

Volume 55 Number 1 February/March 2009

IDA
irish dental association

Journal of the Irish Dental Association

Iris Cumainn Déadach na hÉireann



Let's get digital

Photography in the dental surgery

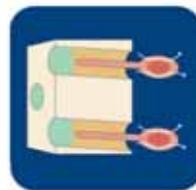
SENSODYNE

1 in 3

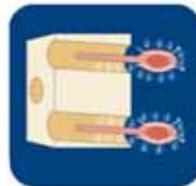
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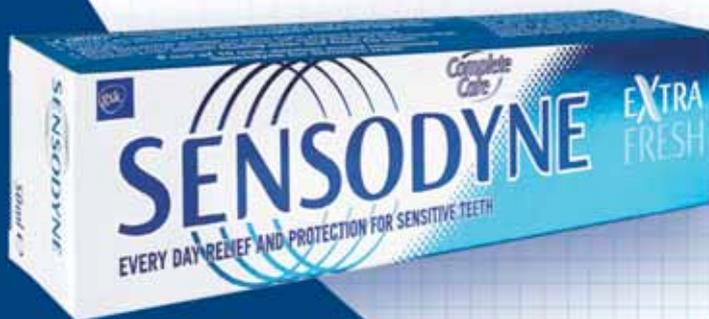
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Potassium salts work by
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that cause the pain.⁶



1. Independent Market Research May 2003.
2. Gillam DG et al. J. Periodontol 1992; 63: 7-12.
3. Silverman et al. Am J Dent. 1994;7:9-12.
4. Salvato et al. Am J Dent. 1992; 5:303-306.
5. Orchanidson, R. Strategies for the management of dentine hypersensitivity; 27:315-323; Toothwear and sensitivity. Martin Dunitz 2000.
6. Markowitz K. Kim, S.: Hypersensitive Teeth: Experimental studies of Dentine Desensitising Agents. Dent. Clin.N. Amer. 34:491-501, 1990.



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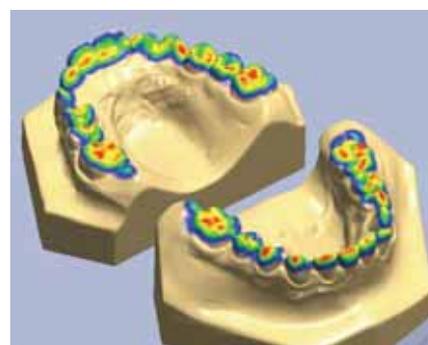
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Are you ready for that rainy day?

50



Did you know that more than 60% of Children aged 8-12 years suffer from inflamed gums¹?

The Smart Rinse to Recommend

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1 Children's Dental Health in the UK, 2003, National Statistics

2 Data on file: 103-0120

3 Driscoll WS et al. JADA. 1982; 105: 1010-1013

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Good science

This issue of the Journal highlights a number of important considerations: new technology; hard times; know yourself; how to take photographs, collect data and how to protect our finances.

President Obama is in office in the US. He has the expectations of the world on his shoulders. He had the common sense and bravery to come out and say "shame on bankers' bonuses" awarded in 2008 in this difficult time and we need to say the same to some of the practices that have been allowed to prosper. The Celtic Tiger has passed but the money wasted/lost is frightening. Hopefully Senator Mitchell can work his miracles in the Middle East and broker a peace. Dr Brennan (p6) talks about "Hard times ahead". This is for all in dentistry and with only 33% of patients attending a dental practitioner, the loss in tax relief is likely to make this considerably worse. The IDA (p8) continues its conversations with the Joint Committee on Health and Children and highlights the shortage of Public Health Dentists. It is expected that the National Oral Health Strategy will look at this and make recommendations on how this service might be helped.

Screening, and digital recording

There is a place for oral health screening in the dental environment, in particular oral cancer screening (p10) and it is disappointing that earlier literature indicates that the medical practitioner without any oral/mouth examination training refers more oral cancers than the dental practitioner. The present education and training of our young dental graduates and future CDE courses might enable our dental colleagues to link up with their local medical practitioners to assess some of those unusual oral conditions that are confusing to medical practitioners, improve dental attendance and then refer on to the oral cancer specialist if necessary. This is the only chance to improve outcome for this easily visible tumour. The development of such a relationship can only improve the standing of dentistry and enable easy access to local medical advice on that patient with the 'raised blood pressure'.

Complete digital recording of models (p14) by ESM Digital Solutions (Dr Stephen Gallagher/Mark Barry) is a must read. No more models to store and easy access when required. This might be read in conjunction with "Let's get digital" by Rita Bauer (p44-48). I heard Rita in Wexford and her advice is clear, concise and I am off to buy a camera. David McDonald's scientific paper "Factors to consider in the transition to digital radiological imaging" (pp26-34) further highlights the technological advances, the value of computer recording vs. the storage of x-rays and the ability to communicate easily with other practitioners. Printing out on good photographic stock prevents the loss of radiographs when we send our patients for an opinion. Infection control is a must.

The EU, our awards, and a great deal more

The European section highlights the *EU Manual of Dental Practice* (p19), which is available on the CED website. This book tells us what

we need to know and regulations on how to practice in any of the 32 European countries. Look what it says about Ireland!

The Sensodyne Sensitive Dentist Award for 2008 (pp21-23) was a great success. Congratulations to the winners and thanks to the judges and Sensodyne. Everybody looks so young. I will have to change my toothpaste or resign as Editor.

The award also reflects our feature "Logic, behaviour and dentistry" with Dr Tony Humphreys (pp24-25) on his views on life. Read his book, *The power of negative thinking*. I heard him in Wexford at the Conference. He is an inspiring person and highlights the importance of combining the 'heart and the head' to get the best for ourselves and through that, our family and patients.

Supernumerary teeth (pp35-37) in a confined population (Cork and Kerry) in 1996 highlights the high incidence of these teeth in this population. This is a further audit by the same author (Ian O Dowling) and highlights changes over a period of time and reminds us of the risks of supernumerary teeth. It is a very nice study and again stresses the importance of good data collection to allow these types of studies/audits to be undertaken.

Results of a peer review process: the distribution of codes by examining dentists in the Republic of Ireland 2006-2007 (pp38-40) is a very nice audit on what has been happening in the DTSS. It highlights good practice and probity in the group assessed. It shows the cost per treatment received (p39). On average it is €54 per treatment. This might explain some of the problems and why patients find it difficult to obtain this treatment. Dentists have to pay for premises, nurses, and other outlays.

This *Journal's* abstracts (pp42-43) are again very broad in their coverage, highlight important areas for us to look at and may encourage us to undertake these assessments in our own clinics.

The *Journal* started on "Hard times ahead" and John O'Connor's piece on "Are you ready for that rainy day" (pp50-51) is an excellent bit of sound advice for all of us to heed. He gives two case studies for us to look at and even for those of us with no head for figures, it is understandable.

I learnt an awful lot from reading this Journal and I am already looking forward to the next issue.



Leo F. A. Stassen

Prof. Leo F. A. Stassen
Honorary Editor

PRESIDENT'S NEWS

Hard times ahead

IDA President DR ENA BRENNAN says that 2009 will see very challenging times for everyone working in the dental profession.

Significant reductions in funding and services are inevitable according to the HSE Service Plan, which was recently approved by the Minister for Health & Children. Undoubtedly, this will affect most those working in the Public Dental Service and also those participating in the DTSS.

As our economy changes with many redundancies, businesses closing and a general downturn, I urge all dental professionals to be aware of our dental colleagues who might be going through difficult financial times and perhaps would welcome some friendly advice or assistance, or indeed just the assurance that support is at hand.

National Oral Health Strategy

It is my understanding that all the submissions from interested parties have now been compiled and the National Oral Health Strategy will be published by the Department of Health & Children in April/May 2009. The strategy document will hopefully offer a blueprint for the growth and development of the profession so we await its publication with interest.

AGM 2009

As members will be aware, the AGM will take place this year at 10.00am on Thursday April 23 at Hotel Kilkenny. Motions for consideration and nominations must be forwarded to IDA House no later than Thursday March 19.

It is the responsibility of each and every one of us to submit relevant motions that might affect various policy decisions in the IDA. Please consult with your branch and group colleagues and submit motions before the March 19 deadline.

I would like to take this opportunity to ask all members to volunteer to get involved in the many IDA activities, committees, branches and groups. It is important for us all to play our part for the betterment of our profession, so I ask you all to contact your local branch, committee member or IDA House for details on how to get more involved. A warm and genuine welcome is assured for all so please get involved and play your part in dealing with the many challenges we face.

Annual Dinner

I am delighted to hear that President Mary McAleese and her husband Martin will be the guests of honour at our Annual Dinner on Friday April 24. It is indeed a great honour to welcome President McAleese back to our Annual Dinner and I would like to make a special plea to members to make an effort to attend this year's event in Hotel Kilkenny.

Dr Gary Boyle

It was with great sadness that I heard of the passing of Dr Gary Boyle (Metro Branch). Gary was past Treasurer and Director of the Association and worked tirelessly on behalf of the IDA. He was also a significant member of the GP Group and was on the DTSS negotiation team. Gary was a committed individual who gave very generously of his time and expertise to his profession and he will be sadly missed – ar dheis Dé go raibh a anam.



Dr Ena Brennan

Irish Dental Association President



Annual Conference 2009



Skillkenny

Irish Dental Association Annual Conference
Kilkenny, April 22 - 25, 2009

The IDA Annual Conference for 2009 is fast approaching. The event takes place from April 22-25 at Hotel Kilkenny, and will include a host of international and national speakers, along with an extensive trade show. 2009 will see the Association continue to hold our AGM at Annual Conference; it will take place on Thursday April 24 at 10.00am, and all members are encouraged to attend. Dr Ena Brennan will pass over the Presidency to Dr Donal Blackwell.

The conference kicks off on Wednesday April 22 with four pre-conference courses covering the areas of implants, paedodontics, composite layering and oral surgery.

Topics included in the extensive programme will include oral surgery, endodontics for GDPs, implants, dental tourism, employment law, radiography, pain management and practice management, along with much, much more.

All the usual social activities will take place, including the Annual President's Dinner on Friday April 24, with guests of honour President Mary McAleese and Dr Martin McAleese. The President's Prize Golf Competition will take place on Saturday April 25 at Mount Juliet.

Book before February 20 to avail of the early booking fees.

For further information, visit www.dentist.ie, or contact IDA House, Tel: 01 295 0072.

AGM 2009 – March 19 deadline

The AGM of the Association will take place during our National Conference on Thursday April 24 at 10.00am in Hotel Kilkenny.

All motions for consideration at this AGM must be forwarded, in writing, together with the names of the proposer and the seconder, on or before Thursday March 19, 2009.

All groups, branches and individual members are encouraged to consider suitable motions to be brought forward to the AGM. Submitting a motion gives you, the members, the opportunity to have your say on various issues of concern for your Association.

Nominations will also be sought this year for Honorary Secretary designate and an elected member to Council.



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- 26 - 27 Mar Derry
- 15 - 16 Oct Monaghan

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This Live Skills programme allows delegates to apply the theory learned in the Foundation course on live patients and enable delegates to employ more advanced treatment planning skills for the multidiscipline case with full consideration of cosmetic assessment and aesthetic outcomes.

- 04 - 05 Jun Ballymoney
- 24 - 25 Sep Ballymoney

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IDA NEWS

IDA delegation attends Health Committee meeting



IDA delegation (from left): Dr Jane Renehan; Dr Ciara Scott; Dr Helen Walsh; Fintan Hourihan; Dr Maurice Quirke; and, Dr Rosarii McCafferty.

On Thursday January 29, a delegation from the IDA made a presentation to the Joint Committee on Health and Children, the first time that the Association has been represented at such a committee. The delegation consisted of Dr Helen Walsh, Chairperson, IDA General Practitioners Committee, Dr Rosarii McCafferty, President, IDA Public Dental Surgeons Committee, Dr Jane Renehan, IDA Council member, and incoming President, IDA Public Dental Surgeons Committee, Dr Maurice Quirke, Immediate Past Chair, IDA General Practitioners Committee, Dr Ciara Scott, IDA Council Member and Specialist in Orthodontics, and Fintan Hourihan, IDA Chief Executive.

Mr Hourihan made a brief presentation to the Committee, highlighting the current crisis in community care, and the need for urgent action to address the shortage of public health dentists in many parts of the country. He drew the Committee's attention to the fact that investment in dental practice facilities derives solely from funds generated by dentists, and highlighted the difficulties that are likely to arise from the Government's decision to reduce tax relief on dental treatment. He drew particular attention to the fact that the Health Service Executive's (HSE) presentation to the Committee on January 28 made no mention of oral health. He reiterated the IDA's eagerness to engage in discussions with the HSE on the provision of more extensive care for greater numbers of patients through investment but also through innovation and reform.

Members of the Committee raised a number of issues with the delegation, and requested clarification on some of the points raised in the presentation, and in the IDA's detailed submission to the Committee.

In response to a number of questions regarding the IDA's contact with the HSE up to this point, and the Association's stance on the role dentists might have in primary care teams, Fintan Hourihan stated that his understanding was that the HSE sees dentists as being part of

a larger primary care network, rather than specific primary care centres. However, he reiterated that the IDA has had no discussion with the HSE on this issue and would welcome the opportunity to address it. He stated that the Association's position is that dentistry is currently isolated, and it is essential that there is greater integration of dental services into primary care.

Responding to a query on health promotion and prevention from Margaret Conlon TD, Dr Rosarii McCafferty stated that the Public Dental Service provides a service to children from 0 to 16 years, and to patients with special needs. She highlighted the inequalities in service provision nationally, and pointed to the current recruitment embargo as a major issue, which needs to be addressed urgently. She highlighted the fact that some clinics have been forced to close because of lack of clinical staff.

Jan O'Sullivan TD stated that it was very alarming that children are not accessing these services, and asked the delegation what needed to be done as a matter of urgency to address this. Dr McCafferty responded that the appointment of frontline clinical staff must be prioritised to provide vital preventive care and treatment to children and patients with special needs.

Dr Ciara Scott addressed issues relating to the public orthodontic service, including waiting times for treatment, which have reached as much as 48 months in some areas. She explained that orthodontists in the Public Dental Service triage patients based on greatest need, but that recruitment freezes and lack of funding are having a serious impact. She also drew attention to the fact that the Government's decision to reduce tax relief will push more families towards the public orthodontic service, thus putting the service under increased pressure. On the subject of dental tourism, Dr Maurice Quirke echoed the Committee's concern about the current trend for patients to seek dental treatment abroad. He pointed out that the best place for a patient to seek treatment is from a local provider, so that any problems can be dealt with appropriately. He stated that dentists should by all means encourage patients to shop around, but that patients must be sure that they are getting appropriate treatment.

Dr James Reilly TD asked the delegation what they saw as the most pressing concern for dentistry in Ireland. The delegation responded that greater national co-ordination of dental care in the HSE was urgently needed, and re-emphasised the need for one senior clinician within the health service with national oversight to co-ordinate services and increase efficiency. At the moment services are fragmented and some regions get better management support and better funding than others. There is an urgent need for the appointment of a Chief Dental Officer to guide the formulation of Departmental policy, and bring oral health issues to the attention of the HSE.

Committee Chairman Mr Seán Ó Fearghail thanked the delegation for their submission, and requested further clarification on certain issues. Both sides undertook to maintain communication on these matters.

The delegation felt that the meeting had been a positive one, bringing issues of importance for the dental profession to the attention of a forum that the Association has not previously accessed.



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IDA NEWS

Cork study highlights importance of oral cancer screening

A new study has highlighted the benefits of oral cancer screening, in particular for people with tobacco or alcohol addictions. In her report 'Oral Cancer Screening Study of High Risk Individuals', Dr Eleanor O'Sullivan, a clinical lecturer in the Oral Surgery Department at Cork University Dental School and Hospital with a special interest in oral and pharyngeal cancer (OPC), points out that OPC is often associated with heavy alcohol and tobacco intake, making it a largely preventable condition. However, early detection can be difficult as heavy drinkers and smokers often escape the attention of health service professionals. In Ireland, OPC represents approximately 4% of cancer patients and is responsible for 1.5% (or 150) of cancer deaths each year, killing more people than malignant melanoma, Hodgkin's disease or cervical cancer.

Many OPCs can be detected by a relatively simple, painless oral examination, and if detected early, minimal surgical intervention generally results in good outcomes. "All these facts should make oral cancer a very rare and easily treated cancer. Unfortunately, many patients still present with advanced lesions and for this reason, the five-year survival rate is less than 50%", said Dr O'Sullivan.

For her study, Dr O'Sullivan investigated the feasibility, suitability and



acceptability of a targeted oral health screening programme for addiction treatment centre residents in Cork to assess the potential benefit of a similar process nationally.

Dentists are currently the only primary healthcare professionals trained specifically in oral cancer examination. However, only one-third of the adult Irish population visits a dentist annually, while less than 50% visit bi-annually.

Attendance rates among older adults, medical card holders and those with no natural teeth are even lower. International research indicates that individuals with an increased risk of oral cancer generally exhibit low rates of dental attendance. "The dental profession needs to develop innovative ways of increasing contact with individuals who currently do not attend on a regular basis," said Dr O'Sullivan.

The study was supported by a grant from the Irish Cancer Society.

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Metro Branch Annual Scientific Meeting

The Metropolitan Branch will hold its Annual Scientific Meeting in the Hilton Hotel, Charlemont Place on Friday February 27. The event, which is entitled 'Mastering Technology', will also include a full trade show.

Speakers at the event will include Dr PJ Byrne, who will present on 'Computer guided implant placement', Dr Paul Moore on 'Microscopy – what you see is what you get', and Dr Lynda Elliott on 'Get twisted – review of the new twisted endodontic rotatory files'. A very interesting presentation on practice management and marketing dental practices will be given by Mr Steve Cartin from Cartin Coaching.

The ever popular table discussions will also take place on such topics as restorations, tooth whitening, practice management and periodontics, as well as many more.

For further information and a brochure, please contact IDA House, Email: info@irishdentallassoc.ie.

Metro Branch AGM

The AGM of the Metropolitan Branch will take place on Thursday March 19, 2009, at the Hilton Hotel, Charlemont Place, Dublin 2, at 8.00pm. All branch members are welcome. Dr Dermot Canavan will step down as President and will be succeeded by Dr Lynda Elliott.



The winning team (from left): Drs Gerry Tormey; Spencer Wolfe; Harry Torney; John Fahey (Golf Captain); and, John Lalor.

IDA Christmas Hamper Golf Competition

A packed time sheet made for a great game of golf on Saturday December 5 at the Annual Christmas Hamper Golf Competition. 84 members of the golf society braved the elements to play an exciting game of golf at the Royal Dublin Golf Club followed by dinner at the club house.

The day was sponsored by Johnson & Johnson and prizes were sponsored by Morris Dental.

The winning team included Dr John Fahey, who also takes over as the new Golf Captain from Dr Billy Davis.

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IDA NEWS



Class of '83 – where are they now?

The Dublin Dental School graduating class of 1983 recently held their 25th anniversary reunion in the Shelbourne Hotel in Dublin.

Back row (from left): Dr Elizabeth Pierson, Tipperary; Dr Vivian Mongey, Swords; Dr Paul Maguire, Wellingborough, Northants; Prof. Declan Millett, Cork Dental School & Hospital; Dr John Lynch, Gravesend, Kent; Dr Peter Hannon, Maidstone, Kent; Dr Tony Sweeney, Ballina; and, Dr Jeremy McCabe, Margate, Kent.

Middle row (from left): Dr Blanaid Daly, London; Dr Eugene McMullan, Belfast; Dr Kenneth Prendergast, London; Dr Maeve Bradley, Belfast; Dr Ros O'Leary, London; and, Dr Kenneth Byrne, Castleknock.

Front row (from left): Dr Victoria Dyer, Carnforth, Lancashire; Dr Triona McAllister, Dublin; Dr Anne Brazil, Dublin; Dr Catherine Condren, Dublin; Dr Marie Tuohy, Tipperary; Dr Frances McCann, Belfast; Dr Finola Smyth, Calais, France; and, Dr Julie McCann, Omagh, Co. Tyrone.



Dental School alumni award excellence

The Dublin Dental School & Hospital Alumni Association has announced that it is making an award presentation to Dr Joe Creavan for 'excellence in dental teaching'.

The award will be presented to Dr Creavan on Thursday March 26, 2009, in the "1592" Dining Room in Trinity College Dublin (in the Dining Hall, Front Square) at 7.30pm.

A limited number of places are available for anyone who wishes to join in the celebration with Dr Creavan.

If you would like to attend, or require further information, please contact Agnes Hagan, Dublin Dental School, Tel: 01-612 7214 (office hours Mon/Tues/Wed).

PDS Seminar 2009

The PDS Seminar will return to Wexford this year and will take place from October 7-9 next at Whites Hotel.



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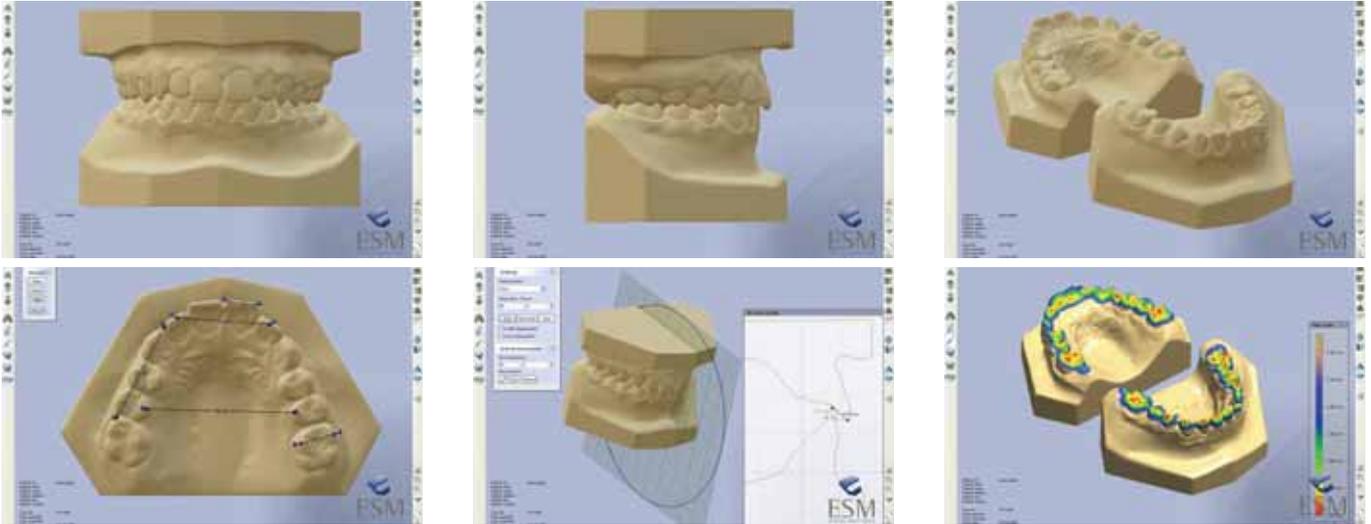
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BUSINESS NEWS

Complete digital record keeping now available in orthodontic practice



Samples of the digital records now available to orthodontists from ESM Digital Solutions.

Computerised records have become established as invaluable tools in today's busy orthodontic practice. Practice management software, digital photography, digital radiography, practice websites and email communications with colleagues have all become commonplace and now orthodontists can complete their digital patient records with digital study models.

Standard plaster study models can become difficult to store and retrieve, can break, can become mouldy and unusable, and often require valuable staff time to archive and find. They can also be mislaid, even when they are needed most.

When Dublin-based orthodontist Stephen Gallagher started to find storage space for study models at a premium, he looked for another solution. Together with mechanical engineer Mark Barry, he developed the concept, and with the support of Fingal Enterprise Board, ESM Digital Solutions launched their Digital Study Model Service in late 2007.

ESM Digital Solutions has been so successful that the company recently won an Award for Innovation, from Fingal County Enterprise Awards 2008. Working with major dental schools, several studies are

ongoing to evaluate the clinical value of using digital models for treatment planning and assessing treatment outcomes, both in the UK and Ireland, and initial results are very positive, with far-reaching potential benefits in all branches of dentistry.

ESM can provide clinicians with standard study models in addition to the digital copy if required and can digitise archived records.

Ciara Scott is one of a number of Irish orthodontists who has started using the new digital study models. "It is very convenient to download the images and they link into my patient records on my existing practice management software. As I'm not at the practice full time, it means I can treatment plan my cases when it suits me. I've also found the digital models very useful when discussing joint cases with restorative colleagues, rather than carrying models around or posting them."

ESM Digital Solutions will provide you with a high accuracy, high resolution three-dimensional version of your patients' teeth. Viewing and analysis software is provided free of charge, which will allow you to perform a number of viewing and analysis functions.

To find out more about the PracticeDigital™ suite of products, visit www.esmdigitalsolutions.com.



QUIZ

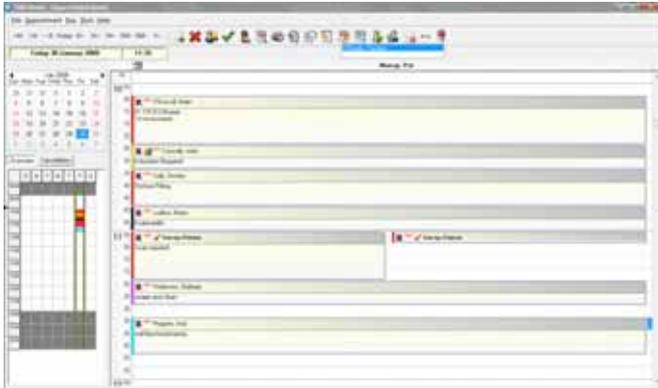
Contributed by Dr Aislinn Machesney

This x-ray was taken at routine examination. The patient is a 39-year-old lady and was asymptomatic at the time of the x-ray.

1. What special tests would you perform?
2. What is the differential diagnosis?
3. What treatment would you recommend based on the differential diagnosis?

Answers on page 51

DMI enters alliance with CDSOft



A screen shot of the CDSOft programme, TAB Dental, which assists dentists to manage their practice.



At Dental Medical Ireland (DMI), dental knowledge is the company's core competency. The company offers a full range of services, equipment and products to support practice requirements, allowing dental professionals to sustain competitive advantage and offer patients the very best of care.

The number of dental practices wishing to convert to computerised systems is increasing dramatically, and DMI recognises that comprehensive IT solutions are beyond their core field of expertise. Therefore, the company has announced the formation of a strategic alliance with one of Ireland's leading IT companies, CDSOft Ltd.

According to the company, with this alliance, DMI now offers the very best local solution for the dental practice in services such as practice management software (TAB Dental), computer IT integration with existing equipment, and computer network system management and maintenance.

CDSOft Ltd has been delivering advanced infrastructure solutions to its customers throughout Ireland for nearly 20 years. They are a Microsoft Gold Certified Partner and a HP Gold Preferred Partner, and employ 50 staff nationwide with offices in Limerick, Cavan, Westport, Kildare and Dublin. Their flagship dental product is TAB Dental practice management software, a product that provides a full service solution to the Irish dentist, from appointment management and charting to text messaging and accounts. TAB Dental has been developed with practising dental staff to make sure it works how you really need it to. DMI and CDSOft Ltd together offer a one-stop solution for dentists when purchasing, and also a one-stop point of call for after sales service. We recognise that problem-solving faults in your dental equipment is not your area of expertise and can become an inefficient use of your time. DMI invites dentists to call them to see how this new strategic alliance can support your dental practice.

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Difflam is effective for relief of sore throats, mouth ulcers and is used following oral surgery

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Tel: 01 802 6624 Fax: 01 802 6629

Email: info@meda.ie

www.meda.ie

BUSINESS NEWS

'Competence in Composites' seminars

Ivoclar Vivadent is offering dentists and team members the opportunity to attend a number of one- and two-day seminars, either at the company's main headquarters in Liechtenstein or at specialist venues in the UK.

The initial 'Competence in Composites' seminar will be held at Ivoclar Vivadent's state-of-the-art training facilities within the International Centre for Dental Education, Schaan, Liechtenstein on February 9 and 10, 2009. The programme will cover techniques and materials for practitioners to consistently achieve high quality aesthetic dental restorations.

The events will include tutorials by leading experts, hands-on workshops in the purpose-built training centre and a full company tour for attendees. All expenses will be fully covered by the hosts. The programmes will be suitable for all dentists, from the newly qualified to the experienced, and they are expected to attract a substantial number of delegates. Specialist speakers will discuss a variety of subjects relating to techniques and materials that will provide a complete 'Competence in Composites' for dental practitioners across the UK.

Confirmed dates for the courses in 2009 are March 19 (Wakefield), May 11 and 12 (Schaan), September 9 (Derby), and November 10 (Derby), with two further scheduled trips to Schaan planned but yet to be confirmed. For further information contact Ivoclar Vivadent.

Identex 2009

This year's Identex will take place on September 18 and 19, 2009. The venue is The National Show Centre, Old Swords Road, Cloghran, Co. Dublin, which is a quarter of a mile from Dublin Airport, just off the M1.

With just under 3,000 square metres of exhibition space, all located

on one level, Identex gives exhibitors the perfect opportunity to show all the latest equipment and technology available to the dental market.

Further information, together with costs, etc., will be available shortly. For further details, please contact Anne Flaherty, General Secretary, The Association of the Irish Dental Industry Ltd.

Improving health literacy

Pharmaceutical company Merck Sharp & Dohme Ireland (Human Health) Ltd has joined forces with the National Adult Literacy Agency (NALA) to launch a national health literacy campaign, which aims to improve communication between health professionals and patients who have literacy difficulties.

According to NALA, health literacy is the degree to which individuals have the capacity to obtain, process, and understand basic health information and services needed to make appropriate health decisions. Research shows that people with literacy difficulties find it difficult to read and understand many health-related items such as:

- signage;
- health advice;
- information leaflets;
- appointment cards;
- consent forms; and,
- procedures.

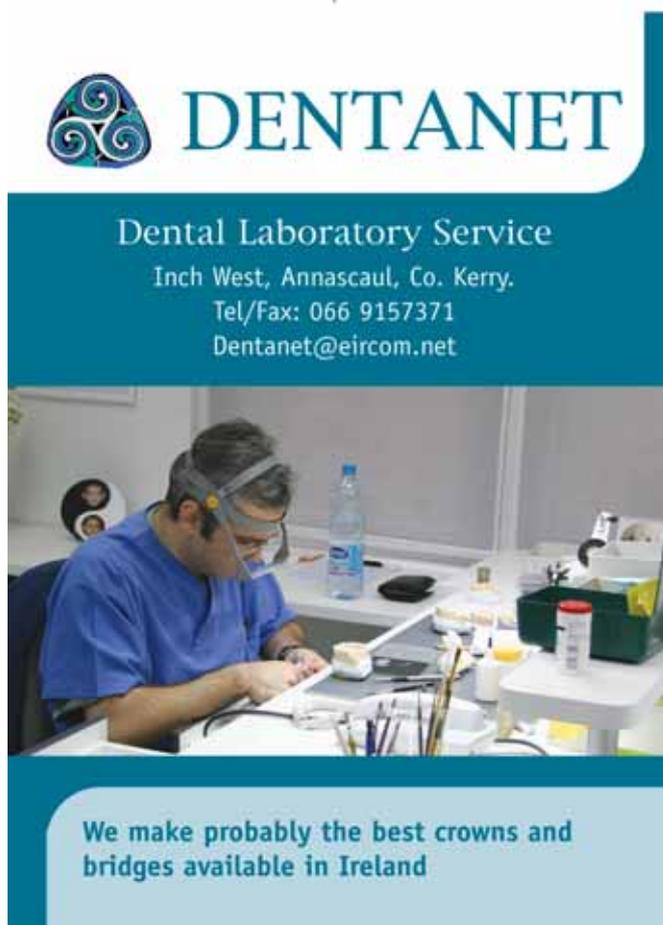
The Health Literacy Initiative has launched a series of tools to assist communication between healthcare professionals and the general public. The 'Askme3' initiative encourages patients to ask three questions of their dentist, doctor, nurse or pharmacist to help them understand and make informed decisions about their health:

1. What is my main problem?
2. What do I need to do?
3. Why is it important for me to do this?

The Initiative will also assist health professionals by promoting three Top Tips to help them communicate clearly with the public. These are:

- avoid medical jargon, use plain English;
- use images or visual aids where possible; and,
- ask the patient to repeat what you have told them in their own words to ensure that they understand.

For more information about health literacy and tips on how to communicate better with your patients, go to www.healthliteracy.ie.



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irish dental association

BOOKING FORM



Skillkenny

Irish Dental Association Annual Conference
Kilkenny, April 22 - 25, 2009

PRE-CONFERENCE REGISTRATION

WEDNESDAY APRIL 22

Course titles	Pre February 20 Early booking	Post February 20 Booking
PAEDODONTICS		
Progress in Practical Paediatric Dentistry Half day am <input type="checkbox"/> pm <input type="checkbox"/> <i>Maximum 10 morning / 10 afternoon</i>	€200 <input type="checkbox"/>	€250 <input type="checkbox"/>
ENDODONTICS		
<i>Limited to 20 participants</i>	€400 <input type="checkbox"/>	€450 <input type="checkbox"/>
ORAL SURGERY		
Half day - Morning only Half day am <input type="checkbox"/> pm <input type="checkbox"/> <i>Maximum 15 morning / 15 afternoon</i>	€200 <input type="checkbox"/>	€250 <input type="checkbox"/>
COMPOSITES		
<i>Limited to 16 participants</i>	€400 <input type="checkbox"/>	€450 <input type="checkbox"/>

CONFERENCE REGISTRATION

THURSDAY APRIL 23

FRIDAY APRIL 24

SATURDAY APRIL 25

	Early booking	Post February 20 Booking
IDA member	€300 <input type="checkbox"/>	€350 <input type="checkbox"/>
Non member	€500 <input type="checkbox"/>	€550 <input type="checkbox"/>
Dental nurses	€120 <input type="checkbox"/>	€150 <input type="checkbox"/>
Dental hygienists	€120 <input type="checkbox"/>	€150 <input type="checkbox"/>
Dental technicians	€120 <input type="checkbox"/>	€150 <input type="checkbox"/>
Retired IDA members	€100 <input type="checkbox"/>	€120 <input type="checkbox"/>
1st year qualified/graduate student		€175 <input type="checkbox"/>

ONE DAY REGISTRATION

IDA member	€220 <input type="checkbox"/>	€270 <input type="checkbox"/>
Non Member		€350 <input type="checkbox"/>

FREE SOCIAL EVENTS (please indicate your attendance ✓)

Lunch: Thursday	<input type="checkbox"/>
Friday	<input type="checkbox"/>
Grand Party - Trade night Thursday	<input type="checkbox"/>
President's Dinner	€85 per ticket <input type="checkbox"/>

TOTAL PAYMENT €

Partners in regeneration



The new product from Biomet 3i.

Some 40% of dental implant cases require a bone grafting procedure, and to meet with increasing demand, Biomet 3i has expanded their regenerative portfolio to offer a variety of options for building bone. Endobon Xenograft Granules are bovine-derived hydroxyapatite, which enables bone to grow directly on the ceramic surface and through the entire graft. The mineralised nature of Endobon Xenograft Granules provides a non-resorbable osseoconductive scaffold that is ideally suited for regeneration of defects when effective space maintenance is required.

Endobon Xenograft Granules are fully deproteinated by a two-step high temperature manufacturing process for safety from bacteria, viruses and prions, and have excellent handling characteristics for easy transfer to the defect site.

Endobon Xenograft Granules with an already popular Osseoguard Membrane complete the regenerative product portfolio of Biomet 3i.

BioHorizons relocates

Manufacturer of the Laser-Lok implant system, BioHorizons has moved to bigger offices in Berkshire, England, due to significant market growth. The new offices will enable BioHorizons to satisfy growing customer and clinician demand. Large storage space allows for more products to be stocked on the premises.

According to the company, the core values of BioHorizons are science, innovation and service. The benefits of the new premises, coupled with the recent expansion of its sales team, allows BioHorizons to reach out to a much larger client base.

Promed support Coisceim Eile

Staff at Promed Dental and Medical Supplies in Killorglin recently held a number of events to help support the charitable group Coisceim Eile in their efforts to raise money for the purchase of a Lokomat machine for the Munster region. The Lokomat machine is a specialist piece of equipment that allows people with disabilities to exercise their own muscles. Staff at Promed held a fancy dress day in October last and also sold tickets for a dinner dance in Cahirciveen in November. Donations to the Coisceim Eile fund can be made at Bank of Ireland in Cashel, account number 90406898.

CED General Meeting launches updated *EU Manual of Dental Practice*

Honorary CED Treasurer TOM FEENEY gives a summary of relevant European issues.

The CED's November General Meeting was attended by Drs Tom Feeney and Barney Murphy as delegates, and Dr Robin Foyle and Mr Fintan Hourihan as observers. The meeting was held in Brussels and the following is a summary of the highlights from that meeting.

Updated Manual of Dental Practice (Version 4)

The 2008 edition of *The EU Manual of Dental Practice* was presented to the membership after many months of background work. Dr Anthony S. Kravitz and Professor Elizabeth T. Treasure of the Dental Public Health Unit in Cardiff Dental School, Cardiff University, were commissioned by the CED to update the 2004 version. The manual is an extremely comprehensive document and a must have reference resource. It can be downloaded from the CED website – www.eudental.eu – subject to CED copyright rules.

The EU Manual of Dental Practice, commissioned by the CED, was first published in May 2004 and updated in November 2008. It aims to provide comprehensive and detailed information for dentists who are considering working in another country. It has been written as a practical 'handbook' in which information is easy to find and understand, and is aimed at dentists, dental students, policy makers and others interested in the regulatory environment for dentistry in the EU. CED members agreed that the EU Manual would not be commercialised, but would be made available to the public on the open part of the CED's website, accompanied by a copyright notice. CD-ROMs will be produced and used to distribute the Manual to CED contacts, particularly in the European Commission and the European Parliament. A new update of the EU Manual will be commissioned for delivery in November 2010.

The latest edition of *The EU Manual of Dental Practice* describes the legal and ethical regulations, dental training requirements, oral health systems and the organisation of dental practice in 32 European (EU and EEA) countries, including Croatia, which is due to join the EU next year. The practising arrangements, regulatory frameworks and systems within which dentists work in the respective countries are compared. There is also country-specific information on the dental specialties that are recognised, along with details of where training is available and its duration.

The Manual also contains information on other dental care professionals, with a list of those that are recognised, their training, the procedures they are allowed to carry out, and the rules within which they can legally practise.

The 2008 edition also contains (for the first time) information about tooth whitening, ionising radiation rules and hazardous waste regulations, as well as data on caries levels (in children), edentulousness and fluoridation.



Professor Egita Senakola and Dr Zane Bendika accepting full membership of CED.

Latvia becomes full CED member

Following the unanimous agreement of CED members, the Latvian Dental Association became the 33rd association to come under the CED umbrella. Professor Egita Senakola spoke about how proud Latvia now was to become a full member of the CED.

Cross-border health services directive

The CED position paper on the draft Directive on the Application of Patients' Rights in Cross-border Healthcare (COM/2008/414/EC) was agreed unanimously. CED members were encouraged to lobby their national representatives as well as their MEPs in line with the position paper.

The CED welcomed the European Commission's proposed directive. It supports many of the measures designed to clarify patients' rights, protect patient safety and improve the quality of service and sharing information and good practice, while bearing in mind that the new article 152 of the Lisbon Treaty is not yet in force, and that the EU does not have any primary powers related to the structuring of health and social security systems of Member States. However, a framework directive will necessarily leave many issues unresolved and the CED sees that there will be a great deal of debate, controversy and work to do in implementing the provisions in the Member States, as there will be many challenges to decisions taken at all stages in the legislative process.

EU NEWS



The CED supported the SCCP's 2005 opinion that tooth-whitening products containing between 0.1 and 6% hydrogen peroxide (H₂O₂) are not safe to be sold over the counter and used freely, but are safe to be used after the approval and under the supervision of a dentist.

The CED believes that most patients in the EU will continue to prefer to obtain healthcare close to home, but it is important that their rights and responsibilities are clear if they choose not to do so and that they are appropriately protected.

Education

The Association of Dental Education in Europe (ADEE) represents the voice of dental education in Europe, with a membership of over 160 dental schools and other institutions. Among its objectives is the tuning of dental education through the establishment of an agreed profile for the dentist, based on learning units, and generic and professional competences.

The CED is of the strong opinion that, as the representative organisation of the dental profession, it (CED) must have a say in defining what competences the dentist should have at graduation. Progress is currently being made on the CED draft position paper on the competences of the European dentist, and the CED contribution to the ADEE document 'Profile and competences of the European dentist'.

As the ADEE seems likely to submit a paper to the European Commission to influence changing the relevant directives on dental education, the CED wants to ensure that any changes go in the direction of a full-term basic dental education, rather than the implementation of a two-cycle Bologna educational system in dentistry.

An ADEE Executive Committee meeting took place recently in Zagreb and was attended by CED President Orlando Monteiro da Silva. Of particular interest were proposals for a permanent structure for dialogue between the CED and the ADEE.

CED resolution on tooth whitening

At the November meeting, CED members agreed unanimously to adopt a CED Resolution on the implementation of the final Scientific Committee on Consumer Products (SCCP) opinion on tooth-whitening products (TWPs), with slight amendments.

In its May 2007 Resolution on TWPs, the CED supported the SCCP's 2005 opinion that TWPs containing between 0.1 and 6% hydrogen peroxide (H₂O₂) are not safe to be sold over the counter and used freely, but are safe to be used after the approval and under the supervision of a dentist. The CED welcomed the European Commission's decision to uphold the SCCP opinion and its request to the SCCP to provide a final opinion on the matter.

In its opinion of December 2007, the SCCP specified that the risk associated with the use of TWPs containing between 0.1 and 6% H₂O₂ grows with increasing concentration and frequency of application, and that it was not possible to anticipate the exposure if the products were to be freely and directly available to the consumer. Potential risks could be reduced if products were used only after clinical examination and if exposure in terms of frequency and duration of application was limited. TWPs containing more than 6% H₂O₂ were not considered safe for use by the consumer.

Against this background, the CED:

- recognises the need for regulation of availability of TWPs at EU level on the basis of the December 2007 SCCP opinion;
- feels that the aim of such regulation should be to protect consumers from potential harmful effects of excessive exposure to TWPs and to enable distribution of the full range of TWPs, under the responsibility of a dentist, as justified by scientific evidence;
- expresses concern about continued delay in implementing the SCCP opinion and calls on all actors involved to ensure that a solution is found as soon as possible in the interest of patient safety;
- supports the intention of the European Commission to amend the Cosmetics Directive in line with the final SCCP opinion; and,
- encourages the European Commission to schedule a vote to amend the Cosmetics Directive at the earliest opportunity and urges Member States to contribute to a positive outcome.

Discussion with Dr Andrzej Rys

Dr Andrzej Rys, Director, was appointed Director of Public Health and Risk Assessment, DG SANCO, in the European Commission in 2006. He graduated from medical school in Krakow, specialising in radiology, so he has a very good understanding of medical matters and issues of interest and concern to the CED.

Dr Rys gave a very interesting presentation to the meeting on the structure and work of DG SANCO, focusing on the health strategy, scientific committees and their opinions, the green paper on healthcare workforce and EGOHID. He expressed support for the CED's efforts to secure fast implementation of the SCCP 2007 opinion on TWPs. He mentioned that there will likely be a new call for a scientific opinion on the effects of exposure to fluoride from all sources and supported CED members in distributing information on national guidelines on antibiotic prophylaxis to ECDC and the Commission. He suggested that CED members encourage the governments of those Member States who will hold EU Presidency in 2010/2011 (Spain, Belgium and Hungary) to consider designating oral health as one of their Presidency priorities. Spain in particular intends to discuss health strategies in different fields and one of those fields could be oral health.

Patient care recognised

The Journal and GlaxoSmithKline combined to organise the Sensodyne Sensitive Dentist of the Year Awards and the winners were announced recently. A feature of the awards was that patients had to nominate the dentists.

The Sensodyne Sensitive Dentist of the Year winners for 2008 were announced at a lunch in Dublin in January. Organised in association with the *Journal of the Irish Dental Association*, these awards highlight the work of GDPs in caring for their patients. There was a huge entry and given that an entry required patients to make a nomination, this was a terrific reflection of how patients view and value their dentists. The judges were impressed by the number of entries, their

geographical spread, and the quality of dentistry and patient care demonstrated throughout (see panel on The Judging). In addition to choosing three regional winners and an overall winner, the winning nominator was chosen. This was David de Burca who required very considerable treatment, including 11 fillings, from Dr Sharkey. For being the winning nominator, David received a holiday for him and his family to Orlando, Florida.

Sensodyne Sensitive Dentist of the Year for 2008

Dr Niall Sharkey

Dr Sharkey practises in Midleton, Co Cork.

Judges' citation:

Our overall winner, Dr Niall Sharkey, received several nominations. These spoke of his care and attention to patients in a wide age span and in differing medical conditions. The winning nomination of Dr Sharkey by David de Burca spoke of David's long standing fear of the dentist's chair and of how Dr Sharkey overcame that fear through patience and good communication.

The extent of Dr Sharkey's achievement is demonstrated by the fact that David needed, amongst other work, 11 fillings and a root canal treatment. That would be a daunting task with any patient, but with one full of fear and having avoided the dentist for seven years, it was an enormous commitment. He succeeded to the point that David de Burca felt moved to describe Dr Sharkey's work as "pain free" and now brings all his family to Dr Sharkey's practice.

For his clinical excellence, his commitment to patient care, and his sensitivity in dealing with the most difficult cases, Dr Niall Sharkey is the Sensodyne Sensitive Dentist of the Year for 2008.



Overall winner, Dr Niall Sharkey (centre) with Liz Rowen, Marketing Director, GlaxoSmithKline, and Professor Leo F.A. Stassen, Honorary Editor, Journal of the Irish Dental Association.



Winning nominator David de Burca receives a voucher for a family holiday in Florida from Ms Nuala Beecher, Product Manager, Sensodyne.



At the reception were (from left): Fintan Hourihan, Chief Executive, Irish Dental Association; Dr Denis Kerrisk; Dr Ena Brennan, President of the Irish Dental Association; and, Professor Leo F.A. Stassen.

FEATURE

**Connacht/Ulster winner
Dr Rosemary Smith**

Dr Smith practises in Westport, Co. Mayo.

Judges' citation:

Dr Rosemary Smith, the Connacht/Ulster winner treated a patient who had a difficult experience of dentistry as a young woman. Dr Smith succeeded in removing fear from this patient and dealt with her pain in such a convincing way that the patient now refers her own special needs students to Dr Smith. Additionally, Dr Smith has engaged in support of the patient's aid work in Ghana. This is an excellent example of a dentist going well beyond the normal dentist/patient relationship in a very positive way.



Connacht/Ulster winner Dr Rosemary Smith (left) receives her certificate from Sinéad Bailey, Medical Marketing Manager, GlaxoSmithKline.

**Leinster winner
Dr Warren Mowlds**

Dr Mowlds practises in Dublin.

Judges' citation:

Dr Warren Mowlds, the Leinster winner, went to extraordinary lengths to treat the intense pain being felt by a patient who had been operated on by another surgeon. He gave his full and wholehearted attention to a patient who was in great need of treatment and sympathy. He took a problem, not of his making, and dealt with it effectively, professionally and cogniscent of the suffering of the patient.



Leinster winner Dr Warren Mowlds receives his certificate from Amy Thomas, Dental Detailer with GlaxoSmithKline.

**Munster winner
Dr Denis Kerrisk**

Dr Kerrisk practises in Limerick.

Judges' citation:

Across a range of conditions and treatments, patients gave testimony to Dr Denis Kerrisk, the winner for Munster. One father wrote in to speak of the exceptional sensitivity and care shown to his adult daughter who has an intellectual disability and who has been very traumatised by previous medical treatments. Dr Kerrisk succeeded in helping her to relax fully in a dentist's chair and this has had a positive carry-over effect in the doctor's surgery. Dr Kerrisk went beyond the bounds of normal care to provide a calm and reassuring environment and state-of-mind for a frightened patient.



Munster winner Dr Denis Kerrisk receives his certificate from Sinéad Bailey, Medical Marketing Manager, GlaxoSmithKline.

The Judging

Judges for the Sensodyne Sensitive Dentist of the Year in association with the *Journal of the Irish Dental Association* were Dr Barry Harrington, Chairman; Dr Seton Menton; and, Dr Anne Crotty.

Dr Harrington made the following comments on the overall judging process: "The judges were surprised by the volume and geographical spread, and impressed by the quality of the entries. It was very satisfying to note the universal acceptance of proper dental care and gratifying to read patients' testimony to the great work being done by dentists throughout Ireland.

"This testimony was given for a huge number of dentists and across a diverse range of cases and problems. Excellent treatment and great care was evident throughout the entries and ensured that the entries were difficult to judge. As a result, we were looking for a 'wow' factor above and beyond good clinical care and sympathetic treatment. In fact, we sought out the outstanding entries with evidence of an almost superhuman effort on behalf of patients.

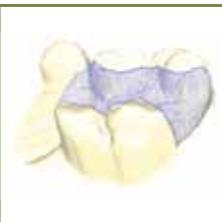
"In the end, we made the judgements on the winning dentists, all of whom are superb ambassadors for our profession, and our decisions are final."



Judges Dr Seton Menton and Dr Barry Harrington at the lunch, and Dr Anne Crotty (above).



Also pictured at the reception were (from left): winning nominator, David de Burca; Fiona Sharkey; and, Liz Rowen.



INDEPENDENT CEREC 3D CAD CAM "ISCD" CERTIFIED TRAINING PROGRAMME



One Visit, Chairside. Bonded All Porcelain Restorations Inlays, Onlays, Posterior Crowns, Anterior Crowns, Veneers.

Preview

Prior to commitment of a full chairside system, let us provide a full day's training and evaluation of how to integrate Cerec into your dental practice to increase your clinical options, patient services, productivity and review of financial implications.

Venues in Dublin, Belfast, Galway, Waterford subject to availability.

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Following purchase of the chairside system we will provide a further two days training to enable you to get started with an integrated training program of presentations, hands on, and a live clinical case.

Further programmes for both Anterior Crown and Veneer and Multiple Anterior.

For full details and application form, or a complimentary DVD on Cerec Capabilities please contact us.

Dr Paul Moore

Gate Dental Services, Gate Clinic, Dock Road, Galway
Tel 091 547592, Fax 091 561 828 or info@gateclinic.com

Logic, behaviour and dentistry

Dr Tony Humphreys is a well-known psychologist whose speech at last year's IDA Annual Conference fascinated many and prompted this interview. PAUL O'GRADY spoke with him for the Journal.

It's the difference between psychology and psychiatry that best explains what Dr Tony Humphreys does for his clients. Psychiatrists are medical doctors and tend to take a medical and biological approach to the solving of behavioural problems. Psychologists, and specifically, consultant clinical psychologists, take the approach that all human behaviour is logical and is a response to life's experiences. Dr Humphreys, who spoke at last year's Irish Dental Association Annual Conference in Wexford, says his approach is that all humans are intelligent and when faced with threats, they deduce amazing behavioural strategies to deal with those threats. His book, *The Power of Negative Thinking* was a number one seller for 15 weeks and stressed the point that all behaviour has intention and is, therefore, not negative. Perhaps controversially, he would agree with the psychiatrist Spitzer who declared last year that such problems as attention deficit disorder (ADD) and attention deficit hyperactive disorder (ADHD) do not have a neuro-biological basis. He believes that there are specific reasons for the children's behaviours which often relate to the child's need for attention.

He expands on this point to say that children's sickness is often a form of behaviour using a phrase... "the compassionate intentions of illness" and stressing again that every human behaviour has an intention.

Revealingly, he says that the body is a great canvass of the mind, citing the example of how common heart problems are in men. "Men have difficulty expressing their emotions and this frequently leads to illness in the heart. The operation 'heart bypass' is a very literal metaphor for how some men fail to deal with their emotions." Expanding further on the theme, he feels that a lot of the current economic malaise can be blamed on an over-emphasis on the

'head' and a serious underestimation of the importance of the role of the heart in business life – which is dominated by men. "Good leadership is a head and heart phenomenon and the heart has a key role to play in the perception of fairness and justice." He believes it is because US President Barack Obama is subconsciously perceived to "have a heart" as well as a head that there is such hope for the future around the Obama presidency.

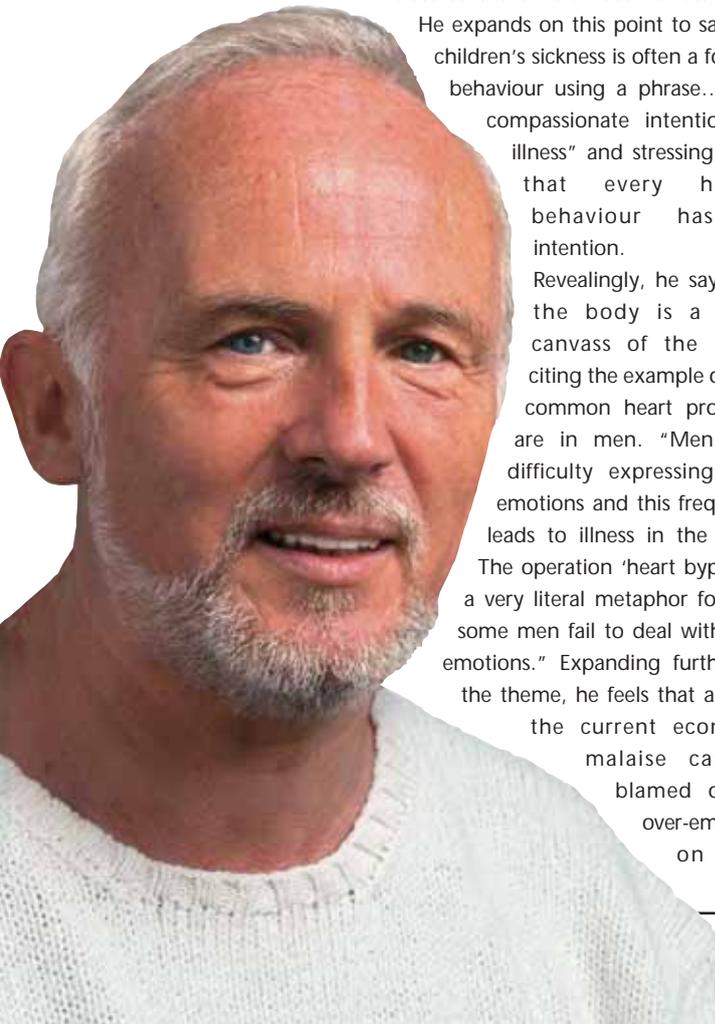
The psychology of dentistry

Dr Humphreys' first port of call in relation to dentists is that he feels that they have to nearly "walk on water" in order to achieve a place on a dentistry course in university. This can cause a success addiction where a dentist feels a constant need to prove themselves and this can take a terrible toll on family and children. "We constantly have to examine how we carry out our profession. Our first priority has to be ourselves, and then the clients. Doctors and dentists often get this wrong and put their patients first. It's a very common fault and can cause great unhappiness. We have to ask ourselves the question – do we live from the outside in or from the inside out? The answer is to live from the inside out. You must accept yourself, nurture yourself, and balance yourself and your life. Do not confuse your identity with your success."

He says this process can start very early in life. Take, for example, a child that is labelled 'bright' or 'superior' in primary school. The pressure on that person to succeed is great, and often can lead to feelings that the person must always 'win' in life. When they do not, as is natural in any life, then there can be great emotional and intellectual distress for that human being. He says this accounts for high suicide rates amongst doctors, dentists and other professionals. So what can a dentist do to protect themselves from such feelings? Dr

Turning the taps off

A woman was referred to Dr Humphreys after she developed an obsessive compulsive disorder. In this case, she repeatedly checked that all the taps in her house were turned off. Following several sessions, it emerged that the woman had great difficulty dealing with emotions. The tap compulsion was a physical manifestation of her need to prevent feelings flooding her life. Up to that point, naturally, she had contained her emotions so tightly that she had no meaningful personal relationships, despite an outwardly successful professional life. Following treatment, she made a full recovery and learnt to deal with her emotions successfully. She ended up marrying and has not needed to return to Dr Humphreys.



Psychologist, author and speaker

Dr Tony Humphreys is a consultant clinical psychologist, author and national and international speaker. He began his career as a clinical psychologist in State psychiatric and psychological services in England and Ireland, and since 1990 has been working in private practice in Ireland.

He has become Ireland's most influential psychologist, working with individuals, couples, families, schools, local communities and

Humphreys quotes Plato: "A life unexamined is a life not lived." Dentists, he says, must examine themselves asking how balanced are they in life and how do they express themselves? Specifically, they must examine how they express themselves, and all human beings express themselves in many ways: physically; sexually; emotionally; intellectually; socially; behaviourally; creatively; and, spiritually.

The patient/dentist relationship

"Dentists have told me that following corrective work on a jaw, five years later the patient will often have reverted to the original problem. People can hold back emotionally in life and so much of that holding back can be stored up in a clenched jaw. And often too, in the grinding of teeth. Dentists need to be sensitive around the underlying problems that patients have and to take cues from the patient. It's vital to talk with the patient and explore their fears and anxieties. Ask them what they feel is safe. Good relationships with patients are essential and that is determined by the relationship with yourself," says Dr Humphreys. He places special emphasis on the "talking with" as opposed to the "talking to" or "talking at" which he sees as a real danger for many professions. "Talking at", he says, "is a sign of personal insecurity."

The tricks our brains play on us

"The human mind operates at five levels: unconscious; subconscious; preconscious; conscious; and, physical. It is quite logical for our minds to keep things that we find very difficult hidden at the subconscious level. It's a way for the person to protect themselves and it's why so many adults block out the memory of abuse."

Dealing with reactions

Dr Humphreys is used to the reactions he gets. As at the Dental Conference, there are many people who quickly understand the sense of what he is communicating. They also often express surprise that psychology can help them more than they had anticipated. However, he always gets a few reactions of the type: "That's all very well, but..." and understands this as a natural reaction from people who are not at all comfortable with examining the state of their own lives and emotions.

the business community. He is a specialist lecturer on education, communication and self-realisation in University Colleges, Cork and Limerick, and Senior Fellow at National College of Ireland, Dublin.

He is the author of 12 best-selling books. His best known books are: *The Power of 'Negative' Thinking*; *Self-Esteem, the Key to Your Child's Future*; *Work and Worth, take back your life*; *Myself, My Partner*; *Leaving The Nest*; *Whose Life Are You Living*; *All About Children*; and, *The Mature Manager*.

Assess your life

"Age, status, success, education: these are not indices of maturity in an individual. We all need to ask: 'to what degree do we know ourselves'." The real measure of success, according to Dr Humphreys, is the quality of the relationships in your life – with your partner, your children, your parents, your friends, your patients. Dr Humphreys' teachings are logical, even if they are sometimes counter-intuitive (e.g., being successful can bring excessive personal pressure). They have a direct effect on behaviour and offer an opportunity for everyone to improve the quality of their lives. If you missed him at the Conference, have a read of one of his books. You're guaranteed insights that can have a practical and beneficial effect on your life.

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Morning seminar sessions will be provided for GDPs to enable them to comprehensively understand and utilise 3D technology for dental implant diagnosis. Individual hands-on tuition will be provided to a select group of practitioners. At the end of each session, participants will have a comprehensive understanding from a diagnostic viewpoint of what 3D imaging can provide for them and their patients.

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Factors to consider in the transition to digital radiological imaging

Abstract: The dentist considering adopting digital radiological technology should consider more than the type of detector with which to capture the image. He/she should also consider the mode of display, image enhancement, radiation dose reduction, how the image can be stored long term, and infection control.

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Introduction

The high profile developments in oral and maxillofacial radiology (OMFR) are: digital conventional radiography (digital equivalents of existing analogue intra- and extra-oral techniques); and, cone-beam computed tomography (CBCT). These are accompanied by the more mundane, but nevertheless essential, developments in data storage and image display. For the dentist, particularly the family practitioner, it is digital radiography, particularly solid-state detectors, that is of most interest, because they produce an almost instantaneous image on the monitor, which facilitates ergonomics and time management. Digital radiology can be integrated into a digital patient record. It also dispenses with hazardous and noxious chemicals. Since Dr Mouyen introduced RadioVisioGraphy in 1987,¹ the developments in the image quality and ease of use of dental radiography have been phenomenal, so that now digital radiography has many advantages over dental film. However, dental film was first used within months of the discovery of x-ray by Roentgen in 1892 and is a very robust technology, which, when properly used, will produce a record that for all practical purposes is permanent. Nevertheless, as seen from the already almost complete eclipse of film photography by digital photography, radiographic film, although still used by the overwhelming proportion of dentists worldwide, is likely to suffer a similar fate eventually. The delay in its eventual demise reflects the fact that digital dental radiography, although the subject of much

research, is still very much a work in progress. The focus of much of this research is on the quality of the captured image, but little research has been carried out on the image display or on long-term storage of the entire data set.

There is a general view in the dental profession worldwide that digital dental radiography is largely film-based technology replaced by digital images, and that the main problem is: "What particular product is best for my practice and my patients?" This question, frequently the first question asked of the author, should actually be the last following an exploration of the whole digital issue. Many dentists are still surprised to learn that the solid-state detectors are inflexible and relatively more difficult to place in the mouth, because they are encased in a bulky plastic case. Furthermore, the area available to capture the image is much smaller than that for film. Altogether these result in more retakes, certainly initially, and more images. The solid-state detectors' cables have to be cared for to prevent damage, which can occur if they are bitten. In addition to their high retail cost (Parks² has recently reviewed their costs, which is a complex process), most solid-state detectors are very susceptible to serious damage, which in turn invites costly replacement. The phosphor plate detectors, although individually cheaper, need an expensive scanner to realise their latent images. Furthermore, phosphor plates, having no protective surface, are extraordinarily easy to damage during routine use. In addition to these technical challenges, there are

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FIGURE 1: Prescribing dental radiographs (adapted from the FDA guidelines)

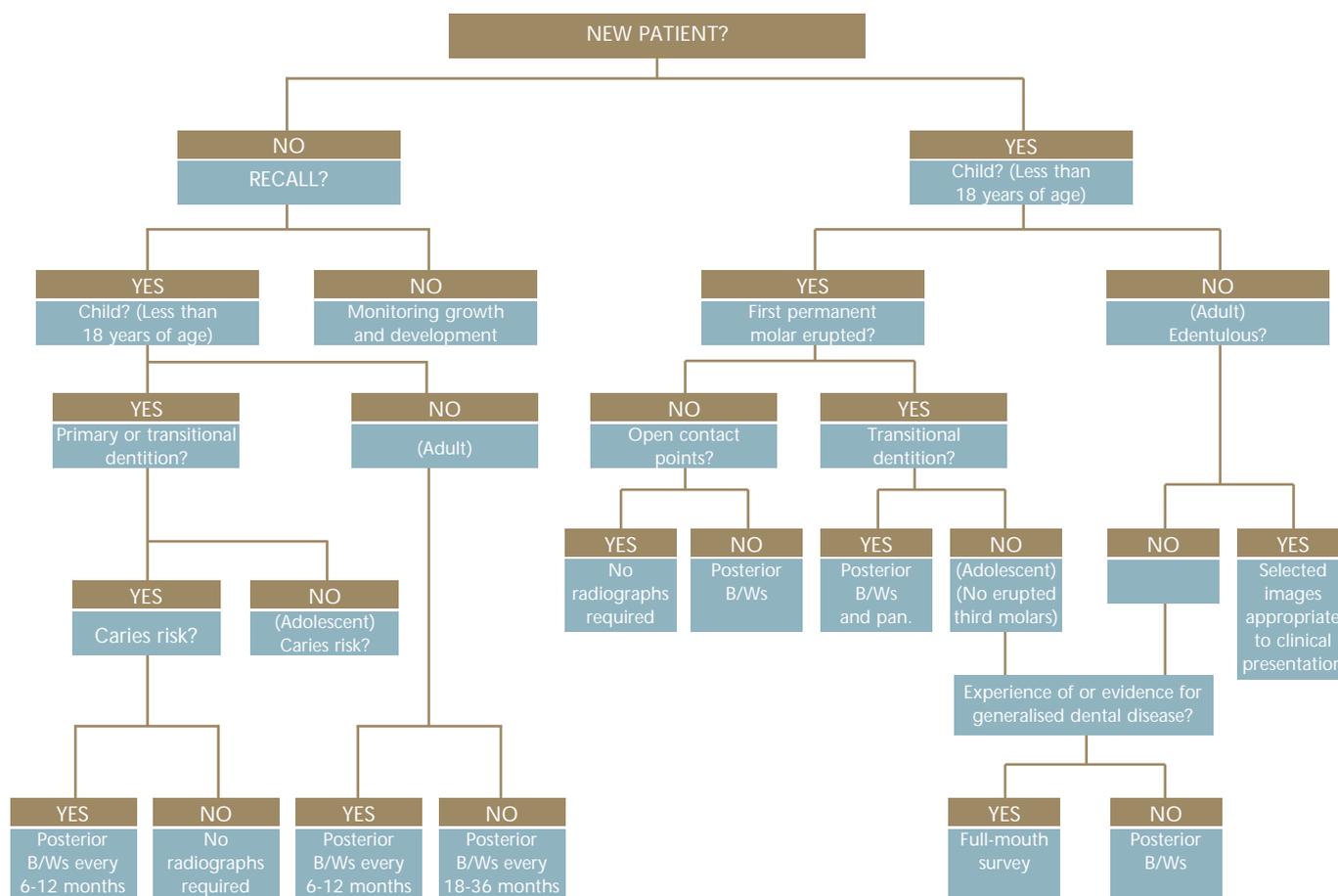


FIGURE 1: This decision tree has been adapted from the United States' Food and Drug Administration's guidelines for prescribing dental radiographs. Abbreviations: B/W: bitewings; pan: panoramic radiograph; post: posterior.

infection control issues unique to digital radiography, which have not been met when using film. Therefore, the necessity for the dentist to acquire a deeper understanding of these emerging technologies prior to going digital is pressing. This paper attempts to encompass all of the important aspects of digital dental radiology and associated developments.

Changes to Irish law as it applies to radiation protection

As our profession necessarily intrudes upon the persons and well-being of our patients, the law must equally intrude upon our practice, particularly where there is a real risk of harm. Medical radiology contributes 13.7% of the radiation burden on the Irish population, over 90% of this from diagnostic radiology.³ Although dentistry only accounts for a fraction of this, dentists radiograph a larger proportion of the population. Therefore, the dentist is required to justify or demonstrate that there is a clear clinical reason for making the exposure (justification). The United States' Food and Drug Administration has published a comprehensive set of guidelines;⁴ Figure 1 displays a flowchart based on these. The dentist will then

need to optimise the quality of image acquisition (optimisation). Justification and optimisation are two of the three principles of radiation protection; the third is the application of dose limits.⁵ This last is represented in Irish law by the diagnostic reference level (DRL).⁶ "DRL is a benchmark against which practice in relation to medical exposure is evaluated",⁷ and "should not be exceeded for a standard procedure when good and normal practice regarding diagnostic and technical performance is applied".⁸ This has already been discussed by Fanning recently in this journal.¹

The dental practitioner, unlike his/her medical colleagues, is frequently the prescriber, the practitioner and the radiographer for almost all exposures he/she prescribes.¹⁰ In these three roles, he/she will determine that an exposure is clinically indicated, will clinically direct the selection of the most appropriate techniques and then make the exposure. According to the provisions of SI 478 of 2002, this process needs to be audited. "The primary rationale for audit is to determine that the dental radiographic practice under review meets a reasonable standard."¹⁰ Such an audit should at least consider selection criteria, technique selection, x-ray equipment, patient dose,

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Table 1: A comparison between the imaging technologies available to dentists.

	IMAGING TECHNOLOGIES			
	Film	SOLID STATE		Phosphor plate
		CCD	CMOS	
Brief description partly provided by Parks (2008)	Silver bromide developed to silver, the density of which provides the greyscale image	X-rays cause emitted electrons to collect in electron wells converted to greyscale image	Array of field effect transmitters with a polysilicon gate	Scanned by red light laser and emit blue light
Vulnerability to damage?	No – unless poorly stored – heat fogs it	Yes – by dropping and autoclaving	Yes – by dropping and autoclaving	Yes – frequently unusable after 50 uses
Basic costs of detectors – not including operating systems or software	Cheapest – note the film is completely consumed in a single use These costs were derived and converted into Euros from the following URL – http://www.cliniciansreport.org/page/additional-studies-archive , also discussed by Parks (2008)	On average €10,000-20,000	On average €10,000-20,000	Although €40-50 each, they last for 50 uses and the scanners are expensive – €10,000
Immediate Image?	No – chemical development of latent image	Yes	Yes	No – needs to be scanned into the patient record
Likelihood of image degradation if delayed?	No – unless re-exposed before developed	N/A	N/A	Yes – deteriorates with delay before scanned
Special room required?	Yes (dark room)	No	No	Yes (dim room)
Noxious chemicals?	Yes	No	No	No
Whole surface available for image capture?	Yes	No	No	Yes
Spatial resolution (detail) in line pairs per millimetre?	Kodak InSight 20lp/mm ALL from the	Kodak RVG-ui 20lp/mm 2005 report by Farman, A.G., and Farman, T. They compared 18	Kodak RVG 6000 20lp/mm	Planmeca Dixi 16lp/mm
Dynamic range?	Narrow	Narrow	Narrow	Wide
Shorter exposure time?	Yes – if E and F speed	Same as E and F speed	Same as E and F speed	Yes – potential to be shorter
More exposures required for full-mouth survey?	No – optimum	Yes – smaller area available for image capture	Yes – smaller area available for image capture	No – same area available for image capture as film
Retakes more likely?	No	Yes	Yes	No – scanned image is automatically inserted into the patient record
Patient comfort?	Yes	No – bulky and inflexible	No – bulky and inflexible	Yes – same as film
Permit taking of vertical bitewings?	Yes	No – bulky and inflexible	No – bulky and inflexible	Yes – same as film
Occlusal size available?	Yes	No	No	Yes
Panoramic radiograph?	Yes	Yes	Not yet available	Yes
Lateral cephalogram?	Yes	Yes	Not yet available	Yes
Infection control challenges?	No – disposal after single use	Yes	Yes	Yes
Integration with an electronic patient record (EPR)?	No – also scanned image contains a fraction of the information	Yes	Yes	Yes
Image display	Bright – light viewing box	ALL three digital technologies under high brightness medical diagnostic grade greyscale monitor		
Optimal viewing conditions?		ALL under reduced ambient lighting		
Ease of image enhancement?	No – brightness only	Yes	Yes	Yes
Integrity of original image (vulnerability to fraud)?	No	No – almost all modern systems preserved original image – any subsequent amendments are preserved as date-stamped editions		
Long-term storage?	Yes – if properly developed	Unknown	Unknown	Unknown
Vulnerability of data in the image to loss?	Not if properly developed and stored, but will be destroyed if surgery is destroyed	Can be vulnerable to computer viruses. If the data is backed-up to a remote facility it can survive destruction of the surgery		
Telemedicine?	No	Yes	Yes	Yes

processing, image quality, image interpretation, records and training."¹⁰ In addition, the final report of the Health Service Executive's task force recently "recommended that the Dental Council make it mandatory for dental practitioners to attend appropriate training courses on an ongoing basis in relation to dental radiology."¹¹ Therefore, the audit process is not confined to the dental practitioner's practice, but includes the dental practitioner him/herself. Furthermore, in order to set up the audit process properly, the dental practitioner may require the services of a medical physicist and/or radiation protection advisor.¹⁰

Regardless of the technology used, The European Commission's Guidelines on Radiation Protection in Dental Radiology state that "all radiographs must be evaluated by the dentist and an appropriate report on the radiological findings made."¹² The dentist should review the images, not only for the presenting complaint and/or the clinical findings that prompted the radiograph's prescription, but also for hitherto undetected and as yet asymptomatic disease, which may have significant repercussions for the patient. Two such lesions, which are particularly important in the elder patient, are atherosclerosis and osteoporosis. Although calcified carotid arteries are indicative of atherosclerosis, a recent systematic review has suggested that this is not conclusive.¹³ Furthermore, some radiopacities in the vicinity of the carotid arteries on a panoramic radiograph are normal anatomy, such as the larynx cartilago triticea.¹⁴ In addition, mineralisation of the stylohyoid complex frequently presents as isolated radiopacities in this area.¹⁵ Those with osteoporosis tend to have a low OSIRIS score (a higher risk for osteoporosis) and a thinned cortical mandibular border as determined on a panoramic radiograph.¹⁶ Therefore, dentists serving the community at large now have a definite role in the detection of patients at high risk of osteoporosis. The reader should clearly understand that the author is not advocating 'screening' of patients for these diseases, but instead is advocating fuller use of all radiographs, in the making of which the patient has already incurred the burden of increased risk of radiation-induced damage and neoplasia. It naturally follows that all images should be properly dated, identified, orientated and archived (the storage of images will be discussed later).

Image capture

In spite of the considerable pace of digitisation, dental film remains the 'gold standard' with regard to image quality, when it has been properly exposed and developed, and viewed on a standard illuminated viewer under reduced ambient light. Furthermore, the much vaunted claim of digital imaging's substantial reduction in radiation dose as a reason for converting to digital technology, will only be fulfilled if the clinician is abandoning the slower D speed film (still used in about 60% of North American dental practices) rather than the faster E and F speed film. Also, the wide latitude of the phosphor plates may permit overexposure of patients by inappropriately high exposure times without incurring any degradation of the image, which would be readily apparent on film or solid-state detectors, indicating a need to reduce the exposure time.¹⁷ Integration into a digital patient record system and easier image

management (enhancement for clinical purposes, storage and teleradiology) are other advantages of digital imaging. Integrating digital radiology with a digitised oral health record offers clear advantages: it streamlines office processes; enhances efficiency; and, minimises errors, reducing the risk of legal liability. The devices used to capture the primary x-ray beam that emerges from the patient's jaw are variously known as a detector, a sensor or a receptor. In this report, only the term 'detector' will be used throughout. Comparison between film and the digital technologies is set out in Table 1.

Digital dental intra-oral radiography

There are two entirely different digital technologies: solid-state and phosphor plate (photostimulable phosphor [PSP]).^{2,17,18} As the term PSP is widely used, it will be used from now on instead of phosphor plate and the other acronyms (SPS and PIP). The solid-state technology is still largely represented by the charge-coupled device (CCD), but has now been joined by the complementary metal oxide semiconductor (CMOS). Both CCD and CMOS offer the clinician an image immediately after exposure. This differs from the PSP system, which requires scanning of the detector before the captured latent image can be displayed. The scanning of the PSPs should be performed as soon as possible after the detector has been exposed and should take place in a dim room in order to minimise degradation of the latent image.¹⁹ Therefore, a separate room, the dim room, akin to the darkroom, is still required. PSP detectors should be considered semi-disposable to ensure that an adequate standard of image quality is maintained. Bedard and co-authors²⁰ determined that PSP detectors were so damaged after 50 uses that they should be replaced.

Many clinicians may find that CCD/CMOS and PSP technologies complement each other. The CCD/CMOS technology's instant image is invaluable for endodontic or other chairside procedures, which need almost real-time imaging. The more flexible PSP detector (as flexible as film) can be used in situations in which the bulkier CCD/CMOS detector is difficult to use, such as limited opening and shallow palates. PSPs are also better for vertical bitewings. Detectors for occlusal projections are generally only available as PSPs, as an occlusal-sized solid-state detector would be extremely expensive. Therefore, the dentist who is considering 'going digital', rather than attempting to choose between solid-state and PSP detectors, may consider both depending upon the nature of his/her practice. Farman and Farman last objectively reviewed a range of detectors in 2005.²¹ The spatial resolution of the 18 detectors they reviewed varied widely, from five to over 20 line pairs per millimetre (lp/mm). The reader is alerted to the fact that some manufacturers quoted a theoretical resolution for their spatial resolution, based simply on the pixel size, which was unlikely to be achieved in practice.²¹

Extra-oral digital radiography

Panoramic radiography has also been substantially affected by digitisation. This has been achieved by simply replacing the film with a similar sized sheet of PSP, which is scanned and displayed on the monitor. Other panoramic units use solid-state detectors, which display the image instantly upon exposure. As a full-sized sheet of

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CCD or CMOS similar to that used for film or PSPs would be prohibitively expensive, such detectors are reduced to a vertical bar, whose solid-state elements are continuously exposed during the entire exposure.

Lateral cephalometry has been similarly served by digital technology. Yu and co-authors²² revealed that digital lateral cephalometry might display certain features better, though not significantly so, than film lateral cephalometry.

Image display

The European Commission's Guidelines on Radiation Protection in Dental Radiology emphasise the importance of the quality of the monitor.¹² Although Krupinski and co-authors found no difference between the performance of radiologists using monitors of differing luminance, the dwell-time (time spent reviewing the image prior to diagnosis) was significantly longer.²³ The two factors affecting display are the quality of the monitors and the ambient lighting at the time of reviewing the displayed image.

Monitors

In medicine, diagnostic images are read by radiologists on medical-grade diagnostic greyscale (monochromatic) monitors under reduced ambient lighting. The main advantage of these monitors is their high luminance, which makes it easier to see the entire greyscale from black to white. They produce a report, which accompanies the images. The referring clinician, using a 'point-of-care' monitor (which can have a colour display) has the radiologist's report to guide him/her. Therefore, it follows that dentists, who are their own radiologists, should also use similar facilities to 'read' their images. The best medical greyscale monitors, although more expensive than commercial monitors, cost the same or are cheaper than a single No. 2 size CCD detector (about the same size as a standard periapical film). The NDS's E3 (3-megapixel; formerly made by Planar Systems) is ideal for panoramic and high spatial resolution intra-oral images and costs around €6,000. The 2-megapixel E2 costs around €4,500, but will no longer be made in the near future. At the time of writing, this monitor was the smallest to offer all the following features: an optimal spatial resolution (image detail, measured in line-pairs per millimetre [lp/mm]); contrast resolution (discerning the difference between two adjacent densities and commonly expressed in bit-depth or grey levels); high brightness; and, self-calibration.

The displayed image should fully represent all the data captured by the detector. Ideally, the display of each pixel of the image captured by the detector should be represented by a corresponding pixel on the monitor display in order to optimise the detector's spatial resolution (1:1 display). Therefore, information contained within the captured image may not be displayed on the monitor if the display is not 1:1. Haak and co-authors²⁴ reported that ratios of 1:1 and 2:1 were significantly better for detection of approximal caries than a ratio of 7:1. In their comparison of a standard desktop with a dedicated medical monitor, Gutierrez and co-authors²⁵ found that the standard desktop display was clearly inadequate for diagnostic radiology. These medical-grade, diagnostic or primary-read monitors are

technologically complex. For example, the greyscale standard-display function (GSDF) is based on a phenomenon called human-contrast sensitivity (HCS), which takes the human eye's non-linear perception into account. The human eye more easily sees relatively small changes in brighter areas than in darker areas. The GSDF adjusts the brightness so that all areas have the same level of perceptibility.²⁶

Although the monitors employed for medical diagnosis use 12-bit-depth technology, if they are operating within an operating system (OS) such as Windows, they will only resolve to 8-bit-depth (or 256 grey-level used by ordinary monitors). Despite this, medical monitors do require the 12-bit-depth (4096 grey-levels) technology for accurate self-calibration, which is performed to digital imaging and communications in medicine (DICOM) standards.

Seto and co-authors' results "indicate that medical display systems must be carefully.... calibrated to ensure adequate image quality".²⁷ Self-calibration of the monitor's brightness (luminance) ensures that every time the dentist, in his/her essential role as radiologist, reviews an image, it is of optimal quality. Medical grade monitors are exceptionally bright, optimally about 500 candela (candles) per square metre (cd/m²). As all monitors fade with time, this self-calibration ensures optimal and standardised brightness, until the backlight brightness falls below the threshold and needs to be replaced.

Ambient lighting (illuminance)

Reduced ambient lighting (illuminance) essentially goes in tandem with monitor brightness. Recommendations for reduced ambient lighting in diagnostic reading stations for conventional analogue (and digital) radiographs are 2-10lx (illuminance is commonly expressed in lux or more simply lx), in comparison with 200-250lx in clinical viewing stations in hospitals.¹⁸ The evidence for the need for reduced ambient lighting for dentistry is provided by Haak and co-authors.²⁹ They found that differences in monochromatic intensity were detected significantly earlier if the ambient lighting was reduced (70lx versus the 1,000lx recommended for the dental operator). More recently, Hellén-Halme and co-authors demonstrated that when the reduced ambient lighting is less than 50lx there is a significant increase in the accuracy of diagnosing approximal caries.³⁰ Although both monitors used by Haak and co-authors²⁹ did not reach the National Electrical Manufacturers Association's (NEMA) standards for DICOM,²⁶ Haak and co-authors²⁹ found that the flat screen monitor performed better than the cathode ray tube (CRT) in the dental operator, probably because the flat screen monitor was brighter. Note that both CRT and LCD monitors function equally well provided they comply with DICOM standards.²⁶

Image enhancement

Enhancement of the captured image is clearly an advantage that the digital technologies have over film. Parks² recently displayed and discussed several enhancements: 'density' (brightness); 'contrast'; 'measurement'; 'image inversion'; 'magnification'; 'flashlight'; and, 'pseudocolour'. Although altering the brightness can lighten over-exposed images, under-exposed images should be retaken. Therefore,

the need to optimally expose a solid-state detector is just as important as it is for film.² As indicated earlier, images should be reviewed at a 1:1 ratio. But this may not be always possible, particularly for detectors with very high spatial resolutions or large images such as panoramic radiographs. In such cases a 1:1 ratio will magnify ('magnification') the image, requiring the clinician to scroll through the image. Haak and co-authors²⁴ demonstrated that review of radiographic images at higher magnification improves accuracy. Perhaps one of the most desired features of digital radiology is measurement; nevertheless, Kal and co-workers³¹ found that all processing algorithms provided significantly shorter measurements of the endodontic file lengths than their true length.

Koob and co-authors³² compared the effect of different image processing modes or filters on the reproducibility and accuracy of the assessment of approximal caries viewed in CCDs. Although they found that there were no significant differences in reproducibility, the exposure time influences the overall accuracy of the central depth measurement of the approximal carious lesion. Haiter-Neto and co-authors³³ found that the accuracy for the detection of non-cavitated approximal caries among seven solid-state detectors was not significant.

Storage and compression of images

Adopting digital technology does not alleviate the problem of long-term storage of all existing films (analogue images). Fundamentally, the storage of electronic dental records must accurately preserve the original content of the record (e.g., text, image or chart).³⁴ The record must include complete information about the creation of any modification (author, date, time and exact source of the record, such as work station). The format must be 'read only' and protected from unauthorised alteration, loss, damage or any other event that might make the patient information it contains inaccessible. Many jurisdictions require that digital clinical data be backed up to a remote server. The advantage of this is that this data is preserved if the surgery has been destroyed by fire or natural catastrophe. The advantage to both the dentist and his/her patients is that this data can be retrieved and treatment quickly recommenced at an alternative venue. This is particularly important, as the value of a practice is still based in part on the 'good will' represented by active patient records. This back-up of patient data is stated in the European Commission's Guidelines on Radiation Protection in Dental Radiology.¹²

The Dental Council of Ireland recommends retention of dental records for at least 10 years. The dentist considering adopting digital radiography needs to consider this, as it is likely that during that period, at least for some of his/her patients, he/she may need to convert to a different system at least once. It is a common experience that information technology (IT) changes rapidly with time, with a risk that different generations may become incompatible. Therefore, in order to ensure that data survives transfer from one system to another, the dentist must ensure that not only are the systems DICOM compatible, but also that all digital images are transferred into the new record system without a loss of data. So far there does not appear to be a report to confirm that this can actually be achieved in dentistry.

Although not much of an issue for a single practitioner, the storage of images may present a much greater challenge for a large group practice that uses CBCT data for implants and orthodontic cephalometry. Intra-oral images account for only hundreds of bytes of storage and panoramic radiographs for only a few thousands. The very large image files required for CBCT data quickly exhaust even a very generous storage capacity, measured in picabytes.

Compression of image files is an alternative to increasing storage. Two systems are used for compression, lossless and lossy. The files of the iCAT (a CBCT unit) are automatically losslessly compressed, without loss of data. Lossy compression, however, involves an irrevocable loss of data. Although Eraso and co-authors³⁵ reported that loss of image quality is not a factor unless the file size is reduced to 4% or less, Fidler and co-authors,³⁶ who systematically reviewed the literature on lossy compression, reported that the amount of information lost is difficult to express and standardise. Therefore, until lossy compression has been definitively tested, all data contained in a clinical image file must be preserved. Furthermore, the format of the image at the time of creation remains the original.³⁷ Therefore, scanning a film, even on a medical grade scanner, only creates a copy; the film is the original image and must be preserved. Furthermore, those images created digitally remain the original images, although they may have been printed on to the appropriate quality of paper or transparencies by medical grade printers. These printouts are just copies. It also follows that any modification of the original image can only ever be an edition of the original, which must remain unaltered. The later edition should be automatically date-stamped with the date of its later creation.

Before we leave this section, the dentist must understand that the image he/she views on his/her monitor is not the original image captured by the detector. This captured image is itself still not the raw image captured by the detector, but instead is the image that has been automatically 'pre-processed' so as to compensate for defects such as non-functioning pixels. The programs that perform this pre-processing cannot be accessed and modified by the dentist. It is this 'pre-processed' or 'presented' image that constitutes the 'original' image from a legal perspective.

Infection control

Infection control necessarily lies at the very heart of dentistry. Infection control for film is relatively straightforward; the contaminated film wrapping is discarded and the film developed. Therefore the entire film packet is completely consumed in a single use, whereas in digital imaging the detectors are used many times. As any instrument that comes into contact with the mucosa should be sterilised, the detectors, which are readily destroyed by autoclaving, pose a particular problem. Ethyl oxide sterilisation can be applied in a large dental facility, but is potentially hazardous to use in dental practice. An alternative practice of sealing the detectors in watertight bags (which are later discarded) prior to insertion in the mouth is widely used. Although a single report showed that bagging of detectors was unreliable as it failed in half of cases,³⁸ a pilot study on PSPs in the author's institution has revealed that this need not be the case if a rigorously practised infection control protocol is followed. As infection

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control is infrequently raised at trade shows and demonstrations, the dentist should understand how he/she would be able to achieve infection control in his/her practice when choosing between systems. Infection control bags and wraps have to be included as a recurring cost in the overall cost of 'going digital'.¹⁸

Conveying electronic information between clinicians

The application of teleradiology has been accelerated by picture archiving and communication system (PACS) and DICOM, eliminating the physical transport of hard copy as printed transparencies, or soft copy as DVDs or CDs. Teleradiology should be defined as the formal transmission of images within a secure local area network (LAN) and not as transmission by ordinary email. Email transmissions are not secure, nor are the attached images diagnostic, particularly if they were lossy compressed. Teleradiology currently lacks standards for an interoperable, manufacturer-independent protocol for secure teleradiology.³⁹ Therefore, in the absence of formal teleradiology, downloading the data onto a DVD or CD is preferred for medico-legal reasons because it contains all the original data generated during the investigation (conventional digital radiology, CT or MRI [magnetic resonance imaging]), rather than selected and manipulated images printed on transparencies. The data on the DVD/CD can be downloaded by the patient's dentist (or the clinician the dentist has referred the patient to) to be reconstructed according to the clinician's needs. However, this may require the appropriate software, for example Simplant for implants, to be fully effective.

Other developments

CBCT, virtually unknown to the dental profession only five years ago, is today perhaps the most widely discussed and exciting development in OMFR. Although CBCT is a topic that would be better addressed in a separate article, some comments can be made here. There are already over 12 different models available in the global market. They vary widely, both in technical specifications and in the radiation dose they deliver, the lowest perhaps being the Newtom 3G, the original CBCT and the most widely studied. Like any other CT technology, CBCT is subject to spray artefacts arising from metal restorations (including implants), which, although they can be reduced by metal artefact reduction (MAR) software, cannot be entirely eliminated. Therefore, such artefacts will appear on any reconstruction, including a panoramic reconstruction. Although the latter is more dimensionally stable and is free of secondary artefacts in comparison to those produced by the conventional panoramic radiography units, the dentist considering referring his/her patient for CBCT imaging should first reflect upon the implications of spray artefacts and the radiation dose of the particular CBCT upon which the referred patient will be imaged. Although guidelines for CBCT and other advanced imaging modalities are not yet available, most referrals for CBCT are for pre-osseointegrated implant assessment. Although the European Academy of Osseointegration (EAO) published guidelines for the use of diagnostic imaging in implant dentistry in 2002 (based on a workshop held at Trinity College in Dublin in 2000),⁴⁰ these need to be revised as they occurred prior to the advent of CBCT. Other

referrals are clinically indicated for investigation of unerupted third molars and non-locally invasive benign neoplasms and cysts. Although such latter referrals are entirely appropriate, they are not for those lesions that may be malignant or are locally invasive, such as ameloblastomas, odontogenic myxomas and keratocystic odontogenic tumours (formerly known as odontogenic keratocysts).⁴¹ These lesions need to be investigated by spiral CT and MRI, usually with contrast, to determine invasion of the adjacent soft tissues. CBCT is unsuitable for their investigation for two reasons. CBCT's bit-depth is only between 12 and 14 and cannot display soft-tissue detail, whereas spiral CT has a bit-depth of between 16 and 24. With the exception of the Newtom 3D, all CBCTs investigate the patient while vertical and are thus unsuitable for delivery of intravenous contrast, mainly because it can provoke an adverse reaction, which is best managed when the patient is supine. Fortunately, when such lesions are considered for such advanced imaging they are already in the hands of oral and maxillofacial surgeons, and are no longer an issue for the dentist serving the community at large.

The advent of CBCT has raised a number of issues. Although the radiation dose imparted by CBCT is lower than that for spiral CT, because it is infrequently prescribed by a radiologist there is the real risk that for many exposures CBCT may not be the appropriate imaging modality, and the patient may be needlessly exposed. Even if it is clinically indicated, the prescribing clinician will still be required to make two important decisions: he/she will have to determine whether the field of view (FOV) is the appropriate size; and, whether a radiologist should report the resultant images. The FOV should be adequate to cover the area of clinical interest, but should not be excessively large. An excessively large FOV would impart a needlessly high radiation dose to the patient, particularly if a high spatial resolution is chosen. This spatial resolution can be as high as 0.01mm voxel size, which translates into 5lp/mm and approaches the spatial resolution the unaided human eye experiences when viewing a conventional panoramic radiograph. Once acquired, CBCT images should be read and reported like any other image. If the FOV has only encompassed the jaws, then the images could be read safely by dentists who have undertaken the appropriate training in operating and interpreting the entire CBCT data set. If extragnathic areas were included, particularly when a large FOV has been selected, the data set would be better referred to a radiologist.⁴²

Concluding remarks

The experiences of dentists providing general dental services to certain European and North American communities will now be briefly reviewed in order to give the Irish dentist an insight into 'going digital'. Although film was preferred for its pre-exposure user-friendliness, digital was preferred for its post-exposure user-friendliness.⁴³ Nevertheless, dentists were more likely to take more images when using digital rather than conventional radiography; this could arise because the solid-state detectors have smaller surfaces to receive the image than film, thus necessitating more images. This cannot be the complete explanation, because the same report⁴⁴ revealed a smaller increase in the number of PSP images, which have

a similar sized radiosensitive area as film, and like film, do not have the advantage of the solid-state detectors, which produce an immediate image automatically after exposure. One American study reported that although cost is a major issue for most dentists, they considered it to be a worthwhile investment;⁴⁵ an American⁴⁶ and a Norwegian⁴⁷ report found digital radiology most frequently in group practices. Two Scandinavian reports^{48,49} stated that equipment failure and problems were common. This would suggest that the vendor's and manufacturer's after-sales service should be fully explored prior to completing the purchase. Furthermore, this major investment should be protected by acquiring contracts for servicing the hardware and software, and for software updates.¹⁸

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Supernumerary teeth among Irish school children attending the public orthodontic service in Cork and Kerry

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Introduction

Supernumerary teeth may be defined as extra teeth occurring within the dental arch. These teeth may be found within the deciduous dentition, but are more commonly found within the permanent dentition. The prevalence of supernumerary teeth in the permanent dentition has been investigated in several studies (Table 1);¹⁻¹¹ it varies from 0.45% to 4.5%. In Ireland the levels vary between 2.2%⁶ and 3.7%.¹⁰ Not only does the prevalence of supernumerary teeth vary among different ethnic populations, but the site and type of the supernumerary tooth also varies among different ethnic groups. It was decided, therefore, to re-examine data collected between January and June 1996 regarding supernumerary teeth in patients that presented to the orthodontic service in the counties of Cork and Kerry, i.e., the former Southern Health Board area. The population of Cork and Kerry in 1996 was 532,263.¹²

Material and methods

The records of 100 consecutive patients who presented to the Southern Health Board orthodontic services, where the presence of a supernumerary tooth was identified, were examined. All patients were seen between January and June 1996, and all patients were Caucasian. Some patients had supernumerary teeth clinically visible, whereas in other cases they were found on radiographic examination. The age profile of the patients at referral was not considered. Some patients were recent referrals, whereas others had been on an orthodontic waiting list for a number of years. The resorption of the adjacent teeth to the supernumerary teeth was not considered as part of this study.

The patient records collected were as follows:

1. The name, sex and number of supernumerary teeth found for each patient.
2. The site of the supernumerary tooth.

TABLE 1: Comparison of findings of supernumerary teeth in different populations (in ascending order)

Author	Country	No. of subjects	% Hyperdontia
Buenvitje, M., Rapp, R. (1984) ¹	USA	2,439	0.45
Neal, J.J., Bowden, D. (1988) ²	UK	982	0.5
Stafine, E.C. (1932) ³	USA	48,550	0.9
Hurlen, B., Hummerfelt, D. (1984) ⁴	Norway	2,043	1.2
Bergstrom, K. (1977) ⁵	Sweden	2,589	1.5
Burden, D.J., Connolly, I.H. (1989) ⁶	Ireland	1,020	2.2
Ruprecht, <i>et al.</i> (1984) ⁷	Saudi Arabia	5,548	2.3
Davis, J. (1987) ⁸	South China	1,093	2.7
Grahnen, H., Lindahl, B. (1961) ⁹	Sweden	1,052	3.1
O'Dowling, I.B. (1989) ¹⁰	Ireland	3,006	3.7
Gardiner, J.H. (1961) ¹¹	UK	2,250	4.5

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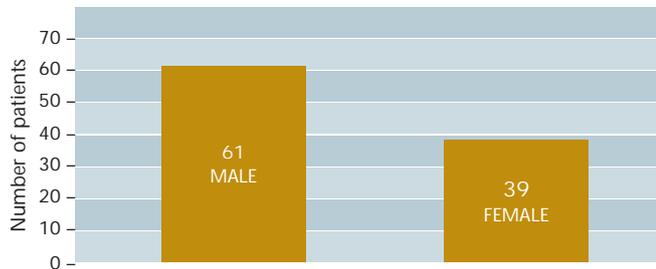


FIGURE 1: Gender of patients with supernumerary teeth.

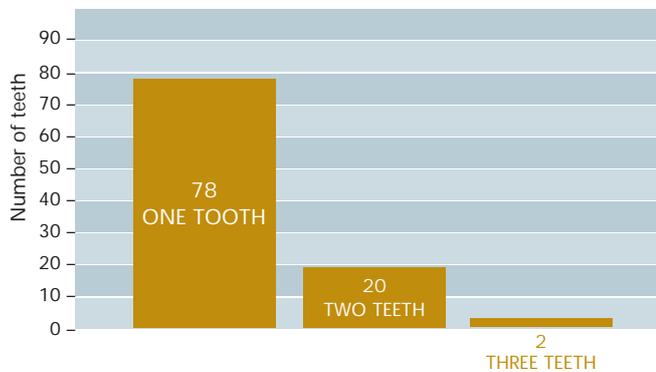


FIGURE 2: Number of supernumerary teeth per patient.

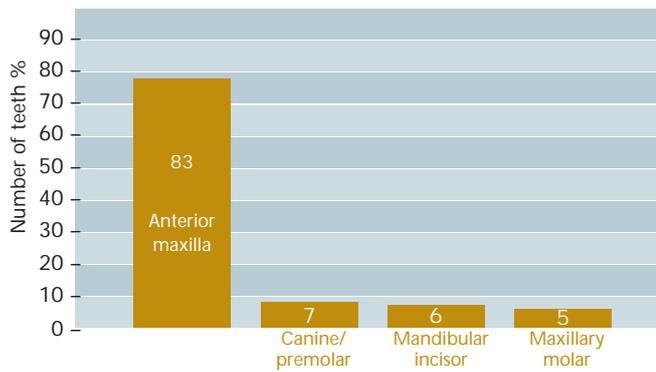


FIGURE 3: The site of the supernumerary teeth.

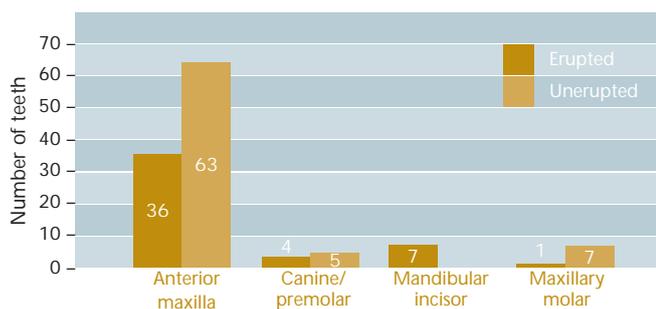


FIGURE 4: Eruption status of the supernumerary teeth.

- The eruption status of the tooth: was the supernumerary tooth erupted or unerupted at the time of examination?
- The effect of the supernumerary tooth or teeth on the developing permanent dentition. The supernumerary tooth was considered to have an effect if:
 - there was failure of the permanent tooth to erupt;
 - the permanent tooth was rotated;
 - the permanent tooth was displaced or crowded.; or,
 - a median diastema was present.

Results

The records of 100 patients presenting with 123 supernumerary teeth were examined. Figure 1 shows that 61 patients were male and 39 were female. Of these, 78 patients presented with only one supernumerary tooth, 20 had two supernumerary teeth, and two patients presented with three supernumerary teeth (Figure 2).

The site of the supernumerary teeth is shown in Figure 3; the anterior maxilla is the most common site, with 83% of supernumerary teeth appearing in this region. However, supernumerary teeth were also identified in the mandibular canine premolar region (7%), the mandibular incisor region (6%) and the maxillary molar region (5%). No supernumerary teeth were identified in the maxillary canine and premolar region, or in the mandibular molar region. One patient had supernumerary teeth in the anterior maxilla and the maxillary canine premolar region. The eruption status of the supernumerary teeth in each region is shown in Figure 4. In the anterior maxilla, 36 teeth were erupted and 63 teeth were unerupted, in the mandibular incisor region all seven teeth were erupted, and in the canine premolar region four teeth were erupted, with five teeth unerupted. Finally, in the maxillary molar region one tooth was erupted and seven teeth unerupted. This gives a total of 123 supernumerary teeth. The effect of the supernumerary teeth on development of the permanent dentition is shown in Figure 5. In the anterior maxilla, 56 teeth had an effect on the development of the permanent dentition, and 43 teeth had no effect, in the mandibular incisor region two teeth affected the permanent dentition, with five having no effect. In the canine premolar region four teeth had an effect on the development of the permanent dentition, whereas five teeth had no effect. Finally, in the maxillary molar region one tooth affected eruption of the permanent dentition and seven teeth had no effect. In all, 63 supernumerary teeth affected the permanent dentition, and 60 had no effect on development of the permanent dentition.

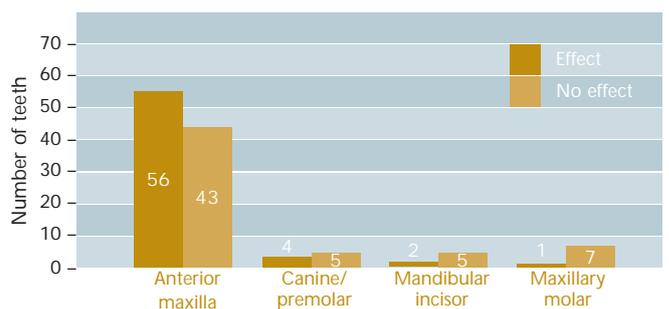


FIGURE 5: Effect on the permanent dentition.

Discussion

The prevalence of supernumerary teeth in Ireland is high in contrast to other studies.^{6,7} In keeping with other studies, supernumerary teeth are more common among males than in females.¹³ Of significance, however, are the differences cited for the site of the supernumerary tooth, the eruption status and the effect of these teeth on the permanent dentition. The most common site was the anterior maxilla, where 83% of supernumerary teeth were found. The presence of teeth in this region varies from 46.9% to 83% in other studies.^{13,14} Only 7% of patients displayed supernumerary teeth in the canine premolar region. The majority of the teeth in the molar region were fourth maxillary molars. There is no evidence that any of the patients with multiple supernumerary teeth had evidence of syndromes or conditions such as Gardener's syndrome or Cleidocranial dysplasia. The eruption status of the supernumerary teeth is significant, as the majority of the supernumerary teeth in the anterior maxilla were unerupted and therefore discovered on radiograph, either routinely or by their effect on the developing permanent dentition. In contrast, the supernumerary teeth in the mandibular incisor region were all erupted, whereas most of those in the maxillary molar region were unerupted and also discovered on radiograph. The effect of the teeth on the permanent dentition is important, particularly in relation to the anterior maxilla, where 56 teeth had an effect on the eruption or the position of the permanent incisors. In contrast, supernumerary teeth had little effect on the development of mandibular incisor, canine premolar and maxillary molar regions. This study is significant because the Ireland of 1996 did not have the same multicultural society that exists in the Ireland of 2009. Ireland reached its migration turning point in 1996, and from 1996 to 2006 the numbers of non-nationals increased from 4% of the population in 1996 to 10% of the population in 2006.^{12,15} Therefore, the patterns of supernumerary tooth eruption are very much in keeping with that found in a Caucasian population. The most common form of supernumerary tooth occurs in the anterior maxillary region. Almost half of these supernumerary teeth will be unerupted and only discovered on radiograph, and almost two-thirds will have an effect on development of the permanent dentition.

Conclusion

The records of 100 consecutive patients with recorded supernumerary teeth in permanent dentition attending a public health orthodontic clinic were examined. Supernumerary teeth were more common among males than females. Some 83% of the supernumerary teeth were found in the anterior maxilla region. Of these supernumerary teeth, two-thirds were unerupted and almost half had an effect on the permanent or developing dentition.

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Results of a peer review process: the distribution of codes by examining dentists in the Republic of Ireland 2006-2007

Précis: The distribution of codes assigned in 2,991 reports made by examining dentists in the Dental Treatment Services Scheme (DTSS) between 2006 and 2007 are analysed.

Abstract: The Health Service Executive (HSE) appointed 20 examining dentists in April 2006 under contract for one year as part of a probity assurance initiative by peer review in the Dental Treatment Services Scheme (DTSS) in the Republic of Ireland.

Aim: The aim of the study was to analyse the distribution of codes assigned to the reports drawn up by the examining dentists.

Methods: At the end of the year's contract, each examining dentist forwarded an end of contract report of their activity, including the distribution of codes issued, to the HSE. These were correlated into a national summary of examining dentist activity, from which the data used in the study was extracted. A total of 11 different codes were used, varying from an indication of agreement between the examining dentist and the contracting dentist (code A) to a significant disagreement (code D).

Results: The vast majority (94.5%) of reports on the clinical examination of patients, drawn up by examining dentists, were in broad agreement with the treatment or estimate of the responsible contracting dentists. A total of 622 contracting dentists received such reports. The small minority of reports (4.8%) where there was a significant disagreement related to a small number of dentists (47 dentists).

Conclusions: The study provides evidence that most contracting dentists were not a probity risk. The author suggests that any future probity assurance initiative should focus on areas of high risk rather than random selection of patients/contracting dentists. An enhanced advisory role for the examining dentist is recommended.

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Background – introduction to the Dental Treatment Services Scheme

The overall objective of the Dental Treatment Services Scheme (DTSS) when it was set up in 1994 was to improve the oral health of adult medical card holders in the Republic of Ireland, and thereby reduce the previously identified¹ equity gap between this group and the general population. The DTSS is managed by the Health Service Executive (HSE), with the Primary Care Reimbursement Service (PCRS) as the payment agency. Dental treatment is provided by self-employed dental practitioners who hold a contract with the HSE (termed contracting dentists). Key statistics of the DTSS for the year 2006 are given in Table 1.

As with the provision of many healthcare delivery systems, the quality and efficiency of

services are largely dependent on the behaviour of the providers who are the agents of care. The challenge of monitoring the delivery of care in third party-funded systems is shared by many services. Monitoring is frequently carried out by probity assurance systems.

Probity assurance in the DTSS

The Batchelor and Sterling Report,² published in 2002, was commissioned by the General Medical Services (Payments) Board (GMSPB) with the purpose of inquiring into probity arrangements in the DTSS. Batchelor and Sterling stated that any probity assurance for oral healthcare has four components:

- the quality of diagnosis and treatment plan;

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TABLE 1: The Dental Treatment Services Scheme (DTSS) 2006

Year	2006
Number of contracting dentists	1,213 (at December 31)
Fees paid to contracting dentists	€54.46M
Number of persons treated	256,360
Number of treatments	1,095,919

Source: Primary Care Reimbursement Service: Statistical analysis of claims and payments for 2006.

- the quality of the treatment provided;
- the accuracy of the claims submitted; and,
- the compliance of practitioners with their terms of service.

The authors of the report found that probity assurance arrangements within the DTSS were inadequate and needed to be strengthened through the installation of appropriate governance combined with a quality assurance system.

Appointment of examining/General Practitioner Unit dentists

The HSE appointed 20 part-time examining dentists/General Practitioner Unit dentists (henceforth referred to as examining dentists) in March 2006 for a period of one year as part of a probity assurance initiative in the DTSS. Appointments were made following open competition among private practitioner contractors active in the DTSS. On appointment, examining dentists became part-time salaried employees of the HSE for the 12-month duration of their contract. The time commitment from each examining dentist amounted to two days per month. The examinations of patients by the examining dentists took place in HSE clinics spread geographically throughout the country, with ancillary staff provided by the HSE.

The role of the examining dentist

The primary role of the examining dentist was to ensure the probity of the dental claim, as well as ensuring that the quality of treatment provided met currently acceptable professional standards within the parameters of the treatment schedule (source: Appointment of Examining Dentists, Health Service Executive, 2005: p. 4).

Contracting dentists' patients selected for referral to the examining dentist were to be identified in ways that included the following:

- randomly selected for routine review;
- when variations from the norm or other aberrations were identified by the data analysis and further clarification was needed;
- when prior approval for a more complex treatment had been sought and clarification was required before approval was given;
- patients who had complaints concerning DTSS treatment prescribed and/or received and where the matter could not be resolved without a clinical examination and report; and,
- where a contractor made a request that the examining dentist examine a patient.

TABLE 2: Coding instructions for examining dentists' reports.

Code	Coding Instruction
A	Treatment as detailed in the contracting dentist estimate has been satisfactorily completed. Minor discrepancies in charting would not preclude an A classification.
B	The examining dentist disagrees with the estimated or completed treatment but not to a significant degree. Clarification might be required from the contracting dentist.
C1	Where the examining dentist is satisfied, by examination of the patient and/or inspection of all records, that an outstanding treatment need may have arisen during the interlude between completion of the estimate and the referral examination and/or may be sufficient to necessitate further treatment.
C2	Where the examining dentist is satisfied, by examination of the patient and/or inspection of all records, that the treatment need could have been identified at the time of the contracting dentist's examination of the patient and that the patient now requires further treatment.
C3	Where the examining dentist is satisfied that any failure to complete treatment is as a result of a failure on the part of the patient to complete treatment.
D	The examining dentist disagrees to a significant degree with the estimated or completed treatment.
F	The patient failed to attend for the examination.
R1	The contracting dentist failed to submit the relevant clinical records within the stipulated time. Where appropriate, this code is assigned in addition to codes B, C, D or F.
R2	Clinical records of poor quality or of limited value. Where appropriate, this code is assigned in addition to codes B, C, D or F.
X1	Where the contracting dentist has claimed for radiograph(s) but has failed to return these for examination. Where appropriate, this code is assigned in addition to codes B, C, D or F.
X2	Radiographs of poor quality or of limited or no diagnostic value. Where appropriate, this code is assigned in addition to codes B,C,D or F.

Source: ED6 Examination Form for Examining Dentists, HSE, 2006.

The contracting dentist was advised of the date of the examination and was free to attend. Patients who attended for examination received €20 expenses, later increased to €30, from the HSE.

The study

The aim of the study is to analyse the distribution of codes issued by the examining dentists for the clinical examinations that they carried out over the 12-month contract period April 2006 to March 2007.

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TABLE 3: Distribution of codes issued by examining dentists.

Code given	A	B	C1	C2	C3	D	F	R1	R2	X1	X2
Number of reports	909	56	171	35	26	59	1,762	18	4	11	3
As a % of attendees*	74%	4.8%	13.9%	2.8%	2.1%	4.8%	N/A	N/A	N/A	N/A	N/A
Number of practitioners	446	48	114	32	14	47	496	13	4	10	1

Note: the number of codes given exceeded the number of patients appointed, as some reports assigned more than one code to a referral examination.
*As a percentage of all patients who attended for examination.

Methods

On completion of the clinical examination of the patient, a report of the findings was drawn up by the examining dentist with a code or codes ascribed. A copy of this report along with the code(s) was supplied to the contracting dentist. Table 2 gives the coding instructions for examining dentists' reports.

At the end of the year's contract, each examining dentist forwarded an end of contract report on their activity to the HSE. These were correlated into a national summary of examining dentist activity, which is the source of the data used in the study.

Results

Table 3 gives the distribution of codes issued by the examining dentists. A total of 2,991 patients were appointed, of whom 1,229 patients attended for examination, representing an attendance rate of 41%.

Some 74% of the patients who attended for examination by the examining dentists were assigned code A. These patients had claim forms submitted by 446 contracting dentists. If those patients whose examinations were assigned the codes B, C1 and C3 are added to those who were assigned code A, then 94.5% of reports on clinical examinations of patients were assigned codes that indicated broad agreement with the examining dentist.

Some 4.8% of patients who attended examination were assigned code D, indicating significant disagreement with the examining dentist. A total of 47 contracting dentists received such reports. The majority of code Ds were given for lack of evidence that the treatment claimed was carried out. Fewer code Ds were given for quality issues. Codes R1 or R2 represented <1% of appointed patients. Codes X1 or X2 represented <1% of appointed patients.

In summary, 94.5% of reports on clinical examinations of patients were assigned codes that indicated broad agreement with the examining dentist. This represented the claims/estimates of 622 contracting dentists. In general, the examining dentists reported the quality of the contractors' work to be very good.

However, 4.8% of reports on clinical examinations were given codes indicating that the examining dentist disagreed to a significant degree with the estimate or completed treatment of 47 contracting dentists.

Discussion

The examining dentist process was a peer review process. The examining dentists were both professional and geographic peers of the contracting dentists whose patient they examined. Appropriate issues for peer review are quality of care, appropriateness of care and

issues surrounding fees. Because of the expertise required to provide needed services effectively, patients are by definition unable to objectively assess the work of their professional service providers because of asymmetry of information. For this reason, peer reviewers should be practising dentists, even if practising on a part-time basis.³ The profession is thus required to assess itself, which means that individuals must be willing to review their peers and to submit themselves to peer review. Each professional acquires tremendous practice experience in the course of his or her career from which peers can surely benefit.⁴ The DTSS uses a fee per item remuneration system. Cost containment can be a problem with fee for item payment systems.⁵ In order to counteract any adverse side effects of the financing system, focus should be placed on the individual dentist in relation to ethics, norms and quality control.

Conclusions

Efforts should be directed towards identifying areas where the small minority of contracting dentists who received 'negative' reports appear to have difficulty. An enhanced advisory role for the examining dentist could have a key function here. It is suggested that any future probity assurance initiative should focus on areas that are identified as high risk, rather than random selection of patients/contracting dentists, as the most efficient use of resources.

The vast majority of reports contained a 'positive code', providing evidence that most contracting dentists were not a probity risk. They offer a strong affirmation of the professionalism of the majority of contracting dentists in the DTSS.

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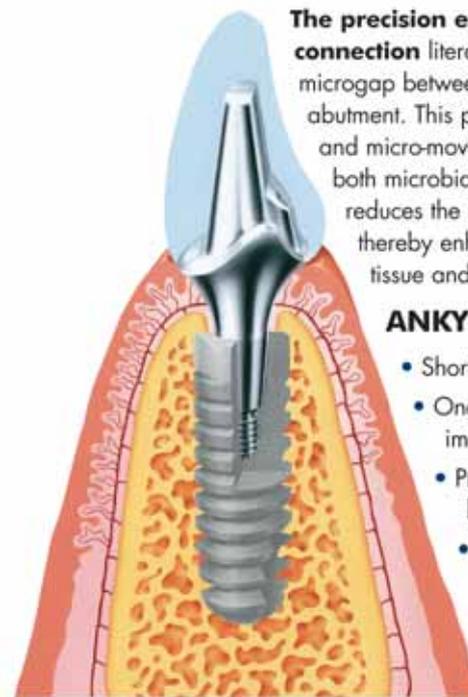
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ABSTRACTS

Non-odontogenic infections in dentistry

Dahlén, G.

This volume of *Periodontology 2000* is dedicated to non-odontogenic infections that may be present in patients attending dental clinics. Dentists therefore need to have a thorough understanding of infectious diseases in order to diagnose such infections correctly, and to decide whether they can provide appropriate treatment or whether referral to dental or medical specialists is necessary. It is of utmost importance for dentists to be able to differentiate between infectious and non-infectious illnesses in the oral cavity and between infectious diseases having an oral or a non-oral origin. An increasing number of patients present with systemic diseases or are undergoing treatment with medications that can increase the risk for infections in the oral cavity and in the surrounding tissues. Treatment of opportunistic oral infections caused by underlying systemic or local factors often requires a close collaboration between dentists and medical specialists. Patients in many countries seek dental care at regular appointments, which provides dentists with the opportunity to diagnose illnesses not only in the oral cavity but also in the surrounding body structures. Lack of insight into infectious diseases may cause a delay in the administration of appropriate therapy. Dentists must also be able to distinguish between different types of infections. Too many viral and fungal infections are treated with common antibiotics indicated only for bacterial infections. Moreover, dentists need to be acquainted with the most common medical infections in order to undertake proper safety precautions aimed at preventing the transmission of infectious agents to the dental office personnel.

Periodontology 2000 2009; 49 (1): 7-12.

Influence of post fit and post length on fracture resistance

Büttel, L., Krastl, G., Lorch, H., Naumann, M., Zitzmann, N.U., et al.

Aim

To investigate: (i) the impact of post fit (form-congruence); and, (ii) the influence of post length on the fracture resistance of severely damaged root filled extracted teeth.

Methodology

A total of 96 single-rooted human teeth were root filled and divided into four groups (n = 24 per group). Post spaces were prepared with a depth of 6mm (groups 1 and 3) and 3mm (groups 2 and 4). Form-congruence with a maximal fit of the post within the root canal space was obtained in groups 1 and 2, whereas there was no form-congruence in groups 3 and 4. In all groups, glass fibre reinforced composite (FRC) posts were adhesively cemented and direct composite crown build-ups were fabricated without a ferrule. After thermo-mechanical loading (1200000x, 5-50°C), static load was applied until failure. Loads-to-failure (in N) were compared among the groups.

Results

Post fit did not have a significant influence on fracture resistance, irrespective of the post length. Both groups with post insertion depths of 6mm resulted in significantly higher mean failure loads (group 1: 394 N; group 3: 408 N) than the groups with post space preparation of 3mm (group 2: 275 N; group 4: 237 N).

Conclusions

Within the limitations of this study, the fracture resistance of teeth restored with FRC posts and direct resin composite crowns without ferrules was not influenced by post fit within the root canal. These results imply that excessive post space preparation aimed at producing an optimal circumferential post fit is not required to improve fracture resistance of roots.

International Endodontic Journal 2009; 42 (1): 47-53.

A clinical study on the effects of cordless and conventional retraction techniques on the gingival and periodontal health

Al Hamad, K.Q., Azar, W.Z., Alwaeli, H.A., Said, K.N.

Aim

To investigate the influence of two cordless techniques on the periodontium in comparison with conventional cords.

Material and methods

Dental students (n=60) with healthy gingival conditions were recruited, and an expanding polyvinyl siloxane material (Magic Foam Cord®), a paste-like material (Expasyl®), and a conventional retraction cord (Ultrapak®) were applied on the buccal aspects of three premolars of each subject. Probing depth, clinical attachment level, gingival index (GI), plaque index, mobility, bleeding, and sensitivity were assessed at baseline, and at one and seven days after application. Data were analysed using Kruskal–Wallis and Mann–Whitney tests ($\alpha=0.05$).

Results

The periodontal parameters were not statistically significant among the groups at all time intervals except for the GI, which was increased for all groups after one day. The highest was in Expasyl (p=0.011). After seven days, the GI returned to a non-significant level compared with baseline except for Expasyl, which was still significant (p=0.044). Expasyl induced sensitivity in four subjects. Bleeding was only induced by Ultrapak in 28.3% and 26.7% during and after retraction, respectively.

Conclusions

All techniques caused a temporary gingival inflammation; the greatest was in Expasyl, which also showed slower recovery. Cordless techniques did not induce bleeding during or after retraction.

Journal of Clinical Periodontology 2008; 35 (12): 1053-1058.

Prospective observation of 41 perforations of the Schneiderian membrane during sinus floor elevation

Becker, S.T., Terheyden, H., Steinriede, A., Behrens, E., Springer, I., et al.

Objectives

The aim of this study was to follow 41 intra-operative perforations of the Schneiderian membrane during sinus floor elevation and to identify potential differences from patients without perforations.

Material and methods

A total of 201 sinus floor elevations were performed at the department of oral and maxillofacial surgery of the University Hospital of Schleswig-Holstein in the years 2005 and 2006. Some 41 intra-operative perforations (20.4%) were documented and treated according to the following scheme: defects smaller than 5mm were covered with a collagen membrane; and, larger defects were additionally sutured. Particulated jawbone mixed 50:50 with bone substitute (25 cases) and a 50:50 mix of particulated iliac crest bone and BioOss® (six cases) mainly served as graft material in the

perforation group. In 12 cases, implants were installed at the time of sinus grafting, and in 27 cases, a second operation was performed.

Results

Four sinus lift procedures had to be discontinued intra-operatively. Over a mean control interval of 162 days, one implant of the 93 inserted had to be replaced in the perforation group. After one year, the implant survival rate was 14 out of 14 in the perforation group vs. 81/92 in the control group.

Conclusions

With appropriate treatment, intra-operative sinus membrane perforations did not represent an elevated risk for implant loss, infectious complications or displacement of graft material in the investigated population.

Clinical Oral Implants Research 2008; 19 (12): 1285-1289.



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PRACTICE MANAGEMENT

Let's get digital

RITA BAUER offers advice on which camera to buy – and how much to spend – when it comes to digital photography in the dental practice.

Digital images of your patients are a vital tool for treatment planning, medical/legal documentation and patient education. Understanding the difference between single lens reflex (SLR) cameras and high-end amateur cameras adapted for dental photography can help you to decide which digital camera is best suited for your practice.

You will be able to take basic dental views of your patients with cameras that cost under US\$500 but, depending on the clinical views you require, you may need a camera system that costs around US\$2,000 or more.

Since cameras are constantly being discontinued and replaced with newer models, the following systems are my current recommendations as of December 2008. Recommendations will change as new cameras are introduced and tested on an individual basis. Please keep in mind that a newer model is not necessarily better for dental photography, since this type of photography is incredibly specific and requires your camera to have certain features to make it



FIGURE 1: A 90mm, 100mm or 105mm macro lens will result in a distortion-free image.



FIGURE 2: A 60mm macro lens results in a distorted image.

work. If a previously recommended camera has been replaced, do not purchase the newer model unless it has been tested for dental photography.

Manufacturers often change the functionality of their cameras when they release a new model, which sometimes renders them impractical for our purposes; therefore, do not assume that 'newer' means 'better' when it comes to dental photography. Always check with my latest recommendations before you buy. I test all new cameras offered by the major manufacturers as they are released to the market and do not recommend any one camera manufacturer; rather, I look at all the major brands to determine which camera is best suited for dental photography. My focus is overall functionality in the dental practice, so my camera brand and model recommendations will change as new cameras are released. You can be confident that my camera recommendations will guide you in your purchase to ensure that you are buying a camera that is suited to your stringent requirements.



FIGURE 3: A 60mm macro lens distorts the image with slightly larger anterior teeth and a narrow arch.



FIGURE 4: A 100mm lens reproduces the image accurately.

Moreover, having the right camera, knowing the correct settings and being adequately trained on how to take technically accurate clinical photographs will enable you to consistently produce the high quality results you demand in your practice.

Choosing your equipment

Digital single lens reflex (DSLR) cameras with a 100 or 105mm macro lens and a ring flash or ring and point flash combination

Basically, all DSLR camera bodies will produce great results, but since Canon and Nikon were the first manufacturers to drop their prices to under US\$1,000, they took the lead in the market. You can obtain excellent images from entrance level DSLRs because they still have enough function settings for superior dental images. The obvious advantage of a DSLR system over high-end amateur cameras is that you can have more control and will be able to fine-tune the quality of your images.

Lens

In order to produce an undistorted facial and intra-oral view, you must have a 90, 100 or 105mm macro lens. If a shorter focal length lens is used, these images will be distorted (Figures 1 and 2).

You may find that the 55mm or 60mm macro lens is offered with some dental systems for dental photography. These lenses are less expensive and lighter than the 100mm macro lens, but the short working distance will lead to distortion (Figures 3 and 4).

Ring flash

When using a DSLR with a 100mm macro lens, a circular flash (ring flash) mounted at the front of the lens is required for even illumination inside the oral cavity. Ideally, a ring flash should consist of two semicircular flash tubes, which allow you to control the ratio of light emitted from the left and right tubes, as well as the ability to use a single tube or to use both at full power. This control allows

for a detailed, accurate reproduction of the occlusion or condition you wish to capture (Figures 5 and 6).

Camera recommendations

Canon EOS 450D (Rebel XSi), 40D, 50D and 5D with the Canon 100mm macro lens and the Canon Ring Lite MR-14EX

The Canon system is totally integrated, and in my opinion is the easiest to set up and standardise for dental photography. This system is available locally, with local warranty and an excellent support system. Buy from a good camera store to ensure access to support for troubleshooting and instructions (Figure 7).



FIGURE 7: Canon dental system.

Nikon D90, D300 or D700, D3x with a 105mm Nikon macro lens and a twin point flash combination (Figure 8)

Nikon discontinued their ring flash and replaced it with the R1 macro flash. While this system provides excellent results, the adjustable flash units can be

unintentionally knocked into variable angles and this can result in inconsistent lighting and unwanted shadows.



FIGURE 8: Nikon dental system.



FIGURE 5: Ring flash.



FIGURE 6: Single unit on ring flash or point flash.

PRACTICE MANAGEMENT

The Nikon Micro-Nikkor 105mm lens with vibration reduction (VR) system is an excellent lens for hand-held, low light situations. However, since all dental views are taken with the flash, the VR function is not required for this purpose. The lens is very heavy for comfortable use in dental photography, and I would recommend a much lighter Tamron SP AF90mm F/2.8 Di macro lens or the Sigma 105mm f/2.8 EX DG macro lens instead.

Other manufacturers

Pentax: The Pentax dental system (lens and ring flash), used with Pentax analogue (film) cameras, can be adapted to any of the Pentax DSLRs with excellent results. This is an excellent solution if you already have the Pentax dental kit and want to go digital.

Dental photography kits available from dental suppliers

Clinipix, Dine Corp, Photomed and Norman Cameras have been in the business for many years providing clinical cameras and the components necessary for dental photography. They offer camera bodies that have been adapted with lenses and flashes to make them easy to use in the dental office. They also provide set-up instructions for their systems. All of these companies are very reputable, with good customer support. See www.dinecorp.com, www.clinipix-online.com, www.photomed.net, or www.normancamera.com for further details.

Entrance level dental photography with a high-end amateur camera

All amateur cameras have a fixed zoom lens and most have a macro button to allow for close-up focusing. There are hundreds of cameras with macro functionality, but only two or three models that can take macro photographs in the telephoto setting (which is when the camera is zoomed in). The telephoto setting allows you to capture a close-up image without distortion, and this is the vital function when taking clinical photographs. Most cameras only allow close-up

focusing in macro when in the wide-angle setting (which is when the camera is zoomed out). This focuses at an extremely close working distance, and leads to distortion and unwanted shadows, rendering it useless for dental photography (Figures 9 and 10).

The camera that is intended for dental photography must be able to focus in the macro setting when the camera is zoomed in to the equivalent of a 100mm telephoto lens. This focal length results in an undistorted image with good lighting in the oral cavity. Most cameras are not able to focus at this point.

The set-up for these small and compact cameras has to be very precise, and they are therefore more difficult to use than a DSLR camera. Each individual camera has to be tested extensively to find the correct settings for close-up photography. These cameras are fairly limited in close-up macro photography (intra-oral views), but will give very good results if the proper techniques are used. The built-in flash is used and, since the light cannot be directed, some shadowing will occur (Figure 11).

Current recommendations as of December 2008

Sony Cybershot DSC H50: closest undistorted image captured is a full mouth; close-up setting for facial and intra-oral views; macro and zoom to 2.5.

Canon Powershot SX110 IS: closest undistorted image captured is a full mouth; close-up settings for facial and intra-oral views; macro and zoom to 10-50 (this is important; if it is lower you will get distortion, and if it is higher it will not focus).

Bring a set of retractors and a willing subject to the camera store and test these cameras at these settings to see the results you will be able to get. Make sure that you focus and lock the focus before you release the shutter, otherwise the images will not be sharp. These cameras offer good results, and are relatively easy to use.

Dental photography kits available from dental suppliers

A fully modified and preset amateur camera is available from



FIGURE 9: Most amateur cameras cannot focus in macro with the zoom set to the equivalent of 100mm.



FIGURE 10: Most amateur cameras with fixed zoom lenses can only focus in macro – wide-angle setting.



www.photomed.net. The custom set-up is reflected in the price of the product (Figure 12).

FIGURE 12:
Photomed Canon G10 with diffuser and close-up adapter.

Set-up tips

Exposure

Automatic exposure should never be used for dental views. In automatic exposure, the lens is wide open, and while the image will be properly exposed, it will not be sharp from front to back due to the lack of depth of field. Always use a flash for dental views and do not use red eye reduction.

Depth of field

This is the depth that will be in focus in front and beyond the point of focus. A higher magnification will result in a shallow depth of field. The smaller the opening in the lens, the bigger the increase in the depth of field (single lens reflex = f-22, f-29 and f-32; amateur camera = f-8 or f-11, which is equal to f-32 in the SLR cameras) (Figures 13 and 14).

ISO (film speed)

The higher the film speed, the less light is needed for the exposure. For DSLR cameras your ISO should be set between ISO100 and ISO320, depending on the camera model. This will allow you to take intra-oral images at f-29 and f-32. For high-end amateur cameras, set the ISO to 'auto'.

Resolution and compression

While you should always use the 'fine' setting for compression or quality, the resolution is set for the image size required for the output (print or projection). The resolution we use at the University of Toronto for patient documentation meets publication requirements: 300dpi for a postcard size print, which is usually the 'small' (minimum 1,280 x 960) setting on your camera. If you wish to make enlargements or crop your images, use a higher resolution.

Exposure set-up

DSLR

The recommended shutter speed setting for the DSLR cameras is the synchronised setting for the flash, which is a minimum of 1/60sec (Nikon) or 1/200sec (Canon), with the lens opening between f-29 and f-32 for intra-orals, and f-8 for facial views.

With most cameras, use the 'aperture priority' (A or Av) setting on the camera, but only if the shutter is at 1/60 for Nikon and 1/200 for Canon, when the flash is turned on and fully charged. The camera has to default to this shutter speed. Most new camera models will allow you to set the synchronised shutter speed under 'custom set-up', which can be found in the menu (check your instruction manual).

Older DSLR models do not allow you to do this; therefore, you must use the manual (M) exposure setting, and both the shutter speed and aperture (f-stop) will need to be set.

High-end amateur cameras

Every camera is very different and will require testing to determine the correct settings. In general, use 'aperture priority' (A or Av, depending on the manufacturer) for intra-orals, and set the f-stop to the highest setting available (usually f-8 or f-11, which is equal to f-32 for DSLR cameras). When in aperture priority, the shutter speed will set itself automatically. Take the facial views in 'portrait' mode. Use the flash for all dental views, and make sure to turn the red eye reduction mode off.



FIGURE 11: Some shadows will be visible with the built-in flash.



FIGURE 13(top): f-32: maximum depth of field.
FIGURE 14(bottom): f-2.8: no depth of field.

PRACTICE MANAGEMENT



FIGURE 15: Double-ended stainless steel retractors.

Retractors and mirrors

Distributor for recommended mirrors and retractors

Abacus Dental: Tel: 0044 1274 865444, or Email: sales@abacusdental.eu – ask for the convention special.

Mirrors and retractors are extremely important to achieve the best intra-oral views. All retractors should be double ended, with a large and a small curve for the best possible exposure of the oral cavity. Use the appropriate curve, taking the size of the mouth into consideration. There are two types of retractors that I use exclusively, and that provide the best possible retraction at a very competitive price:

- 4001-019 small double-ended plastic cheek retractors, which can be autoclaved, but will get brittle and change colour; and,
- 4001-050 stainless steel double-ended cheek retractor, which will show a dark edge in the photograph, but is indestructible and can be autoclaved (Figure 15).

Remember, if you purchase a camera from abroad, your warranty will not be valid in your country. Some Internet purchases can also often lead to 'grey market' dealers, and you may find that manufacturers refuse to honour the warranty of an item purchased from grey market sources. Remember, if a deal seems 'too good to be true', it usually is.

Rhodium-plated glass mirrors

Riofoto 4250-971 Mirror XL

I recommend the rhodium-plated Riofoto extra long occlusal mirrors (Figure 16). They are highly reflective and occlusal photographic images are very sharp. The thickness of the glass makes them sturdier and is more comfortable for the patient when they are placed in the mouth. The X-long size reflects enough light into the oral cavity for even lighting. The extra long mirror is much more comfortable for the patient, and allows a good grip for the photographer, but eliminates images of fingers in the photograph (Figure 17).

Rita Bauer is a professional photographer and the Digital Education Media Specialist at the University of Toronto, Faculty of Dentistry, where she produces lecture material and teaches digital technology to the academic staff and students. She specialises in making digital photography easily accessible for dentists and their staff, and in transforming inexperienced photographers into enthusiastic, competent digital camera users.



FIGURE 16: Riofoto occlusal mirror.



FIGURE 17: Mirror view.

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PRACTICE MANAGEMENT



Are you ready for that rainy day?

JOHN O'CONNOR gives an overview of income protection, its key features and some guidance on the most appropriate cover.

What is income protection?

Income protection is a type of insurance that provides you with a replacement income if you are unable to carry out your usual work due to any illness, injury, disability or accident. Dentists can cover up to 75% of their income up to a maximum of €175,000 per annum.

Why would you need it?

Self-employed dentists are not entitled to social welfare benefits in the event of them being unable to work. This means that if someone breaks a leg in a skiing accident, for example, they literally have no income coming in to support themselves and their families. This makes income protection a very critical type of insurance for a self-employed dentist. Public service dentists may be entitled to an ill health pension and some state benefits, which would be quite paltry in comparison to their earnings.

What types of income protection are there?

Many insurance companies offer income protection cover (or permanent health insurance [PHI], as it is also called), particularly through pension arrangements. However, dentists need to be very careful which insurance company they decide to go with. The reason is that some companies will only offer cover for 'any occupation' or a 'suited occupation'. This means that in the event of a claim the insurance company can suggest that the dentist claiming try a related occupation, such as teaching or lecturing, which isn't affected by their illness or injury. When you consider the amount of claims that are

musculoskeletal related (see chart below), the quality of cover required by dentists is emphasised. In fact, there are a very small number of insurance companies that provide the level of cover that dentists need.

If I go off sick can I claim immediately?

Some policies provided to dentists by UK companies offer what is known as 'Day 1' cover. This means that you can begin claiming the first day you go out sick and for the whole period that you are unable to work, even if this is only for two weeks. Irish income protection providers have a minimum 'deferred period' or 'waiting time' of 13 weeks. The deferred period is the length of time between when you were last at work due to the illness and when you start receiving an income benefit.

Do I get tax relief on my premiums?

When you are paying premiums to an Irish provider you are entitled to claim tax relief as long as premiums do not exceed 10% of your income. When you are paying premiums to a UK provider you are not allowed to claim tax relief on the premiums.

Do I pay tax on any claim that I make?

If you make a claim from an Irish provider you will pay tax on the income you receive as you would pay tax on any income source. The tax is calculated in the same way as if you were still working and you can claim your allowance, etc. When you are claiming from a UK provider you begin to pay tax on the claim (in the same manner) once you have been receiving payment for 12 months.

TWO CASE STUDIES

I am a 27-year-old female dentist earning €70,000pa. What cover should I have?

You need to cover yourself for €800 per week escalating in line with inflation. It is best that you take a combination of cover from UK and Irish providers. €400 per week cover from a UK provider will cost you €57 per month. €400 cover with an Irish provider will cost you €76.07 per month but this will fall to €44.88 after tax relief. So in total after tax relief you will be paying €101.88 per month.

To summarise the tax treatment, with an Irish provider you get tax relief on the premium and pay tax on the claim, and with a UK provider you get no tax relief on the premium and pay tax on a claim after one year of receiving it.

With so many choices available, what is the best option?

In our experience with dentists to date, our recommendation is for a combination of cover from both Irish and UK providers. The 'Day 1' cover that is offered by UK providers is very attractive, but not getting tax relief takes the shine off it marginally. Where the Irish providers gain is that the premiums are tax deductible, making it financially cost efficient. One key piece of advice that we cannot emphasise enough is for dentists to take out cover as early in their career as they can. Dentists often have trouble getting cover as they get older; it is not uncommon for dentists to struggle to get cover even in their thirties. Another benefit of starting cover early is that premiums will remain low for the whole duration of their career.

What is the difference between serious illness insurance and income protection?

There are many differences and I have just given some here. A serious illness plan will pay out a lump sum in the event of an individual suffering from cancer, heart attack, stroke or another of the listed illnesses. When someone claims on income protection they could be paid a replacement income for many years and as a result the claims often tend to be much higher. Many claims are as a result of accidents such as a severe cut, broken bones, or back and neck injuries. On a pragmatic level there is no tax relief granted on serious illness premiums.

Do the providers actually pay out when dentists need it?

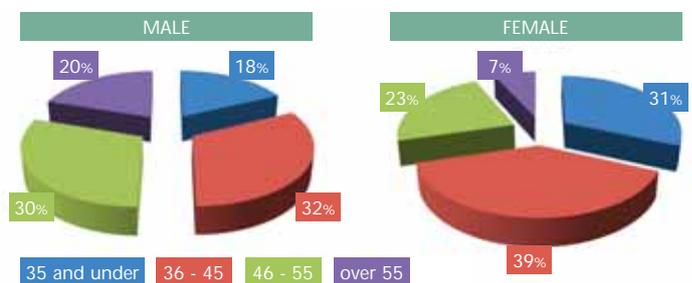
To give an accurate indication of the types of claims that are paid out to dentists, I have quoted Dentists' Provident's claims experience. The two pie charts make very interesting reading, showing the analysis of 1,507 claims paid in 2007 by gender:

Female analysis

It is quite staggering to see that 70% of female claimants are 45 years of age or under. From separate analysis it is shown that the majority of the claims would not be covered by a serious illness plan. Some 26% of female claims were for musculoskeletal disorders, 14% were for accidents and 12% were for psychiatric disorders. In fact, only 15% of claims were related to cancers and cardiovascular diseases.

I am a 45-year-old male earning €110,000pa. I have cover of €500 per week through a UK provider. What should I do?

Firstly, you need to keep your existing cover in place. You obviously took it out when you were younger so you are getting good value now as a result. You need to top up your cover with an Irish provider for an additional €750 per week with a deferred period of 26 weeks. This will cost you €121.12 gross per month but this cost will fall to €71.46 after your tax relief.



Male analysis

Similar to their female counterparts, the higher claims statistics were for psychiatric disorders (18%), musculoskeletal disorders (24%) and accidents (14%). It is interesting to note that exactly half of male claimants were over 45 and half under.

Summary

When taking out income protection, always insist that the company providing it will cover you for your 'own' occupation and not just 'any' occupation or a 'suited' one. Be aware of the deferred period or 'waiting time' and try and get some 'Day 1' in place. The younger a dentist decides to take out income protection, the better. Not only will they secure cover at a reasonable price now, but they will also be able to maintain it for their whole career.

John O'Connor is Managing Director of Omega Financial Management, an independent firm offering financial advice.

Quiz Answers from page 14

- Vitality testing/pulp testing.
- Differential diagnosis:
 - hypercementosis;
 - benign cementoblastoma;
 - periapical cemental dysplasia; and,
 - condensing osteitis.
- If the tooth responds normally to vitality testing, then endodontic treatment will only be required if the lesion is to be biopsied or surgically removed. As it is small, an apicectomy can be carried out to remove it and retain the tooth. If it is a benign cementoblastoma it may become larger and cause expansion of the mandible, so surgical removable may be required.

CLASSIFIED

Classified advert procedure

Please read these instructions prior to sending an advertisement. On the right are the charges for placing an advertisement for both members and non-members. Advertisements will only be accepted in writing via fax, letter or email (fionnuala@irishdentalassoc.ie). Non-members must pre-pay for advertisements, which must arrive no later than March 2, 2009, by cheque made payable to the Irish Dental Association. If a box number is required, please indicate this at the end of the ad (replies to box number X). Classified ads placed in the Journal are also published on our website www.dentist.ie within 48 hours, for 12 weeks.

Advert size	Members	Non-members
up to 25 words	€75	€150
26 to 40 words	€90	€180

Non-members must send in a cheque in advance with their advert. The maximum number of words for classified ads is 40.

Only if the advert is in excess of 40 words, then please contact:
Think Media

The Malthouse, 537 North Circular Road, Dublin 1.

Tel: 01-856 1166 Fax: 01-856 1169 Email: paul@thinkmedia.ie

POSITIONS WANTED

I am an Irish dental graduate looking for either P/T or F/T employment. I am a young, friendly and dynamic person. I am currently living in Dublin. Please contact me at Tel: 085 148 1947, or Email: cindymaharaj1@gmail.com.

Female dentist, 25 years experience in general practice, seeks part-time employment within radius of Cork City. Tel: 086 232 6687, or Email: rocklodgehouse@gmail.com.

Endodontist available for sessions in your general practice, Dublin 1, 2 or 4 areas, on associate terms. Tel: 087 756 1287, or Email: windmill38@gmail.com.

Dentist seeking part-time work one day a week and evenings or Saturdays in the Cork area – 20 years experience. Tel: 083 359 5600.

Cork graduate with five years experience seeks locum position from May 2009. Please Email: trionaf2000@yahoo.com.

POSITIONS VACANT

Associate required for modern, friendly dental practice in Westport, Co. Mayo. Excellent opportunity for right candidate in busy two-surgery practice. Please contact Alida, Tel: 086 856 2790, or 098 26611.

Full-time associate sought for busy practice in Drogheda. Tel: 086 793 6933, or Email: emmet@smiles.ie.

Weekend associate sought for busy practice in Galway. Tel: 086 793 6933, or Email: emmet@smiles.ie.

Associate required for busy Co. Clare practice. Modern surgeries, digital OPG/x-ray. Tel: 086 602 3371.

Associate wanted for busy practice one hour from Dublin. Almost entirely private with no medical card work. Fully computerised, digital I/O radiography and panoral, rotary endo, microscope, implant-equipped with on-site periodontist and hygienists. Please apply with CV to abbeydentalcare@gmail.com.

Part-time associate required for modern, well-equipped, five-surgery practice in Dun Laoghaire area. Private/PPS. Monday/Wednesday plus potential for Friday. Start February 2009. Please contact Tara, Tel: 01 284 2344.

Experienced dental associate required for a very busy, modern dental practice in Galway City. Fully equipped and computerised (digital x-ray, OPG, hygienist, etc.). Please Email: dental.care1@yahoo.ie.

Full-time enthusiastic associate required from January 2009, for busy South Dublin general practice. Minimum two years experience. Please Email: tfoley@iol.ie.

Full-time dental associate required for busy computerised Northside Dublin practice to replace departing associate. Digital OPG and I/O, motorised endo, etc. Please Tel: 086 236 4375, or Email: banded@iol.ie.

Associate required (full-time) for a very busy practice in Nenagh, Co. Tipperary. OPG and laboratory on site. Tel: 087 686 6180.

Established practice in Wexford seeks enthusiastic associate for immediate start. Multi-chair practice, working alongside two other full-time associates. Very progressive. Great opportunity. Tel: 086 818 7373.

Galway City. Part-time associate dentist required, two to three days per week from early March. Tel: 087 958 3962, or Email: bforde@iol.ie.

Full-time, skilled associate required to replace departing colleague. Busy practice, Maynooth and Palmerstown. Excellent equipment, auxiliary staff and hygiene support. Training given in Cerec 3D. Good mix private and PRSI, no GMS. Tel: 01 628 9482 during office hours, or Email: gbglass@mac.com.

Associate required for busy dental practice in Limerick City. Computerised, digital x-ray, OPG, hygienist. Tel: 061 417566.

Prosthodontist required for busy practice in South Dublin. Immediate start available. Implant experience essential. Email: info@seapointclinic.ie.

Orthodontist required. Sessions available in a modern and purpose built two-surgery practice. Excellent support staff with state-of-the-art equipment. Dublin 15 suburb with no other orthodontist in the area. Email: oaklanddental@yahoo.ie.

Full-time experienced locum dental surgeon required to work from February to August 2009 in HSE Dental Service in Dublin South City. Email: colleen.oneill@hse.ie.

Dental surgeon required for very busy Midland practice. A good mix of private/GMS and PRSI patients require good quality dentistry. Full book assured. Excellent prospects. Please reply with CV to dentalvac@hotmail.com.

Dentist required to cover maternity leave from April to October 2009 in busy friendly modern practice in Portmarnock, Co. Dublin. Email: magsblessing@yahoo.com.



We require experienced dental nurses for our new Emergency Dental Service, Vhi SwiftCare Clinic, Cork. This is a unique and exciting opportunity to work in a developing area. P/t dental nurses required on a sessional basis. Submit CVs to: recruitment@vhiswiftcare.ie.

Full-time dental nurse required for busy dental practice. South West Dublin area. Email: terrie@smileclinic.ie.

Dental hygienist required for busy Co. Clare practice. Tel: 086 602 3371.

Dental hygienist required for a very busy, modern dental practice in Galway City, Ireland. Fully equipped and computerised, full assistance provided (digital x-ray, OPG, Cavitron, etc.). Please Tel: 087 803 4514, or Email CV to: dental.care1@yahoo.ie.

Busy dental practice in Castlebar seeking hygienist for a minimum three days a week. Tel: 086 856 2423, or Email: mayodental@gmail.com.

Hygienist wanted two to three days per month in specialist ortho practice. Tel: 01 818 6571, or Email: shona@clontarfbraces.ie.

PRACTICES FOR SALE/TO LET

Ballsbridge. To rent: 3,000 sq ft on first floor over parade of shops with 36-space car park. Suit dentist/medical. Flexible lease. Contact Fergal Fahy, Tel: 087 256 0664, or Email: fahy@ireland.com.

For sale, Co. Louth. Leasehold, three fully equipped surgeries, OPG, good staff, associate, hygienist, turnover 500K+. Quick sale, first 220K secures. Principal relocating. Tel: 087 933 2676.

To rent/lease, Waterford City Centre. Anchored by the largest medical GP practice. South East. Superbly designed, WOW factor, health complex, high visibility. 1,800 sq ft – flexible options, no VAT. Four large surgeries, central sterilising, OPG, great natural light. Tel: 086 819 8887.

For sale, South Dublin. Great location – area wide open. Freehold property with full planning permission. Two existing surgeries with potential to expand – plans available. Long established, high profile practitioner retiring. Huge growth possible. No medical card. Immediate sale. Tel: 086 807 5273.

Surgery to let in orthodontic practice, D3 beside Clontarf Road Dart Station. Only €1,000 p.m. Ideal for start-up specialist. Tel: 01 818 6571, or Email: shona@clontarfbraces.ie.

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Practices urgently wanted. Calling all dentists! Planning to retire/relocate or prepared to stay on as associate short-/long-term basis. All options freehold/leasehold. Dublin City and County areas. All types of practices required. Highest confidentiality assured. Tel: 086 807 5273.

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www.dentist.ie



DIARY OF EVENTS

February 2009

Kerry Branch IDA/Craobh Chiarraí

February 4 Óstán Malton, Cill Áirne, 8.00pm
Aoi-chainteoir/Speaker: Dr Patricia Shalloe on 'Diagnosis and treatment planning of the perio patient'.

Kerry Branch IDA/Craobh Chiarraí

February 12 Óstán Meadowlands, Traigh Lí, 8.00pm
Aoi-chainteoir/Speaker: Dr Colm Sugrue on 'Colour selection – dos and don'ts'. Also in attendance at this meeting will be Dr Donal Blackwell, President Elect, IDA, and Mr Fintan Hourihan, Chief Executive, IDA, who will address the meeting.

Kerry Branch IDA/Craobh Chiarraí – Oíche shóisialta/Social night

February 14 Óstán Meadowlands, Traigh Lí, 7.00pm
St Valentine's Night Dinner Dance (as advertised in RSVP magazine). Smart dress – not black tie. Tickets €95 each. Contact 087 373 3566 on/before February 7, 2009. Proceeds to fund Kerry dental unit in Vesnova, Belarus. Organised by Chernobyl Children's Project International (Kerry Branch).

Irish Endodontic Society Meeting

February 26 Dublin Dental Hospital, 7.30pm
Case studies.

Metropolitan Branch IDA – Retired Dentists' Dinner

February 26 Hilton Hotel, Charlemont Place, Dublin 2
Dinner is at 6.00pm. All dentists, whether retired or not, are very welcome to attend and have a chat with our colleagues who have 'been there and done that'. Informal dental evening takes place at 8.00pm.

Metropolitan Branch IDA – Annual Scientific Day: 'Mastering Technology'

February 27 Hilton Hotel, Charlemont Place, Dublin 2



Programme will include short presentations, a multidisciplinary dental team presentation, table discussions and trade show.

March 2009

Irish Dental Association – Council Meeting

March 7 IDA House, Leopardstown, Dublin

Metropolitan Branch IDA – Scientific Meeting/Metro AGM

March 19 Hilton Hotel, Charlemont Place, Dublin 2
Speaker is Dr Paul Averley on 'Conscious sedation: a primary case perspective'.

The Dental Nursing and Dental Hygienists Seminar

March 21 Cork University Dental School and Hospital
Further details available nearer the time.

Irish Endodontic Society Meeting

March 26 Dublin Dental Hospital, 7.30pm
Speakers: Drs Derek Duggan, Sile Lennon and Eoin Mullane.

IDA Golf Society – Metropolitan Branch Outing

March 29 Woodenbridge Golf Club

April 2009

IDA Golf Society – President's Prize

April 25 Mount Juliet Golf Club

Irish Dental Association Annual Conference 'Skillkenny 2009'

April 22-25 Hotel Kilkenny



For further details, contact the IDA, Tel: 01 295 0072, or Email: elaine@irishdentassoc.ie.

Irish Dental Association – Annual General Meeting

April 23 Hotel Kilkenny

May 2009

IDA Golf Society – Lyttle Cup

May 23 Baltray Golf Club

September 2009

IDA Golf Society – Captain's Prize

September 5 Carlow Golf Club

October 2009

Public Dental Surgeons Seminar 2009

October 7-9 Whites Hotel, Wexford

December 2009

IDA Golf Society – Christmas Hamper

December 11 The Royal Dublin Golf Club

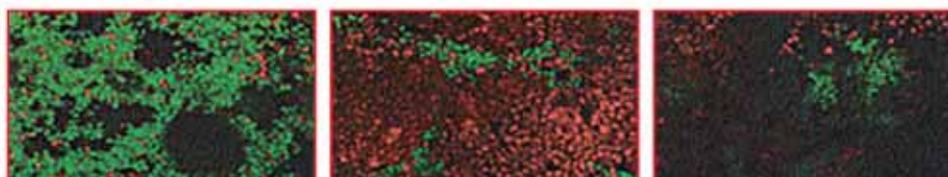
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As you know, dental plaque can be mechanically removed but within two hours of cleaning, pioneer colonies of bacteria attach to the tooth surface and the plaque reforms.

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Colgate Total



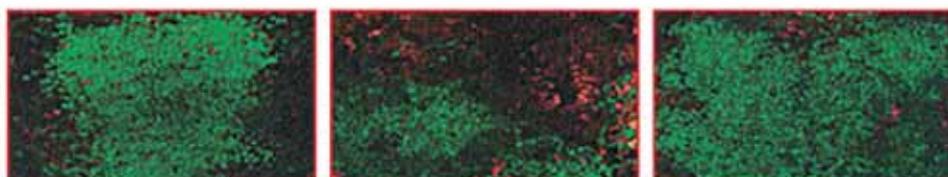
0 hours

3 hours

12 hours

immediately before application

Ordinary Toothpaste



In vitro sequential photomicrographs showing relative proportions of dead and viable plaque bacteria after application of Colgate Total vs ordinary fluoride toothpaste

Green: live growth
Red: dead bacteria

Because the copolymer helps ensure delivery and retention of the active ingredient, triclosan, on the surface of the teeth and gingivae, Colgate Total provides a sustained antibacterial effect for up to 12 hours.

- Its sustained antibacterial action helps reduce dental plaque by up to 98%^{1,2*}
- It helps reduce the number of sites with gingival bleeding by up to 88%^{1,2*}



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Reference: 1. Panagakos FS *et al.* *J Clin Dent* 2005; 16 (Suppl): S1-S19.

2. Garcia-Godoy F *et al.* *Am J Dent* 1990; 3 (Spec Issue): S15-S26.

* vs ordinary fluoride toothpaste.

Colgate Total

PRODUCT INFORMATION. Product Summary, Trade Name of the Medicinal Product: Colgate Total Toothpaste. **Indication:** To reduce dental caries, to improve gingival health, to reduce the progression of periodontitis. **Contraindications:** None known. Individuals with known sensitivities should consult with their dentist before using. **Special Warnings and Special Precautions for Use:** Children under 7 use a pea-sized amount for supervised brushing. If using fluoride supplements, consult your dentist. **Interactions with Other**

Medicaments: None known. It is important to note that as for any fluoride containing toothpaste in children under systemic fluoride therapy, it is important to evaluate the total exposure to fluoride (fluorosis). **Undesirable Effects:** None known. **Legal Class:** GSL. **Product Authorisation Number:** PA320/5/1. **Product Authorisation Holder:** Colgate-Palmolive (UK) Ltd., Guildford Business Park, Middleton Road, Guildford, Surrey GU2 8JZ. **Recommended Retail Price:** €2.19 (50ml tube), €3.85 (100ml tube), €4.35 (100ml pump). **Date of Revision of Text:** February 2005.

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