Fruits significantly more dangerous for teeth than carbonated drinks

LONDON, UK: Eating fruit such as apples could do up to four times the damage to teeth than carbonated drinks, new research has found. In a study led by Prof David Bartlett at the Dental Institute, King’s College London, scientists looked at links between diet and tooth wear at several sites in the mouth, in more than 1,000 men and women aged 18 to 30.

The researchers looked for damage to the 2 mm surface enamel of volunteers’ teeth and at the dentine, the main supporting structure of the tooth beneath the enamel, and compared what they saw with the results of a questionnaire on the participants’ diet.

The findings showed that people who ate apples were 3.7 times more likely to have dentine damage, while those who consumed carbonated drinks had no additional risk. Drinks most often associated with dietary erosion, particularly cola, showed no increased risk in this study. Fruit juice increased the likelihood of damage to the enamel around the top of the teeth near the gums fourfold, and lager, which is acidic, raised the chances of dentine damage by up to three times.

Bartlett, Head of Prosthodontics at the Dental Institute, said: “Apples are probably worse for erosion than fizzy drinks since they are strongly acidic. However, it would really depend on how you consumed them. What is important is the frequency of consumption—if you took all day to eat the apple then it’s likely to cause erosion, but if eaten within a few moments then it is unlikely. Some people drink fizzy drinks quickly too and these will not cause damage, but if sipped over long periods then they are more damaging.”

According to Bartlett, the results emphasise that dietary advice should be targeted at strong acids rather than some of the commonly consumed soft drinks. The researchers say that they do not want these findings to deter people from consuming fruit and fruit juices because they are important for overall health and well-being.

“The underlying message is that acids in your diet can damage teeth if consumed throughout the day. These acids can dissolve the teeth if the mouth is not given sufficient time to counteract the effect. Snacking on acidic foods throughout the day is the most damaging, whilst eating them at meal times is much safer,” Bartlett said.

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Abu Dhabi: The Abu Dhabi Medical Distinction Award organizing committee announced today that it has received 127 nominations from various public and private health facilities and educational institutes in the Emirate of Abu Dhabi for the Abu Dhabi Medical Distinction Award.

Launched in July 2011 by the Health Authority – Abu Dhabi (HAAD), the award aims to acknowledge professionals who have contributed to the improvement and enhancement of the healthcare system, encourage medical and scientific research, honor voluntary work and promote philanthropy.

According to the organizing committee 101 applications met the standard criteria and were presented to the Awards Steering Committee for further evaluation.

Dr. Mohammed Bader Al Sebei, Award Executive Director and Director of Health System Compliance at HAAD said: “We are very pleased with the amount of nominations received in the first edition of Abu Dhabi Medical Distinction Award. Health care facilities and educational institutes have shown a high level of professionalism and quality in their submissions and we expect a fierce competition.”

According to the Award Organizing Committee 21 applications were submitted for Health Administration and Management Distinction Award category, 15 applications for Medical Research Distinction Award category, 13 applications for Medical Teaching Distinction Award category, 13 applications for Clinical Performance Distinction Award category, 13 applications for Allied Health Distinction Award Category, 10 applications for Surgical Performance Distinction Award category, 9 applications for Clinical Diagnostics and laboratory Distinction Award category and another 9 applications for Medical Volunteer Distinction Award category.

1,800 heart attack cases reported in Dubai yearly

Emirates Cardiac Society (ECS) has said facilities operated by the Dubai Health Authority (DHA) receive on an average 15,000 outpatients every year suffering from some form of cardiovascular disease (CVD), Khaleej Times has reported.

“In terms of inpatients, the DHA receives 3,000 patients, of which 60% are heart attack cases. The other 40% are cases of heart failure, valvular heart disease and so on,” said Dr Fahad Omar Baslaib, president of ECS and head of cardiology department at Rashid Hospital. One in four deaths in the UAE is attributed to cardiovascular disease.
Scientists have created the world's smallest electric motor, made from a single molecule.

The tiny gadget is expected to lead to new devices that can be used in medicine and engineering.

The microscopic motor is just one nanometre across, about 60,000 times smaller than the width of a human hair.

Team leader Dr Charles Sykes, from Tufts University in Boston, U.S., said: "There has been significant progress in the construction of molecular motors powered by light and by chemical reactions, but this is the first time that electrically-driven molecular motors have been demonstrated, despite a few theoretical proposals."

"We have been able to show that you can provide electricity to a single molecule and get it to do something that is not just random."

The scientists, who describe their achievement in the journal Nature Nanotechnology, used a state-of-the-art low temperature scanning tunnelling microscope, which uses electrons instead of light to "see" molecules.

The microscope's metal tip provided an electrical charge to a butyl methyl sulphide molecule placed on a conductive copper surface.

This caused compass needle-like "arms" of carbon and hydrogen atoms to rotate around a central axis.

Direction and speed were affected by temperature. The scientists found that a freezing minus 288C proved ideal for tracking the motor's motion. The motor span much faster at higher temperatures, making it difficult to observe and control.

Dr Sykes added: "Once we have a better grasp on the temperatures necessary to make these motors function, there could be real-world application in some sensing and medical devices which involve tiny pipes. Friction of the fluid against the pipe walls increases at these small scales, and covering the wall with motors could help drive fluids along."
Certain oral bacteria could signal pancreatic cancer

LONDON, UK/LOS ANGELES, US: Particular types of oral bacteria, some of which are found in gum disease, are associated with the development of pancreatic cancer, a study published in the British journal Gut has reported. According to the U.S.-American researchers who conducted the study, the finding might make it possible to halt the progress of one of the most difficult cancers to treat by altering the balance of bacteria. Pancreatic cancer usually spreads very quickly, and only around one in 20 patients is still alive five years after the diagnosis.

The researchers suggest that levels of certain bacteria could be used as a non-invasive and accurate screening test for pancreatic cancer, with the promise of earlier detection for a disease that has no clear symptoms in its early stages.

The study findings are based on an initial comparison of the bacteria found in the saliva of ten patients with pancreatic cancer that had not yet spread and ten healthy people, matched for age and sex. They found significant differences between the bacterial colonies in the two groups, with 31 additional species and 25 fewer species found in the saliva of the cancer patients compared with the control patients.

The researchers checked saliva samples from a further 28 pancreatic cancer patients and 28 healthy people to verify their findings. Furthermore, they examined saliva samples from 28 patients with chronic inflammation of the pancreas (chronic pancreatitis), which is associated with an increased risk of developing pancreatic cancer.

Amongst six suspicious species, two (Neisseria elongata and Streptococcus mitis) appeared significantly less often in the mouths of the cancer patients than in those of their healthy peers, and levels of Granulicatella adiacens (another species) were significantly higher.

The combination of N. elongata and S. mitis accurately differentiated between healthy patients and those with cancer in more than 80 per cent of cases. Furthermore, the research team found similar differences in the prevalence of S. mitis and G. adiacens between the chronic pancreatitis samples and the saliva of healthy people. It is not yet clear whether the presence of particular types of bacteria is a cause or effect of pancreatic cancer, the authors say. However, their findings corroborate previous research that has indicated that oral bacteria play a role in the development of pancreatic diseases.

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Ergonomic and/or lightweight handpieces may help to reduce the risk of certain musculoskeletal disorders (MSDs) such as carpal tunnel syndrome (Dong 2006). Advances in technology have provided improvements in ergonomics, thereby, helping to extend the longevity and careers of dental professionals. Improved technology along with normal and neutral positioning of the body, spine, and hands will work together for positive health.

Over the years, poor posture can affect the musculoskeletal system, which can lead to other complicating health factors. Although, poor posture habits have been created throughout life, it is not too late to learn ergonomic principles that can contribute to a long-lasting, pain-free way to practice with less fatigue. Learning and practicing good posture while working should be one of the primary goals for increasing and continuing work efforts.

Another effort on the behalf of the clinician is to engage and embrace new technology and allow that technology to work for you. Many clinicians are intimidated by technology and hesitate to make changes, although these changes are for the best.

Repetitive stress injuries (RSI) are defined as cumulative trauma disorders resulting from prolonged, forceful, or awkward movements. These movements result in damage to the muscles, tendons and nerves (Nainzadeh 1999).

Because clinicians are at risk for developing wrist injuries, ergonomic considerations are very important. The correct grasp on instruments, power scalers or dental equipment will help to prevent RSI. The use of powered scaling devices is one of the prevailing recommendations for reducing these injuries. Ergonomically designed ultrasonic equipment includes scaling units with rotating cables and inserts with balanced handpieces. Power scalers must have a light modified pen grasp.

The advantages of the light grasp are tactile sensitivity, patient comfort and reduced fatigue. In addition, the clinician has the advantage of rolling the handpiece between the fingers to have continuous access to the tooth surface, line angles and interproximal and subgingival areas. In other words, the equipment is doing the work; the clinician is guiding it.

Another area of concern is the management of the cords coming off handpieces, equipment and units. Equipment that must have a power cord revisits the fact that improper management and poor design of the cords can increase drag on hand, wrist and arm. This in turn increases the risk of repetitive injuries, as your fingers must continually counter the force of the cord drag.

The new Midwest® RH Freedom® handpiece is cordless, balanced, lightweight and easy to maneuver. Because of the diameter of the handpiece and lack of a cord, it takes less of a pinch grip and no drag to set up ergonomic advantages. This allows the hygienist to take any position around the patient’s head to maintain proper ergonomic angles in the arm and wrist. Combine these features with the cordless foot pedal and it predicts less fatigue and better ergonomics.

In a survey with hygienists, 100 percent of the hygienists approved of the weight of the cordless handpiece with the attached disposable prophy angle. In addition, 90.9 percent found that the Midwest RH Freedom handpiece was easier to maneuver than a corded device. 95.9 percent of hygienists rated their fatigue light to none at the end of the day using the Midwest RH Freedom handpiece versus only 75 percent indicating light to no fatigue when using their current polishing handpiece.

A remarkable difference!

Modern technology supports ergonomics, and therefore, aids in promoting the longevity of the clinician and comfort for the patient when supported with proper posture and technique. Many times technology is not maximized to the fullest, therefore, limiting the benefits. Take advantage of modern advancements in engineering and design and allow your equipment to work for you.
Orthodontic tooth movement results from forces applied to teeth that evoke cellular responses in the teeth and their surrounding tissues, including the periodontal ligament (PDL), alveolar bone and gingiva. It is advantageous for the orthodontist to know the details of the biological events that unfold during tooth movement because some of these details may differ from one person to another, owing to variables such as gender, age, psychological status, nutritional habits and drug consumption.

The purpose of this article is to emphasize that orthodontics is a field of endeavor in which mechanics and biology are integrated, and to stress the reality that tooth movement is conducted in individual human beings, each with a unique and intricate physiological system. Biological variations may be the foundation of the differences observed in the outcomes of orthodontic treatment between patients with similar malocclusions treated identically.

Principles of orthodontic biomechanics are usually taught with the help of a typodont, consisting of artificial teeth embedded in wax. This set-up ignores entirely the biological aspect of tooth movement. In the clinical setting, living patients are进程中, and mechanical forces mobilize their teeth. These movements result from the development of strains in dental and para-dental tissues, followed by modelling and remodelling of these tissues. In some patients, systemic conditions may exist, causing complications such as root resorption, dehiscences and fenestrations of the alveolar bone. Hence, clinical orthodontics must be viewed as a specially designed environment in biology, all the way from the molecular level. As a clinical profession, it must be based on a commanding knowledge of medicine, biology, physiology, and pathology. The goal of this article is to enhance the biological awareness of the orthodontic practitioner in order to minimize or avoid tissue damage during tooth treatment. It will demonstrate that this objective may be achieved by focusing closely on the nature of root movements, and avoiding the dogmatic following of “prescription” methods that promise “automatic” correction of all malocclusions.

Tissue remodelling and orthodontic tooth movement

The actual rate of tooth movement may depend on the rate of bone turnover. The latter was modified pharmacologically in rats undergoing maxillary mesial movement, by inducing either hypothyroidism or hyperthyroidism (Verna et al., 2000). In rats with high bone turnover, the rate of tooth movement was increased significantly in animals with a low turnover. Although all teeth had been moved in the same manner (controlled continuous force magnitude, direction and rate of rotation differed, depending on the metabolic state of the animal), various histological sections from the jaws of these rats (Verna et al., 2000) showed numerous osteoclasts to this site. Thus, it is advantageous for the orthodontist to know the details of the biological events that unfold during tooth movement. Rats that were exposed to light forces for 2 or 12 hours per day for 21 days, and were subjected to orthodontic force only during the light period, presented doubling of the rate of tooth movement and bone remodelling, as compared with animals that received the force during the 12 hours of daily darkness (Miyoshi et al., 2001).

The realisation that tissue remodelling in orthodontics is mediated by the biologically active components, including fibroblasts, root and bone surface lining cells, endothelial, epithelial, and various different leukocytes, prompted clinical investigators to apply physical and chemical agents, concomitant with orthodontic forces in order to augment the effect of the mechanical forces. In this vein, Twedt (1965) used local application of heat to para-dental tissues surrounding orthodontically treated teeth. Davidovitch et al. (1980) used minute electric currents, and Blechman (1989) advocated the use of static magnetic fields. Davidovitch et al. placed the electric current near the teeth. In vivo experiments with magnetic fields, causing teeth to move faster. However, an experiment carried out by coworkers revealed that magnets do not speed up the mesial movement of maxillary molars, and actually increase root resorption in early phases of treatment.

Utilization of thermal agents in attempts to increase the pace of root movement in rat's incisors was investigated by Sheets and Keeling (1992). In that experiment, maxillary molars were subjected to thermotherapy, with the help of a typodont, containing a local application of heat. This hypothesis was confirmed by Shimp et al. (2005). These investigators moved molars lingually in young (13-week-old) and in adult (29-week-old) rats, and reported that teeth are more resistant to thermotherapy, or to increase the pace of root movement in rat's incisors, with the help of a typodont, containing a local application of heat. This hypothesis was confirmed by Shimp et al. (2005).

The reports cited above suggest that the extent of tissue remodelling and the rate of tooth movement can be significantly influenced by numerous factors capable of interacting with para-dental cells that received the force. However, this is not the case of the skeleton, loads like weight, gravity prompt cells to rearrange their cells to light forces initially, in order to increase the pace of root movement significantly with-coupled with orthodontic forces. In summary, the role of age on the tissue response to orthodontic forces has been studied in different experimental conditions since Hunter, in the 18th century, and probably earlier. Hunter observed that orthodontic treatment reached the tooth more quickly in children than in adults. Children, therefore, are already subjected, when treated, to subjections, to light forces initially, in order to increase the pace of root movement significantly with-coupled with orthodontic forces. In summary, the role of age on the tissue response to orthodontic forces has been studied in different experimental conditions since Hunter, in the 18th century, and probably earlier. Hunter observed that orthodontic treatment reached the tooth more quickly in children than in adults. Children, therefore, are already subjected, when treated, to subjections, to light forces initially, in order to increase the pace of root movement significantly with-coupled with orthodontic forces.
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Dental Tribune

Medical problems that involve one or more of the tissue systems. These conditions, and the medications used to treat them may have profound effects on the response of oral and para-dental cells to mechanical loading.

Endocarditis is a life-threatening disease, requiring primary prevention in the form of administration of antimicrobial agents prior to certain orthodontic procedures. The orthodontist must weigh the risk of endocarditis against the risk of an adverse reaction to the prescribed antibiotic therapy. Fortunately, most orthodontic procedures do not cause bacteraemia. Lauer et al. (1992) reported a case of a 5-year-old child from children 50 seconds after taking dental impressions, separator placement, band placement and insertion of an adjusted arch wire. Significant bacteraemia was found only after separator placement.

Orthodontic braces, fixed and removable, can accumulate bacterial plaque that may be harmful to oral soft and hard tissues. This problem has been addressed by adding antimicrobial agents to bracket bonding materials, elastic bands and resin casts to enhance their antimicrobial properties (Ohman et al., 2002). Likewise, coating teeth in orthodontic patients with a chlorhexidine varnish decreases Streptococcus mutans levels in the patients' saliva (Beyth et al., 2005).

Children treated for childhood cancers with both radiation and chemotherapy often exhibit disturbances in dental development, such as tooth agenesis, teeth with both short roots or with roots altogether. A retrospective analysis of treatment outcome in ten orthodontic patients with such a background revealed that five had been treated with nickel-sensitive patients. The addition of benzalkonium chloride to a composite resin added antimicrobial properties to the composite without altering its mechanical properties (Ohman et al., 2002).

Allergic reactions to orthodontic materials include latex, resins, adhesives containing endogenous hormones produced by the hypothalamic-pituitary-adrenal (HPA) axis, and the immune system. Since osteoclasts and odontoclasts are derived from the immune system, modification of their function by psychological stress may affect the process of root resorption. A recent survey revealed that orthodontic patients with psychological stress were at a high risk of developing excessive root resorption during the course of orthodontic treatment (Davidovitch et al., 1999). Furthermore, patients who are non-compliant, poor co-op-erators and those who frequently break ap-pointments and/or appliances do it most likely because of psychological stress. Often, these non-compliant individuals express their objection to orthodontic care that had been imposed on them by their parents through their behaviour. In these individuals, the rate of orthodontic root resorption was found to be significantly higher than in compliant patients.

Among the reasons for partial and total loss of scalp hair is psychological stress, probably through effects on the HPA axis. Davidovitch et al. (1999) reported a case of an adolescent orthodontic patient who developed alopecia totalis during orthodontic treatment. A review of the case revealed a normal medical background with the presence of a psychological stress-owing to exposure to orthodontic mechanotherapy. Consequently, the patient's paediatrician and the endocrinologist concluded that his alopecia had been most likely caused by psychological stress evoked by the orthodontic treatment.

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Planmeca and Materialise Dental announce co-operation

The Finnish dental equipment manufacturer Planmeca Oy and Belgium-based Materialise Dental started a joint effort that benefits users of Planmeca ProMax 3D imaging devices. Planmeca ProMax 3D users now can directly order Materialise Dental SurgiGuide® drill guides based on the implant planning done in the Planmeca Romexis software.

The Planmeca ProMax 3D customers can order Materialise Dental SurgiGuide® drill guides directly from Planmeca Romexis software. This opens new perspectives for Planmeca’s cone beam users, who can transfer their implant planning from the Planmeca Romexis software to the patient’s mouth, using the trusted technology of SurgiGuide® drill guides.

A variety of implants can be planned in Planmeca Romexis with all available tools. This information is sent, together with the DICOM images, to Materialise Dental as a SurgiGuide® order. Materialise Dental will then import the data in their SimPlant® software, and contact the customer to verify and discuss the planning in SimPlant®.

SurgiGuide® options are discussed to find the optimal solution for transferring the implant planning to the mouth of the patient, based on the specifics of each case, the surgeon’s preferences and implant systems used. This way, all technicalities are covered by the service. After production, the customer receives the SurgiGuide®, ready for use in surgery.

“This new cooperation will help the users of our Planmeca ProMax 3D cone beam X-ray devices to further benefit from their system. The implant planning can be done conveniently in Planmeca Romexis software, the same software used for image capturing, and whenever there is a need for guided surgery, Materialise Dental’s prominent SurgiGuide® drill guides can be ordered and the process finalised with Materialise Dental’s professionals”, states Ms Helianna Puhlin-Nurminen, Vice President of Digital Imaging and Applications Division at Planmeca Oy.

“We are excited about this co-operation with Planmeca as a leading cone beam manufacturer,” says Mr Bert Van Roie, International Product Manager SimPlant® and SurgiGuide®.

“Since years our SurgiGuide® drill guides ensure a fully predictable transfer of the digital implant planning from SimPlant® to the mouth of the patient. Now we can offer the same benefit to all Planmeca users, directly from within Planmeca Romexis.”

Managing bone with Acteon

The Thailand subsidiary of French dental manufacturer Acteon has announced to hold a seminar and workshop on the issue of bone management next January in Bangkok, Thailand. The seminar will be joined by Drs Fred Bergmann and Surakit Visutvat-tanakorn as well as Profs Fumihiko Watanabe and Lars Sannerby.
SybronEndo has announced that it has acquired the endodontic business unit from Discus Dental, a U.S. dental company currently held by Philips. The takeover will take effect immediately and includes Discus’ entire product range of irrigation systems and other products under the Smart Endo brand, as well as patents and licenses, the company said in a press release.

On their websites, both companies advise customers to contact their SybronEndo representatives for all future Discus Dental product orders. Further information were not disclosed.

SybronEndo is a business division of Sybron Dental Specialties, a California-based dental conglomerate comprising business units involved in orthodontics, endodontics, infection prevention and dental implants. As part of the Kerr Corporation, the company has operated in the dental market for almost 100 years.

Zimmer reveals NextGen implant with osseointegration functionality

ATHENS, Greece: A Tapered Screw-Vent implant featuring osseointegration was revealed by Zimmer Dental this morning at the Annual Congress of the European Association of Osseointegration (EAO) in Athens in Greece. The new implant has an osteoconductive midsection made of Trabecular Metal, a highly biocompatible material with a structure similar to cancellous bone, and is compatible with the company’s Tapered Screw-Vent Surgical Kit and range of prosthetics.

Trabecular Metal has been already used for more than a decade in many of Zimmer’s orthopaedic devices. Made from tantalum, a rare and highly corrosion resistant metal already used for dental implants since the 1950s, it offers high porosity that allows bone around implant sites to grow not only onto the material but also into it—a process known as osseointegration.

Zimmer acquired the technology from an acquisition of the Implex Corporation in 2003.

New light on oral leucoplaikia

Chemical luminescence can aid in the visualisation of oral leucoplaikia, new research has found. Following oral examinations, researchers at King’s College London Dental Institute evaluated the accuracy of chemiluminescence in detecting potentially malignant oral disorders using a commercially available detection kit.
GENGIGEL®
High molecular weight
hyaluronic acid (Hyaluronan)
BIO-TECHnologically manufactured
A ‘world’s hottest curry-eating contest’ turned into a disaster after two of the participants were admitted to hospital, the Scottish Ambulance Service has said.

The ‘Killer Kismot Curry’ contest, held in aid of a children’s charity, took place at the Kismot Indian restaurant in Edinburgh on Saturday afternoon.

While battling it out, some of the contestants became unwell, reacting badly to the curry by vomiting and fainting.

Competitors were warned in advance that they could be affected during the contest, which involved eating a progressively spicier dish in each round.

According to curry house owner Abdul Ali, half of the diners dropped out after seeing others fall ill.

Medics from the British Red Cross were at the scene but the casualties were too serious for them to deal with and the ambulance service had to intervene.

One of those affected, Korean student Curie Kim, 21, told the ‘Edinburgh Evening News’ how she had to go to the Edinburgh Royal Infirmary (ERI) twice.

She said: “I’ve always enjoyed spicy foods and thought this was for a good cause. But it came with a price, I had to be taken to the ERI twice.

“I first went to hospital at around 4pm and the second time was at 9pm. It got really bad. I have never endured such pain in my life.”

Mike Lavin, from Polwarth, came fifth in the contest but was also taken to hospital by ambulance.

Despite the bad reaction to the hot dishes, there are no plans to cancel next year’s contest.

Dental students in India face new regulations

NEW DELHI, India: The Indian Ministry of Health and Family Welfare recently approved a revision of course regulations for Bachelor of Dental Surgery (BDS) programmes, making it mandatory for dental undergraduates to participate in a paid, rotating one-year internship after four years of theoretical training. The new regulations will first be applied to students who started their BDS in 2008/2009 and be implemented in dental schools around the country in Autumn.

Internships were temporarily dropped from BDS courses in 2007 after the Dental Council of India found out that many students, especially from private schools, had tried to fake certificates instead of actually doing hands-on training. It also contributed to increased stress levels amongst dental students owing to the high number of subjects in the final year, according to a 2009 study.

It is estimated that India currently has the largest number of dental schools in the world. However, experts say that the country is putting too many dentists on the market, making it difficult for BDS graduates to find a job.

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