

# DENTAL TRIBUNE

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## AEEDC Dubai Ranked Third Globally and Receives Recognition from American Dental Association

Dubai: The Dubai Health Authority announced earlier its full support to the fifteenth edition of the UAE International Dental Conference and Arab Dental Exhibition (AEEDC Dubai) which will be held from 1 to 3 February at the Dubai International Convention and Exhibition centre, under the patronage of H.H. Sheikh Hamdan Bin Rashid Al Maktoum, Deputy Ruler of Dubai, Minister of Finance and President of the Dubai Health Authority.



Qadhi Saeed Al Murooshid, Director General of Dubai Health Authority



Dr. Tariq Khoory, the Director of the Dental Department at the Dubai Health Authority

Qadhi Saeed Al Murooshid, Director General of Dubai Health Authority, said "we are keen to support all medical conferences and exhibitions held in the UAE for their excellent revenues on all sectors in the country, including; economy, trade, tourism and other sectors.

Such events motivate the economy and development to move forward, and develop the skills and capabilities of the public and private sectors." He continued; "Qualified Medical events such as AEEDC Provide excellent opportunities for doctors from the region and introduce them to the latest scientific

developments in the fields of dentistry, in addition, they provide them with the opportunity to engage with international dentists.

This initiative translates the vision of His Highness Sheikh Mohammed Bin Rashid Al Maktoum, Vice President and Prime Minister of the UAE and Ruler of Dubai, and H.H. Sheikh Hamdan bin Rashid Al Maktoum, Deputy Ruler of Dubai, Minister of Finance and President of Dubai

Health Authority." HE added that the Dubai Health Authority is eager to provide the best dentistry services in all its medical centres located in Dubai.

He also pointed out that the public and private dental services in Dubai are very efficient and are at the same level with those in developed countries. He declared that AEEDC Conference and Exhibition is getting bigger and better every year, as

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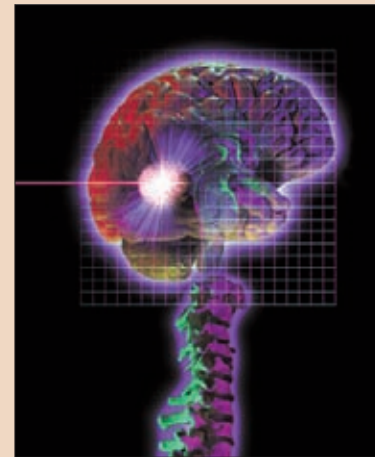
## Blood protein linked to stroke in diabetes

Scientists have discovered why people with diabetes are more likely to experience severe strokes leading to greater damage.

When blood sugar levels are high - which happens in diabetes - a blood protein called plasma kallikrein inhibits the normal blood clotting process during a stroke, leading to more bleeding on the brain, the scientists suggested. Strokes are caused by either a blood clot in a vessel stopping the flow of blood to the brain (ischaemic stroke) or by a burst blood vessel (haemorrhagic stroke). About seven out of 10 strokes are caused by blood clots.

Past research has associated diabetes and raised blood sugar levels with increased bleeding on the brain during haemorrhagic stroke, but the reason for this is unclear.

Scientists from the Joslin Diabetes Centre in Boston reached their conclusion after injecting blood into the brains of rats with and without diabetes. The diabetic rats bled over a much greater area of the brain. But when the diabetic rats were also injected with a molecule which inhibits the activity of



plasma kallikrein, the amount of damage to the brain was similar to that in non-diabetic rats.

When pure plasma kallikrein was injected into the rats' brains, it rapidly increased major bleeding in the animals with diabetes but had little effect on those without the condition, the researchers wrote in the journal Nature Medicine.

The scientists say their work suggests that blood sugar levels at the time of having a stroke is the most important factor for the increased bleeding seen in diabetes patients. [1]

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## New device lets patients rest from dental drill



**LONDON, UK/LEIPZIG, Germany:** Noise-cancelling technology could soon be available in dental practices. Clinicians from the Kings College in London in the UK said to have invented a device that blocks out the shrill sound generated by modern dental air turbines a main cause for anxiety among dental patients.

Noise cancelling or Active Noise Reduction is already in use in headphones and to cancel out noise from engines inside road

tunnels or airliners. It is blocking out sound through the emission of own-generated sound waves that cause interferences.

The new device, containing a microphone and a computer chip, was developed in regard to the high-pitched sound caused by air turbines in dental handpieces. According to the researchers, it can be easily plugged in between mobile music players and headphones.

They are now looking for investors to bring the device to the dental market. [DT](#)

## Booze And Obesity 'Cause High Cancer Rate'

**Unhealthy lifestyles and heavy drinking are contributing to high rates of breast cancer in Britain, according to a new report.**

Experts from the World Health Organisation (WHO) blame alcohol consumption and obesity levels for the number of cancer cases.

Overall, the UK is 22nd of the top 50 countries for cancer rates, with Denmark in first place. But Britain ranks 11th for rates of breast cancer, according to the report, which sees the country placed 33rd for all cancers among males and 12th for females.

But the analysis also shows rates of cancer overall are higher in men than women. On breast cancer, more women per 100,000 develop the disease in the UK (260.5) than in France (254.9),

Italy (251.6) and Germany (245.7).

The highest rates are in Denmark (325.3), New Zealand (287.1) and Ireland (285.1). Denmark is also shown to be the cancer capital of the world (326.1) for all forms of the illness.

Experts believe some of the explanation for Danish data could be down to better diagnosis but noted high rates of smoking among Danish women.

Professor Martin Wiseman is medical and scientific adviser for the World Cancer Research Fund, which compiled the league tables based on WHO data. He said: "We know that people in high-income countries are more likely to be overweight, to drink a lot of alcohol and to be inactive.

"When you look at the list, it is clear that the countries that do worse for these factors tend to be



nearer the top. "The high incidence rates in the UK, Denmark and other high-income countries are not inevitable and lifestyle changes can make a real difference to people's risk." [DT](#)

### [DT](#) Page 1

the number of participating local and international dental companies is increasing steadily. In addition, AEEDC Dubai features excellent specialised courses, workshops and symposiums that aim to update the dentists' knowledge and introduce them to the latest international updates."

Al Murooshid also mentioned that this success achieved by AEEDC will encourage Dubai to host bigger specialised international conferences and exhibitions. The Dubai Health Authority had formulated a specialised program to adopt new technologies in this field. In addition, the DHA provides the latest medical equipment for hospitals and health centres, as an initiative to improve the health services and treatment methods and access to global technologies.

Dr. Tariq Khoory, the Director of the Dental Department at the Dubai Health Authority and the Honorary Chairman of AEEDC Dubai praised the significant in-

crease at the AEEDC Dubai, in terms of the number of companies and dentists participating in the conference and exhibition. Dr. Tariq also mentioned that this large turnout is due to the global status enjoyed by Dubai as a regional hub for all international companies looking to market and promote their products to the entire region through Dubai.

Dr. Khoory added "AEEDC Dubai celebrates its fifteenth anniversary this year; therefore the scientific committee has organized a special scientific program filled with outstanding courses, workshops and symposiums that will add to the experience and knowledge of each participant. A lot of scientific and business activities are taking place this year as well, AEEDC Conference and Exhibition will not be like any of its previous editions."

"After 15 years of evolutionary increase in size, content, and participation, the AEEDC Conference has become one of the world's top International scientific meetings. The conference and its other educational scien-

tific activities have dedicated a total of 49 credit hours this year." Said Dr. Khoory

Every year, the scientific committee of AEEDC organizes three days pre-conference courses where dentists can learn and participate in hands-on courses led by leaders from the dental community. The Dubai World Dental Meeting (DWDM) is a continuing education program that brings together practice, research, and academia, in addition to industry leaders from every corner of the dental profession.

Dr. Khoory praised the DWDM program and said that "The program is designed for dentists who aspire to improve themselves and develop their skills in order to meet the commitments of their everyday professional life.

The sessions provide an ideal environment for the entire dental team, with topics covering Implantology, Endodontics, Orthodontic, Restorative Dentistry, Infection Prevention & Control and Dental Clinic Management." [DT](#)

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# New treatment helps beat depression

A grandmother who had a long battle with depression has become the first person in the world to benefit from life-changing neurosurgical treatment.

Sheila Cook, from Torquay in Devon, suffered from depression for more than a decade and attempted to take her life on more than one occasion. The 62-year-old is now beginning to enjoy life again after pioneering treatment, which accurately targets brains networks involved in depression, was offered to her in Bristol.

Mrs Cook - whose illness had stopped responding to conventional treatments - was offered deep brain stimulation (DBS) in the first trial in the world that stimulates two different brain networks that are involved in depression. Although DBS provided some temporary response, she relapsed and went on to be the first to have further advanced stereotactic neurosurgery, which was carried out in early 2010.

Mrs Cook said: "The effects were remarkable. Within a few weeks my life changed. I read books, did the housework, went for walks and, perhaps most importantly, got to know my family again." Leading the research is Dr Andrea Malizia, consultant senior lecturer in the School of Social and Community Medicine at the University of Bristol and Mr Nikunj Patel, senior clinical lecturer in the Department of Neurosurgery at North Bristol NHS Trust.

## Dental implants see fastest growth in Emerging Markets

NEW YORK, USA/LEIPZIG, Germany: Premium manufacturers are driving the market for dental implants and bone-craft substitutes in countries like China and India, according to iData Research. In a market report, the Canada-based consulting company has forecasted the

In February 2010, Mrs Cook was asked if she would trial a new form of treatment - Anterior Cingulotomy using implantable guide tubes (GTAC), which was developed in Frenchay Hospital, Bristol. Mrs Cook is the first patient to have received DBS and

GTAC treatments. Dr Malizia said: "Mrs Cook has been the first patient in the world to have these two treatments. I'm very pleased to see the second treatment has worked well for her and has been maintained." **DT**



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market volume of both countries for dental implants to exceed US\$400 million by the year 2017. Strong double digit growth rates were also predicted for Brazil, another potent global Emerging Market. **DT**

## Woman regains voice after rare larynx transplant

Complex and rare transplant operation restores women's voice

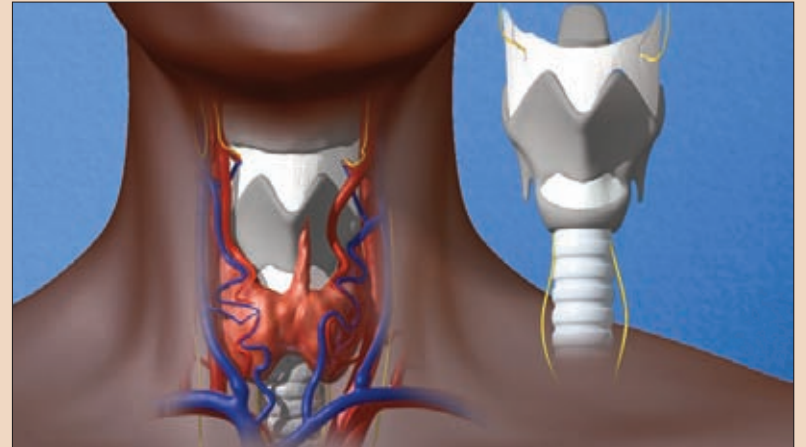
A woman who has been unable to speak for more than a decade has regained her voice after undergoing a rare voicebox transplant.

Brenda Jensen, lost the ability to speak following surgery 11 years ago. Her voice box was damaged after she repeatedly ripped out a breathing tube whilst sedated.

Since then she has been unable to smell or taste food and can

only breathe with the help of a tracheotomy tube. An electronic hand held device that produces an artificial robot-like voice was her only way of speaking to others.

An international team of surgeons - which included Professor



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Martin Birchall from University College London - performed the complex surgery at the University of California Davis Medical Centre, US. More than two dozen surgeons, doctors, nurses and technicians were involved overall.

The 52 year-old-woman spoke her first words just 13 days after the operation. She is now able to speak easily.

Ms Jensen said: "This operation has restored my life. I feel so blessed to have been given this opportunity. It is a miracle. I'm talking, talking, talking, which just amazes my family and friends."

The surgeons removed and replaced Ms. Jensen's larynx (voicebox), thyroid gland and trachea (windpipe) with that from a donor who died in an accident. Surgeons had to work simultaneously on each side of the patient to reconnect the organ and various nerves, veins and arteries.

The new voice sounded hoarse after the operation, but has improved significantly since the transplant. Although the donor organ came from an accident victim, Ms. Jensen's voice is her own and not that of the donor, the surgeons said.

Ms Jensen is now able to smell and taste food and is in the process of relearning to swallow. She hopes to soon be able to eat and drink normally again.

"We are absolutely delighted with the results of this extraordinary case," said Professor Gregory Farwell, at UC Davis Medical Centre and lead surgeon for the transplant. "The larynx is an incredibly complex organ, with intricate nerves and muscles functioning to provide voice and allow breathing."

"Our success required that we assemble an exceptional, multi-disciplinary team, use the most recent advances in surgical and rehabilitation techniques, and find a patient who would relish the daunting challenges of undergoing the transplant and the work necessary to use her new voicebox."

Dr John Williams, Head of Clinical Activities at the Wellcome Trust, which has supported Professor Birchall's research in the past said: "This is a truly extraordinary achievement and a genuine breakthrough."

"Professor Birchall and colleagues have clearly transformed the life of their patient and their work offers much hope both for patients in need of similar procedures and indeed for research into transplantation and regenerative medicine in general." □

# Japanese scientists develop replacement for dental metal

Yvonne Bachmann  
DTI

**HONG KONG/LEIPZIG, Germany:** Scientists from the Kyoto University in Japan reported to have developed a new alloy similar to palladium, a rare metal used in dental restorations. The element was produced by mixing molecules of silver and rhodium, two elements chemically close to palladium, and could be a first step in producing synthetic alternatives for other rare earths, the researchers told the Yomiuri Shimbun newspaper in Tokyo.

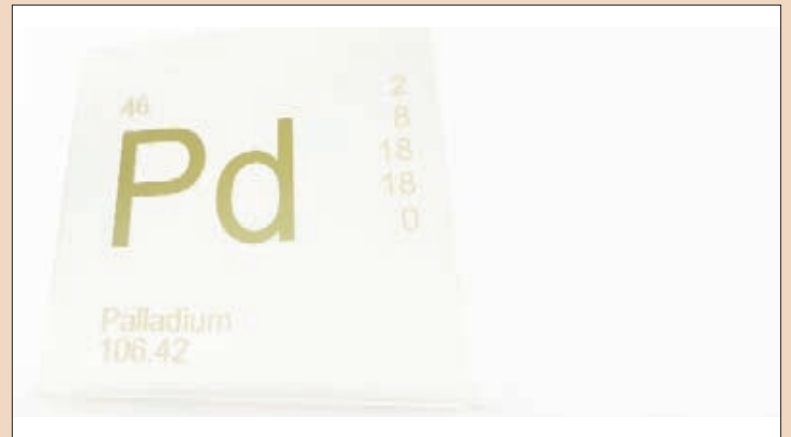
Palladium only naturally occurs in some parts of Russia, South Africa, Canada and the US. Besides dentistry, it is used to produce autocatalysts, jewelry and essential components for consumer electronic products, amongst other things. A 2010 report by US chemical company Johnson Matthey estimates that 5 to 6 per cent of the annual demand comes from dentistry for crowns or bridgework. With an annual demand of 8,5 tons, Japan continues to utilise the largest amount of dental palladium despite other treatment options, such as all-ceramic crowns, according to the same report.

The researchers have begun joint research projects with the Japanese industry, though they said the new alloy will be difficult to produce commercially. Metal experts, however, are sceptical towards the announcement. "It does look like they have managed to create 'nanoparticles'—an often abused phrase—an often abused phrase—of rhodium and silver, which would normally be using traditional melting techniques," Johnson Matthey General Manager Peter

Duncan told the South African Journal Mining Weekly.

"It is very common for Japanese academics to patent anything vaguely new, regardless of its potential in the commercial world."

Japanese experts said that synthetic replacements for rare metals could make Japan more independent from countries like China, which currently produces over 90 per cent of rare metals in the world. □



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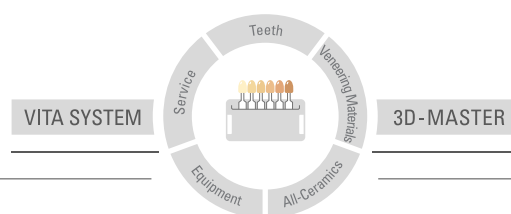
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## Montreal to welcome dentists from around the world



**MONTREAL:** Following a record-breaking attendance year in 2010, over 12,000 delegates are expected to attend the 40th annual Journées dentaires internationales du Québec (JDIQ) to be held in Montreal, Canada, from May 27 to 31, 2011. Canada's largest annual meeting, JDIQ has grown exponentially in recent years. □



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# An Evidence-Based Endodontic Implant Algorithm: Back to the Egg; Concluding Part

Kenneth S. Serota, DDS, MMSc

(mCME articles in Dental Tribune (always page 6) has been approved by HAAD as having educational content acceptable for (Category 1) CME credit hours. Term of approval covers issues published within one year from the distribution date (September, 2010). This (Volume/Issue) has been approved by HAAD for 2 CME credit hours.

An increased uniform amount of coronal dentin significantly amplifies the fracture resistance of endodontically treated teeth, regardless of the post system used or the choice of material for the full-coverage restoration<sup>45</sup>. A recent article by Coppede et al demonstrated that friction-locking mechanics and the solid design of internal conical abutments provided greater resistance to deformation and fracture under oblique compressive loading when compared to internal hex abutments<sup>46</sup>. These two “seemingly” disparate observations define the inherent continuum between natural tooth engineering and the principles of engineering necessary to orthobiologically replicate the native state.

The use of a ferrule or collet and a bonded or intimately fit post-core to restore function and form to an endodontically treated tooth is analogous to the use of a long, tapered friction fit interface with a retaining screw (Morse taper), to secure an abutment to a fixture. In both cases, the role of contact pressure between mating surfaces to generate frictional resistance provides a locked connection. This has been shown to affect the long-term stability of crestal bone support for the overlying gingival tissues and maintains a healthy protective and esthetic periodontal attachment apparatus<sup>47</sup>.

## Human symmetry

The Roman architect Vitruvius' (Marcus Vitruvius Pollio) description of the perfect human form in geometrical terms was a source of inspiration for Leonardo da Vinci, who successfully illustrated the proportions outlined in

Vitruvius' work 'De Architectura'. The result, the Vitruvian man, is one of the most recognised drawings in the world and is accepted as the standard of human physical beauty. Vitruvius theorised that the essential symmetry of the human body, with arms and legs extended, should fit into the perfect geometric forms; the circle and the square. However, Leonardo Da Vinci recognised that the circle and the square were only tangent at one place, the base. Observe the insert in Fig 8. The stabilising platform for the human outlined form begins at that tangent; the intersection is graphically analogous to the structural configuration of platform switching.

In geometry, an oval is a curve resembling an egg or an ellipse. Architects and engineers have used smooth ovate curves to support the weight of structures over an open space literally since the second millennium BC. These arches, vaults and domes can be seen in buildings and bridges all over the world; the most pervasive example being the keystone arches used by the Romans for aqueducts and mills.

An arch directs pressure along its form so that it compresses the building material from which it is constructed. Even a concrete block is readily broken if you hit it on the side with a sledge. But under compression forces from above, the block is incredibly strong and unyielding. Many will remember the weight bearing tripod experiments from grade school where an egg acts as one of three supporting legs of a square section of wood bearing books as the load. The structure could support over sixty books,

almost twenty pounds, before breaking the supporting egg. One need only look at the root trunk and coronal tooth structure of a multi-rooted teeth and it becomes apparent that strength of the tooth form is dependent upon an arch form for its integrity (Figs 8 & 9).

## Optimal engineering

Is it possible for this natural feat of engineering to be biomimetically replicated to the design parameters of osseointegrated implants? There are a number of paradigms that continue to fuel debate in the dental clinical and scientific communities pertaining to the optimal engineering predicates for implant design. These include smooth vs. rough surfaces, submerged vs. non-submerged installation techniques, mixed tooth-implant vs. solely implant-supported reconstructions, Morse taper abutment fixation vs. a butt-joint interface and titanium abutments vs. esthetic abutments in clinical situations where esthetics is of primary concern.

The cone-screw abutment has been shown to diminish micro-movement by reducing the burden of component loosening and fracture. This enables the identification of the effects of the parameters such as friction, geometric properties of the screw, the taper angle, and the elastic properties of the materials on the mechanics of the system.

In particular, a relation between the tightening torque and the screw pretension is identified. It was shown that the loosening torque is smaller than the tightening torque for typical values of the parameters. Most of the tightening load is carried by the tapered section of the abutment,

and in certain combinations of the parameters, the pretension in the screw may become zero.

This enables the identification of the effects of the parameters such as friction, geometric properties of the screw, the taper angle, and the elastic properties of the materials on the mechanics of the system. In particular, a relation between the tightening torque and the screw pretension is identified. It was shown that the loosening torque is smaller than the tightening torque for typical values of the parameters.

Most of the tightening load is carried by the tapered section of the abutment, and in certain combinations of the parameters the pretension in the screw may become zero. This tapered abutment connection provides high resistance to bending and rotational torque during clinical function, which significantly reduces the possibilities of screw fracture or loosening.

## Biomechanics

*'The seed of a tree has the nature of a branch or twig or bud. It is a part of the tree, but if separated and set in the earth to be better nourished, the embryo or young tree contained in it takes root and grows into a new tree.'* Isaac Newton.

Pressure on the cervical cortical plate, micro-movement of the fixture-abutment interface (FAI) as well as microflora leakage and colonisation at and within the FAI are some of the pathologic vectors associated with osseous remodeling, both crestal and peripheral to dental implants<sup>48</sup>.

Occlusal considerations engineered into fixture design should enable optimum load distribution for permanent load stability during functional loading, reduce

functional stress transfer to the interfacial tissues and enhance the biologic reaction of interfacial tissues to occlusally generated stress transfer conditions<sup>49</sup>.

Future modifications to implant biomechanics should focus on designs wherein the osseous trabecular framework retaining the fixture will adapt to the amount and the direction of applied mechanical forces, cope with off-axis loading, compensate for occlusal plane to implant height ratios differences as well as adjusting to mandibular flexion and torsion<sup>50</sup>.

In this new era of implant driven treatment planning, fixtures should be engineered to support single crowns with cantilevers instead of implant/implant or implant/teeth connections for a span of any degree. These engineering design iterations will minimise high-stress torque load at the implant abutment interface and obviate areas with degrees of bone insufficiency.

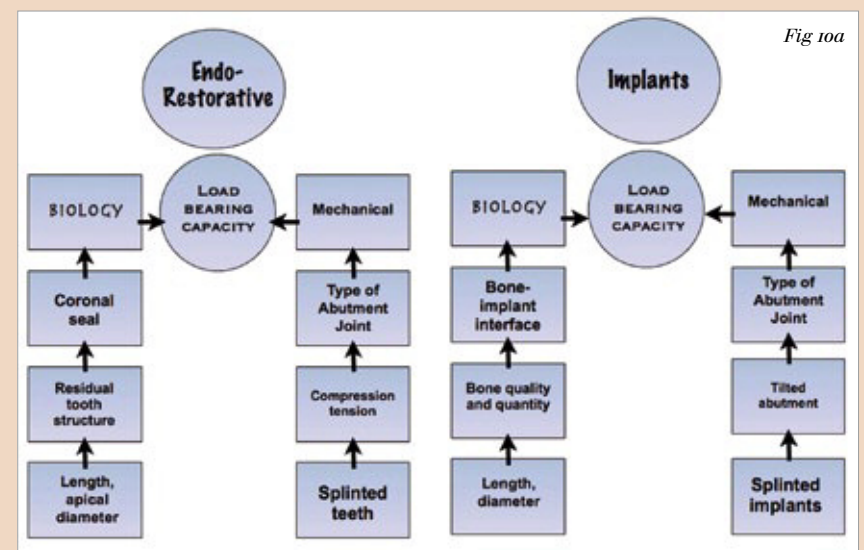
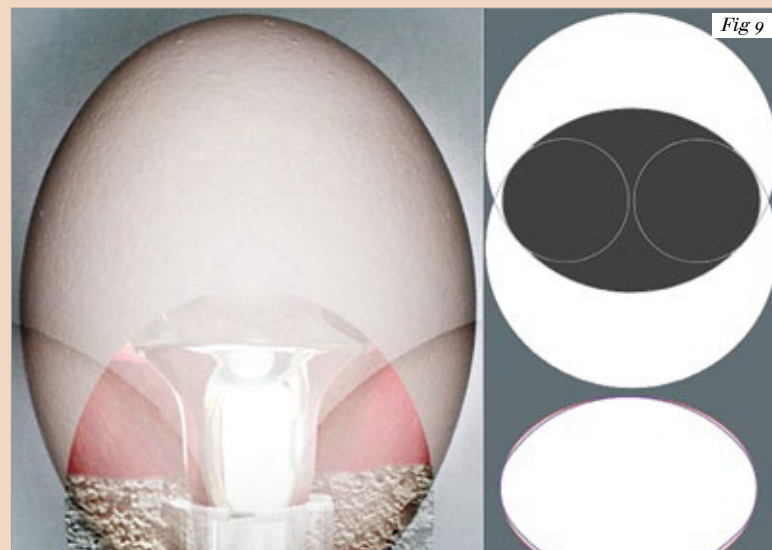
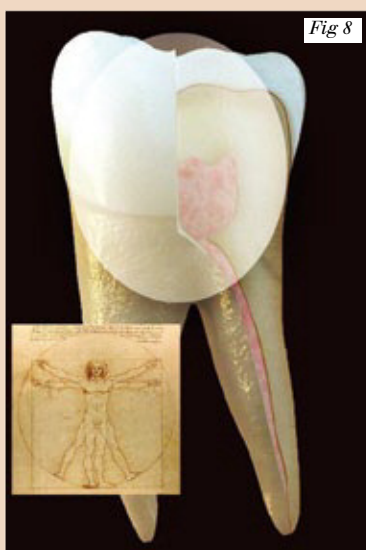
The goal should be to biomimetically replicate the natural state to the greatest degree (Figures 10a and 10b) in regard to load bearing capacity.

## Measuring success

Stable crestal bone levels are the yardstick by which treatment success and health are measured in the orofacial ecosystem, whether it relates to natural tooth retention or restorative and/or replacement rehabilitation. It is therefore surprising that the treatment outcome standards for switched and subcrestally positioned design demonstrated better stress based performance and lower risk of bone overload than the other implant systems evaluated.

## Essential features

Platform switching, together with a stable implant-abutment connection are increasingly accepted essential implant design features required to reduce or eliminate early crestal bone loss. A bacteria-proof seal, a lack of micro-movement due to a long friction grip tapered channel and minimally invasive second-stage surgery without any major trauma for the periosteal tissues are also important factors in preventing cervical bone loss.



A preconfigured platform switched design has a significant impact on the implant treatment in esthetic areas as not only is the tissue biotype preserved, but it has been shown to osseointegration accept crestal bone remodeling and resorption of up to 1.5 – 2mm during the first year following fixture placement and prosthetic insertion<sup>51</sup>.

The concept of “biological width” outlines the minimum soft tissue dimension that is physiologically necessary to protect and separate the osseous crest from a healthy gingival margin surrounding teeth and the peri-implant environment.

A bacteria-proof seal, the lack of micro-movement associated with a friction grip interface and a minimally invasive second-stage surgery (where indicated) without any major trauma to the periosteal tissues, are also important factors in preventing cervical

bone loss. The literature suggests that the stability of the implant/abutment interface may have an important early role to play in determining crestal bone levels<sup>52</sup>.

Tarnow’s seminal study on crestal bone height support for the interdental papilla clearly showed the influence of the bony crest on the presence or absence of papillae between implants and adjacent teeth<sup>53</sup>. Twenty years later, logic dictates that anticipated early crestal bone loss and diminished, albeit continual loss, during successive years of function, should have been engineered out of the substitution algorithm for peri-implant tissues<sup>54</sup>.

**Platform switching: By default or by design**

‘There is no logical way to the discovery of elemental laws. There is only the way of intuition, which is helped by a feeling for the order lying behind the appearance,’ Albert Einstein.

Platform switching theorises that by using an abutment diameter of a lesser dimension than the periphery of the implant fixture, horizontal relocation of the implant-abutment connection will reduce remodeling and resorption of crestal bone after insertion and loading.

The concept implies that peri-implant hard tissue stability will engender soft tissue and papilla preservation. Maeda et al reported that stress levels in the cervical bone area peripheral to a fixture were reduced when a narrow diameter abutment was connected in comparison to a size commensurate with the fixture diameter<sup>55</sup>.

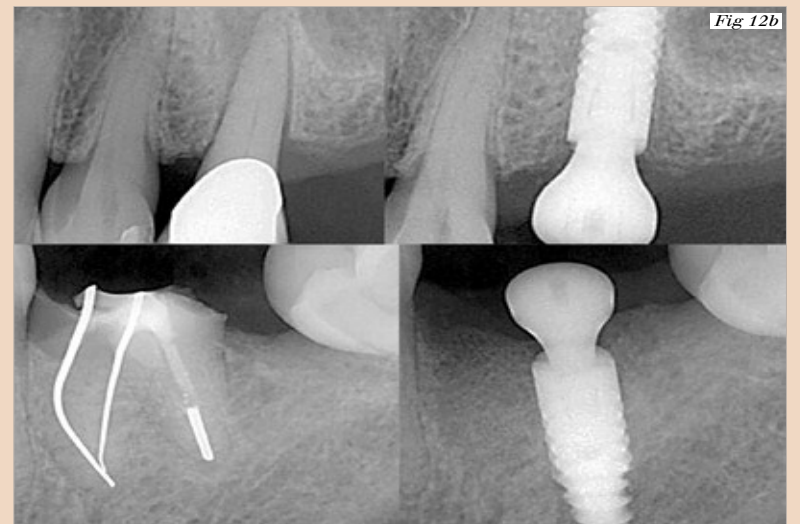
The authors concluded that the biomechanical advantage of shifting stress concentrations away from the cervical area will diminish their impact on the biologic dimension of hard and soft tissue extending apically from the FAI (Fig 11a, 11b and 11c). The inherent disadvantage is that it shifts stress to the abutment screw with the potential for loosening or fracture.

Ericsson et al<sup>56</sup> detected neutrophilic infiltrate in the connective tissue zone contacting the implant-abutment interface. The facility by which platform switching/shifting reduces bone loss around implants has been investigated by Lazzara et al<sup>57</sup>. The authors hypothesised, that if the abutment diameter matches that of the implant, the inflammatory cell infiltrate is formed in the connective tissue contacting the microgap created at the FAI.

If an abutment of narrower diameter is connected to wider neck implant, the FAI is shifted away from the outer edge of the implant, thus distancing inflammatory cell infiltrate away from bone. Hypothetically, less crestal bone loss is expected and an increased implant/abutment disparity allows more stable peri-implant soft tissue integration.

Baggi et al conducted a finite element analysis experiment to define stress distribution and magnitude in the crestal area around three commercially available implants – ITI Straumann® (Institut Straumann AG, Basel CH), Nobel Biocare (Nobel Biocare AB, Goteborg SE) and Ankylos C/X (Dentsply-Friadent, Mannheim, DE)<sup>58</sup>. Numerical models of maxillary and mandibular molar bone segments were generated from computed tomography images and local stress vectors were introduced to allow for the assessment of bone overload risk. Different crestal bone geometries were also modeled.

Type II bone quality was approximated and complete osseous integration was assumed. It was concluded that the Ankylos C/X implant based on its platform

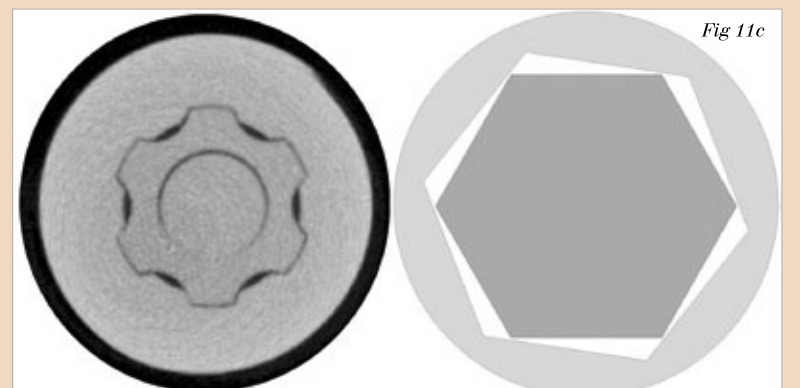
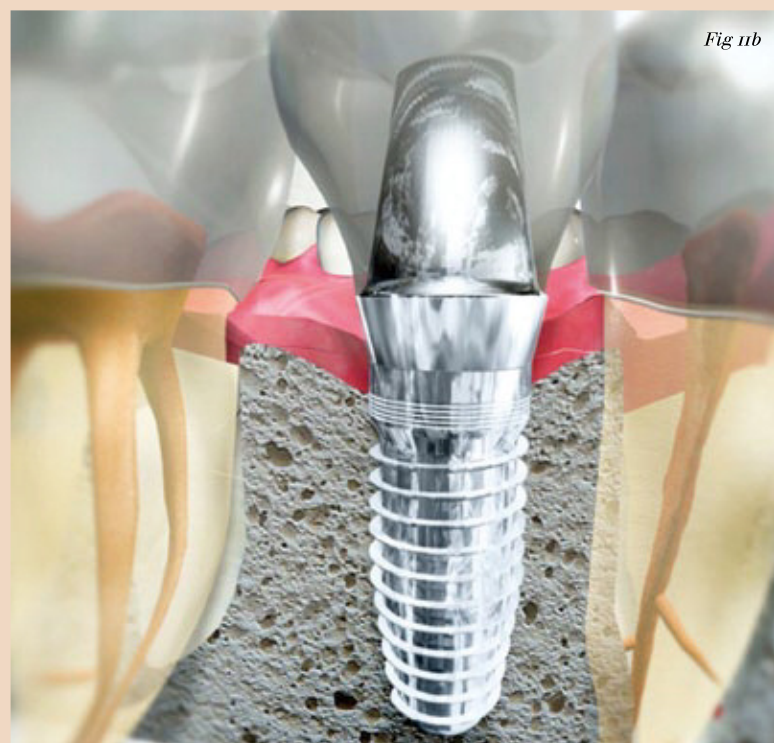
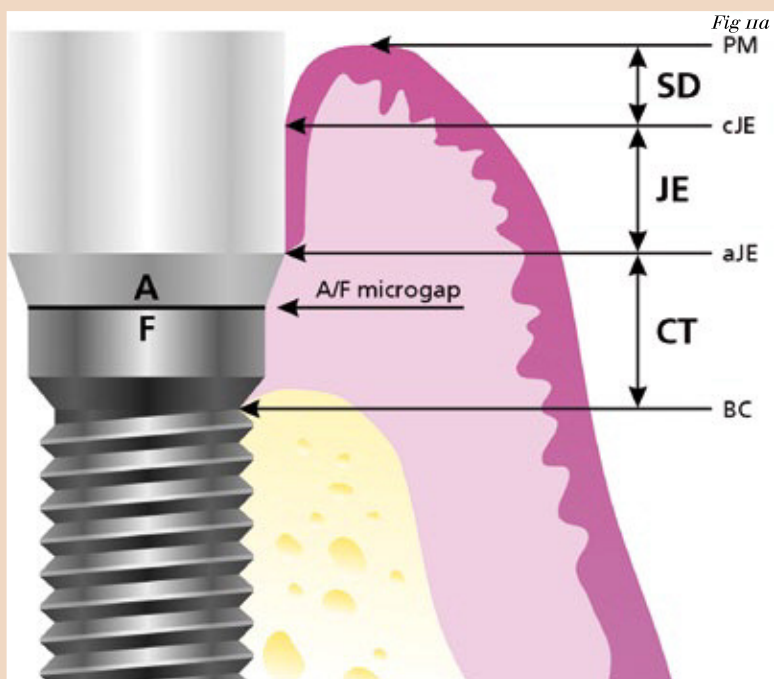


be enhanced by osseous generation over the collar of the fixture (Figs 12a and 12b)<sup>59,60</sup>.

come without X? An equivalent situation arises in engineering and science known as circular reference, in which a parameter is required to calculate that parameter itself. This is the essence of foundational dentistry.

The endodontic implant algorithm parallels the question, which came first, the chicken or the egg as an example of circular cause and consequence. It could be reformulated as follows: ‘Which came first, X that can’t come without Y, or Y that can’t

Nature wisely created a structure that could harmoniously interpolate hard and soft tissue, act as the portal of nu-



trition and communication for the body and be the gatekeeper on guard and in function throughout our lifetime. As such, our role is to ensure that however we reengineer nature, we must adhere to its rules, its logic and fundamentals.

‘There’s no use trying,’ said Alice. ‘One can’t believe impossible things.’ ‘I daresay you haven’t had much practice,’ said the Queen. ‘When I was your age, I always did it for half an hour a day. Why, sometimes I’ve believed as many as six impossible things before breakfast?’ Lewis Carroll. [DT](#)

**The best evidence**

This is not an easy task, as filtering out the best range of evidence from a wide range of sources, presenting clear, comprehensive analyses and incorporating patient experience is a Herculean task. In many ways, this is analogous to Alice’s Adventures in Wonderland as so much of what we do grows ‘curiouser and curiouser’ as each new innovation demands that we go through the looking glass and determine what Alice found there.

**About the author**

**Kenneth S Serota, DDS, MMSc** graduated from the University of Toronto, Faculty of Dentistry in 1975 and was awarded the George W Switzer Memorial Key for excellence in Prosthodontics. He received his Certificate in Endodontics and Master of Medical Sciences Degree from the Harvard-Forsyth Dental Center in Boston, MA. The founder of ROOTS – an online educational forum for dentists from around the world who wish to learn cutting edge endodontic therapy, he recently launched IMPLANTS (www.rxiimplants.com) and www.tdsonline.org in order to provide a clear understanding of the endodontic/implant algorithm in foundational dentistry.

# Limiting your affairs

Michael Lansdell outlines the advantages of incorporation for an independent practice owned and operated by a dentist or partnership

Most dentists are not primarily business people, so it's not surprising that since the General Dental Council (GDC) altered

the regulations to allow dental practices to operate as limited companies from 2006, there has been much speculation and misinformation circulating

within the profession about whether to take this step.

#### Limited Liability

The use of the word 'limited' in

the title 'limited company' refers to limited liability. While even in these parlous times, few dental practices are in danger of closing, the shareholders in a limit-

ed company have the security of knowing that their exposure to liabilities to creditors will never exceed their original share capital, usually between £100 and £1,000.

Another advantage of trading as a limited company is the higher level of credibility in many commercial negotiations or inter-business relations accorded to a company compared with a sole trader.

#### Selling to a third party

It is often easier to transfer the ownership of a practice trading as a limited company. This is because the company remains in existence unless it is dissolved or liquidated.

The existing business arrangements, bank accounts and supply contracts, for example, all stay the same under the

*'Shareholders in a limited company have the security of knowing that their exposure to liabilities to creditors will never exceed their original share capital'*

new ownership, while the new owner of a sole-trader practice would need to re-establish these relationships under his/her own name. This is especially important with PCT contracts, which should be unaffected, provided the PCT has been properly approached at the time of incorporation and the PCT contract has been transferred into the limited company without restriction. Experience shows that incorporated practices with PCT contracts are realising higher selling values than unincorporated practices, partly for this reason.

The process of incorporation and the resulting altered tax regime enables converting sole traders to use tax savings arising from incorporation to substantially increase their pension contributions without affecting their current quality of life, subject to the new rules on pension contributions for high earners.

#### Tax benefits

Other taxation benefits, related to the differences between how individuals and companies pay tax and National Insurance, depend on the individual's income, which is effectively the practice's profit in any given year.

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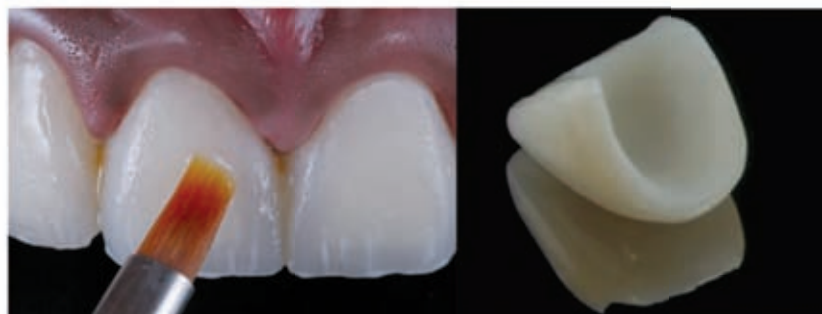
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For example, a sole trader making a profit of around £100,000pa, and drawing out of the practice all of the profit, would expect to be about £4,000pa better off after incorporation, just based on the rate differences alone (09/10 tax tables), before any other planning is done to significantly increase the amount of the total tax savings.

#### Cash flow benefits

Converting to a limited company also has cash flow benefits. Sole traders normally pay tax on their profits (income) in two instalments, with about half becoming due two months before the end of tax year and the other about half payable four months after the end of the tax year. Limited companies of this size do not make payments on account, and their Corporation Tax, as opposed to Income Tax, is not payable until nine months after the end of the tax year. When the practice is transferred to the newly formed company, it can often borrow to pay for the goodwill, which can amount to 100 per cent of the annual turnover of the practice.

The interest on this loan qualifies for tax relief, and the capital sum borrowed by the limited company can be used by the dentist to reduce non-tax deductible payments, for example on his/her home mortgage. In some cases, the home mortgage can be paid off in its entirety, depending on the goodwill value.

Even if the company does not need to borrow to complete the purchase of the practice, it is possible for the dentist as both shareholder and company director (employee) to draw from the company a combination of salary, dividends, and loan repayment, to reduce his/her personal tax liability to zero, for a number of years after incorporation. Corporation Tax on the practice's (now the company), profits is of course still paid, currently at a rate of 21 per cent on profits up to £500,000.

#### A family business

Legislation to curb "income splitting" due to be implemented on 6 April 2009 has been deferred for now. However, other family members, often a spouse employed to manage appointments or other aspects of administration, assist many dentists acting as sole traders in the running of their businesses.

If these family members also

become shareholders in the new company, advantage can be taken of other allowable tax mechanisms to further reduce the overall tax liability.

#### Offshore structures

For higher earners not domiciled in the UK for tax purposes, there are more sophisticated tax-planning techniques that make use of offshore structures. If you fall into this category, (and your

domicile in this context is not necessarily the country in which you live or hold a passport from!), you need to take specialist advice to optimise your tax position. It's evident that all dentist sole traders and dental partnerships, whether or not they are currently considering incorporation, would benefit from a review of their status which compares their present position with that after the formation of a limited com-

pany. There is, quite literally, nothing to lose.

At the same time, incorporation is not necessarily appropriate for every practice. The ultimate decision, after considering specialist, professional advice, must take into account the individual dentist's present business circumstances, personal position and preferences and also, where relevant, his or her future plans. [\[1\]](#)

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#### About the author



Michael Lansdell was brought up in South Africa, receiving his honours degree there in 1991. He completed his training with international accounting firm Deloitte in 1994, and went on to become a founding partner at Lansdell & Rose Chartered Accountants (SA) a year later. Based in Kensington, London, Lansdell & Rose deal only on a long-term retained basis, exclusively with owner-managed clients, generally dentists and doctors, and specialising in the incorporation of dental practices. As a client-focused team, they look for sustainable long-term solutions for their clients that maximise profits, minimise tax and build wealth. For more information, visit [www.lansdellrose.co.uk](http://www.lansdellrose.co.uk) or call 020 7376 9333.