San Mateo, CA, USA: A very unusual hearing aid, which is placed inside the mouth, is about to find its way into the European market. The device, called Soundbite, is manufactured by American medical device company Sonitus Medical. It is custom made to fit around either the upper left or right molars.

According to the manufacturer, the new hearing system is designed to allow sound to travel via the teeth, through the bones, to both cochleae, bypassing the middle and outer ear entirely. By using bone conduction via the teeth, Soundbite is intended to restore normal hearing to patients with single sided deafness, conductive or mixed hearing loss, all without surgery.

“It is not yet available in Europe. However, we have obtained CE approval to market the device in Europe. We are still determining the time frame,” Shirley Guerrero, Marketing Specialist at Sonitus Medical, told Dental Tribune ONLINE. According to the European Commission, products bearing the CE marking are presumed to be in compliance with the applicable directives and hence benefit from free circulation in the European Market.

Nearly invisible when worn, the system consists of an easy to insert and remove In-The-Mouth hearing device and a small microphone unit worn behind the ear. No modifications to the teeth are required. The hearing device was reviewed in the April issue of the journal Otology & Neurotology and found to be “a safe and effective system, which provides substantial benefit for SSD patients with continual daily use over a 30-day period”, According to the authors of the review, no medical, audiologic or dental complications were experienced.

However, critical reception of Soundbite has not only been positive. In a BBC News article, Angela King, senior audio advisor at the Royal National Institute for Deaf People, expressed doubts over the significance of the new hearing device. “Just by looking over the significance of the new device, Deaf People, expressed doubts over the significance of the new hearing device”, according to the European Commission, products bearing the CE marking are presumed to be in compliance with the applicable directives and hence benefit from free circulation in the European Market.

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The Finnish company Planmeca Oy, one of the world’s leading dental equipment manufacturers, announces its donation of a Planmeca Compact i dental unit along with a Planmeca ProMax 3D s imaging unit to the temporary dental clinic that is being set up by the Japanese government and Japan Dental Association in the tsunami region.

“We found out that there are temporary dental clinics to be established in Tohoku region with the support of Japanese government. We would like to do our share in contributing to the rebuilding efforts of this tsunami-ridden region. With these dental devices modern, high-quality dental care become available for people in the crisis area,” says Mr. Heikki Kyöstilä, the president of Planmeca Oy.

Planmeca is the market leader in dental imaging devices – panoramic, intraoral and 3D imaging units – in the world. The Planmeca ProMax 3D s digital imaging unit is designed to obtain complete information on patient anatomy in the minutest detail. The unit complies with a multitude of diagnostic requirements: those of endodontics, periodontics, orthodontics, implantology, dental and maxillofacial surgery, and TMJ analysis. Planmeca ProMax 3D s unit is ideal for imaging with a smaller field of view: the imaging size is optimal for e.g. single implant and wisdom tooth cases, as well as for implant surgery and orthodontic treatment. “All Planmeca imaging units comply with the best practices of dentistry. Pulsed X-ray of 3D units, together with the short rotation scan, virtually eliminates artefacts, contributing to outstanding image quality. Planmeca’s patented, computer-controlled SCARA (Selectively Compliant Articulated Robot Arm) technology allows a variety of imaging programs,” states Mr. Kyöstilä.

The design of the Planmeca Compact i dental unit has been strongly steered by the importance of ergonomics and uncompromised safety of the dental team as well as highest level of hygiene. There are over 25 000 Planmeca Compact i dental unit installations and users around the world.

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Glaxo Gets A Poligrip: Pays $120M To Settle Suits

Over the past nine months, GlaxoSmithKline has paid at least $120 million to resolve more than 100 lawsuits claiming some of its Poligrip products caused neurological disorders because the denture cream contains zinc. The lawsuits allege the drugmaker failed to warn consumers about zinc-related health risks.

Plaintiff attorneys have argued there was no warning for people who apply excessive den- ture cream to hold ill-fitting den- tures, and this can cause prob- lems as severe as a loss of feeling in the limbs. Lawsuits have also been filed against Procter & Gamble, which sells Fixodent.

A 2008 study in Neurology study found that dental creams may be the source of “excess zinc” in patients. High doses of zinc, the study said, cause copper deficieny, which has been linked to nerve damage for about a decade. The study indicated regular use of large amounts of adhesive provided several times the recommended daily allowance of zinc.

Brain cancer warning over mobiles

Mobile phone users could be increasing their chances of developing brain cancer, experts have warned.

Scientists for the International Agency for Research on Cancer (IARC) said radiofre- quency electromagnetic fields associated with mobile handsets potentially increase the risk of glioma, a malignant type of the disease.

Following a week-long IARC working group meeting in Lyon, France, 51 scientists from 14 countries classified the fields as “possibly carcinogenic to hu- mans” (Group 2B).

The agency, which is part of the World Health Organisation, said there are around five billion mobile phone subscriptions around the world, and the number is growing, particularly among young adults and chil- dren.

Its classification of the ra- diofrequency electromagnetic fields to Group 2B puts them be- low the higher risk levels of Group 1 (“carcinogenic to hu- mans”) and Group 2A (“probably car- cinogenic to humans”).

Jonathan Samet, chairman of the working group, said: “The ev- idence, while still accumulating, is strong enough to support a conclusion and the 2B classifica- tion.”

The scientist, from the Univer- sity of Southern California, added: “The conclusion means that there could be some risk, and therefore we need to keep a close watch for a link between cell phones and cancer risk.”

IARC director Christopher Wild said: “Given the potential consequences for public health of this classification and findings, it is important that additional re- search be conducted into the long-term, heavy use of mobile phones.

“Finding the availability of such information, it is important to take pragmatic measures to reduce exposure, such as hands- free devices or texting.”

The international working group reached its conclusion af- ter discussing and evaluating available literature on radiofre- quency electromagnetic fields and exposure to wireless tele- phones.

The disclosure comes just three months after Glaxo began warning consumers about den- ture creams that contain zinc, and took “voluntary, precaution- ary” steps to end manufacturing and supplying these denture ad- hesives due to “health risks associ- ated with long-term excessive use.”

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Although it accounts for only 2% of your total body weight, the fact remains that the brain is a food-hungry organ with ten times the appetite of other organs. In order to function, it uses up a minimum of 20% of your daily calorie intake.

To ensure your brain gets what it needs, there are certain foods you should add to your diet.

1. Oily fish (mackerel, sardines, salmon...) for brain maintenance

More than 50% of brain mass is made up of lipids, and over 70% of these are fatty acids that belong to the well-known Omega 3 group. These fats are crucial to the production and maintenance of brain cells, preserving the fluidity of cell membrane.

2. Pulses (lentils, chickpeas...) for brain energy

The brain is said to be glucose-dependent, which means it uses only glucose to function. It consumes more than 5g an hour, but doesn’t know how to store it. If we could get the human body to turn “bad fat” into “good fat” that burns calories instead of storing them, we could add a serious new tool to tackle the obesity epidemic.

Scientists have found a way to turn bad fat into calorie-burning good fat, and say the discovery could lead to new and better treatments for obesity.

White or “bad” fat typically collects around our waists as well as other parts of the body and stores the extra calories we consume. But brown “good” fat, found in abundance in babies, acts like a power source, burning calories and generating heat. By the time we are adults, most brown fat has disappeared and been replaced by white fat.

Scientists at Johns Hopkins University, Baltimore initially tried to reduce body fat and weight gain in rats by suppressing the production of an appetite-stimulating protein called neuropeptide Y (NPY) in the part of the brain which helps to regulate hunger and thirst.

The findings showed that rats treated this way gained less weight after five weeks, compared with untreated rats which became obese, showing that suppressing NPY led to less calories being consumed.

However, when the scientists examined the rats with suppressed NPY, they discovered that some of their white fat had been replaced with brown fat.

The scientists speculated that white fat tissue may contain some brown fat cells which become activated when NPY is suppressed. The research said: “If we could get the human body to turn “bad fat” into “good fat” that burns calories instead of storing them, we could add a serious new tool to tackle the obesity epidemic.”

The findings are published in the journal Cell Metabolism.

NSK’s new technology, iPiezo engine® ensures stable frequency by automatically adjusting to the optimum frequency for each of the many tips available to give you an excellent, tactile feel. This new NSK technology assures an optimal and stable power output by automatically monitoring the loading of the tip and adjusting it accordingly.

NSK LED delivers natural daylight quality light bringing significant advantages to the way you work.

Compact and Versatile

Well Balanced, Slimmest and Lightest* Handpiece with LED

NSK new ergonomic Varios handpiece is the slimmest, lightest* instrument of its kind. Using the slimmest handpiece ensures excellent access, high visibility of the operating field and more comfortable use causing less fatigue. The handpiece can be repeatedly autoclaved at up to 135°C.

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When most people leave the dentist’s office, they’re leaving with chapped, stretched lips and a bit of Novocain numbness. But one Oregon woman left her dentist’s with an entirely new accent.

That’s what happened to Karen Butler after she was put under and had several teeth removed. “I just went to sleep and I woke up and my mouth was all sore and swollen, and I talked funny. And the dentist said, you’ll talk normal when the swelling goes down,” but she never went back to normal, and now has an accent that’s “a combination of British, Irish and Eastern European.”

Butler said her new accent immediately started getting attention. “You talk to young girls they think it’s a very, very pretty sound. And they say, ‘I want an accent like that,’” said Butler. “Oh, well just go see my dentist. He only charges $7,000.”

Butler is one of a very small number of people suffering from what is known as foreign accent syndrome. There have been just 60 recorded cases since 1941.

There isn’t anything Butler can do to get her old accent back — she doesn’t notice the change at all. The only way she can hear the mix of Irish brogue and Eastern European thickness is by listening to a recording.

Apart from a few surprised people at the end of a telephone call, Butler said her life is mostly the same. Her husband agrees.

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3. Bananas for a calm brain
Rich in magnesium, which is essential in the transmission of nervous impulses, bananas are equally a source of Vitamin B6 (just one banana holds practically a quarter of the recommended daily amount).

4. Liver (veal, beef, chicken…) for intelligence
The brain accounts for around 20% of the body’s oxygen needs, and iron is needed to get oxygen to the brain by means of the blood’s haemoglobin.

5. Red berries for happy brain cells
All edible berries (blackcurrants, strawberries, raspberries, blueberries, blackberries etc.) are veritable mines of Vitamin C.

6. Shellfish for brain function
Though rich in Vitamin B12 and in, it is mostly the oligo-elements in seafood and crustaceans (oysters, clams, shrimp etc.) that are good for brain function to fight and prevent stress and its inconveniences.

7. Eggs for brain connectivity
Eggs contain lecithin and phospholipids, their value lies mainly in the quality of their proteins.

8. Spinach for good memory
All leafy vegetables share a richness in Vitamin B9 (or folates), which is known to play an active role in the development of a foetus’ nervous tissue and also in the renewal of blood cells.

9. Cocoa for brain stimulation
In Aztec times, cocoa was already considered a medicine. Later, Casanova, the legendary seducer of women, used chocolate as an aphrodisiac with the kind of effects we know well!

10. Avocado to keep the brain young
The avocado is exceptionally rich in Vitamin E. This vitamin constitutes one of the most powerful antioxidants and protects the fatty tissues of the brain from ageing. If you don’t like avocado, consider oleaginous fruit instead (nuts, particularly hazelnuts etc.).
Take a cosmetic practice to the next level with facial injectables

(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.

Minimally invasive cosmetic facial procedures are quickly becoming the most exciting and controversial topic in cosmetic dentistry. In my mind, there is no better clinician with the capabilities and qualifications to provide these procedures than the dental professional.

Over the last three to four years, we have trained hundreds of practitioners in the art of facial injectables. In doing so, we have found that dentists have the greatest inherent skills and artistic ability when compared to any other professional.

- Dentists often ask me why I think that they are qualified to do these procedures. In response, I ask them some simple questions:
  - Who is in tune, on a daily basis, to facial and peri-oral anatomy and symmetry?
  - Who knows the dental and skeletal relationships on the soft tissue of the face?
  - Who knows the anatomy of a proper lip line?
  - Who knows how to anesthetize the tissues of the face via intraoral techniques?
  - Who is in tune, on a daily basis, to facial and peri-oral anatomy and symmetry?
  - Who knows the dental and skeletal relationships on the soft tissue of the face?
  - Who knows the anatomy of a proper lip line?
  - Who knows how to anesthetize the tissues of the face via intraoral techniques?

The answer, of course, is you! Using facial injectables is a natural progression for the cosmetic dentist. For example, we all understand that enhancing a patient’s smile is more than just placing some laminates. In our courses, we tell clinicians to imagine the teeth as a picture and contour to the face. They are gel-like in consistency and come in prefilled syringes. The most common type of filler currently being used in the United States is hyaluronic acid (Restylane, Perlane, and Juvederm). Hyaluronic acid is a polysaccharide complex found in normal human tissue.

Because it is not a protein, the risk of allergic reaction is extremely low. There is another filler material, Radiesse, that is made up of calcium hydroxyapatite (CaHA) microspheres suspended in a water-based gel carrier. This is similar to the hydroxyapatite found in our teeth and bones.

Another important learning aspect is which areas require botulinum toxin and which areas require filler material. Many times, a combination of both materials is required for the most esthetic effect.

When looking at the aging face, it is important to understand the difference between static wrinkles and dynamic wrinkles. If you tell a patient to relax her facial muscles and not make any movements, and you see a wrinkle or groove at rest, this would be a static wrinkle (see nasolabial fold). By definition, botulinum toxin would do very little for these wrinkles or grooves because the toxin would “relax” the underlying muscles. However, in this patient we know that even if the muscles are relaxed, they still have this wrinkle at rest. Therefore, filler (or combination therapy) would be better.

A dynamic wrinkle is one that is caused by animation or muscle function (see forehead). In this instance, botulinum toxin would do very well. It would weaken the underlying muscle and cause a chemical denervation. In turn, this would stop the overlying skin from wrinkling.

The first thing the practitioner needs to realize is the difference between Botulinum toxin (Botox® and Dysport®) and facial fillers (Restylane®, Perlane®, Juvederm® and Radiesse® among many others).

Botulinum toxin is a clear fluid medication that comes in a lyophilized (freeze dried) form. It is then mixed with saline and injected subcutaneously or intramuscularly with the intention of weakening the target muscle. Contrary to popular belief, it does not “fill” lines, nor does it “smooth” wrinkles.

In order for a muscle to contract, a signal is sent down the motor nerve terminal and at its ending, acetylcholine is sent across the gap to the muscle. This signals the muscle to contract. Botulinum toxin does not allow acetylcholine to cross from the motor nerve terminal to the muscle.

Technically speaking, the toxin causes a “chemical denervation” of the muscle. If the muscle cannot contract, then the overlying skin cannot wrinkle.

On the other hand, filler materials fill in a depression or wrinkle and add volume or contour to the face. They are gel-like in consistency and come in prefilled syringes. The most common type of filler currently being used in the United States is hyaluronic acid (Restylane, Perlane, and Juvederm). Hyaluronic acid is a polysaccharide complex found in normal human tissue.

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Fig. 1: 62-year-old female with a chief complaint of “thin and misshapen” lips. (Photos/Provided by Dr. Zev Schulhof)

Fig. 2: One week after augmentation with 1 cc of Restylane.

Fig. 3: Botulinum toxin blocks release of acetylcholine from the nerve terminal.

Fig. 4: Perlane, one of the hyaluronic acids, in its prefilled syringe.

Fig. 5: Dynamic wrinkles of the forehead during animation.

Fig. 6: Two weeks after Botox treatment.

Fig. 7: Patient presents for lunchtime ‘liquid facelift.’

Fig. 8: Fifteen minutes later; intra-oral cheek, nasolabial folds and marionette line augmentation.

Fig. 9: This 23-year-old female complained of a ‘retruded’ chin.

Fig. 10: Fifteen minutes later using 2 cc of Radiesse.
For the beginning injector, we generally recommend starting with three areas of the face that generally receive botulinum toxin and three areas that generally receive filler material. In the botulinum toxin course we teach both Botox and Dysport and focus on the glabella complex (the brown lines between the eyes), the forehead and “crow’s feet” (smile lines around the eye).

In the filler course, we focus on the nasolabial folds (lines from the ala of the nose to the corners of the mouth), the “marionette lines” (lines from the corners of the mouth to the inferior border of the mandible) and the lips.

However, with time and experience, there is no limit to how creative the practitioner can become. In my office, we can perform a lunchtime “liquid facelift” by combining botulinum toxin and filler material in multiple areas of the face. We can accomplish this by placing the fillers via an intra-oral route, without any bruising or swelling, allowing patients to go right back to work.

Once the practitioner gains experience and confidence, there are many other exciting procedures that can be done. Instead of doing a genioplasty, you can augment the chin with filler material. You can do a liquid rhinoplasty (nose job), cheek lift or brow lift, just to name a few. How about eliminating a gummy smile, rounding off a square jaw or even augmenting an earlobe?

Another application of botulinum toxin in the dental arena is in the treatment of temporomandibular disorders (TMD). Temporomandibular disorders can span a wide variety of etiologies, including muscular, ligamentous, intra-articular or bone sources. A diagnosis relies on an extensive history, physical exam, radiologic studies and diagnostic procedures.

Botulinum toxin is just one treatment modality included in an extensive algorithm used in treating TMD. Recent studies show that botulinum toxin contains both a muscle relaxing as well as an analgesic effect.

In my opinion, the reason this has become such a controversial topic throughout the medical community is because of the encroaching competition that the other specialties are feeling in this multi-billion dollar industry.

Over the last five years, non-invasive cosmetic procedures have experienced significant growth due to their increasing popularity and virtually painless, highly profitable, office-based administration, and their ability to make patients’ faces look younger and fuller for longer periods of time. Many specialties, such as gynecologists, family practitioners and ER physicians, are offering these procedures without any backlash.

Surely, the dentist is better prepared, better trained and has more experience in the perioral and facial arena than these other specialties.

The ADA definition of dentistry is defined as “the evaluation, diagnosis, prevention and/or treatment (nonsurgical, surgical or related procedures) of diseases, disorders and/or conditions of the oral cavity, maxillofacial area and/or the adjacent and associated structures of the human body.”

Whether you are interested in providing these procedures or not, it is important to defend the skills and talents that the dentist inherently holds.

It is time to show the medical community and the rest of the world that we are truly physicians of the oral cavity and its associated structures.

Dental Tribune Middle East & Africa in collaboration with CAPP introduce to the market the new project mCME - Self Instruction Program.

mCME gives you the opportunity to have a quick and easy way to meet your continuing education needs. mCME offers you the flexibility to work at your own pace through the material from any location at any time. The content is international, drawn from the upper echelon of dental medicine, but also presents a regional outlook in terms of perspective and subject matter.

How can professionals enroll?
They can either sign up for a one-year (10 exercises) by subscription for the magazine for one year ($65) or pay ($20) per article. After the payment, participants will receive their membership number and will be able to attend the program.

How to earn CME credits?
Once the reader attends the distance-learning program, he/she can earn credits in three easy steps:
1. Read the articles.
2. Take the exercises
3. Fill in the Questionnaire and Submit the answers by Fax (+971 4 5868885) or Email info@cappmea.com

After submission of the answers, (name and membership number must be included for processing) they will receive the Certificate with unique ID Number within 48 to 72hours.

Articles and Questionnaires will be available in the website after the publication.

About the author
Dr. Zev Schulhof is a board-certified oral and maxillofacial surgeon as well as a physician. He is currently the president of the American Academy of Facial Cosmetics. Schulhof lectures nationally on a variety of topics, including non-invasive facial cosmetic procedures. To date, Schulhof has trained hundreds of dentists and physicians in the art of neurotoxins and facial fillers. You may contact him at zev.schulhof@gmail.com.

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Which comes first - house or practice purchase?

David Brewer discusses savings, deposits and mortgages

Unlike the chicken and egg conundrum, there is a clearer answer to this question. In the heady days of easy credit in the early to late 2000’s, raising finance for practice purchase was relatively straightforward – as long as you had a GDC number and a pulse, the banks would probably lend to you – often the full 100 per cent of asking price and at rock bottom rates.

As we all know, the banks then experienced a few financial difficulties (and that’s putting it mildly) and almost overnight sizably changed their lending stance to any new lending proposal (be it for house or any type of business including dental practice purchase).

The banks now take a much more critical approach to any financial request and will review in great depth all aspects of any proposal with particular focus on the purchaser’s experience, client commitment and overall ability to repay.

A prospective new purchaser should actually take comfort from the fact such a detailed analysis is now being undertaken by the bank to ensure the proposal actually ‘works’ – and it is staggering that in the past these questions were not being asked.

Thankfully, the dental profession remains one of the so-called ‘Green Light’ sectors for most of the banks - dentists are considered relatively low risk; the banks have very few dental loan defaults on their books and a positive appetite to lend - but to the right applicants.

One of the biggest changes in banks’ lending requirements is the need for the purchaser to commit ‘something’ towards the purchase - ideally a cash contribution. As a rule of thumb, a contribution of between 10 per cent and 20 per cent of goodwill purchase is often sought by the banks. The same goes for house purchase as well – the days of being able to raise 100 per cent mortgage on your house are a distant memory. Nowadays if you want a decent house mortgage you need to put down a sizable cash contribution.

Most associates do normally have a reasonable level of savings (or possibly Bank of Mum and Dad) behind them, which could be used. However this is where we have the dilemma - Do you put your deposit towards your first house or do you buy your first practice??

Past evidence has shown that practice purchase FIRST is the most effective way forward.

If you buy your house first you will have used your own/family savings towards the sizable deposit required by the mortgage lender leaving nothing left over to put down towards practice purchase. Gradually your savings will slowly build up again - however as an associate your earning potential may be restricted by your current principal or practice patient base so it could be a while before your deposit has built up again.

Also... it may well be that you buy your house first and later find the ideal practice many miles away - so you will end up having to go through the whole house sell/buy process again.

By utilising your/family savings of say 10 per cent toward the purchase of a dental practice, you will of course be the proud owner of the practice which in turn should enable you to earn considerably more than you would have done as an associate - leading to your savings accumulating at a much faster rate thus putting a deposit down for a much larger house closer to where the practice is.

Simples...

The same analogy can be applied to purchase of investment properties (normally residential buy to lets). If your wish is for practice ownership, in the vast majority of cases you would earn more £ for £ purchasing a dental practice compared with investing in property.

Equity in your house or own/family investment property can be considered by the bank as quasi contribution - however at present with property prices static at best, any deposit/equity within the property may not be as high as you think. The banks tend to place a ‘security’ value of between 70 per cent to 80 per cent of the value of the property LESS any existing mortgage. Eg House value £500k with £300k mortgage. The banks value at say 70 per cent would be £350k (ie 70 per cent of £500k, less £300k) much less than the ‘true’ equity of £200k.

I would stress again that the banks ARE still lending for practice purchase and the dental sector is viewed by them as relatively low risk - the fact banks will still lend up to lend 90 per cent of Goodwill is great testament to the dental profession. Indeed there are very few other sectors in which this would happen.

If you are seeking to raise funding for practice purchase it remains essential your application is presented in the right manner.

ALWAYS engage the services of an independent specialist to work on your behalf. They should present your proposal in a manner which will satisfy the bank’s lending criteria (which will vary from bank to bank) and ensure you are personally introduced to a number of the specialist dental divisions of the banks. By speaking with more than one bank, a degree of competition can also be generated to ensure more competitive terms are secured.

About the author

David Brewer has worked within the dental profession for over 15 years helping over 1000 clients secure funding for practice purchase and start up. With his banking background and friendly pro-active approach, he is ideally placed to provide advice and guidance to clients who are looking to purchase a practice or simply review their existing arrangements. David works with Frank Taylor and Associates and can be contacted on 08450 125545 or david.brewer@ft-associates.com

Dental Tribune for iPad – Your weekly news selection

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Seventeen lost pyramids are among the buildings identified in a new satellite survey of Egypt.

More than 1,000 tombs and 3,000 ancient settlements were also revealed by looking at infra-red images which show up underground buildings.

Initial excavations have already confirmed some of the findings, including two suspected pyramids. The work has been pioneered at the University of Alabama in Birmingham by US Egyptologist Dr Sarah Parcak.

She says she was amazed at how much she and her team has found.

“We were very intensely doing this research for over a year. I could see the data as it was emerging, but for me the “Aha!” moment was when I could step back and look at everything that we’d found and I couldn’t believe we could locate so many sites all over Egypt.

“To excavate a pyramid is the dream of every archaeologist,” she said. The team analysed images from satellites orbiting 700km above the earth, equipped with cameras so powerful they can pin-point objects less than 1m in diameter on the earth’s surface.

Infra-red imaging was used to highlight different materials under the surface.

Test excavations

Ancient Egyptians built their houses and structures out of mud brick, which is much denser than the soil that surrounds it, so the shapes of houses, temples and tombs can be seen.

“IT just shows us how easy it is to underestimate both the size and scale of past human settlements,” says Dr Parcak.

And she believes there are more antiquities to be discovered: “These are just the sites [close to] the surface. There are many thousands of additional sites that the Nile has covered over with silt. This is just the beginning of this kind of work.”

BBC cameras followed Dr Parcak on her “nervous” journey when she travelled to Egypt to see if excavations could back up what her technology could see under the surface.

In the BBC documentary Egypt’s Lost Cities, they visit an area of Saqqara (Sakkara) where the authorities were not initially interested in her findings.

But after being told by Dr Parcak that she had seen two potential pyramids, they made test excavations, and they now believe it is one of the most important archaeological sites in Egypt.
There used to be a time when a private plate really meant you were doing OK for yourself. Now, though, they’re so cheap that they’re rarely a status symbol. Apart from these beauties that is. We’ll start with the UK’s five top plates, then move onto the world’s list—all of which dwarf our humble registration record breakers, and, interestingly, were all bought in the same country: Abu Dhabi.

In the UK

5
Plate: VIP 1
Price: £285,000
Buyer: Roman Abramovich
When: 2006
The UK’s most famous Russian oil oligarch, whose net worth is an estimated £8.4bn, bought VIP 1 as a nice little boost to his self-esteem. Abramovich was planning on putting the plate on his prized pre-facelift second generation green Fiat Punto, but he decided on his Rolls-Royce Corniche IV instead.

4
Plate: M1
Price: £352,411
Buyer: Nabil Bishara
When: 2009
Lebanese property developer Nabil Bishara paid this staggering price at an auction in Warwickshire, in March 2009. He bought it for his wife’s Bentley as a surprise present.

3
Plate: 1D
Price: £304,063
Buyer: Anonymous
When: 2008
September 2008 saw the purchase of Edinburgh’s first registered number plate, at a Bonhams auction in Chichester. The bidder said, perhaps sarcastically, that the plate would be registered in “an old red Skoda.”

2
Plate: S1
Price: £404,063
Buyer: Afzal Khan
When: 2008
Afzal Khan, owner of car styling company Project Kahn, is officially the owner of the UK’s most expensive plate. He first put it on his Mercedes-McLaren SLR, though we recently saw it on Mr Khan’s white Bugatti Veyron parked in his Bradford showroom.

1
Plate: F1
Price: £440,625
Buyer: Afzal Khan
When: 2008
Afzal Khan, owner of car styling company Project Kahn, is officially the owner of the UK’s most expensive plate. He first put it on his Mercedes-McLaren SLR, though we recently saw it on Mr Khan’s white Bugatti Veyron parked in his Bradford showroom.

In the UAE

5
Plate: 7
Price: £1.58m
The world records are all held by single-digit plates bought at a series of auctions in Abu Dhabi, starting in May 2007, with the proceeds going to various charities including to a rehabilitation centre for traffic accident victims. Who’d have believed that a £1.58 million plate could be only fifth on the list?

4
Plate: 9
Price: £1.72m
This is the fifth single digit number plate to sell in Abu Dhabi. The May 2008 auction that it was part of saw 100 plates sold in front of 450 bidders. In total, 52 million UAE dirhams was raised for charity—around £9m.

3
Plate: 7
Price: £3m
A YouTube video shows plate number 7 fetching its staggering price. They don’t do things by half over in Abu Dhabi, selling the plate from a huge stage complete with an Enzo Ferrari, a Mercedes-Benz G Wagen and a Maybach.

2
Plate: 5
Price: £3.4m
Nobody thought that the ludicrous £3.4m paid by Emirati stockbroker Talal Khouri for number 5 would be broken—he said the number meant nothing to him—until the February 2008 auction of number 1.

1
Plate: 1
Price: £7.1m
“I bought it because it’s the best number,” said Saeed Khouri after he paid £7.1m for the number 1. One of 90 plates sold in its auction, the event raised a total of £14.7m for charity.
50 years of Sensodyne® innovation 1961-2011
Leading the way with Sensodyne

For the last 50 years Sensodyne has been at the forefront of scientific innovation into the aetiology, treatment and prevention of dentine hypersensitivity and erosive toothwear. In January 2011 GlaxoSmithKline celebrated 50 Years of Sensodyne innovation by hosting a 50th anniversary symposium in Madrid, Spain. Experts in the field of dentistry and dental research discussed the past, present and most importantly the future of oral health, each presenting a prospective from their own field of specialism.

Principal Speakers

The principal speakers at the symposia included Professor Francis Hughes, Professor J.M ('bob') ten Cate, Professor David Bartlett and Professor Martin Addy.

All Speakers agreed that dentistry had come a long way in 50 years however good oral health for all is a challenge and can only be achieved by linking treatment to patient needs. “Research into genetic profiling holds many possibilities.” Professor Francis Hughes.

Oral Health prevention, a relatively neglected area of global health, is now key and commitment is needed by policy makers to prevent chronic diseases. “The effectiveness and contribution of fluoride toothpastes are undisputed, however in the future priorities should include ‘Better’ or ‘Smarter’ products that improve compliance, availability and affordability. Every one can learn to brush—however a paradigm shift in prevention needs to occur, as caries prevention is very dependent on fluoride.” Professor J.M ('bob') ten Cate.

“In future there will be reduced government funding for dentistry practice and research, therefore there is a need for Industry and University collaboration with research focused on clinical needs and realistic outcomes. Prevention of erosion needs changes to formulation of toothpastes which actively protect enamel and dentine from acids”. Professor David Bartlett.

“Traditionally there has been a lack of understanding of the aetiology of hypersensitivity and gingival recession. For dentists to offer advice they need to be educated and Industry has a role”. Professor Martin Addy. Professor Addy called for further research that is fully scientifically founded. “Many clinical trials on treatments for Dentine Hypersensitivity belong in the realms of testimonials. Areas for improvement include Objective Evaluation Criteria, better controls and evidence of stimulus response and therapeutic action. There is a need to be able to really magnify and visualise Dentine either as a replica or in-situ”.

The speakers all agreed Industry has a key role to play in the continuing research and development of preventative dental care.

Science at the heart and core of Sensodyne success for 50 years. Through collaboration with the dental health care professional and by researching patient’s needs, truly significant advances have been made. Sensodyne was first made available in 1961 by Block Drug. Since GlaxoSmithKline’s acquisition of the brand it has rapidly grown globally and become the dentists sensitivity toothpaste of choice in many markets.

Expanding expertise

GlaxoSmithKline’s significant investment in Sensodyne includes employing experts not only in dentistry but also in fields outside to expand the understanding of dentine hypersensitivity. Linking aetiology, research and patient needs has resulted in toothpastes that deliver specific patient benefits.
Ground Breaking Research into the management of Dentine hypersensitivity

Up until now pain measurement was subjective and could be influenced by a number of variables. Research for an objective measure for pain using fMRI (functional Magnetic Resonance Imaging) to map brain activity was presented by Dr Ashley Barlow, GSK Principal Clinical Scientist in collaboration with the University of Zurich using a multi-discipline team including experts in medical, clinical, engineering, psychology, statistics and data management. Future GSK investment into pain measurement will bring advances into understanding dentine hypersensitivity and hence more targeted modes of treatment and prevention.

Novamin innovative Technology

In early 2011 GlaxoSmithKline will be launching the world’s first daily fluoride toothpaste with Novamin, Sensodyne Repair and Protect, a development that clearly illustrates why Sensodyne has become synonymous with dentine hypersensitivity.

Novamin, advanced calcium phosphate technology, employs the same patented bioactive material used in advanced bone regeneration techniques.(7,8) It acts as a reservoir to build a new reparative layer over exposed dentine and within the tubules.(9-15) This layer has a similar chemical composition to hydroxyapatite mimicking the tooth’s natural composition and strongly binding in the collagen in dentine.(14-16)

Innovative use of the Electron Microscope

Dr Jonathan Earl, Principal Scientist Sensodyne, using his expertise in material science and engineering has applied electron microscopy techniques to the visualisation & characterisation of the tooth structure and how treatments work in-vitro.

This work was carried out in conjunction with UK universities Cambridge, Leeds and Manchester, and uses various methods including Scanning Transmission Electron Microscopy (STEM), Environmental Scanning Electron Microscopy (ESEM) and Focussed Ion Beam Scanning Electron Microscopy (FIB SEM).

The research shows the transformation of Novamin in saliva – changes are not only seen in structure but can also be measured in changes in chemical composition. This dynamic reparative layer is harder than natural dentine(15,16) and is able to withstand daily oral challenges such as tooth brushing abrasion, and dietary acid challenges (9,15,16,17). With regular twice daily use(18,19,19) it helps maintain lasting protection to deliver clinically proven relief from the pain of dentine hypersensitivity (18,19,20).

The in–Office Prophy Paste is the only prophylaxis product containing the unique patented ingredient, NovaMin®. Dr Teresa Layer Vice President, Oral Healthcare R&D is hugely excited about forging a relationship with Dentsply to work on taking the brand forward.

50 years of Sensodyne Expertise

Sensodyne’s strengths lie in its dental and clinical heritage, GlaxoSmithKline acknowledges it owes a lot to all those who have worked on Sensodyne in the last 50 years both internally and externally. “The next 50 years will be even more exciting for GSK Sensodyne with continued investment into leadership in oral care through science. We are living in exponential times” Teresa Layer, Vice President, Oral Healthcare R&D.

References: