ADC 2017: All about education

Melbourne welcomes dental community to biggest event to date

From 17 to 21 May, the 37th Australian Dental Congress (ADC) 2017 is bringing together over 4,000 dental practitioners at the Melbourne Convention and Exhibition Centre. Established in 1907 and organised by the Australian Dental Association (ADA), the event is set to be the biggest ever this year. Held under the theme “Educating for dental excellence”, ADC 2017 has attracted an impressive line-up of four keynote speakers: acclaimed UK prosthodontist Dr John Besford, UK periodontists and prosthodontics specialist Dr Andrew Dawson, endodontist Prof. Axel Kieser from the University of Toronto in Canada and prosthodontist Dr Ken Malament from the US.

With an additional 100 speakers from all over the world and a range of topics in all fields of dentistry, including oral cancer screening, root canal irrigation, ergonomics and infection control, ADC 2017 is the largest continuing professional development (CPD) event for dental practitioners in Australia and an ideal way to fulfil CPD requirements. According to the ADA, the main scientific programme and associated workshops, forums and “lunch and learn” sessions offer over 32 hours of CPD for dentists, 12 hours for dental hygienists, oral health therapists and dental therapists, and 11.5 hours for dental therapists.

Another key part of the congress programme is the ADA/FDA National Emerging Young Lecturer Competition. Sponsored by the ADA, and Pierre Fauchard Academy (PFA), the competition gives ADA branch-nominated young clinicians the opportunity to present their clinical, research and lecture skills, providing insight into the latest work being undertaken in dental schools across Australia. Candidates hold 15-minute presentations with a short Q&A session and are judged by a panel of four experts from both sponsoring organisations.

The presentations will be held on Friday from 10.30 to 14.30. The winners will be announced at 15.00. The National Emerging Young Lecturer is granted a sponsorship from the PFA of A$5,000. A second prize, the Encouragement Award, is worth A$1,000.

Free industry exhibition

For the first time, the accompanying industry exhibition—the largest of its kind in Australia—is free, not just for congress attendees, but also for all those in dental practice. Hosting over 100 major companies, the exhibition is showcasing a wide selection of products and services available to the dental profession. It runs from 18 to 20 May in a building adjacent to the venues where the main congress programme will be presented. The exhibition includes over 40 companies and organisations from across the dental industry, including private practices, public sector employers and companies, with whom graduates will be able to book appointments to discuss the opportunities available.

Read about the ADC’s numerous networking opportunities on pages 4 and 5.

“This year’s congress is not limited by a theme”

An interview with Dr Gordon Burt, Chairman of the Scientific Programme Division for the 37th Australian Dental Congress (ADC)

Providing three and a half days of presentations and over 100 speakers, this year’s edition of the ADC will be the largest continuing professional development (CPD) event for dental practitioners in Australia in 2017. Today international spoke with Dr Gordon Burt about highlights and new additions to the Australian Dental Association’s (ADA) flagship event, such as the “whole of practice” sessions and the new congress app—and coffee, which he believes is one of the best things Melbourne has to offer.

The congress has a very diverse schedule of sessions. What did you aim at when composing the scientific programme?

This year’s congress is not limited by a theme. We have tried to organise the concurrent sessions of the main scientific programme into “proce- dural” (practical), “holistic” (pa- tient-controlled and “blue sky” (visionary and creative) streams. For example, attendees have the opportunity to attend lectures that inform them of techniques they could apply in their practices on Monday morning, or confirm their contribution to the health of a patient, or learn about the future directions of the profession.

We have invited four keynote speakers from the UK, the US and Canada, as well as other international and local presenters. Including the “lunch and learn” sessions, there are more than 100 speakers. The congress also features programmes for dental hygienists, oral health therapists and dental therapists.

What is the proportion of attendees in these professions and have you noticed an increase in participation by these groups in recent years?

This ADA has selectively included allied dental health professions as part of the biennial congress since 2013. Two-day programmes are now offered to dental hygienists and therapists, dental assistants, practice managers and dental prosthetists. While these attendees make up a fraction of the total, they are none the less important. Generally, the participation figures are continuing to increase.

You have introduced a new congress app for recording of participants’ CPD hours. How does this work?

As well as providing general information about sessions and speakers, the congress app allows those attending the main scientific, dental hygienist and therapist, or dental assistant programmes to accrue CPD hours, by entering a unique code specific to the session they are attending into the app. The code is only displayed in the session venue. For ADA members, the recorded CPD hours will flow back to the members’ CPD portal. For other participants, this information will form the basis of a CPD certificate of attendance of the congress. The app is available for smartphones and tablets.

Could you introduce the concept of the “whole of practice” sessions?

The “whole of practice” sessions are a first for the congress. The dental profession has always relied on various clinicians and support from others to provide the best care for an individual. To include those providers who work closely with the dentist is logical.

The opportunity for the whole team to attend lectures together is invaluable in reinforcing the bond between us all and building mutual respect.

Melbourne is your home town. Could you give attendees some tips on making the most of the time in the host city after hours?

Walk the streets and be spontaneous. Melbourne is one of those cities that really need to be explored. Within a few metres from the congress site, there are arts venues, live music, clubs, bars, restaurants, laneways and graffiti-and-coffee. In my opinion, it is the best in the world. One of Melbourne’s most successful international exports seems to be the barista. There are plenty of online publications that will tell attendees what is on (apart from the ADA event). Do not worry about the weather; there will be some—a coat and umbrella may be necessary.

Thank you very much for the interview.
The link between lifestyle, the oral microbiome, health and well-being
An interview with ADC speaker Prof. Philip Marsh, UK

Philip Marsh is Professor of Oral Microbiology at the University of Leeds in the UK. He has received national and international awards for his research in the field and is a regular conference speaker. In Melbourne, he will be addressing the topics of dental biofilms and oral microbiome ecology in three lectures. Ahead of the event, today internationals had the opportunity to speak with him about the relationship between lifestyle factors and the microbiome composition and how to best maintain a healthy bacterial balance in the mouth.

The microbial balance of the oral cavity is essential for dental (and overall) health. Could you briefly explain this relationship?

Humans and microorganisms have evolved to have a close and important symbiotic relationship, to the extent that we are 90 per cent microbe! These microorganisms [the human microbiome] are natural and deliver essential health benefits. In the mouth, the normal oral microbiome prevents colonisation by external microbes—some of which would be potentially pathogenic—and contributes to the development of our host defences and cardiovascular system. The natural oral microbiome is closely linked to oral health and is not associated with oral disease.

The oral microbiota is vulnerable to disruption by lifestyle and environmental changes. What exactly can cause a shift and what are potential consequences?

The symbiotic relationship between the oral microbiota and the host is dynamic and can alter if the oral environment undergoes a substantial change, often as a consequence of an altered lifestyle. A clear example is when salivary flow is reduced or when an individual more regularly consumes sugarc containing foods and beverages. In this situation, the dental biofilm spends more time at an acidic pH. This leads to an enrichment of acid-producing and tolerating bacteria at the expense of beneficial organisms and increases the risk of dental caries. Similarly, the host recovers an inflammatory response if biofilm accumulates around the gingival margin. If this fails to reduce the microbial load, then the protein-rich gingival exudate that delivers the host defences inadvertently acts as a novel supply of nutrients for the proteolytic and obligately anaerobic bacteria in subgingival biofilms. Bacteria subvert the host response and continue to drive inflammation; this exaggerated response is responsible for host tissue damage and the onset of caries.

Is the composition of the oral microbiota mainly based on heredity or can it be managed through external factors?

Some elements of the make-up of the oral microbiota are linked to heredity, but the general composition and activity of these microorganisms can be managed through effective oral hygiene and an appropriate lifestyle, for example reducing the amount and frequency of intake of fermentable sugars in the diet, avoidance of tobacco-smoking, etc. An unintended side-effect of some medications can cause a reduction of salivary flow; this would disturb the natural balance of the oral microbiota and increase the risk of dental caries.

Dental care products aim to reduce harmful bacteria while maintaining the good ones. Is there a danger of using too much product and thereby destroying the oral flora?

The oral microbiota is natural and beneficial and therefore needs to be managed and maintained at levels compatible with oral health. Oral care products are designed and evaluated to support the patient in maintaining an appropriate level of oral microorganisms, so if they are used as intended, there is little danger of negatively disrupting the oral microbiota. In contrast, the long-term use of broad-spectrum antibiotics can lead to the suppression of significant numbers and types of beneficial oral bacteria, and this can result in overgrowth by opportunistic or environmental microbes.

Bacteria play an important role in the development of diseases such as periodontitis or caries. Are there ways to manage harmful contamination other than with dental hygiene measures, for example with vaccines, or will there be in the future?

New strategies to promote beneficial oral bacteria and/or to suppress the likelihood of diseases are being developed. These strategies include the development of oral probiotics or bacteria to prevent dental disease and the use of prebiotics, which are supplements designed to boost the growth of beneficial bacteria. Novel anti-inflammatory agents are being evaluated that would promote wound healing and reduce the tissue damage caused by a subverted host response to subgingival bacterial biofilms. Molecules that reduce biofilm formation or inhibit species implicated in dental disease are under active investigation. Some snack foods and drinks contain components that cannot be metabolised into acid by oral bacteria.

In dentistry experiencing greater challenges with regard to biofilms and bacterial shifts today than in the past, and if so, why?

The main differences today compared with the past probably surround the increased amounts of sugar in snack foods and drinks. Also, people are living longer and are retaining their teeth into later life, so the dentinum is vulnerable to dental disease for longer, and is coupled with the fact that a side-effect of many medications taken by the elderly is a reduction in salivary flow.

What strategies for keeping a healthy balance in the mouth can dentists teach patients?

The main strategies are for patients to practise effective oral hygiene and thereby reduce biofilm accumulation and to appreciate the impact of sugar in their diet on their risk of dental caries. It may be helpful if patients realise the relationship and direct link between their lifestyle, their oral microbiome, and their oral and general health and well-being.

Thank you very much for the interview.
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Welcome reception
Giving the opportunity to reconnect with close friends and colleagues in celebration and anticipation of the event to come, the welcome reception kicks off at 18:30 on Wednesday and runs until 20:30. The reception event is included in the registration fee regardless of the category you fall in.

For those still looking to party after the official event has ended, the nearby South Wharf Promenade offers many opportunities, including wonderful waterside dining options—likely boasting the most beautiful waterside views in Melbourne.

A ride along the Yarra River will add to the holiday feeling. Melbourne Water Taxis offer a pick-up and drop-off service for passengers at the Melbourne Convention and Exhibition Centre landing point. The water taxis operate day and night all week. More information can be found at www.melbournewatertaxis.com.au.

Accompanying persons programme
Not to be forgotten at ADC 2017 are the partners of dental professionals attending the congress. This year’s programme for accompanying persons has undergone some changes to make the event even more memorable. Instead of the traditional lunch, held on the Friday in the past, a Thursday meet-and-greet event will give accompanying persons the opportunity to become acquainted with one another in a relaxed and convivial setting.

Another addition is a tourism desk operated by Best of Victoria, which will be open for the duration of the event, allowing visitors to plan their own experience of the beautiful host city of Melbourne.

One thing that remains unchanged is the Accompanying Persons’ Lounge, where visitors will be able to help themselves to a range of hot and cold beverages while catching up with friends and colleagues from Australia and around the world.

Congress Late Night
What could be better than wrapping up a stimulating three days of learning from the best dental minds with Congress Late Night on Saturday? Under the theme “Dia de los Muertos” (Day of the Dead), attendees will witness calacas and calaveras—skeletons and skulls—adorning every vantage point, and brightly decorated altars covered in candles, fruit and toys, all of which are part of rituals to welcome the dead back into the land of the living.

Providing musical entertainment will be Los Románticos, a 22-piece Mariachi band whose music embodies the essence of Mexico and who play a vibrant mix of traditional folk and modern pop. Attendees can while away the evening strolling through the festively decorated space filled with Mexican dancers and food and drink stands serving tequila and churros. Visitors can even have their faces painted in the vividly coloured sugar skull tradition that is the literal face of this iconic Mexican festival.

More information on the social events is made available after registration.
In addition to the vast number of educational and scientific opportunities on offer at the 37th Australian Dental Congress, there is a rich calendar of social events, commencing with a welcome reception on opening night and ending with Congress Late Night on the final evening.

From welcome reception to Dia de los Muertos: Social events at ADC 2017

More information on the social events is made available after registration.

Providing musical entertainment will be Los Románticos, a 22-piece Mariachi band whose music will stir the holiday feeling. Melbourne Water Taxis offer a pick-up and drop-off service for passengers at the Melbourne Convention and Exhibition Centre landing all week. More information can be found at www.melbournewatertaxis.com.au.

In addition to the welcoming reception, attendees can while away the evening strolling through the festively decorated space filled with Mexican dancers and food and drink stands serving tequila and churros. Visitors can even have their picture taken to welcome the dead back into the land of the living with celebration and song.

Attendees will witness calacas and calaveras—skeletons and skulls—adorning every vantage point, and brightly decorated altars covered in candles, fruit and toys, all of which are part of rituals to welcome the dead back into the land of the living with celebration and song.

One thing that remains unchanged is the Accompanying Persons’ Lounge, where visitors will be able to help themselves to a range of hot and cold beverages while catching up with friends and colleagues of dental professionals attending the congress. It has undergone some changes to make the event more memorable. Instead of the traditional lunch, held on the Friday in the past, a Thursday meet-and-greet event will give accompanying persons the opportunity to become acquainted with a wide range of exhibitors and commercial markets. General terms and conditions apply. Legal venue is Leipzig, Germany.
There is mounting evidence in the literature of the diagnostic superiority of 3-D imaging versus 2-D. As a result, many clinicians today are using 3-D imaging either by referring their patients to a CBCT scanning centre or having mobile units visit them—the only benefit of this is that there is no initial capital outlay to buy the machine. In contrast, the benefits of an in-house CBCT device are many, including the convenience of an on-demand service at any time (pre, peri or postoperatively if needed), learning one software programme and utilising it fully, rather than having to learn different ones for different machines from various manufacturers and thus not employing it to its full potential. Additionally, patients appreciate the convenience of not having to travel to another location.

Our X-Mind trium CBCT unit from ACTEON is rather new to our practice, and we have yet to fully utilise it. Every day we find new uses and ways to benefit our patients by using 3-D imaging where applicable. Following the latest evidence from experts in the utilisation of 3-D imaging, we can help a great deal in deciding where and when to use it, consequently minimising radiation dosage and improving diagnostics and planning.

We owe our patients the lowest possible dose with the corresponding acceptable diagnostic value, and sometimes, a 2-D image does not provide satisfactory diagnostic value. A great deal of guesswork is often involved with 2-D imaging and exposes the patient to extra radiation. In many cases, a small FOV that is enough for one to several teeth could be equal to the radiation dose of several peripapical radiographs, but with a much higher diagnostic value.

Despite the choice of four different FOV settings with the X-Mind that could affect our decision-making and treatment planning, judging every case individually is important in order for the benefits of using a CBCT scan to outweigh the potential risks involved with the use of any type of radiographic unit. A modern CBCT machine should allow for different fields of view (FOV) to be utilised in order to minimise the dose to the patient.

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When a 3-D image is necessary, patients appreciate the information and education they obtain by the case being discussed with them while pointing out vital structures and proposed solutions in 3-D compared with a 2-D image that generally does not make sense to the untrained eye.

In order to show how a CBCT unit can affect day-to-day dentistry in a small family practice, it would be beneficial to share a week’s diary of its use. This article provides a small selection from a week’s diary regarding the use of the X-Mind trium CBCT unit in the clinic. More CBCT scans were often obtained on any one day depending on the cases on that day; however, owing to space limitations in this article, only one to two cases per day are described. It must be borne in mind that each practice need not be different, but one thing should be common above all and that is to assess every case individually and never take 3-D scans routinely, despite their clear diagnostic benefits.

**Day 1**

The patient had had all of his mandibular teeth extracted many months before, owing to mobility and infections, and preferred to have a fixed solution through implant therapy. At that point, the patient was wearing a well-fitted temporary mandibular denture. Initially, the idea was to take a scan of the existing denture with radiopaque markers (gutta-percha in six to eight holes made in the denture) to plan for the placement stage. However, a decision was made to duplicate the existing denture using a duplication flask (Lang
values are acceptable or high and red if the values are low (Fig. 5), allowing the clinician to make the right decision. This can also be a very good educational tool to show the patient the bone density around any potential implant. In our experience, patients like this feature once shown what it means.

**Day 2**

An implant was planned to replace a missing mandibular molar, and the position of the mandibular canal was not very clear on a 2D image, the position was still a little confusing. For this case, we decided to use the ACTEON Imaging Suite’s FlyMode option, which is like a virtual endoscope that follows the mandibular canal tract from within and clarifies the path to confirm that our nerve tracking is correct (Fig. 6). This is one of the unique features of the software.

**Day 3**

Obtaining the correct position and trajectory of a retained maxillary canine has conventionally been dealt with by taking 2D images (periapical radiographs) at different angles and possibly an occlusal film to determine the correct position in the buccal palatal aspect, together with some guesswork. 3D imaging can be an invaluable tool for this indication. The patient refused orthodontic extrusion of the maxillary left canine and wanted both the primary and permanent canines extracted and replaced with an implant-supported crown.

In planning this case, a CBCT scan was obtained to serve many purposes in assessing the positions, including the anatomy and bone surrounding these teeth. After this image was taken, both teeth were extracted and the socket was grafted fully to prepare the site for a later implant placement (Figs. 7 & 8).

**Day 4**

**Case 1**

A mandibular molar case was in the planning stage, and the position of the mandibular canal was located. At this stage, different implant sizes were tested to check for the best fit and the prognosis for maximum integration in the future. The ACTEON Imaging Suite indicated that the first implant considered was too long and there was a risk of nerve damage (Fig. 9); thus, another implant size was chosen to allow sufficient clearance above the nerve, and the density of the bone was checked at the same time, indicating good values in green, which the patient could easily understand (Fig. 10). These tools, as mentioned above, can be quite a revelation for patients, and their use can affect the outcome positively.

**Case 2**

A broken and loose bridge was planned to be removed. The management and clearly showed that this may have proved difficult. In addition, on the 3D image, we noted that the tip of the implant on the left side may have been positioning with the root of the adjacent tooth, with long-term uncertainty as a result (Fig. 15). In a scanning slice (Fig. 16), we also noted the challenge ahead for grafting this implant successfully, indicating that a great deal of consideration would have to be given and careful planning employed in order to obtain a successful outcome for this case. However, despite the outcome at that point with these two implants, the patient appreciated the high quality of the 3D technology and being able to see the problem clearly and from different perspectives, eliminating any guesswork that might have affected the final outcome and guiding the treatment in the right direction.

**Conclusion**

These cases and many more every week pass through any dental clinic with patients hoping to easily understand the best available treatment under the circumstances (clinical, timescale, financial, etc.). We know that 3D imaging is here to stay, and in order to make treatments safer and more predictable for our patients, we have to engage these technologies and involve patients more in showing them their clinical conditions and perhaps the limitations (anatomical, structural, etc.), together with other factors that may affect treatment planning and outcome, hopefully for the better. We hope to use our CBCT scanner for more indications, especially in endodontics, as we have seen amazing positive results from using a CBCT scan in some difficult endodontic cases we acquired this 3D technology. It is the way forward, and we wish we had had the X-Mind trium soon!

"We know that 3D imaging is here to stay."