Could potatoes fight disease?

A new project will investigate the potential of naturally occurring chemicals in potatoes, tomatoes and apricots to combat human diseases such as cancer and arteriosclerosis and ease the pain caused by various ailments. The DISCO project also hopes to find sustainable ways of producing these chemicals, known as bioactive compounds. The DISCO partners, which include 15 organisations from seven countries, aim to capitalise on their experience in metabolic engineering, hyper-production of high-value plant substances, and in bringing technology to the market.

Only 20 per cent of children eat vegetables

Only one in five children eats vegetables every day and one in ten totally refuses to eat vegetables according to a survey commissioned by Vouchercloud. The Infant & Toddler Forum (ITF), says these results are not surprising because children prefer familiar foods and parents tend to offer those foods that they know their children will eat. The ITF says that children need to be encouraged to try new foods and it is best to begin healthy eating habits early.

1,000-year-old plaque reveals diet and disease

Researchers have discovered disease-causing bacteria in 1,000-year-old teeth similar to disease-causing bacteria in humans today. The research team extracted DNA from samples of the dental calculus, which preserves bacteria and microscopic particles of food on the surfaces of teeth, of a German Medieval population. They discovered the ancient human oral cavity carried numerous opportunistic pathogens and that periodontal disease is caused by the same bacteria today as in the past, despite major changes in human diet and hygiene.

First lay GDC chair to speak at BDA conference

Dr Armstrong will give his first address as the leader of the professional association at the 2014 British Dental Conference and Exhibition, which takes place in Manchester from 10-12 April.

New leader for the PEC to take the reins at the BDA

The British Dental Association chooses new chair for Principal Executive Committee after dramatic few months of upheaval

Dr Mick Armstrong has been elected as the new Chair of the British Dental Association’s (BDA’s) Principal Executive Committee (PEC) following the departure of previous incumbent, Martin Fallowfield.

Dr Armstrong (pictured) is a general dental practitioner in a mostly-NHS practice in Castleford, West Yorkshire. He has been a member of the PEC since its inception in July 2012, having been elected to its membership by BDA members across Yorkshire and the Humber. He graduated from Newcastle Dental School in 1985. He has served on the BDA’s Representative Body and General Dental Practice Committee, and was Chair of the Conference of Local Dental Committees in 2011.

Commenting on his appointment, Dr Armstrong said: “I am honoured to be elected to serve the profession as Chair of the BDA’s Principal Executive Committee and look forward to leading the profession as it attempts to navigate the minefield of complexity it is confronting.

“Dentistry in the UK is facing a complicated and evolving set of challenges. We are increasingly underfunded, but over-regulated. High standards are expected of the care we provide to our patients, but often the treatment we receive from those that fund and oversee us leaves a great deal to be desired. All too often the professionalism of dentists and their ability to put patients first is challenged, rather than supported. We must assert our professionalism as the guiding force by which decisions about dentistry should be made and I will lead practitioners in doing exactly that.”

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News in Brief

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Water fluoridation could save NHS millions

The NHS could save at least £4 million every year on hospital admissions for the removal of rotten teeth if water fluoridation were extended to areas with high levels of tooth decay, according to research published in the British Dental Journal.

Analysis by the researchers of hospital statistics over a three-year period suggests that on average, 6,900 young people were admitted annually for dental extractions in the largely non-fluoridated North West. In the same period, that figure was just 1,100 in the West Midlands which is largely fluoridated.

Using data from 2008-9, the cost of carrying out a dental extraction under general anaesthetic was £558 or £789 depending on the complexity of the procedure, bringing the total cost of the operations to around £4 million in the North West.

Professor Damien Walmsley, the British Dental Association's Scientific Adviser, said: “This study is a powerful reminder of how water fluoridation saves the NHS money, and how whole populations can benefit from a huge improvement in their dental health.

“It's a shocking fact that over 25,000 young people in England last year suffered such poor dental health that they had to have teeth removed under general anaesthetic in hospital.”

Teeth found in baby’s brain tumour

Multiple fully formed teeth have been found inside a tumour mass that was growing in the brain of a four-month-old child.

The boy was initially admitted to a clinic in Baltimore after a routine paediatric visit due to an increasing head circumference. The doctors also found structures near the mass similar to those of teeth in the mandible.

Upon surgical removal of the tumour, the surgeons found a number of teeth inside the mass, which was identified as an adamantinomatous craniopharyngioma. Such tumours arise from Rathke’s pouch, an embryonic precursor to the anterior pituitary, and consist of stratified squamous epithelium and wet keratin, and may be cystic.

More than two thirds (67 per cent) of those surveyed thought films which involved smoking should receive the highest classification rating, suitable only for adults. According to the British Board of Film Classification, rated-18 films currently allow scenes of drug-taking, provided ‘the work as a whole must not promote or encourage drug misuse’.

The film board makes no reference to smoking or alcohol misuse, two of the leading risk factors for mouth cancer.

Children should be banned from watching films featuring actors smoking, according to a new survey carried out by the British Dental Health Foundation.

Gingival implant helps reduce cluster headache

A new mini-implant has been developed to help those affected by cluster headaches.

Cluster headache is one of the most severe forms of headache. It is usually unilateral and occurs mostly around the eye or in the temple, and attacks can last up to several hours.

Cluster headaches cause so much disability that patients are often unable to function normally,” said Professor Dr Jean Schoenen from the University of Leige in Belgium.

Call for smoking in films to be banned

Smoking should be banned in all films, say campaigners online in Cephalalgia shows that the device demonstrated clinical effectiveness in treating cluster headache, and provided significant improvement in patient quality of life and headache disability.

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The film board makes no reference to smoking or alcohol misuse, two of the leading risk factors for mouth cancer.

Chief Executive of the British Dental Health Foundation, Dr Nigel Carter OBE, said: “The risks of smoking have been well documented for many years, yet for many young people the message still isn't getting through. Children see movie stars as role models. If they are smoking, children are more likely to take up the habit. The same applies to sports stars, people we see on every day TV and even parents. By re-classifying films containing smoking scenes, it could lead to a drop in the number of young children taking up the habit.”

The ATI Neurostimulation System includes a novel, miniaturised device that is implanted using oral surgery, leaving no externally visible scars. When the patient feels a cluster attack beginning, they hold a remote controller up to their cheek to begin the neurostimulation therapy.

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A new clinical study published
Study queries sense of extracting teeth before heart surgery

Removing an infected tooth prior to cardiac surgery may increase the risk of major adverse outcomes, including risk of death prior to surgery, according to a study in the March 2014 issue of The Annals of Thoracic Surgery.

Dental extraction of abscessed or infected teeth is often performed to decrease the risk of infection during surgery and endocarditis (an inflammation of the inner layer of the heart) following surgery.

Cardiac surgeon Joseph A. Dearani, MD, along with anaesthesiologists Mark M. Smith, MD and Kendra J. Grim, MD, and colleagues from the Mayo Clinic in Rochester, Minn., evaluated the occurrence of major adverse outcomes in 205 patients who underwent at least one dental extraction prior to planned cardiac surgery from 2003 to 2013. The median time from dental extraction to cardiac surgery was seven days (average 35 days).

“Guidelines from the American College of Cardiology and American Heart Association label dental extraction as a minor procedure, with the risk of death or non-fatal heart attack estimated to be less than one per cent,” explained Dr. Smith. “Our results, however, documented a higher rate of major adverse outcomes, suggesting physicians should evaluate individualized risk of anaesthesia and surgery in this patient population.”

In this study, patients who underwent dental extraction prior to cardiac surgery experienced an eight per cent incidence of major adverse outcomes, including new heart attack, stroke, kidney failure and death. Overall, three per cent of patients died after dental extraction and before the planned cardiac surgery could be performed.

Noting the limitations of their retrospective review, Dr Dearani said: “With the information from our study we cannot make a definitive recommendation for or against dental extraction prior to cardiac surgery. We recommend an individualised analysis of the expected benefit of dental extraction prior to surgery weighed against the risk of morbidity and mortality as observed in our study.”

Editorial comment

Welcome to this month’s Dental Tribune UK edition.

As you will have seen from the front cover story, the British Dental Association has appointed a new leader of the Principal Executive Committee.

Congratulations and good luck Dr Armstrong!

On the subject of the BDA, next month sees the first BDA Annual Conference and Exhibition since the membership structure changes and the ensuing damage to finances etc. It will be interesting to feel the mood of both management and members at the event. It is being held in Manchester 10-12 April; I may see you there.

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Don’t let caries become a repeat offender.
Aggression towards NHS staff on the rise

The NHS has reported a rise of verbal and physical aggression towards health and social care staff – up 5.8 per cent to 65,199 or reported assaults in 2012/15. Now a University of Huddersfield lecturer has called for a programme of research to establish the best methods for dealing with the problem.

Various techniques known as ‘de-escalation’ have evolved in order to calm threatening situations, but Dr Andrew Clifton says there is a lack of solid evidence to identify the most successful approaches.

In a new article entitled De-escalation: the evidence, policy and practice, Dr Clifton and his co-author Dr Pamela Inglis call for a ‘randomised controlled trial’ to be conducted. This would involve the comparison of different de-escalation techniques employed at a sample of different hospitals and settings, such as A&E departments or acute psychiatric hospitals. Evidence could then be compiled to show which the most effective methods were.

Dr Clifton points out that failure in dealing effectively with aggression is highly costly for the NHS, in terms of time and resources.

Acupuncture holds promise for treating inflammatory disease

Acupuncture treatments had as predicted, and half of those mice. Ulloa explains that increasing the current magnifies the effect of needle placement, and notes that electroacupuncture is already FDA-approved for treating pain in human patients.

When electroacupuncture was applied to mice with sepsis, molecules called cytokines that help inflammation and organ injury in septic mice. Ulloa explains that increasing the current magnifies the effect of needle placement, and notes that electroacupuncture is already FDA-approved for treating pain in human patients.

Sepsis is the major cause of death in the hospital,” says Luis Ulloa, an immunologist at Rutgers New Jersey Medical School who led the study, which has been published in the journal Nature Medicine. “But in many cases patients don’t die because of the infection. They die because of the inflammatory disorder they develop after the infection. So we hoped to study how to control the inflammatory disorder.”

The researchers already knew that stimulation of one of the body’s major nerves, the vagus nerve, triggers processes in the body that reduce inflammation, so they set out to see whether a form of acupuncture that sends a small electric current through that and other nerves could reduce inflammation and organ injury in septic mice. Ulloa explains that increasing the current magnifies the effect of needle placement, and notes that electroacupuncture is already FDA-approved for treating pain in human patients.

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Ulloa and his team then probed further, to figure out exactly why the acupuncture treatments had succeeded. And they made a discovery that, on its face, was very disappointing. They found that when they removed adrenal glands – which produce hormones in the body – the electroacupuncture stopped working.

That discovery presented a big potential roadblock to use of acupuncture for sepsis in humans, because most human cases of sepsis include sharply reduced adrenal function. In theory, electroacupuncture might still help a minority of patients whose adrenal glands work well, but not many others.

So the researchers dug even deeper – to find the specific anatomical changes that occurred when electroacupuncture was performed with functioning adrenal glands. Those changes included increased levels of dopamine, a substance that has important functions within the immune system. But they found that adding dopamine by itself did not curb the inflammation. They then substituted a drug called fenoldopam that mimics some of dopamine’s most positive effects, and even without acupuncture they succeeded in reducing sepsis-related deaths by 40 percent.

Ulloa considers the results a double triumph.

On the one hand, he says, this research shows physical evidence of acupuncture’s value beyond any that has been demonstrated before. His results show potential benefits, he adds, not just for sepsis, but treating other inflammatory diseases such as rheumatoid arthritis, osteoarthritis and Crohn’s disease.

On the other hand, by also establishing that a drug reduced sepsis deaths in mice, he has provided an innovative road map toward developing potential drugs for people. That road map may be crucial, because no FDA-approved drug to treat sepsis now exists.

“I don’t even know whether in the future the best solution for sepsis will be electroacupuncture or some medicine that will mimic electroacupuncture,” Ulloa concludes. The bottom line, he says, is that this research has opened the door to both.

Epigenetics could play role in dental care

According to researchers at the University of Adelaide.

“Our genetic code, or DNA, is like an orchestra – it contains all of the elements we need to function – but the epigenetic code is essentially the conductor, telling which instruments to play or stay silent, or how to respond at any given moment,” says Associate Professor Toby Hughes.

“This is important because, in the case of oral health, epigenetic factors may help to orchestrate healthy and unhealthy states in our mouths. They respond to the current local environment, such as the type and level of our oral microbes, regulating which of our genes are active. This means we could use them to determine an individual’s state of health, or even influence how their genes behave. We can’t change the underlying genetic code, but we may be able to change when genes are switched on and off,” he says.

Professor Hughes continues: “We know that our genome plays a key role in our dental development, and in a range of oral diseases; we know that the oral microbiota also play a key role in the state of our health; we now have the potential to develop an epigenetic profile of a patient, and use all three of these factors to provide a more personalised level of care.

“Other potential oral health targets for the study of epigenetics include the inflammation and immune responses that lead to periodontitis, which can cause tooth loss; and the development and progression of oral cancers.”

The paper has been published in the Australian Dental Journal.
**Sugar tax may be introduced, says chief medical officer**

A sugar tax may need to be introduced to cut down on obesity rates, chief medical officer Dame Sally Davies has said.

According to the BBC, she told a committee of MPs that the government needs to be firm with food and drink manufacturers in order for them to reformulate their products.

Dame Sally said: “We have a generation of children who, because they’re overweight and their lack of activity, may well not live as long as my generation. They will be the first generation that live less, and that is of great concern.”

She added that she believed researchers will find that sugars are addictive, and the public needed to have “a big education” over how “calorie packed” some smoothies, fruit juices and carbonated drinks were.

“People need to know one’s fine, but not lots of them,” she said. “We may need to move towards some form of sugar tax, but I hope we don’t have to.”

Terry Jones of the Food and Drink Federation said any extra tax on sugar would “hit the poorest families hardest at a time when they can least afford it,” adding that sugar content was already clearly labelled among products’ ingredients.

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**Dentist saves patient’s life**

A woman was saved by her dentist when she suffered a heart attack on her way to work.

According to the Ilford Recorder, Catherine Forman from Barkingside got a lift from a stranger during the London Tube strike. Once in the car, Catherine experienced a pain in her chest, breathlessness and loss of vision.

The driver stopped at The Valentine Dental Health Centre in Ilford where Dr Hitesh Mody (Catherine’s dentist) used his medical kit and knowledge from a DVD on emergencies in the surgery to provide first aid. Dr Mody administered aspirin and a spray containing glyceryl trinitrate which helps the heart to pump more easily while they waited for an ambulance to arrive.

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