Hague/Netherlands. In addition to adopting policy statements on sugar, specialist dentists and dental amalgam, delegates expressed concerns about economic pressures affecting the profession.



According to Landi, the meeting elucidated the increase of commercial chains that in many European countries are changing dentistry in a direction that is motivated by short-term profits rather than quality. "I am concerned with the commercial drivers affecting patients' rights to receive dental health care in their best interests," he said. "The CED will be dedicating more resources to look into this issue."

Moreover, the association advocated new regulations for dental amalgam that restrict the use of the material to an encapsulated form and suggest the mandatory use of amalgam separators from 1 January 2019. The CED is a non-profit association that represents over 340,000 practising dentists from 30 European countries.

Tooth analysis finds advantages of

Modern humans vs. Neanderthals

Dental microwear texture analysis involves the examination and analysis of wear features on tooth surfaces at a sub-micrometre scale. By assessing the type and degree of wear on 52 molars that were taken from the remains of European and Levantine individuals from 37 sites dating back to between 500,000 and 12,000 BP, the study examined the possible influence of dietary strategies on human development.



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The results show that the lineage was capable of adapting to severe fluctuations between climatic cycles of the Ice Age. However, while Neanderthals adapted their diet to the resources that were most readily available and easily accessible, modern humans seemed to have invested more effort in obtaining food resources with the help of tools, for example, for getting at roots in the soil. It is this use of new technology that may have given modern humans a crucial benefit over the Neanderthals, the researchers concluded.

The study, titled "Neanderthal versus modern human dietary responses to climatic fluctuations", was conducted by researchers from the University of Tübingen in cooperation with colleagues from the Max Planck Institute for Evolutionary Anthropology in Leipzig in Germany and Stony Brook University and the University of Arkansas in Fayetteville in the US. The results were published online on 27 April in the *PLOS ONE* journal.

Will India be the next

Big dental market?



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The Indian dental care services market is estimated to experience a double-digit growth rate, reaching up to US$2.2 billion (147 bn. Indian rupees) by 2020. According to Ken Research, India has already witnessed a compound annual growth rate of 12 per cent for the period of 2010 to 2015 as dental awareness and disposable income have increased. Taking into account factors such as continued economic growth and reforms, India might have the potential to become the largest market for dental products and materials worldwide.

According to the Indian Dental Association, India's population of 1.2 billion had access to 180,000 dentists, including 35,000 specialists, in 2014. This number is projected to grow to 300,000 by 2018. Around 5,000 dental laboratories and 300 dental institutes currently provide basic and advanced oral health care. Expected growth in the number of dental chains will increase the share of organised dental clinics across the country. Although the vast majority of dental products are imported from Germany, the US, Italy and Japan, foreign companies continue to invest in India and establish production units. Most importantly, patient demand for better health care facilities has increased.

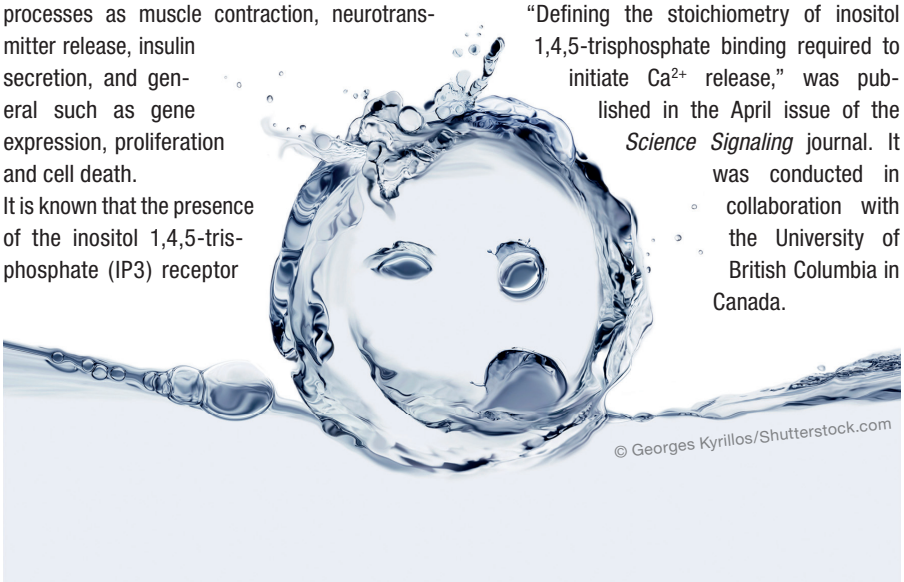
The publication, *India dental care service market outlook to 2020—Increasing awareness on oral care and rising number of organised players to foster future growth*, is available online at www.kenresearch.com. The report covers various aspects, such as market size, structure and segmentation, as well as the demographics of domestic and foreign customers.

Better treatment of

Dry mouth disorders

A new study has now determined the previously largely unknown mechanism that triggers salivary secretion. The researchers from the University of Rochester Medical Center hope that the findings will help advance treatment for many diseases. In the study, the researchers focused on intracellular calcium, which is involved in the production and secretion of bodily fluids and regulates such processes as muscle contraction, neurotransmitter release, insulin secretion, and general such as gene expression, proliferation and cell death.

It is known that the presence of the inositol 1,4,5-trisphosphate (IP3) receptor is necessary to increase intracellular calcium. The researchers discovered that all four IP3 molecules are required to activate the channel for calcium to increase in a cell and initiate processes like fluid secretion. This ensures that the calcium channel only opens under strict conditions, avoiding harmful discharge that could kill cells, the researchers explained. The study, titled "Defining the stoichiometry of inositol 1,4,5-trisphosphate binding required to initiate Ca^{2+} release," was published in the April issue of the *Science Signaling* journal. It was conducted in collaboration with the University of British Columbia in Canada.



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