

Journal of the Irish Dental Association

Iris Cumainn Déadach na hÉireann

Tooth whitening: concepts and controversies



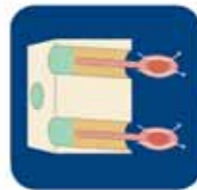
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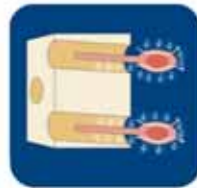
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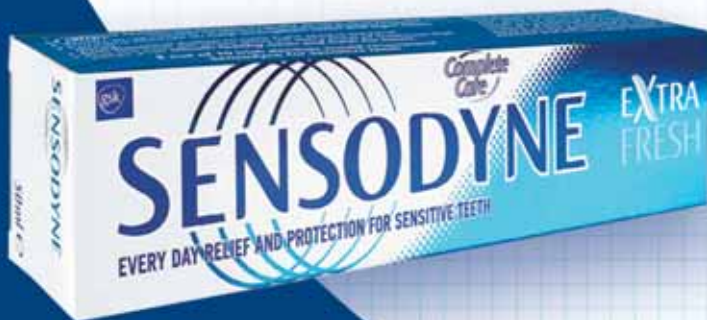
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1. Independent Market Research May 2003.
2. Gillam DG et al. J Periodontol 1992; 63; 7-12.
3. Silverman et al. Am J Dent. 1994;7:9-12.
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Published on behalf of the IDA by

Th!nkMedia
PROFESSIONAL PUBLISHING SERVICES

The Malthouse, 537 NCR, Dublin 1
T: 01-856 1166 F: 01-856 1169
www.thinkmedia.ie

Editorial Ann-Marie Hardiman
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AI ASSOCIATE MEMBER
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IRISH DENTAL INDUSTRY LTD.

PPAI ABC audited circulation
September 7, 2006: 2,981 copies

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Tooth whitening, orthodontics and more

I'm just getting ready for some holidays and a visit to Chicago to see my son. The Autumn Edition is normally a quiet issue for news with holidays, school closures and general warm weather. This year it has been different with rain, news and important developments locally and in Europe. The HSE has decided to set up an Oral Health Strategy Group, Europe is bursting with important decisions and Irish ambitions for the World Cup are in turmoil with yet another devastating blow and unfortunate injury to our Captain, Brian O'Driscoll. Roly Meates, a former coach of mine in Trinity, brings us up-to-date with an insider's view on the Rugby World Cup. His line that 'intelligence and an ability to coldly analyse themselves are what separates elite sportspeople from the rest' could be attributed to any walk of life. Dedication and honesty to oneself are great assets, often missing in today's money-driven society.

The Alumni Association: There is often a reluctance to return to our alma mater. I have recently had a request for some information. Can all readers of the *Journal of the Irish Dental Association* make a concerted effort to contact their university and try and join their alumni association. Addresses change, people move on and it is hard to keep tabs. It is great to see how your class is getting on.

Europe: Tom Feeney highlights the importance of the higher concentrations of hydrogen peroxide 6% being prescribed through the dentist rather than non-dentists. The European Scientific Committee on Consumer Products will make their decision in October. One of our scientific articles deals with this issue. In September, Europe (Internal Market for Consumer Protection) will decide on the 'burden of proof'. This is an important decision and will influence our clinical decisions. Innocent rather than proven guilty vs. guilty until proven innocent is a very important distinction. Oral health and general health strategies in Europe stressed the importance of the intrinsic link between oral health, general health and quality of life. This is something we should always stress – the importance of looking at a patient as a whole rather than simply teeth. Europe's positions on practice ownership and the use of 'needs tests' to restrict the number of dental clinics in well-served areas needs to be read.

Scientific section

Tooth whitening: Concepts and controversies by Johnny Fearon is an excellent, easy to read and understand article on this highly important and politically controversial topic. It is an essential read for any student or dental postgraduate undertaking exams and now I can explain to my daughter, Caroline, how it works, and I might impress her for once! **Pain:** This topic is also an important and politically controversial one. Pain is too often ignored and not understood by clinicians. Patients are at risk of generalised medical problems, if prescribed the wrong medication. We have a duty to our patients to ensure they are

not in pain, particularly following our treatments. The step-up protocol to pain management is essential. **The orthodontic workforce in Ireland:** Niall McGuinness is to be congratulated on this article on behalf of the Orthodontic Society of Ireland. It is particularly important when the number of orthodontists in practice is likely to increase with the expected return of those seeking training overseas (28) over the next few years. There is a huge demand from patients for orthodontics, expectations are high with new advances (implants for anchorage/orthognathic surgery, etc.) and demand is likely to increase. It is worth looking at the note on P.123 where there is an analysis of orthodontics and facial appearance as the demand may become even greater. Attractiveness is important.

Abstracts: The consensus on the management of traumatic dental injuries – avulsion of permanent teeth/dental traumatology – is a must read for all dentists/A&E hospitals, paramedics and general medical practitioners. The Scientific Committee of the IDA should look at this and produce a leaflet for all its members.

Practice management: Migrant workers. This article highlights the change in the Irish population and how we need to address the challenges from an employment law perspective. We have local papers in different European languages and dedicated shops selling food from all over Europe. The Editorial Board frequently discuss – is it time for the Journal to have a section dedicated to our colleagues/readers from different parts of Europe?

The DDTS: Should I stay or should I go? A difficult dilemma: this article explains the issues very well. The HSE Oral Health Strategy Group will need to consider the consequences. This issue needs to be resolved. There are a large number of patients that require treatment and cannot afford dental treatment on top of their PRSI insurance and tax burdens. The dental practitioner is not there to subsidise the Dental Service. Prevention and reconstruction, not extractions, are the aims of dentistry.

I need to say nothing about the importance of the IDA statement about oral cancer P.117 – dentists need to be ever vigilant.



Leo F. A. Stassen

Prof. Leo F. A. Stassen
Honorary Editor

PRESIDENTIAL NEWS

Events in dentistry

Now in its fifth year, Colgate Oral Health Month, in partnership with the Irish Dental Association, will continue to promote good oral hygiene among the general public in Ireland during the month of September.

Colgate Oral Health Month

Increasingly, the general public are recognising the importance of healthy teeth and gums and, during September, Colgate and the Irish Dental Association will work together to highlight the long-term benefits of good dental practice with the message 'Healthy Teeth require Healthy Gums'. Following on from the success of last year's nationwide shopping centre activities, Colgate and the IDA aim to bring this outreach programme to even more shopping centres this year. These events will include free oral healthcare advice and product sampling, as well as some fun for kids. Colgate and the IDA will also be taking the message of Colgate Oral Health Month into dental surgeries nationwide. Blitz teams will call to over 500 dentists across the country to bring the 'Share a Smile' theme and 'Healthy Teeth require Healthy Gums' message to dental surgeries. I encourage all members to actively engage with this very worthwhile endeavour.

PDS Seminar 2007

This year's Public Dental Surgeons Seminar is almost upon us and what a seminar it promises to be! Highly regarded speakers will address topics such as orthodontics, implants, radiographs, cross infection control, dental trauma and oral care for the elderly. Some non-clinical topics will also be covered for the whole dental team, such as stress management and financial affairs and, of course, there will be a trade show exhibiting the latest in dental equipment. The social highlights of the conference include the trade show party, president's lunch and the gala dinner. We are also honoured to have Dr Peter Cooney, Chief Dental Officer of Canada, as our guest of honour. Book now to ensure your place at what promises to be a highly educational and enjoyable few days!

Annual General Meeting 2007

The Annual General Meeting of the IDA will take place on Saturday September 22, 2007 in the Hilton Hotel, Charlemont Place, Dublin. It is your opportunity to have your say with regard to many important issues affecting both the Association and the dental profession as a whole by using your vote on the various motions for consideration at the AGM. Our Association can only be as strong as the support and input it receives from our members so I urge you to attend this very important event in the IDA calendar.

Annual Conference 2008

Plans are well underway for the Annual Conference 2008, with all speakers now confirmed. The fabulous Whites Hotel will be the setting for 'Operation Wexford' and the action-packed programme will be distributed to members later in the year. An important point to note is that AC 2008 will be the first year in which the IDA AGM will be incorporated into our national conference; it will be held on Thursday

April 24 in the conference venue. This is a progressive step to make our Annual Conference an even more important date in members' diaries.

New graduates

On June 15, I was delighted to attend the dinner held in Trinity for final year dental students on the eve of their graduation day. It was an honour to present the Irish Dental Association Prizes for Highest Results over the five years of the dental course to Owen O'Shaughnessy and Best Academic Presentation in the Bachelor Course in Dental Technology to Ronan Gallagher. I would encourage all graduates to join our Association and ask that current members encourage these new entrants to the dental profession to join the Association and to remind them that their first year of membership is free.

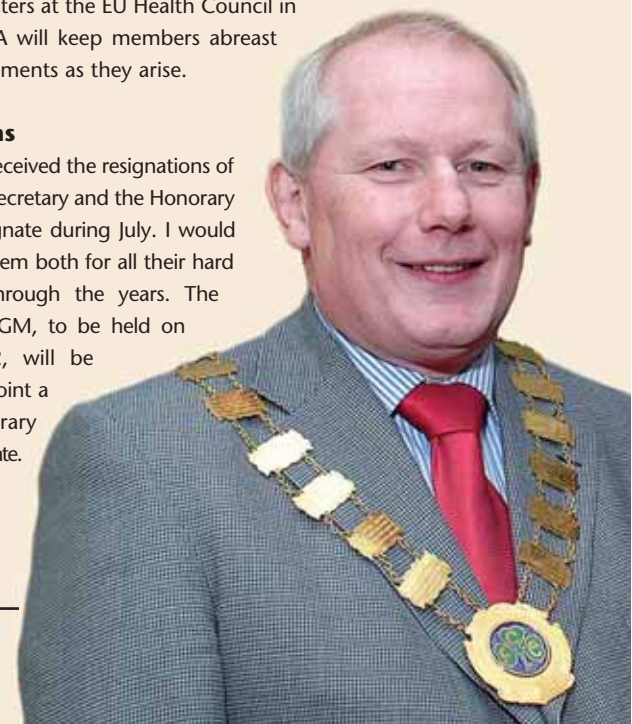
'Health Strategies in Europe' Conference

I recently had the honour of attending a conference on 'Health Strategies in Europe' held by the Portuguese EU Presidency in Lisbon from July 12-13. The aim of the Conference was to discuss issues that are crucial to the EU health agenda and to contribute to the debate on a European health strategy. Parallel workshops addressed topics such as oral health, heart disease, cancer and tuberculosis. The oral health workshop was organised by the Council of European Dentists, and some of the main issues of concern addressed included the level of caries and periodontal disease, and the wider health implications of these, such as diabetes and heart disease. All recommendations on oral disease prevention and oral health promotion arising from the workshop will be brought to the next meeting of the Council of European Dentists and will feed into the European Commission's white paper on an EU Health Strategy, to be presented to health ministers at the EU Health Council in December. IDA will keep members abreast of any developments as they arise.

Resignations

Regrettably, I received the resignations of the Honorary Secretary and the Honorary Secretary Designate during July. I would like to thank them both for all their hard work down through the years. The forthcoming AGM, to be held on September 22, will be seeking to appoint a new Honorary Secretary Designate.

John Barry
President



Munster Annual Scientific Meeting '07

An impressive list of speakers is lined up for the Munster Annual Scientific Meeting on Friday September 28 at the Clarion Hotel, Lapps Quay, Cork. The day will begin at 9.00am with a presentation on periodontics from Dr Jonathan Lack, a specialist based at the Louisiana State University in New Orleans and at the Eastman Dental Institute, London. Topics to be covered will include: basic non-surgical periodontal therapy – periodontist's approach; use of locally delivered antimicrobials; and, use of systemic modification drugs. The programme will continue in the afternoon with Professor Duncan Sleeman, oral surgeon at UCC, who will present on the use of bisphosphonates, the problems as they relate to dentistry and the management of patients taking them. The final clinical speaker is Dr Barbara Coyne, a specialist in paediatrics, who will present on problem solving in paediatric dentistry.

The day will also include a large trade show showcasing the most up-to-date products and services for the dental profession today.

Metro Branch – kick-off of autumn programme

The next meeting of the Metro Branch will take place on Thursday September 27 at the Hilton Hotel, Charlemont Place, Dublin 2 at 8.00pm. Presenters on the evening will be Dr Frank



Gallagher, left, who will speak on 'New ideas for old teeth' and Dr John Dermody who will speak on 'Endodontics – fact and fiction'. This meeting is organised in conjunction with the Irish Endodontic Society.

Dublin Dental School reunion



ABOVE: Dr Mary Conlon, Dr Cathal Owens, Dr Joan Kelly and Dr Monica Owens.



LEFT: Dr and Mrs Fiachra MacFhionnlaioich.

Graduates of the Dublin Dental School and Hospital who qualified between 1956 and 1960 recently gathered for a reunion. Certificates "to acknowledge over 40 years as a graduate of the Dublin Dental School and Hospital" were presented by the Dean, Professor Noel Claffey, on behalf of the Alumni Association.

Golf Society, Captain's Prize

The Annual Captain's Prize will be played at the Carlow Golf Club on Saturday September 8 next. For further information please contact Ciaran Allen, Tel: 047 71400.



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*Sharma N.Charles CH Lynch MC, et al.Adjunctive benefit of an essential oil-containing mouthrinse in reducing plaque and gingivitis in patients who brush and floss regularly: a six month study. J AM Dent Assoc. 2004;135:496-504.



Figure 1. Figure 2.

QUIZ

A 20-year-old woman who was referred to the Dublin Dental School and Hospital for assessment gave a history of bleeding, swelling and pain around her gums, as well as mobility of teeth (Figure 1). On the

OPG (Figure 2) there was evidence of severe periodontal destruction. She also mentioned that the symptoms were recurrent in nature, with periods of complete remission.

Questions

1. With which systemic disease would you think that this patient was diagnosed a year before her assessment in the Dental Hospital?
2. What would be your treatment plan?

Pictures provided by Dr Denise MacCarthy, Senior Lecturer/Consultant in Periodontology, Dublin Dental School and Hospital.

Answers on page 148.

Irish women increasingly contracting oral cancer

Dental experts have warned that instances of oral (mouth) cancer among women have dramatically increased in the last decade with women now accounting for approximately 33% of cases diagnosed each year. The Irish Dental Association (IDA) has highlighted that during the 1990s women accounted for just 12% of oral cancer cases, but this figure has increased steadily each year.

The increase of the disease among women comes at a time when the number of men being diagnosed has increased only slightly. Professor Leo Stassen of the IDA said: "The increase of oral cancer among women may be attributed to an increase in the number of women smoking and the frequency with which they consume alcohol. If this trend continues we will soon see females replace males as the most likely sufferers of oral cancer." Professor Stassen is a Consultant Oral and Maxillofacial Surgeon at St James's Hospital and the Dublin Dental School and Hospital.


The IDA points out that while the most dramatic increase over the last decade has been among women, there has been a general increase in instances of the disease in all groups.

"Instances of oral cancer among younger people are becoming increasingly common. Surprisingly, these young people are very often non-smokers and non-drinkers. The increase may be as a result of genetics, viral infections or exposure to carcinogens," said Professor Stassen.

The IDA highlighted that urban patients tend to present more with oral cancer, largely due to increased incidence of exposure to carcinogens such as tobacco smoke, second-hand smoke and environmental carcinogens such as car fumes. Income levels are also relevant with an associated link to diet and alcohol consumption in urban areas.

The IDA advises that early diagnosis of the disease is vital in order to maximise survival rates. Early diagnosis results in an 86% chance of survival; however, survival rates fall to just 10% if the cancer has become advanced. Prof. Stassen said: "It is important to attend a dental practitioner regularly and to monitor any unusual oral incidences such as prolonged mouth ulcers or any lump or white

patch. If such a symptom persists for more than three weeks you should contact your local dental practitioner and, if you do not have one, your doctor, immediately. This can be especially important for denture wearers as they often self-diagnose ulcers as denture related, when it may be much more serious." Prof. Stassen called for a National Cancer Network to be developed, which will allow experts to share information and expertise on oral cancer.



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LETTER TO THE EDITOR

Attitudes of undergraduate dental students to the use of rubber dam

Dear Editor,

We write to you regarding the recent article published in the *Journal of the Irish Dental Association* on the attitudes of undergraduate dental students to the use of rubber dam.¹ Drs Ryan and O'Connell are to be complimented for undertaking this study.

Readers of the *Journal of the Irish Dental Association* may be interested in the findings of a similar study that we completed into the attitudes and use of rubber dam by Irish general dental practitioners.² This paper was published recently in the *International Endodontic Journal* and reports the views of 300 Irish GDPs, 77% of whom described themselves as working in private practice. Based on the findings of this study, it was reported that the rubber dam is never used by:

- 77% of respondents when placing amalgam restorations in posterior teeth;
- 52% of respondents when placing composite restorations in posterior teeth;
- 59% of respondents when placing composite restorations in anterior teeth;
- 39% of respondents when performing root canal treatment on anterior teeth;
- 32% of respondents when performing root canal treatment on premolar teeth; and,
- 26% of respondents when performing root canal treatment on molar teeth.

It was reported that 41% of dentists do not ask their patients if they have a latex allergy prior to placing the rubber dam. Additionally:

- 57% of respondents consider the rubber dam 'cumbersome and difficult to apply'; and,
- 41% of respondents consider throat pack 'as good a prevention against inhalation of endodontic instruments as rubber dam'.

The findings of this study are interesting when one considers the relative lack of use of the rubber dam in contrast to its benefits. The advantages associated with the use of the rubber dam include:

- reduced contamination of root canal systems during root canal treatment, thereby increasing the likelihood of success of treatment;
- reduced transmission of infective agents, including aerosol spread, between dentist and patient;
- prevention of inhalation or aspiration of instruments or materials used during dental treatment, such as endodontic files or burs;
- facilitation of the use of materials which may have deleterious effects if inadvertently placed in contact with the gingival or oral tissues; and,

- to maintain a 'dry field', which is important with moisture-sensitive techniques, such as placement of composite restorations in posterior teeth.

It should also be noted that:

- the use of the rubber dam during root canal treatment is recommended by good clinical practice guidelines, such as those of the European Society of Endodontology;
- from a medico-legal standpoint, dental defence agencies regard situations where inhalation of endodontic files occur and the rubber dam has not been used as indefensible;
- there is clinical evidence to show that, when used routinely, rubber dam application can be performed quickly, and that the overall time spent on a procedure can be reduced when the rubber dam is applied; and,
- there is evidence to show that patients prefer to have a rubber dam placed when operative/root canal treatments are performed.

Our study demonstrated that while the rubber dam is used more for root canal treatments than operative treatments in Ireland, its use is by no means extensive. This 'lack of use' presents certain medico-legal, safety and treatment quality concerns for the profession as well as for patients. In light of the clear advantages of the rubber dam described above, the reasons for its infrequent use amongst Irish general dental practitioners are puzzling.

Yours sincerely,

Christopher D Lynch

Senior Lecturer/Consultant
in Restorative Dentistry
Cardiff University School of Dentistry.

Robert J McConnell

Professor of Restorative Dentistry
National University of Ireland, Cork.

Copies of the complete article are available from Dr Lynch, lynchcd@cardiff.ac.uk.

References

1. **Ryan W, O'Connell A.** The attitudes of undergraduate dental students to the use of rubber dam. *Journal of the Irish Dental Association* 2007; 53: 87-91.
2. **Lynch CD, McConnell RJ.** Attitudes and use of rubber dam by Irish general dental practitioners. *International Endodontic Journal* 2007; 40: 427-432.

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Promoting oral health



Now in its fifth year, Colgate Oral Health Month, in partnership with the Irish Dental Association, will continue to promote good oral hygiene in Ireland amongst the general public during the month of September. Increasingly, the general public is recognising the importance of healthy teeth and gums and, during September, Colgate and the Irish Dental Association will work together to highlight the long-term benefits of good dental practice with the message, 'Healthy teeth require healthy gums'.

Following on from the success of last year's nationwide shopping centre activities, Colgate and the IDA aim to bring this out-reach programme to even more shopping centres this year. These events will include free oral health care advice and product sampling, as well as some fun for kids.

Colgate and the IDA will also be taking the messages of Colgate Oral Health Month into dental surgeries nationwide. Blitz teams will call to over 500 dentists across the country to bring the 'Share a Smile' theme and 'Healthy teeth require healthy gums' message to dental surgeries.

I encourage all members to actively engage with this very worthwhile endeavour.

John Barry,
President,
Irish Dental Association.

Professional Relations Activities

Colgate-Palmolive and the Irish Dental Association invite you to take part in Colgate Oral Health Month 2007. Since 2003, Colgate Oral Health Month has become the leading Irish oral health campaign and is designed to inform and educate the general public on the importance of oral health.

As part of Colgate and the Irish Dental Association's continued support for dental professionals, together we have implemented various initiatives involving the dental profession this September to ensure that we are all 'fighting together for better oral health'
Aoife Moran, Professional Relations Manager.



*New Dental Detailer,
David Kiernan.*

During Colgate Oral Health month, Colgate endeavours to increase its support to the dental profession. 2007 has seen a substantial increase in interest from the dental profession with a staggering 70% of the profession registering their interest with us through some of the following activities:

- our Blitz Team, comprising both dental and hygienist students, from Dublin and Cork, will be calling to dental surgeries throughout the country. They will distribute our special surgery packs and dress the surgery with balloons and posters, and distribute samples to the profession.
- we will be sending Colgate Oral Health Month packs to all who have registered with us. These packs include:
 - product samples for distribution to patients;
 - patient information leaflets;
 - CPE materials; and,
 - surgery posters.
- with members of the Irish Dental Association as spokespeople, we will be running various public relations activities, including national and regional radio slots and print media. This is with the view to increasing public awareness on the importance of good oral health.

Colgate has recently developed a Professional Relations Team headed by Aoife Moran. Colgate recognises the importance of working with and supporting the dental profession in the continuing pursuit of better oral health for Ireland.

Colgate activities include:

- visiting as many professionals as possible to keep them informed of our product development;
- developing and distributing clinical product evidence for the dental profession;
- supplying patient information leaflets to surgeries throughout the country;
- developing and distributing patient information posters relating to general oral care to surgeries;
- provision of both personal and patient product samples of key products;
- supplying continuing professional education (CPE) materials to the dental profession;
- development of strong academic relations within the dental hospitals; and,
- continued support of key Irish Dental Association activities.

For further information please contact:



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Mobile: 087 268 7591
Web: www.colgate.ie

Consumer drive

To complement the Colgate Oral Health Month activities with dentists and the Irish Dental Association, Colgate is also undertaking a comprehensive consumer promotion campaign.



Advertising

Advertising has been booked into television, radio and print media. The television activity includes a 20 second advertisement which will be broadcast on national television stations throughout the first three weeks of September. In addition, there will be a two-week promotion in conjunction with TV3.

Radio advertising includes three different forms of 30 second advertisement. These are being used on national and local radio stations and, in addition, there will be a one week national promotion programme with 2FM and a one-week local radio promotion with 98FM in Cork.

Print media may include involvement in a Health and Lifestyle promotion with a supplement to the Irish Independent.

Public relations

A national public relations campaign will endeavour to place a series of oral care related stories across a very wide range of media. This will assist in the process of building awareness of the need for improved oral care. While this process commenced in July, the major timing focus was for mid-August through September. Three approaches are being taken: consumer survey facts; twins' photos; and, gum health.

Back-up

An internet and freephone service will be provided as a back-up to the consumer marketing activity. It will function as a link on advertisements for consumers to find further information, as well as providing basic information of Colgate Oral Health Month activities and re-inforce the oral health messages.

The design of the internet site will use the same principal ingredients as the main campaign – the IDA logo, the Share-a-Smile focus, and a list of shopping centres that will be visited as part of the campaign.



Shopping Centre Events

Colgate is conducting a series of shopping centre events throughout September to further engage consumers in Colgate Oral Health Month. There will be seven events, in those shopping centres with the highest 'footfall' in Dublin, Cork and Galway. At each event, there will be a link-in with the local retailer. Irish Dental Association advisors will offer free dental advice, while samples and product information will also be dispensed. Fun items will include the Share-a-Smile instant camera booth, as well as the kids' zone with balloons and PC games. There will be a live link-up with local radio at two of the events.

The most researched.¹

Colgate Total is backed by the most extensive clinical research programme for toothpaste - over 30 clinical studies and a systematic review to date.^{1,2}

Recommend Colgate Total

Here's why:

Colgate Total has a unique formulation that contains triclosan and copolymer to provide effective anti-bacterial activity against plaque and gingivitis.



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0.32% sodium fluoride, 0.3% triclosan

Proven 12-hour anti-bacterial protection

1. Davies RM, Ellwood RP, Davies GM. *Journal of Clinical Periodontology* 2004; 31: 1029-1033. 2. Data on file, Colgate-Palmolive.

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:** PA 320/5/1. **Product Authorisation Holder:** Colgate-Palmolive (UK) Ltd., Guildford Business Park, Middleton Road, Guildford, Surrey GU2 8JZ. **Recommended Retail Price:** €2.19 (50ml tube), €3.79 (100ml tube), €4.29 (100ml pump). **Date of Revision of Text:** February 2005.

Dentists urge greater use of gumshields in school sports



At the launch of the 'No Gumshield – No Game' campaign are (from left): Senior Footballers Ciaran Hanratty, Monaghan, Marc Ó'Sé, Kerry, Colin Moran, Dublin, and Galway Senior Hurler David Collins, with Dr Edward Cotter, IDA, and, Emily Gordon.

One in four children will suffer a dental trauma before the age of 15, and many of these occur during participation in organised sports. The Irish Dental Association (IDA) has responded to this issue by launching a safety campaign entitled 'No Gumshield – No Game' to reduce the instances of oral sports injury among children and to encourage parents to take steps to protect their child's smile before they return to the school playing fields.

The campaign highlights the fact that, as children return to school and become engaged in organised sports, they are at increased risk of sports-related oral trauma. Historically, IDA members have reported an increase in the number of children presenting with oral trauma as they return to playing school sports.

Speaking at the launch of the campaign, Dr Edward Cotter, IDA, said: "While we encourage children to participate in school sports, we need to ensure that they are adequately protected when doing so. Shin-pads and helmets are now widely regarded as essential sports kit and we need to see a well-fitted gumshield worn whenever a child is playing sports.

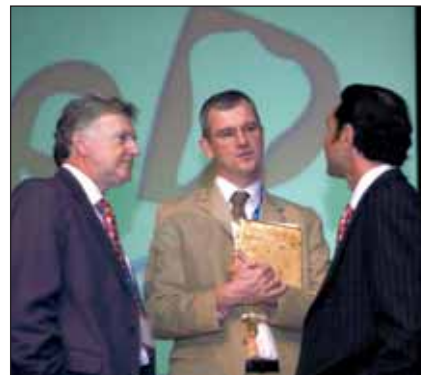
"Gumshields lessen the chance of serious oral injury and can be particularly important for children who wear braces. We are advising parents to contact their local dentist to discuss how best to ensure their child's oral health is protected."

The campaign also highlights a need for oral health awareness among adults participating in sports, with the IDA suggesting that 50% of athletes suffer dental trauma at some stage.

"While having no front teeth may be cute at age seven, it is certainly not the case at 17, or older," Dr Cotter pointed out.

"As always, prevention is better than cure; in the case of oral injury, a simple step such as getting a well-fitted gumshield from your dentist will help protect against expensive and uncomfortable injury," Dr Cotter said.

Paediatric Dentistry Congress



Dr William Fenlon, Dublin (centre), speaks with session chairpersons Dr Jamie Lucas, Melbourne (left), and Dr Karen Mekertichian, Sydney, following his presentation at the 21st Congress of the International Association of Paediatric Dentistry (IAPD) in Hong Kong in June.

Public Dental Surgeons Seminar

Dr Peter Cooney, Chief Dental Officer for Canada, will be the guest of honour at the forthcoming Public Dental Surgeons Seminar in Westport from October 10-12 next. An interesting line-up of speakers has been agreed, including Professor Dennis O'Mullane, Dr Anne O'Connell, Dr Tiernan O'Brien, Dr Marielle Blake, Dr David Hegarty, Dr John Walsh, Dr Frank Burke, Dr Elizabeth O'Sullivan, who will present on 'The management of erosion' and, from the UK, Dr Jenny Harris, whose presentation is entitled 'Safeguarding children in dental practice'.

Branch officers

Dr Cormac Shields, Limerick, is the new President of the North Munster Branch.

Orthodontics and facial appearance

Research on identical twins, published recently in the *World Journal of Orthodontics*, suggests that traditional methods of straightening teeth may not be as effective as some natural methods. "Orthodontic treatment is usually delayed until after growth has stopped," explains Professor John Mew, Director of the London School of Facial Orthotropics, "by when it may be too late to avoid extractions and 'train tracks'. This research suggests that extractions may be avoided if the growth of the jaws can be corrected, preferably before the age of eight." Correcting the shape and size of the jaws also improves the appearance of the face.

The study compared the effect of traditional fixed appliances against orthotropic (growth guidance) treatment without fixed appliances, on a series of 12 identical twins, 10 years after treatment. Facial changes were assessed by a panel of 10 lay judges. A comparison was also made of the dental changes and an error study undertaken. Most of the traditionally treated twins were judged to look less attractive after treatment, while most treated by orthotropics were judged to have improved. There was little difference in the dental results but the traditionally treated cases seemed to relapse to a greater extent after treatment.

BUSINESS NEWS

Talking Points



Attending GlaxoSmithKline's annual Talking Points Dental in Dentistry seminar, which took place recently in the Belfast Hilton, were (from left): Aveen McAllister; Alan McCartney, GSK; Kevin Lewis, speaker; Charlotte Stilwell, speaker; Ian Hulatt; and, Andrew Barker.

Maxillofacial Concept



Nobel Biocare has announced its Maxillofacial Concept for planning implant retained maxillofacial reconstructions. Maxillofacial surgery can correct a number of deformations in the hard and soft tissues of the oral and maxillofacial regions, caused by disease, trauma and genetic defects. According to the company, surgery support comes from the complete Nobel Biocare Branemark System implants and prosthetic assortments for anchoring prostheses, and new state-of-the-art 3D software for diagnosing and planning implant retained maxillofacial reconstructions. When needed, specifications can be submitted for production of customised solutions.

Appointments



Colgate has appointed **David Kiernan** as Dental Detailer. David has recently returned from Australia where he worked in a similar capacity.

Ryan Maguire has been appointed Dental Surgery

Technical Sales Representative for Ireland with Heraeus Kulzer Limited.

Well known to many dental practices, Ryan worked for five years with a major dental retailer.



Obituary



Dr TG Meehan
BDS DDS FICD

Gerry Meehan was from the parish of Annaghdown in Co. Galway. He graduated from UCD in 1957 and practiced for a time in Dublin. He obtained a DDS from the University of Toronto in 1963 and, on his return to practice in Dublin, joined the staff of the Dublin Dental Hospital from 1963 to 1967. A clinical tutor in the Department of Restorative Dentistry, he lectured on the subject in Ireland, the UK and on the Continent; he was the author of many articles in dental journals and co-author of the Fractured Incisor. In 1967 he moved his practice to Galway.

A member of the Federation Dentaire International since 1960, he was appointed Assistant Secretary of that body in 1967. He became a member of the American Dental Society of Europe in 1967, was President of the Irish Dental Association in 1975, was an elected member of the Irish Dental Board from 1978-1985 and, in 1982, was elected a Fellow of the International College of Dentistry.

In 1981 Gerry became one of the few Irish dentists to be awarded Honorary Membership of the American Dental Association. Subsequently, he used his considerable influence and charm to secure the ADA's participation in the joint Trinity 400-IDA meeting in Dublin in July 1992. Since then the IDA has enjoyed a special alliance with the ADA and the ADA has honoured further members of the IDA.

Gerry was one of the most highly respected members of the dental profession both nationally and internationally. At local level, both his colleagues and his patients held him in the highest esteem and his professionalism, coupled with his high standards, were regarded as those to emulate. Certainly, through his influence, he brought dentistry in the West of Ireland to the highest international standards and we his colleagues were proud to have him as a friend and mentor.

A natural sportsman, he was on the Galway minor hurling and football teams in a year when they were All-Ireland hurling finalists and football champions. Latterly he loved his golf but was never more in his element than when organising fishing for his friends on his native Lough Corrib, culminating with a picnic on one of the many islands.

Gerry is survived by his wife, Sighle, and their six children. Due to the protracted nature of his illness the family had some very difficult times in the past three years; they coped with private dignity. Shortly before he died Gerry attended the wedding of his daughter, Amalee. Showing great resolve he walked her up the aisle and later proposed a toast to the bride and groom. It was the last of many great days.

Gerry will be sorely missed by all of us.

Ar dheis Dé go raibh a anam.

Wishing the Irish Dental Association continuing success

Established in 1926, Davy is Ireland's leading institutional, corporate and private client broker. We act on behalf of buyers and sellers in 40 per cent of all dealings in Irish equities, bonds and money market instruments. We serve as broker to more than half the companies listed on the Irish Stock Exchange and

were involved in 70 per cent of all fund raisings on the Irish Stock Exchange in the past two years. We are also the largest private client brokerage in Ireland and have been consistently recognised by the world's top names in financial services for the quality of our research and service. For more information visit www.davy.ie.



Do your patients really know how to fight plaque?

Were you aware that despite 98% of Irish dental professionals believing that they talk to their patients about plaque, a recent survey showed that just over a quarter of the population don't know what plaque is and three quarters have no recollection of talking to their dentist or hygienist about it?¹

Understanding what plaque is and learning how to prevent it is vital for your patient's oral health and might only take a few moments of your time to achieve. Below is the case study of Chantelle whose lifestyle is probably very similar to that of many of your patients and who, like them, just needs to take a few small steps to help improve her oral healthcare routine and fight plaque.

Chantelle Philips, aged 22, PR Executive, London,

"I love my busy office job in town, buying clothes and have a full social life after work. I go to the gym and like to keep fit and healthy. I watch my diet and try to eat sensibly, but I have a weakness for chocolate, especially at coffee breaks, and sometimes keep a bar in my desk to nibble on. I go to the dentist twice a year and recently had my teeth professionally whitened. I'm currently thinking about veneers to improve the look of my front teeth."

Chantelle's looks and health are important to her in her career and social life, but her hectic lifestyle means she doesn't have much time to take care of her mouth. She's invested in her teeth by having them whitened, and she's prepared to spend even more. However, her snacktime chocolate habit is putting her mouth at risk from decay and gum disease caused by plaque, and she isn't really aware of that.

Dental plaque is part of the natural resident microflora of the human body. However, if mature plaque deposits are allowed to build up around the teeth, caries and periodontal problems are likely to develop. In individuals who frequently consume foods rich in fermentable sugars, as Chantelle does, plaque spends more time at a low pH due to the acids produced by glycolysis. This situation is exacerbated if saliva flow is low, e.g. between meals, as saliva acts to remove dietary substrates, buffer damaging microbial acids, and



promote remineralisation. In causing gum disease, plaque develops anaerobic flora as it matures. The organisms release a variety of irritant metabolites, destructive enzymes and antigens, which stimulate inflammatory and immune systems. These then cause local damage in the gingival tissues, which, if left unchecked, will lead to gingivitis and ultimately more invasive periodontal disease.

Orbit Complete is an ideal way for a busy working girl like Chantelle to help keep her mouth fresh and in good condition. Chewing Orbit Complete throughout the day, after or even instead of her chocolate snacks, helps stimulate saliva to neutralise plaque acids, even when she's dashing between the office, gym or out to meet friends. Easy to keep in her bag, Orbit Complete is sugarfree and contains Xylitol, which is proven to help reduce the formation of plaque.

Join our Oral Healthcare Programme

To find out more about how you can educate you patients on fighting plaque and to receive free resources for your practice, please visit www.betteroralhealth.info where you can join up to become a member of the new Wrigley's Oral Healthcare Programme, brought to you by Orbit Complete.

Facts

- Chewing Orbit Complete stimulates saliva by up to 10 times the normal resting rate¹
- Orbit Complete helps stop acid attacks by balancing the pH in the mouth²
- Orbit Complete helps inhibit the build-up of plaque³

¹Dawes C, Macpherson MD (1992) Effects of Nine Different Chewing-Gums and Lozenges on Salivary Flow Rate and pH, *Caries Research* 26(3): 176-182.

²Manning RH, Edgar WM (1993) pH Changes in Plaque After Eating Snacks and Meals, and their Modification by Chewing Sugared or Sugar-free Gum, *British Dental Journal* 174: 241-244.

³Wrigley Data on File 2007

¹ Consumer Dental Plaque Survey: Republic of Ireland (ROI), Ipsos Mori Health, 2007



Partner in oral healthcare



Orbit Complete is the Wrigley Company's dental brand of sugarfree chewing gum. Chewing Orbit Complete sugarfree gum with Xylitol after eating helps reduce plaque and helps reduce the risk of tooth decay, as approved by the British Dental Health Foundation.



Rugby and dentistry combined

Former coach and selector to the Irish rugby team, and, of course, well-known dentist, Roly Meates provides a World Cup preview for the Journal (in an interview with PAUL O'GRADY).



Roly in his practice with (from left): nurse Lettie McCarthy; hygienist Sara Keane; and, practice manager Cora McCullagh.

Roly Meates qualified as a dentist in 1961 and has practiced ever since. He continues to practice in Ballsbridge in Dublin, where he works hours of 7.00am to 1.00pm. Asked about the changes in the profession since he graduated, he observes that while there have been huge and obvious changes in the technology, he has also noticed a significant change in the public perception of dentistry. "It has taken its full place in medical care in the public mind." Roly identifies three things that have led to this improvement in the perception of dentistry:

- the precision, accuracy and breadth of possible treatment and associated health education;
- the improvement in support mechanisms available to dentists including the increased variety of specialists and the outward-looking Dental Hospital; and,

- the availability of educated and aware staff, with dental nurses and hygienists both making a big – and positive – impact on dental practices.

In fact, when asked how he managed to be a dentist and commit so much time to Irish rugby, he points to his colleagues as being the people who enabled him to work effectively and efficiently. Practice manager Cora McCullagh is described by Roly as "the absolute doyenne of dental nursing," running the practice with a "benign but ruthless efficiency." Nurse Lettie McCarthy and hygienist Sara Keane are the vital cogs that help keep Roly's practice operating smoothly. He also acknowledged the co-operation of Guinness management as he was the company dentist for many years. During that time, their flexibility assisted Roly to maintain his rugby involvement as his commitment to the company covered about 40% of his working time.

Meates' moments

- The thrill of competition and the association with players give Roly the most enjoyment.
- Not beating the All Blacks when Leinster were leading well into the second half in the 1970s is a regret.
- He found Irish centre Michael Gibson inspirational and wonderful, and greatly admired the Welsh trio of Gareth Edwards, Phil Bennett, and his particular favourite, Gerald Davies.
- Roly believes that intelligence, and an ability to coldly analyse themselves, are what separate elite sportspeople from the rest.
- Roly worked closely with Irish international props Phil Orr, Des FitzGerald and Mick Fitzpatrick.
- Recent changes in laws in relation to the break down

have created a situation where defence has become pre-eminent in the game. Roly believes that law changes that would ensure that the skills of running backs could be expressed more freely would be of great benefit to the game, both as a contest and as a spectacle.



FEATURE

A life in rugby

Roly Meates played rugby with High School, Trinity College, Wanderers and Leinster. He was President of the Leinster Branch of the IRFU in 1968 while many of his contemporaries were still playing. Coach to the Trinity side from 1966 to 1995, he became coach to the Leinster team in 1970. He was coach to the Irish team from 1975 to 1977 and a selector for several years from 1979, including when Ireland won the Triple Crown in 1982. He was subsequently Chairman of the selectors for three years.

While he coached Leinster for six years from 1987, he has been the scrummaging coach to the team for the last five years, standing down at the end of last season. He is considered a world expert on the scrum, and has a particular expertise in the intricacies of front-row play.

He is delighted that rugby is professional and says that he found working with professional players to be "inspiring"; however, he believes that one of the dangers in professional sport is the lack of proper preparation for a career afterwards. "In rugby, a career can end any Saturday, and there is an onus on the game in that respect." He also believes that there is a need to prepare professional sportsmen for the buzz and notoriety associated with being successful.

He believes that study is essential both for after rugby and for a necessary breadth of vision in life. The difficulty is co-ordinating the demands of training schedules with study, and particularly with lecture timetables.

Dental Hospital Rugby Team - Hospital Cup Winners 1960



Photo: courtesy Dublin Dental Hospital Library.

The Dental Hospital won several Hospital Cups in the late 1950s and early 1960s. Roly was a feature of the team and captained them to victory in 1960. This team picture from 1959/60 shows (all from left): sitting at front: P. Condon and J. Atkinson; seated: K. O'Broin; K. O'Doherty; F. Byrne; R. Meates; C. Brady; A. Boylan; D. Furlong; standing: Dean; F. Prendiville; M. Dwyer; M. O'Hanlon; W. Doyle; F. Carney; J. McKenna; L. Convery; and, Dr Hogan.



New Zealand

The All Blacks are the form team. Their set pieces are very good, though I'd worry about their line-out. They're searching for a second row at the moment. Richie McCaw is the best player in the world at the break down and they have great pace for the counter-attack. However, the huge pressure on them to perform has been counter-productive. Six months ago I had no doubt they would win. Now, there is just a little doubt.

South Africa

This is the most interesting side in the tournament. They have tremendous power, real pace and an equal commitment (to the All Blacks) to succeed. They also have Montgomery to kick them to success as converting territory to points is essential. While South African sides don't have the subtleties of Australian sides, they carry the ball well and have a very solid scrum. They are a good outside bet.

Roly's WORLD CUP



Scotland

The same as applies to Wales applies to Scotland, only more. They can be up for a game for a day, but will not win two or three big games in a row. Consistency of performance is a real problem for them.

Argentina

These are the dark horses. Their forward play can be extremely powerful. When they subdue a team up front, then they can overpower the opposition completely. They have good players and they will perform well. It is a help that they have many players playing in Europe; however, I don't believe they will be in the final shake-up.

Rugby playing dentists

Roly has played with (and coached) many fine rugby players who were dentists. He has very fond memories of winning Hospitals Cups with the Dublin Dental Hospital in the early 1960s with players such



Australia

This is an extremely talented side and, as always, they will be well prepared. There is enormous subtlety in their approach to the game. While Australia beat New Zealand in their recent game in Australia, I don't believe that in the intensity of a World Cup they will equal New Zealand.

France

France carry the burden of home games and while they won the Six Nations, they were hounded last year by the All Blacks. However, I am slow to draw conclusions from that match and have a great respect for French rugby. Potential finalists with the capacity to win.

England

The England team is in a transitional phase, which is not good going into a World Cup. I believe their greatest strength in 2003 was the on-field leadership of Martin Johnson and that he was under rated. From England's point of view, I believe that it is important that Dallaglio is back, but performing well is the limit of their aspirations.

Wales

When Wales play the wide-running game, they can be as good as any team in the tournament; however, they have been inconsistent. I believe that they don't yet have the control and consistency, and this World Cup is too soon for this side.

PREVIEW



Italy

The Italians have improved enormously over the last few years, but they will not challenge the tournament's leading teams.

Ireland

This is the best Irish team in living memory. It has outstanding qualities. As O'Driscoll said in the documentary: "We are a very good team, we can be a great team." We need to play like we played against Australia last autumn, where the quality of the ball we won at the break down was crucial. The

challenges to Eddie O'Sullivan and his team are to turn the good into great, and to deal with this new rush defence set-up that teams are adopting. The other really important issue for Ireland is to avoid injuries to key players – namely Hayes, O'Connell, O'Gara, and O'Driscoll (sinus fracture not withstanding).

Overall

The winners will come from Australia, New Zealand, France, South Africa and Ireland and, on balance, I think it will be a France vs New Zealand final, with New Zealand to win.

as Frank Byrne, Cormac Brady, Willie Doyle, Gerry Cleary, Gerry Tormey, and Gerry and John McKenna.

Several dentists also went on to be interprovincials including Darragh Coakley, Declan Molloy and Alex O'Regan. There are also a few dentists who became internationals including Brian Marshall, Roger

Young, Fergus Dunlea and Paddy Johns.

Interestingly, despite the evidence of Felipe Contepomi, who recently graduated as a doctor, Roly believes that it is no longer possible to combine a commitment to the profession and be a top professional rugby player.

New opinion sought

Dr TOM FEENEY, Treasurer of the Council of European Dentists (CED), summarises recent events of relevance in Europe.

New scientific opinion on tooth whiteners sought

The Commission has submitted a new request for a scientific opinion on the safety of hydrogen peroxide in oral hygiene products. The requested opinion will be the fifth on the subject of tooth-whitening products (TWP) in the last eight years and will be the broadest in subject matter, because it is to cover not only TWPs, but toothpastes and mouth rinses as well. The Scientific Committee on Consumer Products (SCCP) has been asked to consider all available data since its last opinion in March 2005 to assess the possible health risks of hydrogen peroxide in oral products. They are asked to identify specific health risks relating to the different concentrations of product and different usage conditions. The Commission therefore wants the SCCP to advise on what usage conditions are safe for which concentrations of TWP.

In March 2005 the SCCP, in its opinion, ruled that evidence did not support the safety of making 6%-H₂O₂ TWPs available over the counter; instead, a dentist should be consulted first. The Commission attempted at first, contrary to this opinion, to make 6% TWPs available over the counter, but the CED was able to successfully explain the risks of this approach. The CED will continue to discuss with the Commission the overarching question of how best to regulate TWPs.

The CED adopted a Resolution in May 2007 arguing for higher strength TWPs to be regulated in the Medical Devices Directive and not the Cosmetics Directive. The SCCP is expected to deliver its opinion in October.

Obligations of service providers – positive result in IMCO committee

The Parliament's IMCO committee (responsible for internal market and consumer protection) has adopted its report on the obligations of service providers. The result is, on the whole, a positive one. MEPs voted to delete the reference to the Commission's controversial proposal in 1990, which sought to harmonise service provider liability by "reversing the burden of proof" (this would have meant health professionals being presumed guilty for unsuccessful treatment without the patient needing to prove an error or negligence). Also, instead of calling for a harmonisation of liability rules across Europe, MEPs are now calling simply for a "work programme for an appropriate assessment" of the need for a harmonising instrument. The CED sent a letter to IMCO MEPs a week before the vote, explaining that liability rules should not be harmonised and that a reversal of the burden of proof would lead to defensive medicine. The Parliament's plenary is due to vote on IMCO's report in September.

EU Presidency conference recognises importance of oral health to general health

The Portuguese EU Presidency conference on 'Health Strategies in Europe', at its meeting on July 12-13, accepted the recommendations

of its oral health workshop to integrate action on oral disease into the EU's health strategy. The workshop, which was attended by oral health experts from around Europe and by IDA President Dr John Barry, was organised by the Council of European Dentists. It sought to raise awareness of the intrinsic link between oral health, general health and quality of life.

The conference was a hugely important opportunity to raise the profile of oral health and ensure its integration into EU public health policy, and was also a big success for the CED. CED President Orlando Monteiro da Silva said after the event: "Oral health has for too long been overlooked in the EU's action on public health. The dental profession has a particularly effective role in prevention since it is the only medical profession that regularly sees seemingly healthy patients."

The oral health workshop recommended in particular that oral health be included in general disease prevention strategies on the basis of common risk factors.

Greece in court for rules on practice ownership

The Commission decided last month to take Greece to the European Court of Justice (ECJ) for its legislation on the ownership, opening and operation of opticians' shops. Greece has still not complied with an ECJ ruling on the same issue from two years ago. The Greek legislation in force continues to allow only registered opticians to own opticians' shops, which is seen as a restriction on the freedom of establishment of companies from other Member States in Greece, since these can never fully own an optician's shop.

The results of this and a French case could have a direct impact on ownership rules relating to dental practices. The CED's Internal Market task force is monitoring the issue and will send a questionnaire to CED member associations after the summer to assess how widespread such ownership restrictions are in the dental profession in Europe.

ECJ to rule on the use of 'needs tests' to restrict number of dental clinics

An Austrian court has referred questions to the European Court of Justice (ECJ) relating to the permissibility of "needs tests" to restrict the number of dental clinics. Austrian law requires a competent authority to have given approval before a dental clinic can be established. One of the conditions of the approval is that there be a local need for such a clinic. In the present case, two authorities denied permission for the establishment of two clinics, because each town in question had many more dentists than the Austrian average.

It appears that the Austrian government has submitted an opinion to the court defending the use of needs tests in order to guarantee the financial stability of the health system and ensure balanced access to dental and medical treatment for all. The Austrian Dental Chamber is also entitled to submit an opinion in the case before the ECJ.

CODEINE

CAFFEINE

PARACETAMOL

SOLPADEINE



POWER TO HIT PAIN WHERE IT HURTS

SOLPADEINE SOLUBLE TABLETS AVAILABLE ON THE PCRS (GMS); CODE – 47029. PRODUCT INFORMATION

FOR SOLPADEINE SOLUBLE TABLETS PRESENTATION: Each soluble tablet contains Paracetamol 500mg, Codeine Phosphate Hemihydrate 8mg and Caffeine 30mg, 60 soluble tablets per pack. **INDICATIONS:** Solpadeine is indicated in the management of symptoms of headache, including migraine, toothache, backache, common cold, influenza, menstrual pain and musculoskeletal pain. **DOSAGE AND ADMINISTRATION: Adults (including the elderly)** Two tablets dissolved in a glass of water, three to four times in a 24 hour period, as required. The dose should not be repeated more frequently than every four hours. **Children 7-12 years:** Half to one tablet, dissolved in water which may be repeated three to four times in a 24 hour period as required. Children should not be given doses of Solpadeine more frequently than every four hours and not more than four doses should be given in any 24 hour period. The product is not suitable for children under 7 years of age except on medical advice. For oral administration only. **CONTRAINDICATIONS:** Known hypersensitivity to paracetamol, codeine, caffeine or any of the other constituents as well as patients suffering from acute asthma. **PRECAUTIONS:** Care is advised in the administration of paracetamol to patients with severe renal or severe hepatic impairment. The hazard of overdose is greater than in those with non-cirrhotic alcoholic liver disease. Care should be observed in administering the product to any patients whose condition may be exacerbated by opioids, particularly the elderly, who are especially sensitive to their central and gastro-intestinal effects, those on concurrent CNS depressant drugs, those with prostate hypertrophy and those with inflammatory or obstructive bowel disorders. Excessive intake of tea or coffee should be avoided while taking Solpadeine. Prolonged regular use, except under medical supervision, may lead to physical and psychological dependence (addiction) and result in withdrawal symptoms, such as restlessness and irritability once the drug is stopped. Prolonged use without medical supervision may be harmful. Do not exceed the stated dose. If symptoms persist, a doctor should be consulted. Keep out of the reach of children. CONTAINS PARACETAMOL. The product should not be taken with

other paracetamol containing medicines. The product should be used with caution in patients with hypertension, oedema or renal insufficiency because of the sodium content. **INTERACTIONS:** The speed of absorption of paracetamol may be increased by metoclopramide or domperidone and absorption reduced by cholestyramine. The anticoagulant effect of warfarin and other coumarins may be enhanced by prolonged regular daily use of paracetamol with increased risk of bleeding; occasional doses have no significant effect. Opioid analgesics should be given with care to patients receiving monamine oxidase inhibitors. The effect of CNS depressants (including alcohol) may be potentiated by codeine; these interactions are unlikely to be significant at the dosage involved. **UNDESIRABLE EFFECTS:** Adverse effects of paracetamol are rare but hypersensitivity including skin rash may occur. Codeine may cause constipation, nausea, dizziness and drowsiness according to dosage and individual susceptibility. **PREGNANCY AND LACTATION:** There is inadequate evidence for the safety of codeine in human pregnancy, but epidemiological studies in human pregnancy have shown no ill effects due to paracetamol and caffeine used in the recommended dosage. Patients should follow the advice of their doctor regarding its use. Paracetamol and caffeine are excreted in breast milk but not in a clinically significant amount. Insignificant levels of codeine also pass into breast milk. Available published data do not contraindicate breastfeeding. **SIDE-EFFECTS:** Adverse effects of paracetamol are rare, but hypersensitivity including skin rash may occur. Codeine may cause constipation, nausea, dizziness and drowsiness according to dosage and individual susceptibility. **OVERDOSE:** Immediate medical advice should be sought in the event of overdosage, even if the patient feels well, because of the risk of irreversible liver damage. **LEGAL CATEGORY:** Prescription only pack. **PA NUMBER:** Solpadeine Soluble Tablets PA 678/40/2. **PA HOLDER:** GlaxoSmithKline Consumer Healthcare (Ireland) Ltd., Stonemasons Way, Rathfarnham, Dublin 16. **Further information is available upon request.** **gsk** GlaxoSmithKline
Date of preparation: July 2007.

Tooth whitening: concepts and controversies

Abstract: Today's society dictates that it is the norm for people to have straight, white teeth. The demand therefore for tooth whitening in dental practice has increased exponentially over the last decade. A common approach to achieving this goal is by bleaching. This article discusses clinical aspects of dental bleaching by providing an evidence-based review of current literature. Topics covered include aetiology of tooth discolouration, indications for bleaching, its mode of action, different types of bleaching regimes, indications and potential side effects.

Journal of the Irish Dental Association 2007; 53: 132 – 140

Introduction

The cosmetic impairment of tooth discolouration, especially in the anterior region, can be treated by a number of invasive therapies such as indirect crowns and veneers, microabrasion, or by the placement of direct composite. In certain clinical situations, the procedure of tooth whitening or bleaching can be employed as a less invasive alternative to restoration with either ceramic or composite. Bleaching of teeth can be achieved either by an external – or vital – approach (nightguard vital bleaching),¹ where vital teeth are bleached by direct contact with an agent such as carbamine peroxide, or by an internal – or non-vital – approach, where non-vital teeth are bleached with an agent such as sodium perborate in a walking bleach technique.² A third approach, which is a modification of both techniques, can be employed when bleaching vital and non-vital teeth in the same arch. This is called inside/outside bleaching.³ The aim of this review is to discuss the concepts involved in both the vital and non-vital bleaching of teeth, and to provide advice, based on the evidence from current literature, to reduce the risks of complications and to ensure successful bleaching therapy.

Causes of tooth discolouration

Tooth discolouration may be described as intrinsic, extrinsic or a combination of both.⁴ It varies in appearance, aetiology, severity, localisation and adherence to tooth structure.⁵ The causes of intrinsic tooth

discolouration can be attributed to changes to the structure of dentine or enamel (**Figure 1**), or by incorporation of chromotogenic material into tooth tissue, either during odontogenesis or post eruption. The main cellular changes observed in intrinsically stained teeth often provide a clue to the aetiology of the pathologic process involved. Discolouration can manifest as either a red, brown, grey or yellow appearance. Internal pulp bleeding caused by trauma or pulp extirpation can cause a temporary red colour change to the crown. Then, as blood degenerates and breaks down, products such as haemosiderin, haemin, haematin and haematoidin release iron.⁵ The iron can be converted into black ferric sulphide with hydrogen sulphide produced by bacteria, which causes a grey staining of the tooth. In addition to blood degradation, degrading proteins of necrotic pulp tissue may also cause discolouration. If pulp tissue is not completely extirpated and remains in the pulp horns, discolouration may result from the break up of the proteins of the necrotic pulp tissue,⁶ causing a grey or brown hue to



FIGURE 1: Intrinsic tooth colour change due to tetracycline staining.

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the crown (**Figure 2**). Yellow discolouration is often due to the reactionary laying down of tertiary dentine sclerosing the root canal and pulp chamber. Because enamel is relatively translucent, the additional volume of dentine obliterating the pulp chamber produces a yellow hue to the crown (**Figure 3**).⁷ Intrinsic discolouration is also caused by exposure to high levels of fluoride, tetracycline administration during childhood, inherited developmental disorders, jaundice in childhood, porphyria, caries, restorations and trauma to the developing tooth germ. After eruption, ageing, pulp necrosis and iatrogenesis are the main causes of intrinsic discolouration.⁸

Extrinsic staining results mainly from dietary factors and smoking (**Figure 4**). Foods containing tannins such as red wine, coffee and tea can give rise to extrinsic stain. Carotenes in oranges and carrots, and tobacco use, whether it is smoking or chewing, also give rise to extrinsic stain.⁹ Wear of tooth structure, deposition of secondary dentine due to ageing or as a consequence of pulp inflammation, and dentine sclerosis affect the light-transmitting properties of enamel and dentine, resulting in a gradual discolouration. For example, tetracycline staining is persistent, whereas discolouration of ageing responds quickly in most instances.¹⁰

History

The first publications describing techniques and chemicals for bleaching non-vital teeth appeared in the latter half of the 19th Century. The bleaching agent of choice was chloride of lime.¹¹ Other agents described for the bleaching of pulpless teeth included aluminium chloride and hydrogen peroxide, used either alone or in combination with heat. The active ingredient common to all the early medicaments was an oxidising agent, which acted either directly or indirectly with the organic component of the tooth. Concern about the side effects of some of these agents was justified however, because some chemicals used were very poisonous, such as cyanide of potassium.¹²

The walking bleach technique that was introduced in 1961 involved placement of a mixture of sodium perborate and water into the pulp chamber, which was sealed into place between dental visits.¹³ This method was later modified by replacing water with 30-35% hydrogen peroxide to improve the whitening effect.¹⁴

Although most of the early publications described non-vital bleaching, a 3% solution of Pyrozone was used safely as a mouthwash as early as 1890, which not only reduced caries, but also whitened teeth.¹⁵ The observation that carbamine peroxide caused lightening of teeth was

made in the late 1960s by an orthodontist (Klusmier), who had prescribed an antiseptic containing 10% carbamine peroxide to be used in a tray for the treatment of gingivitis. This technique, which is the method of home bleaching today, was not widely accepted by the dental profession until 20 years later when it was described in a 1989 publication.¹⁶

Mechanism

Hydrogen peroxide is a colourless liquid with a bitter taste and is highly soluble in water to give an acid solution. It has a wide number of industrial applications, for example bleaching or deodorising textiles, wood pulp, fur and hair, and in the treatment of water and sewage. Hydrogen peroxide is a reactive oxygen species and acts as a strong oxidising agent through the formation of free radicals,¹⁷ which attack the organic molecules responsible for tooth discolouration. When complex, pigmented organic molecules (chromophores) are broken down by the action of free radicals, simpler molecules are produced, which reflect less light.¹⁸ During tooth bleaching, more highly pigmented carbon ring compounds are converted to carbon chains, which are lighter in colour. The carbon double bond chains (yellow in colour) are converted into hydroxyl groups, which are essentially colourless. The radicals also reduce coloured metallic oxides like Fe_2O_3 (Fe^{3+}) to colourless FeO (Fe^{2+}). The bleaching process continues until all of the original pigment is rendered colourless.¹⁹

The chemistry of carbamine peroxide, used for nightguard vital bleaching, is slightly different from hydrogen peroxide as it also contains urea, which permits the peroxide to remain in contact with the tooth for longer. Although the action of carbamine peroxide also causes the breakdown of pigmented carbon compounds as described above, the degradation is slower than with hydrogen peroxide alone.

External (vital) bleaching

The bleaching of vital teeth can occur inside the surgery (power bleaching) or outside the surgery (nightguard vital bleaching). Power bleaching accomplishes complete lightening during treatment in the surgery, whereas nightguard vital bleaching involves the application of a peroxide gel to the tooth surface via some means of carrier, usually a custom fitting bleaching tray.

Power bleaching

Power bleaching of vital teeth generally uses a high concentration of peroxide solution (35-50% hydrogen peroxide) placed directly on the



FIGURE 2: Brown/grey appearance of a non-vital central incisor.



FIGURE 3: Yellow discolouration of the upper right central incisor due to sclerosis of the pulp chamber.



FIGURE 4: Yellow appearance of extrinsic enamel staining.

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teeth, often supplemented by a heat or light source to activate or enhance peroxide release.²⁰ Because the hydrogen peroxide concentration is so high, soft tissues must be very well protected to prevent injury (Figure 5).

Definite indications for its use include treatment of generalised gross staining such as tetracycline staining and perhaps dentine sclerosis, which take a long time using the nightguard vital bleaching technique, and for patients who may have difficulty in compliance with the nightguard vital bleaching technique.

Power bleaching has several potential disadvantages:

1. Neither the patient nor the dentist can exactly control the amount of lightening (compared to the nightguard vital bleaching technique). The technique runs the risk of both over- and under-bleaching.
2. The fee is usually higher as a greater amount of chair time is required.
3. There is a possibility of soft tissue damage due to the caustic nature of the high concentrations of peroxide.
4. There is a greater risk of post-operative sensitivity.²¹ A higher incidence of tooth sensitivity (67-78%) was reported after power bleaching,^{22,23} compared with the nightguard vital bleaching method, using 10% carbamine peroxide (15-65%).^{24,25,26,27}

Nightguard vital bleaching

Nightguard vital bleaching, or 'take home' bleaching, is the more commonly used bleaching technique because it is easy to perform and is generally less expensive for the patient. It involves the use of a 10-20% solution of carbamine peroxide in a gel form (approximately equal to 3.4-7% hydrogen peroxide) delivered to the tooth surface by a custom-made, vacuum formed, plastic bleaching tray (Figures 6 and 7).

Manufacturers have offered carbamine peroxide in a variety of different concentrations, ranging from 10% to over 20%, but the best combination of safety, limited side effects and speed of action is obtained with a 10% solution of carbamine peroxide approved by the ADA (American Dental Association). Products carrying the ADA accepted label have passed a rigorous set of safety and efficacy standards.²⁸ A survey by Christensen (1989) indicated that 90% of dentists surveyed used a 10% concentration of carbamine peroxide for take home bleaching.²⁹

Although the evidence base in the dental literature on the efficacy of nightguard vital bleaching is mostly limited to case reports, it is

generally advocated that most teeth are susceptible to bleaching.³⁰ The process requires longer contact time compared to power bleaching, but it is safe and the results are generally excellent (Figure 2). The first subjective change in tooth colour is generally observed after two to four sessions of bleaching. In a clinical study of nightguard vital bleaching with 10% carbamine peroxide, 92% of subjects experienced some lightening of teeth after a six-week period.³¹ Another clinical trial by Swift *et al* examined the efficacy of 10% carbamine peroxide nightly for two weeks. They reported that the lightness of the crown of the tooth increased by, on average, eight shade units on the Vita® shade guide, calibrated according to a lightness value.³²

Internal (non-vital) bleaching

The whitening of endodontically treated teeth can be carried out by an internal whitening treatment known as non-vital bleaching or the 'walking bleach technique'. This therapy involves placement of a bleaching agent into the empty pulp chamber of a non-vital, discoloured tooth, and is a more conservative option compared to restoration with veneers or crowns. The two most common bleaching agents used for this technique are hydrogen peroxide and sodium perborate, and various sources have been applied to speed up the reaction and improve the bleaching effect.

The decomposition of hydrogen peroxide into active oxygen is accelerated by application of heat or light.³³ The thermocatalytic breakdown of hydrogen peroxide was proposed for many years as the best technique for the whitening of non-vital, discoloured teeth because of the high reactivity of hydrogen peroxide upon application of heat.³⁴ In this procedure, heat from a special lamp or hot instrument was applied to a well of 30-35% hydrogen peroxide in an empty pulp chamber. Temporary restorations impregnated with 30-35% hydrogen peroxide were often used between visits. Although there is little doubt regarding the clinical efficacy of non-vital bleaching using 30-35% hydrogen peroxide³⁵ (either thermoactivated or not), serious concerns regarding the safety of this technique, in particular the risk of producing external cervical root resorption, which is discussed later, have rendered this technique unadvisable, and the application of sodium perborate instead of hydrogen peroxide is now recommended.

Sodium perborate is a hydrogen peroxide releasing agent, and since 1907 it has been employed as an oxidiser and bleaching agent, especially in washing powders and other detergents. It comes in



FIGURE 5: A white silicone barrier material is used to protect the gingival tissues during power bleaching.



FIGURE 6: Take-home bleaching tray, extended as far as the gingival margin.



FIGURE 7: Take-home bleaching tray in situ.



FIGURE 8: Good quality root canal treatments, showing thorough obturation and access cavities prepared for internal bleaching.



FIGURE 9: The distance between the CEJ and the incisal edge is measured with a periodontal probe on the facial.



FIGURE 11: Sodium perborate (Amosan®, Oral-B) mixed with distilled water to a putty-like consistency.



FIGURE 12: The pre-operative appearance of the maxillary right lateral and central incisors.



FIGURE 10: Having recorded the measurement between the CEJ and the incisal edge, the periodontal probe now assists in accurate removal of GP.

powder form and can be mixed into a paste or putty with either pure water or hydrogen peroxide.

Several studies have reported bleaching effectiveness by comparing mixtures of sodium perborate with distilled water or hydrogen peroxide in different concentrations. Rotstein *et al* (1991, 1993)^{36,37} and Weiger *et al* (1994)³⁸ did not report any significant difference in effectiveness between sodium perborate mixed with 3-30% hydrogen peroxide, and distilled water, except for the time taken to achieve a clinically acceptable result. However, mixing sodium perborate with hydrogen peroxide was shown to accelerate the rate of colour change. In the case of severe discolouration, it is safe to mix sodium perborate with a 3% solution of hydrogen peroxide; however it is not appropriate to use 30% hydrogen peroxide because of the possible risk of inducing cervical root resorption.³⁹ This is discussed in more detail below.

Clinical stages for internal bleaching

1. Radiographic examination

A recent pre-operative radiograph is necessary prior to treatment to assess the quality of the root canal treatment. The root canal should be thoroughly condensed along its whole length to prevent the apico-coronal migration of micro-organisms or bleaching agents, which may have a detrimental effect on the surrounding tissues. Should the quality of the root canal treatment be sub-optimal, the tooth should undergo corrective endodontic therapy prior to the commencement of bleaching (Figure 8).

2. Preparation of the access cavity

The pulp space should be completely debrided of any necrotic material, pulp tissues, or restorative or root canal materials. The

smear layer on the dentinal surface of the pulp chamber is removed by applying 37% phosphoric acid gel and irrigated with 2.5-5% sodium hypochlorite.

3. Cervical seal

Gutta-percha (GP) is removed with a round ended, long shank bur to a level of 1-2mm below the CEJ (cemento-enamel junction). It is helpful to measure this distance pre-operatively by recording the distance from the incisal tip to the CEJ on the facial aspect with a graduated probe (Figures 9 and 10). The coronal access is then sealed with a glass ionomer cement (GIC) or accelerated zinc oxide (ZOE) plug to prevent the diffusion of bleaching agents from the pulp chamber throughout the root filling, as root fillings do not provide an effective barrier on their own (Figure 11).² Rotstein *et al* (1992) demonstrated that a 2mm layer of GIC or composite is essential.⁴⁰ Alternatively, Bergenholtz *et al* showed histologically that ZOE cement also provides a hermetic seal.⁴¹

4. Application of bleaching agent

A small drop of distilled water is mixed with sodium perborate powder (Amosan® Oral-B) until a putty consistency is achieved (Figure 12). The sodium perborate putty is applied to the empty pulp chamber with an amalgam plugger or similar instrument, covered with cotton pellet and sealed with an adhesive provisional restoration. It is often difficult to place the provisional restoration directly over the cotton pellet without displacing it. To immobilise the pellet, it is helpful to first wet the pellet with a bonding agent and then light cure the bond once the pellet is in place. A provisional restoration must then be placed, as a sound seal is required around the access cavity to prevent leakage of the bleaching agent into the oral cavity. A light cured GIC or an

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FIGURE 13: The whitening effect of sodium perborate on the maxillary right lateral and central incisors after two applications.



FIGURE 14: Generalised gingival recession. This patient presented with severe pain after four days of external bleaching with 10% carbamine peroxide.

accelerated ZOE material can be employed for this purpose. This procedure is repeated every three to four days until successful bleaching becomes apparent. This normally occurs after one to four visits (Figure 13).

5. Permanent restoration

Once the desired colour change has been achieved, a sound restoration with sealed dentinal tubules is a prerequisite to a successful bleaching therapy.⁴²

The access cavity should be restored with a composite, which is adhesively attached to both enamel and dentine. It is recommended to choose a composite with a high value (light colour) to help compensate if the bleaching therapy alone does not provide the full extent of desired lightness.

The timing of placement of the final restoration is also important, as it has been shown that the bond strengths of composite to bleached enamel and dentine is temporarily reduced. It is recommended to wait for at least seven days post bleaching prior to bonding composite as a definitive restoration.²⁴

Inside/outside bleaching

Another bleaching technique has been described for clinical situations where an endodontically treated tooth is present within the arch and the arch as a whole is to be bleached. This technique, called 'inside/outside bleaching' allows the endodontically treated tooth to be bleached both from within the sealed pulp chamber (inside) and from the facial enamel (outside) simultaneously.

The technique for inside/outside bleaching involves the fabrication of a vacuum-processed plastic mouthguard, trimmed to the facial and lingual margins as previously described for nightguard vital bleaching. Coronal access to the endodontically treated tooth (or teeth) is achieved and the coronal GP is sealed with a light cured GIC or accelerated ZOE, as previously described for non-vital bleaching. The patient is instructed how to inject 10% carbamine peroxide gel into the coronal orifice and into the nightguard. The bleach tray is worn for a minimum of two hours, up to a maximum of an overnight period, as described above. The patient is then instructed to insert a cotton wool plug into the coronal access to prevent the ingress of food particles. Once the non-vital tooth has been bleached to an acceptable match with the adjacent teeth, coronal access can be definitively restored with a high-value shade composite resin, and further nightguard vital bleaching can be continued if desired.³

Controversies

Tooth sensitivity

Unfortunately the aetiology of bleaching-related tooth sensitivity is neither well understood nor easily measured; however the hydrodynamic theory is a mechanism frequently cited to explain it.⁴³ According to this model, peroxide solutions introduced into the oral environment contact available dentinal surfaces and cause retraction of odontoblastic processes, resulting in rapid fluid movement inside the dentinal tubules. This ultimately manifests in stimulation of mechanoreceptors at the pulp periphery, with the resultant feeling of pain when such teeth are exposed to cold or pressure, or even when they are at rest. Tooth sensitivity, if present, normally persists for up to four days after the cessation of bleaching.^{44,45,46}

Patient selection must be carefully considered prior to prescribing bleaching, as some patients are more susceptible to tooth sensitivity than others. In particular, it is wise not to recommend bleaching for patients with generalised gingival recession (Figure 14). Age may also have an effect on tooth sensitivity as the dentinal tubules in younger dentine are wider and enamel is more porous. Also the presence of old, leaking restorations provides a more rapid portal of entry into the pulp for irritating chemicals. Several agent-related factors can also affect tooth sensitivity.

Increasing the concentration of peroxide provides a more rapid bleaching effect; however it also increases the risk of tooth sensitivity. When prescribing a bleaching regime, it is important to differentiate between the concentrations of hydrogen peroxide and carbamine peroxide. A 10% solution of carbamine peroxide is approximately 3% hydrogen peroxide and 7% urea. Concentrations higher than 10% carbamine peroxide may cause increased tooth sensitivity.⁴⁷

Increasing the temperature can also enhance the effect of bleaching while also having an adverse effect on sensitivity. A 10% increase in temperature doubles the rate of chemical reaction; however temperatures elevated to a clinically uncomfortable level may result in latent tooth sensitivity or even irreversible pulpal inflammation.

In addition to concentration and temperature, the degree of bleaching is also related to the amount of time that the bleaching agent is in contact with the tooth surface. The longer the time, the greater the lightening effect and the greater the likelihood of sensitivity.⁵²

TABLE 1: Overview of cervical root resorption observed in clinical studies

Reference	Sample number	Treatment	Heat	Cervical seal	Trauma	Resorption
Abou-Raas (1998) ⁴	112	Wbt: sodium perborate +30% H ₂ O ₂	No	-	-	0
Anitua <i>et al</i> (1990) ⁷⁰	258	Wbt: sodium perborate +30% H ₂ O ₂	No	-	-	0
Friedman <i>et al</i> (1988) ³⁹	58	a) Thermocatalytic – 30% H ₂ O ₂		No	No	1
		b) Wbt: 30% H ₂ O ₂		No	No	1
		c) Thermocatalytic + 30% H ₂ O ₂		No	No	2
Heithersay <i>et al</i> (1994) ⁷¹	204	Wbt: sodium perborate +30% H ₂ O ₂ Thermocatalytic	Yes	Yes	Yes	4
Holmstrup <i>et al</i> (1988) ⁷²	69	Wbt: sodium perborate + H ₂ O	No	Yes	Yes	0

Tooth sensitivity can, however, be reduced by reducing the amount of time spent bleaching per day, bleaching on alternative days or by the substitution of a desensitising agent, such as KNO₃ gel, into the bleach tray between periods of bleaching.

Another approach to reducing sensitivity during bleaching is by the addition of desensitising agents such as potassium nitrate (KNO₃) or fluoride, in the form of SnF₂, to carbamine peroxide to produce 'sensitive-formula' gels. Fluoride acts as a tubule blocker to limit the fluid flow to the pulp. KNO₃ penetrates the tooth to the pulp and has a numbing or calming effect on nerve transmission. Unfortunately, neither agent has proven to be particularly effective. KNO₃ has a limited capacity to achieve antihypersensitivity unless used for long periods, and fluoride formulations are also slow acting and can cause significant tooth discolouration.⁴⁷ In a recent double blind clinical trial by Giniger *et al*,⁴⁷ the effect of addition of amorphous calcium phosphate (ACP) to a 16% carbamine peroxide gel on the degree of hypersensitivity was studied. The results reported significantly reduced hypersensitivity compared to carbamine peroxide bleaching alone after 19 days, both in terms of intensity and duration. There was no associated reduction in the degree of tooth lightening with the ACP solution. This is the first study to show that ACP added to carbamine peroxide may reduce hypersensitivity and, although the results appear promising, further research is required before making a clinical recommendation for the use of ACP-containing products.

External cervical root resorption

Cervical root resorption is a painless, inflammatory-mediated external resorption of the root, which can be seen after trauma and following internal bleaching. It is usually detected only through routine radiographs; however papillary swelling or tenderness to percussion can sometimes be observed. While the causes of resorption are not fully known, a review of the literature indicates a number of possible causes.⁴⁸ Patients tend to be younger than 25 years and most report a history of trauma. From a clinical viewpoint, what does appear to be an important factor is the regime of internal bleaching employed. It has been proven that formulations using either 30% hydrogen peroxide alone, or in combination with sodium perborate, are more toxic for periodontal ligament cells than sodium perborate mixed with water.⁴⁹ Heating the peroxide with a hot instrument also appears to promote resorption. Application of heat leads to a widening of the

dental tubules and facilitates diffusion of molecules in the dentine.⁵⁰ Moreover, application of heat results in generation of hydroxyl radicals from hydrogen peroxide, which are extremely reactive and have been shown to degenerate components of connective tissue.⁵¹ Unsurprisingly, therefore, several authors have demonstrated that a high concentration of hydrogen peroxide, in combination with heating, seems to promote cervical root resorption.⁵² **Table 1** provides an overview of clinical studies in which the occurrence of cervical root resorption was observed in association with the technique used. When interpreting the data in **Table 1** it is important to note that a large number of cases had suffered known trauma. Perhaps the observation of greatest clinical significance is that there have been no reported cases of cervical root resorption following internal bleaching using a combination of sodium perborate and water, or sodium perborate and a low concentration, i.e. 3% solution, of hydrogen peroxide. The author was unable to find published data on the incidence of cervical root resorption using a 10% carbamine peroxide solution in the inside/outside technique.

Stability

Advice regarding the long-term stability of bleaching is perhaps the most uncertain aspect of the therapy, as many factors must be considered when attempting to predict the outcome, including the aetiology and original degree of discolouration, dietary and smoking factors, patient age, etc. Data on the duration of both external and internal bleaching are mostly related to case reports, and only a few clinical trials are available for review. Tam *et al*³⁰ reviewed 23 patients 1.5 and three years post external bleaching, and reported that 62% reported slight or no reversal in tooth colour. Another study by Ritter *et al*⁵³ reported that 43% of patients perceived their tooth colour as stable 10 years after a six-week course of external bleaching. Swift *et al*⁵⁴ reported that two years after external bleaching, regression of two shade tabs on the Vita® shade guide occurred; however the regression occurred during the first six months after bleaching. Amato *et al*⁵⁵ evaluated the chromatic stability of internal bleaching from a population of 50 patients after 16 years. They reported colour stability in 62.9% of cases.

Effects on enamel

Questions have been raised about the effect of bleaching on the

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structure of the tooth itself. Surface alterations in enamel topography have been reported in several studies. Shannon *et al* (1993) evaluated the surface topography of enamel tabs exposed to 15% carbamine peroxide for 15 hours a day, using scanning electron microscopy, and detected significant alterations compared to a control group.⁵⁶ This is due to a detectable loss of calcium from the surface enamel along with a loss in surface hardness depth of approximately 25µm. Bitter (1998) demonstrated that teeth bleached *in vivo* with 35% carbamine peroxide (35 min/day for 14 days) lost their aprismatic layer and the damage was not repaired after 90 days.⁵⁷ However, the concentration of peroxide and amount of exposure may influence the amount of alteration to the enamel. Using infrared spectroscopy, Oltu and Gürkan (2000) compared the mineral composition of enamel exposed to 35% carbamine peroxide, to 10% and 16% carbamine peroxide, and detected change at 35% but no detectable change at 10% and 16%.⁵⁸ A clinical implication of these findings may be that teeth are more susceptible to extrinsic discolouration after bleaching due to increased surface roughness.

Effects on restorations

Bleaching has little or no effect on most of the common restorative materials.⁵⁹ Bleaching may increase the solubility of glass ionomer and other cements⁶⁰ and reduce the bond strength between enamel and resin composites, at least for a short time. Because bleaching releases oxygen into the tooth, the oxygen released inhibits the polymerisation of the resin.⁶¹ A delay of a week or more following the bleaching process is advised, prior to the placement of a new composite, to allow for this effect to be dissipated.⁶² Bleaching may cause a slight increase in surface roughness of some types of resin composite, and the hardness may be very slightly increased, but neither is clinically significant.^{63,64} Bleaching has no effect on porcelain and, although it does encourage the release of mercury from some types of amalgam, the clinical relevance of this is not known.⁶⁵

Toxicity

It has been reported that the safety of bleaching using carbamine peroxide should not be an issue since both hydrogen peroxide and urea are found in every human cell; however it must be remembered that the dose makes the poison. Controversy still does exist regarding the safety issues of peroxide-containing products.

Heymann (2005) has stated that: "Literally hundreds of millions of teeth in the US have been bleached over the past 15-20 years without one credible account of any significant untoward effect appearing in the literature. Dozens upon dozens of clinical trials over this same time period have also affirmed the safety of vital tooth whitening when used in a short-term treatment duration according to manufacturers' instructions". However, Heymann accepts concerns regarding the safety of tooth-whitening products, if not used correctly, by stating that: "Valid concerns still exist regarding individuals who may ignore manufacturer or dentist instructions and overuse whiteners for months or years. Long-term adverse effects on soft or hard tissues cannot be totally ruled out when these products are badly abused or overused".⁶⁶

Concerns have been expressed over the potential adverse effects of the use of hydrogen peroxide as a bleaching agent. Effects such as localised tissue irritation and external cervical root resorption have already been discussed. However, clinical studies addressing other adverse effects, in particular carcinogenesis, are lacking.⁶⁷ Reactive oxygen radicals are a potential source of cell damage, causing DNA strand breaks, genotoxicity and cytotoxicity. Although these radicals tend neither to cross biological membranes nor travel large distances within a cell, numerous animal studies have demonstrated pre-cancerous cellular changes, and indeed carcinoma, when hydrogen peroxide has been in direct contact with tissues, indicating that hydrogen peroxide might possibly act as a promoter.⁶⁸ It is therefore prudent to recommend that until clinical research to address the question of possible mutagenicity is concluded, bleaching therapies utilising high concentrations of hydrogen peroxide should not be used without gingival protection, and that hydrogen peroxide-containing products should not be used in patients with damaged oral mucosa.⁶⁹

Conclusion

- Whitening of teeth can be achieved either by an external – or vital – approach, where vital teeth are bleached by direct contact with an agent such as carbamine peroxide, or by an internal – or non-vital – approach, where non-vital teeth are bleached with an agent such as sodium perborate, in a walking bleach technique;
- most teeth are susceptible to bleaching;
- during tooth bleaching, reactive oxygen produced by the breakdown of peroxide causes more highly pigmented carbon ring compounds to be converted to carbon chains, which are lighter in colour;
- increasing the concentration of peroxide provides a more rapid bleaching effect; however it also increases the risk of tooth sensitivity;
- tooth sensitivity, if present, normally persists for up to four days after the cessation of bleaching and can be reduced by reducing the amount of time spent bleaching per day, bleaching on alternative days or by the substitution of a desensitising agent, such as KNO₃ gel, into the bleach tray between periods of bleaching;
- there is a greater risk of post-operative sensitivity following power bleaching than with take-home bleaching;
- there have been no reported cases of cervical root resorption following internal bleaching using a combination of sodium perborate and water, or sodium perborate and a low concentration of hydrogen peroxide;
- the stability of bleaching is multi-factorial and variable. Only a few clinical trials are available for review;
- enamel may become more susceptible to extrinsic discolouration after bleaching due to increased surface roughness;
- bleaching has little or no effect on most of the common restorative materials; and
- controversy still exists regarding the safety issues of peroxide-containing products.

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Pharmacological management of acute dental pain

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Précis: The recent withdrawal of a popular analgesic medication by the Irish Medicines Board has raised a number of important questions regarding the use of analgesics for acute dental pain. This short article reviews some of the principles of analgesic usage and outlines the scope of available prescription drugs.

Journal of the Irish Dental Association 2007; 53: 141

Controlling pain that arises from dental disease or procedures is a fundamental component of satisfactory patient care. Toothache is potentially one of the most distressing pains we can experience. Numerous factors are associated with this phenomenon including the density of pulpal innervation and the high level of attention focused by the brain on the orofacial region. Fear of pain and dental phobia prevents many patients from ever seeking dental care. Classical toothache is dull, aching and prolonged, when the pulp is inflamed. Non-steroidal anti-inflammatory drugs (NSAIDs) would therefore seem to be the medication of choice for most dental pains; however, the situation is slightly more complex.

From a physiological perspective, most dental pain is inflammatory in nature because of its origin in dental disease or injury, and is more correctly termed 'nociceptive pain'. The World Health Organisation (WHO) has produced an analgesic ladder as a guide for prescribing analgesics. If the first step does not produce adequate analgesia, the patient then progresses to the next step.

Step one

The first step of the analgesic ladder is to use a non-opiate analgesic, for example paracetamol (acetaminophen). This effective analgesic/antipyretic is rapidly absorbed after oral administration. Its mechanism of action remains unclear. Available in tablet, soluble (effervescent) and liquid forms, the normal adult dosage is 1,000mg three or four times per day for moderate to severe pain. Renal or hepatic impairment limits the use of this medication; however, paracetamol has fewer side effects than NSAIDs and can be used when the latter are contraindicated (e.g., patients with a history of asthma or peptic ulcers).

To improve analgesic efficacy and treat symptoms other than pain (e.g., inflammation or swelling), NSAIDs may be added to the analgesic regime. The combination of paracetamol and an NSAID provides a superior level of analgesia than either medication used alone. Unfortunately, NSAIDs have significant contraindications and adverse effects. Careful patient selection is imperative if these unwanted effects are to be avoided. These medications work by limiting prostaglandin synthesis through inhibition of the cyclo-oxygenase enzyme (COX). At least two types, COX-1 and COX-2, have been identified, and a third (COX-3) is being investigated. Apart from their involvement in pain signalling, prostaglandins have important protective physiological roles. Disruption of these physiological processes may result in serious adverse effects for the patient.

COX-2 inhibitors are known to be effective for dental pain, and the comparatively low level of gastric irritation initially promised significant advantage over traditional NSAIDs. Unfortunately, the cardiovascular effects associated with long-term use have raised serious questions about their safety. While a number of these drugs have been withdrawn from the Irish market, etoricoxib (Arcoxia) and celecoxib (Celebrex) are still available, but are licensed only for osteoarthritis; however, etoricoxib is currently licensed in the UK for dental pain. The role of COX-2 inhibitors in the management of acute dental pain is likely to be the subject of further discussion and research.

Clinicians are sometimes confused by the number of NSAIDs available. Several useful references can be accessed on the internet, which detail the relative efficacy of analgesics in table form. In addition, *MIMS* (Ireland) contains details of NSAIDs currently licensed for either dental or postoperative pain (listed under the heading 'Pain and inflammation of the musculoskeletal system'). Ibuprofen taken in doses of 400-600mg (up to four times per day) is frequently recommended for moderate to severe dental pain in standard texts. Biological responses to prescribed analgesics may vary. Important influences include genetic traits, which determine how medications are metabolised by each individual. A sensible approach is to ask the patient what analgesics they have taken before and how well they responded to these. The rule of thumb in prescribing NSAIDs is that relatively low doses are required for pain relief, while higher doses are required to effectively reduce the inflammatory response. While most preparations are available in tablet or capsule form for oral administration, there may be some advantage in using a liquid gel or effervescent formulation. NSAIDs can also be administered as a suppository and the rapid onset of effect, coupled with the higher blood level, may be necessary for patients with severe or unresponsive pain.

Step two

If the patient's pain is deteriorating, or unresponsive, then a mild opiate such as codeine can be added (not substituted). These medications are detailed in the Irish *MIMS* under the heading 'Pain, Pyrexia'. Codeine (8mg) is often combined with paracetamol 500mg for increased analgesic effect. Caffeine is another common constituent in these preparations (e.g., Solpadeine, Veganin) to improve absorption of the active medication into the bloodstream. Potential side effects (constipation, drowsiness) and sensitivity reactions should not be overlooked by the prescribing clinician. As one moves further up the analgesic ladder the codeine content is increased up to 30mg per tablet (e.g., Solpadol, Tylex). Naturally, the side effect profile will become more obvious and close patient supervision is required for safety.

Step three

This level includes the use of morphine, which is rarely justified in a dental setting. Apart from issues of dependence and addiction, the potential side effects place the patient at serious risk. Tramadol (proprietary names vary) is a weak opiate analgesic sometimes useful for severe pain, prescribed 50-100mg, four to six hourly.

Summary

Avoid prescribing on a random basis. A logical approach to the use of analgesic medications will maximise therapeutic benefits and limit unwanted responses.

Further reading

Internet site: Oxford league table of analgesics in acute pain. *MIMS* Ireland: For information regarding prescription details of currently available analgesics.

The orthodontic workforce in Ireland: a report by the Orthodontic Society of Ireland

Journal of the Irish Dental Association 2007; 53: 142 – 144

Introduction

The levels of orthodontic manpower in Ireland have never been accurately assessed, as the numbers of orthodontic specialists in private practice and working for the health service have been somewhat difficult to establish. The Orthodontic Society of Ireland (OSI) therefore commissioned a report on the levels of orthodontic manpower in Ireland, which was published in February 2006.

Subjects and methods

Data were collected in late 2005 and early 2006 using a questionnaire mailed to all members of the OSI and all those on the specialist list of the Dental Council of Ireland. If a response had not been received by the end of 2005, a second questionnaire was sent in January 2006.

Respondents were asked for their age range, sex, type of practice (private or public), how many years they had been in orthodontic practice, qualifications, percentage of adult patients, percentage of patients who did not require extractions, proposed year of retirement and whether or not they intended to change their type of practice.

For this report, practitioners who spent 50% or more of their time in private practice were regarded as "private practitioners"; those who spent 50% or more in hospital practice were regarded as "hospital practitioners".

Where it was considered of interest, data was broken down according to sex and the results given as means and ranges. T-tests and chi-square tests were used to assess the significance of difference between groups and proportions as appropriate, and probabilities of less than 0.05 were accepted as significant. All tests were two-tailed.

Results

Of the 110 questionnaires mailed, replies were received from 95 respondents – a response rate of 86%. Of these, 43 worked in hospital settings and 51 in private practice, with one on maternity leave. Of the remaining 15 non-responders, from personal knowledge, six were employed in a hospital setting with the remaining nine in private practice, which makes a total of 49 (45%) in hospital and 61 (55%) in private practice.

a. Gender distribution

One-third were women (n=32) and two-thirds were men (n=63). More women were in hospital practice (n=22) than in private practice (n=9). The corresponding figures for men were 21 in hospital and 42 in private practice.

b. Age profile of respondents

Two-thirds (66%) of all respondents were under the age of 45 (63 compared with 32). Older practitioners were more likely to work in private practice, but this trend is not reflected in the very small numbers in the age group 65 and over (Table 1).

c. Practice type

A mixed pattern of practices emerges from the overall data. Most respondents were in solo private practice (n=40; 42%). The next highest number was in hospital practice (n=30; 31.6%). A total of 19 were in part-time private and part-time hospital practice (20%), with the remaining five (5%) in group private practice.

d. Place of work

There was a significant difference between the number of locations in which those in

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TABLE 1: Age range by type of practice (hospital/private practice)

Age range (years)	Private practice	Hospital (HSE)
25 – 35	6 (12)	21 (49)
36 – 45	21 (41)	14 (33)
46 – 55	15 (29)	6 (14)
56 – 65	6 (12)	0
65+	3 (6)	2 (5)
Total	51	43

TABLE 2: Practice type

	Frequency	Percent
Full-time hospital, no private practice	30	32
Full-time single private practice	40	42
Full-time group private practice	5	5
Part-time private/part-time hospital	19	20
Total	94	99
Missing (maternity leave)	1	1
	95	100.0

TABLE 3: Hours worked per week by gender

Group statistics	Gender	N	Mean	Sig. (two-tailed)
Hours worked per week	Female	30	33.5	0.04
	Male	61	36.6	

private practice and those in hospital practice worked. The difference was statistically significant ($\chi^2=9.701$, $p=0.001$) (Table 2).

e. Hours of work each week

There was no significant difference in the median number of hours worked each week in private practice and in hospital. The mean hourly week was 36 hours (Table 3).

Where the differences lay were in the amount of time spent in secondary or satellite locations. For the main site of work, private practitioners spent almost four hours longer there than their hospital counterparts. Where a second location was involved, those in hospital worked longer in this site than their private counterparts. For those who worked at a third site, more time here was reported by those in hospital than their private counterparts.

When the data were analysed for sex, it was found that women worked roughly three hours less per week than males; this difference was statistically significant ($p=0.04$).

f. Proportion of adult patients and those not requiring extraction

The mean reported percentage of adults as a proportion of the caseload in private practice was 28% compared with 11.8% in hospital; this difference was statistically significant ($p<0.001$) (Table 4).

The mean reported percentage of patients not requiring extractions

TABLE 4: Percentage of adults under treatment and percentage of non-extraction cases

	Adults % under tx		Total	Non-extr. % under tx	
	Private practice	Hospital		Private practice	Hospital
N	53	42.0	95.0	54	37
Mean rank	62.0	30.4		56.2	31.1
Sum of ranks	3283.5	1276.5		3036.0	1150.0
Mann-Whitney U*	373.5	$p<0.001$		447	$p<0.001$

*Non-parametric data

was higher in private practice (57%) compared with hospital (37%); this difference was also statistically significant ($p<0.001$) (Table 4).

g. Teaching activity

A total of 13 respondents (14%) had teaching sessions in either the Dublin or Cork dental schools. The mean number of hours per week was less than 0.5 hours (range 0-8 hours) for private practice and less than one hour (range 0-7 hours) for hospital-based orthodontists.

h. Proposed year of retirement

There was a highly significant difference in the median proposed year of retirement between hospital and private practitioners. Hospital practitioners were due to retire seven years later than those in private practice, reflecting the younger age groups in the hospital service ($p=0.001$) There was no significant difference between women and men as to the mean year of retirement (2023).

i. Future changes in working practice

Of the total responders ($n=95$) it was found that 23% of those currently in hospital practice stated that they would change their practice in the future, either to full-time private practice ($n=2$; 2.9%) or part-time private practice ($n=7$; 20%).

Further analysis showed that there were no significant differences between women and men concerning their future work intentions.

Discussion

A total of 110 names of orthodontists with specialist qualifications were identified from the membership list of the OSI and the Specialist List in Orthodontics maintained by the Dental Council of Ireland. At the time of writing there are 95 names on the Specialist List, which would suggest that 15 orthodontists have failed to register. Though this is not a legal requirement, inclusion on the Specialist List will allow a practitioner to be called a specialist when dealing with the public. This survey has shown that one-third of all orthodontists in Ireland are women, and that they tend to be employed in the hospital sector rather than private practice. Women tended to work slightly less hours than their male counterparts.

Most orthodontists (66%) were under the age of 45, which reflects the considerable number that were trained in recent years, and employed by the HSE when they qualified. The trend towards

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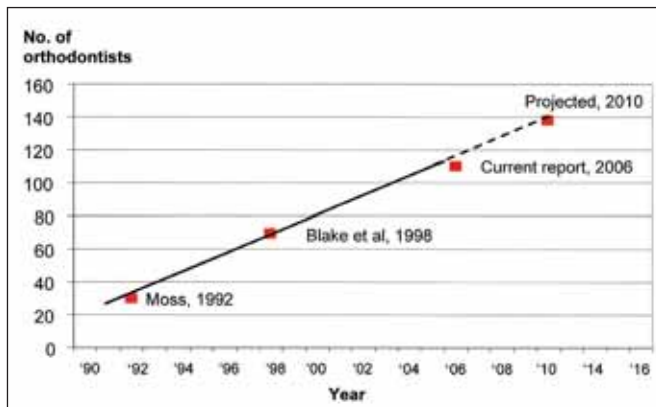


FIGURE 1: Total number of orthodontists in Ireland by year.

increasing engagement in private practice with age reflects the fact that most of those over the age of 45 would have been established in private practice for some time; as this is a cross-sectional survey, it does not indicate a longitudinal trend. Only by repeating the survey in years to come is any such pattern likely to emerge.

The prevalence of solo private practices was notable from this survey; group private practices are uncommon in orthodontics in Ireland. Whether this will change in the future remains to be seen.

The finding that more adults and more patients not requiring extractions were treated in private practice reflects the fact that a considerable number of young adults are now seeking orthodontic treatment, who may not have been able to avail themselves of it in their teens. The higher percentage of non-extraction patients in private practice compared with those in the hospital service reflects the fact that these would be less complex to treat.

Just over one-fifth of those in hospital practice stated that they intended to change their working practice in the future – with the trend towards part-time or full-time private practice. This has implications for the service in that any shortfall in specialists will need to be made up.

The number of orthodontists in Ireland has almost quadrupled since 1992,¹ and has increased by almost two-thirds on the figure of 69 in 1998,² partly reflecting the improvement in the Irish economy over the past two decades and the increase in disposable income.

In 1994, there were 47,929 births (an historic low), and these are now 12-year-olds; in 2006 the ratio of orthodontists to 12-year-olds was 1:435, compared with a ratio of 1:2,773 in 1980 and 1:890 in 1998.² This ratio will change, however, in the coming years as the numbers born in the years since 1994 have increased considerably.³

Future trends in manpower are difficult to predict accurately; however, there are currently 28 Irish specialist registrars in orthodontics in the UK (Cook, personal communication, 2006), who are due to complete their training within the next three years. By 2009, there could be a maximum possible total number of 138 specialists in orthodontics in Ireland, assuming that they all return to Ireland to work. Figure 1 shows that the projected increase in numbers of orthodontists in Ireland is linear and the projection for 2009 follows this trend.

No data are currently available about the number in training on specialist programmes in the USA. The number of specialists from other states of the EU who come to work in Ireland is likely to remain low.

Demand for orthodontic treatment is potentially limitless. In 1990 in Norway, Helm⁴ found that two-thirds of all adolescents would demand orthodontic treatment if it was available free and immediately. It is unlikely that the demand for treatment in Ireland is any less than this.

The recently published North South Survey of Children's Oral Health in Ireland⁵ found that by the age of 15 years, 23% of those examined in the Republic of Ireland had received orthodontic treatment and that just over half of these courses of treatment had been provided through the private sector. In a study in Galway (McGuinness, personal communication, 2006), it was found that by the age of 21, 32% of young people had received orthodontic treatment. This suggests that another 10% of young people receive orthodontic treatment between the ages of 15 and 20.

Summary

- There are currently 110 specialist orthodontists in the Republic of Ireland. The response rate to this survey was 95 (85%);
- one-third of the orthodontic workforce are women;
- there are 49 (45%) orthodontists employed in the hospital service (including consultants) and 60 (55%) working in private practice;
- half (50%) of the orthodontists in hospital settings are female; only nine (18%) of those in private practice are female;
- two-thirds (66%) of the orthodontists in Ireland are under the age of 45; a little over one-quarter (28%) are under the age of 35;
- of those in the 25-35 age bracket, almost 80% are employed in the HSE. With increasing age, more orthodontists work in private practice;
- adult patients comprise 28% of the reported caseload in private practice compared to 12% in hospital settings;
- non-extraction patients account for 37% of the caseload in hospital settings compared with 57% in private practice; and
- almost one-quarter (24%) of those in hospital practice stated that they intended to change their working practice in the future.

Footnote: In the intervening period since the survey was undertaken (early 2006) little change has occurred in the numbers of orthodontists.

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3. Census 2006. Principal demographic results. Central Statistics Office, 2007.
4. Helm, S. Reappraisal of the criteria for orthodontic treatment. Thesis, University of Oslo, 1990.
5. Department of Health and Children. *North South Survey of Children's Oral Health in Ireland, 2006.*



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*Commercially available Spring, 2007
*Data on file

A randomised clinical trial comparing anatomic, lingualised and zero-degree posterior occlusal forms for complete dentures

Sutton, A.F., McCord, J.F.

Statement of problem

There is a lack of evidence to recommend a particular type of posterior occlusal form for conventional complete dentures.

Purpose

The purpose of this study was to compare subject satisfaction with three types of posterior occlusal forms for complete dentures in a randomised crossover controlled trial.

Material and methods

For each participant (n=45), three sets of complete dentures were fabricated, each of which had a different posterior occlusal form (0-degree, anatomic and lingualised). Each set was worn for eight weeks in a randomised order. Subjective data were collected using the Oral Health Impact Profile 20-EDENT (OHIP-EDENT). The Wilcoxon statistical test was used to compare differences between the groups ($\alpha=0.05$).

Results

Lingualised posterior occlusal forms were perceived to be significantly superior in terms of painful aching in the mouth ($P=0.01$), sore spots ($P<0.001$), eating ability ($P=0.02$) and meal interruptions ($P=0.008$), compared with 0-degree posterior occlusal forms. Subjects with anatomic posterior occlusal forms had significantly fewer problems eating ($P=0.05$) compared with 0-degree posterior occlusal forms. There was no significant difference found between the lingualised and anatomic posterior occlusal forms.

Conclusions

Participants provided with complete dentures having lingualised or anatomic posterior occlusal forms exhibited significantly higher levels of self-perceived satisfaction compared to those with 0-degree posterior occlusal forms.

The Journal of Prosthetic Dentistry 2007; 97 (5): 292-298.

Guidelines for the management of traumatic dental injuries. II. Avulsion of permanent teeth

Flores, T.M., Andersson, L., Andreasen, J.O., et al.

Avulsion of permanent teeth is the most serious of all dental injuries. The prognosis depends on the measures taken at the place of accident or the time immediately after the avulsion. Replantation is the treatment of choice, but cannot always be carried out immediately. An appropriate emergency management and treatment

plan is important for a good prognosis. Guidelines are useful for delivering the best care possible in an efficient manner. The International Association of Dental Traumatology (IADT) has developed a consensus statement after a review of the dental literature and group discussions. Experienced researchers and clinicians from various specialties were included in the group. In cases in which the data did not appear conclusive, recommendations were based on the consensus opinion of the IADT board members. The guidelines represent the current best evidence based on literature research and professional opinion. In this second article of three, the IADT guidelines for management of avulsed permanent teeth are presented.

Dental Traumatology 2007; 23 (3): 130-136.

Impact of local and systemic factors on the incidence of oral implant failures, up to abutment connection

Alsaadi, G., Quirynen, M., Komárek, A., van Steenberghe, D.

Aim

The aim of this retrospective study was to assess the influence of systemic and local bone and intra-oral factors on the occurrence of early implant failures, i.e., up to the abutment connection.

Material and methods

The surgical records of 2,004 consecutive patients from the total patient population who had been treated in the period 1982-2003 (with a total of 6,946 Brånemark system® implants) at the Department of Periodontology of the Catholic University Leuven, were evaluated. For each patient the medical history was carefully checked. Data collection and analysis mainly focused on endogenous factors such as hypertension, coagulation problems, osteoporosis, hypothyroidism, chemotherapy, diabetes type I or II, Crohn's disease, some local factors (e.g., bone quality and quantity, implant [length, diameter, location], type of edentulism, Periotest® value at implant insertion, radiotherapy), smoking habits and breach of sterility during surgery.

Results

A global failure rate of 3.6% was recorded. Osteoporosis, Crohn's disease, smoking habits, implant (length, diameter and location) and vicinity with the natural dentition were all significantly associated with early implant failures ($p<0.05$).

Conclusion

The indication for the use of oral implants should sometimes be reconsidered when alternative prosthetic treatments are available in the presence of possibly interfering systemic or local factors.

Journal of Clinical Periodontology 2007; 34 (7): 610-617.

ABSTRACTS

Tongue pain: burning mouth syndrome vs. Candida-associated lesion

Terai, H., Shimahara, M.

Objective

We investigated patients with tongue pain to examine whether the differential diagnosis of burning mouth syndrome and Candida-associated lesion was possible.

Patients and methods

A total of 60 patients with tongue pain were divided into three groups according to the intensity of pain at rest and that when eating using the visual analogue scale: Group A: Functional pain group; Group B: Non-functional pain group; and, Group C: Mixed pain group. Antifungal treatment was scheduled for patients suspected clinically, mycologically or cytologically as having candidal infection.

Results

The results of the culture test and direct examination indicated that group A was different from the others by its high positivity for Candida, and a good response to the antifungal treatment was

obtained. On the other hand, antifungal treatment was not useful in group B, and the low possibility of Candida infection in the direct examination supported the result in this group. In group C, the positivity of Candida and the effect of the antifungal treatment were between those of groups A and B.

Conclusion

These results may suggest that tongue pain in group A is Candida-associated, that in group B it is burning mouth syndrome-induced, and that in group C it is caused by mixed conditions.

Oral Diseases 2007; 13 (4): 440-442.

QUIZ answers (from page 117)

1. She was diagnosed with cyclic neutropenia.
2. When possible, periodontal treatment should be done during periods of disease remission. At such times, treatment should be as conservative as possible while reducing potential sources of systemic infection. After physician consultation, severely affected teeth should be extracted. Oral hygiene instruction should include use of chlorhexidine rinses twice daily. Scaling and root planing should be performed carefully under antibiotic protection.



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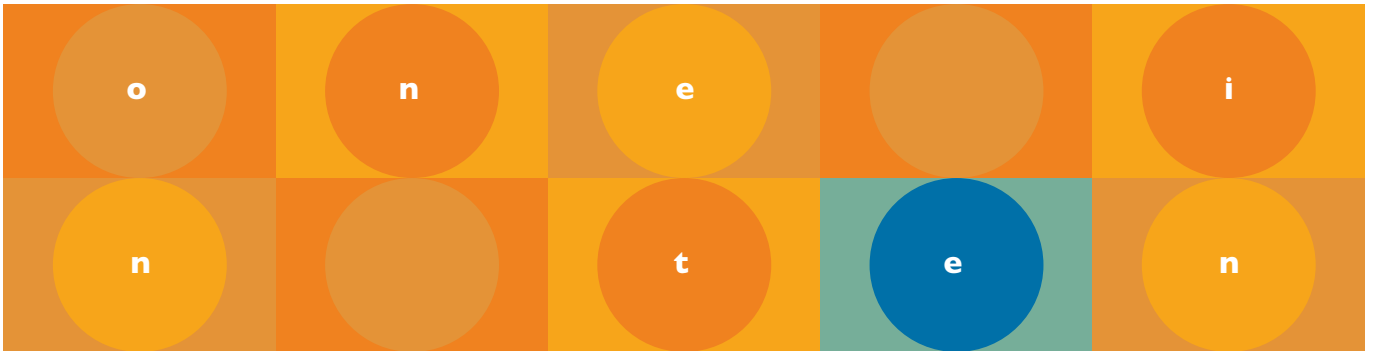
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Migrant workers

In this European Year of Equal Opportunities for All, it is appropriate to examine the issue of migrant workers in Ireland. SHIRLEY COULTER explains.



The composition of the Irish workforce has undergone significant change in recent years, due largely to the increasing numbers of foreign nationals living and working in Ireland. According to the 2006 Census, there are approximately 400,000 non-Irish nationals in the Republic, representing 9.4% of the population. A non-national who is working in a state of which he/she is not a national is termed a migrant worker. Almost 85% of migrant workers resident in Ireland are from the EU and are free to seek work here without any restrictions; however, migrant workers from outside the EU require a work permit or visa (as outlined in *IDA Update* Volume 3, Number 1, February 2007). It is estimated that 500,000 migrant workers will be needed in Ireland to meet employment demand over the next 10 years.

The availability of skilled migrant workers has greatly increased the Irish labour force, especially in the area of healthcare, and it has also introduced many new challenges for both employers and employees. Although many employer organisations, individual employers and voluntary organisations have worked hard to provide a positive working environment for migrant workers, many of these workers have experienced unacceptable working conditions. It is essential that employers meet their legal obligations with regard to migrant workers and that equal opportunities are available to all employees. As the study on 'Migrant Workers & Access to the Statutory Dispute Resolution Agencies' undertaken by the Labour Relations Commission in October 2005 indicates, a small but steadily increasing number of migrant workers are seeking access to the State dispute resolution agencies in order either to vindicate their employment rights or to seek redress for alleged exploitative employment practices. Bearing these facts in mind, the following are a few key points that employers should be aware of:

- all Irish employment and equality legislation applies to migrant workers in the same manner as to Irish workers;
- with regard to recruitment, to avoid any inference that an unsuccessful applicant was refused employment because of their nationality, employers should not question candidates about their specific nationality at any stage during the recruitment process. An

employer may ask whether the candidate is an EU national. Other non-national candidates may be asked if they have an entitlement to work in Ireland and whether they need a work permit to do so;

- language barriers can be problematic to migrant workers and can lead to a lack of understanding of work procedures and policies. Employers must ensure that all employees are aware of, and understand, the terms and conditions relating to their employment, and should make all necessary documentation available in a range of languages as necessary. It must be noted, however, that employers are only expected to do what is reasonably necessary to ensure equal treatment of employees regardless of nationality;
- the maximum working week is 48 hours for all workers regardless of nationality. Although migrant workers may be willing to work in excess of these hours employers should not accommodate this; and,
- employers have a responsibility under employment equality legislation to ensure their employees do not behave in a discriminatory manner and, as such, should implement anti-discrimination policies. As employers can be held personally liable for any discriminatory actions by their employees, employers should monitor behaviour and investigate any incidents thoroughly.

The two basic principles underpinning the 2007 European Year of Equal Opportunities for All are to make people in the European Union more aware of their rights to equal treatment and to a life free of discrimination. In the words of Vladimir Spidla, European Commissioner for Employment, Social Affairs and Equal Opportunities:

Europeans have a right to enjoy equal treatment and a life free of discrimination. The 2007 European Year of Equal Opportunities for All aims to ensure they all know this. [...] Europe has a rich array of talents. We cannot afford to waste them.

Shirley Coulter, Employment Relations Officer, Irish Dental Association.

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Should I stay or should I go?

DAVID McCAFFREY looks at factors influencing a decision to withdraw from the DTSS.

Following our article in the last issue of the JIDA highlighting the cost of treatments, many dentists have enquired about the impact of withdrawing from the DTSS and whether they can afford to do so. Dentists of a certain age may remember The Clash lyrics and in many ways it sums up the dilemma that dentists face in considering whether to withdraw from the DTSS.

Should I stay or should I go now?

If I go there will be trouble

And if I stay it will be double

So come on and let me know (Mick Jones and Joe Strummer)

The number of dentists contracted with the DTSS increased slightly from 907 in 2004 to 937 in 2005, with 62% of dentists earning less than €60,000 per annum (Figure 1). With the average practice earning a total of €320,000 in fee income, the DTSS portion would represent 19% of fee income generated.

When considering the impact of the DTSS, attention needs to be given to patient/practice management and the practice income.

Patient and practice management

One of the difficulties in managing the appointment diary in a practice with a large volume of DTSS patients is the number of missed appointments. While this can be a cause of annoyance, on occasion it does potentially allow for emergency patients to be seen at short notice. It also allows for the dentist to take a short but often much needed 15-minute break. Those dentists who have withdrawn from the DTSS have experienced a decrease in the 'do not attend' (DNA) rate; however, it should be noted that some dentists have stated that they are seeing a drop in DNAs nowadays regardless of patient profile. The level of administration associated with the DTSS can place a burden on practice managers. In addition to the completion of forms, there can be particular issues keeping track of payments received for work completed. A review of treatments applied for and those received is recommended, as some practices have found large numbers of discrepancies in the payments received. A similar exercise is recommended for PRSI patients.

As treatment options are limited under the DTSS, another cause of frustration we hear regularly from dentists is the high number of extractions performed on DTSS patients. A private patient presenting with similar case profiles would be offered a greater range of treatment options.

Where a patient has paid PRSI contributions through his/her employment prior to retirement, then there are special conditions that apply in order for the patient to be entitled to PRSI cover for life. In general the patient must have: 260 contributions paid at any time; and, have 39 paid or credited in any of the two contribution years before reaching age 66; and, have 13 paid contributions in a recent

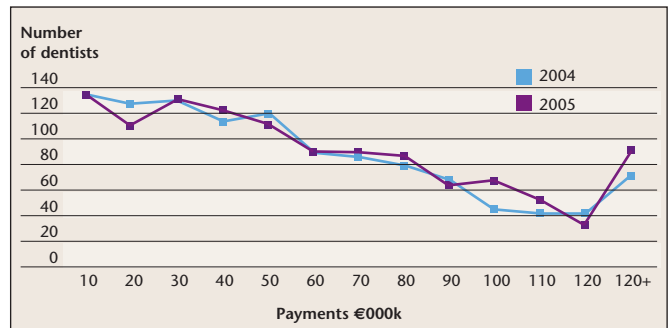


FIGURE 1: DTSS payment ranges.

contribution year (recent to reaching age 66). This may allow the practitioner to offer treatment options to some patients who have become entitled to medical cards due to being over 70 years of age. There are, however, a number of exceptions to having lifetime entitlements to PRSI cover and patients should be encouraged to check their entitlements with their local welfare office before switching.

Practice income

The first step is to accurately assess the level of DTSS income within your practice. If the percentage income is greater than one-third then

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PRACTICE MANAGEMENT

the decision to withdraw from the DTSS becomes more difficult to make because of the difficulty in making up the lost income.

There is a level of comfort that can be drawn from having a regular contribution to the practice's overheads from DTSS payments. The type and number of treatments carried out also needs to be reviewed as, depending on the treatments carried out, losses can be incurred. Reports from those dentists who have withdrawn from the DTSS have indicated that appointment books have not collapsed and that a number of patients have switched to become private patients. Practice managers should be briefed as to how to inform patients of the practice's withdrawal from the scheme and how to offer alternative payment options.

It is interesting to note that the ratio of percentage chair time to income received is usually disproportionate for practices with a high level of DTSS income.

	Chair time	% Income
Private	40%	50%
PRSI	30%	28%
GMS	30%	22%
	100%	100%

Where the practice has an associate then consideration should be given as to how the associate is used. Is there the possibility of channelling GMS patients to the associate thereby allowing the principal to concentrate on private patients?

Summary

Deciding the best option for your practice is by no means straightforward. It would be easy to look at the financial effects and simply decide to withdraw from the DTSS; however, consideration should be given to other factors such as the dentist's duty of care to patients, whether the practice facilities need to be upgraded and how your nearest dental competitor will react to your decision to withdraw.

At the end of the day, it is an individual decision for each dentist, which should be based on facts, not assumptions, so do your homework and fully understand the impact of withdrawing on your practice.

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September 2007**35th Indian Prosthodontic Society Conference**

September 6-11 New Delhi, India
All relevant information and downloads are available at the official website for the conference – www.35ipsconference.com.

Irish Dental Association – Golf Outing: Captain's Day

September 8 Carlow Golf Club
For further information contact Ciaran Allen, Tel: 047 71400.

Irish Society of Periodontology – Annual Scientific Meeting

September 21 Royal College of Physicians, Kildare St, Dublin 2
Contact Dr John Molloy, Tel: 091 569110, for further information.

The European Society of Cosmetic Dentistry (ESCD) – 4th Annual Scientific Meeting

September 21-23 Marriott Hotel, Vienna, Austria
New challenges in update dentistry. For further information or to register, Tel: 0043 1 536 6337, or Email: iris.bobal@media.co.at.

Irish Dental Association – Annual General Meeting

September 22 Hilton Hotel, Charlemont Place, Dublin 2
The AGM will commence at 11am.

Metropolitan Branch, IDA – Scientific Meeting

September 27 Hilton Hotel, Charlemont Place, Dublin 2
Speakers are Drs Frank Gallagher ('New ideas for old teeth') and Dr John Dermody ('Endodontics – fact and fiction'). This is a joint Metropolitan and Irish Endodontic Society meeting.

The 148th American Dental Association Annual Session and Marketplace Exhibition

September 27-30 The Moscone Center, San Francisco
Pre-session activities for ADA '07 take place on September 26, with scientific sessions from September 27-30. House of Delegates takes place from September 28 to October 2, and this year's session introduces the all-new World Marketplace Exhibition from September 27-29. For further information, or to download a copy of the programme, contact www.ada.org.

Munster Branch, Irish Dental Association – Annual Scientific Meeting 2007

September 28 Clarion Hotel, Lapps Quay, Cork
The Munster Branch Annual Scientific Meeting will commence at 9.00am and finish at 4.45pm. Speakers include Dr Jonathan Lack, Professor Duncan Sleeman and Dr Barbara Coyne. For further information, contact Catherine Nevin in the Postgraduate Medical and Dental Board, University Dental School and Hospital, Wilton, Cork, Tel: 021 490 1294, Email: c.nevin@ucc.ie.

Irish Academy of American Graduate Dental Specialists (IAAGDS) – Annual Scientific Meeting 2007

September 29 Conrad Hotel, Earlsfort Terrace, Dublin 2

Time: 9.00am-1.00pm (registration from 8.30am).

For further information, contact Dr Barry Dace, Tel: 086 846 2734 or Email: barrydace@ireland.com.

October 2007**Promed and the Irish Dental Nurses Association – 'Continuing Professional Development for the Dental Team'**

October 6 Radisson SAS St Helen's, Stillorgan Road, Dublin 4
The aim of the seminar is to provide information on the following areas: continuing professional development; legislation in relation to infection control; disinfection of the dental surgery; four-handed dentistry (including ergonomics and posture); and, teambuilding. To register for this event, application forms can be downloaded from www.IDNA-Ireland.com.

Public Dental Surgeons Seminar, Irish Dental Association

October 10-12 Knockranny House Hotel, Westport, Co Mayo
Speakers include Drs Christine McCreary, John Walsh, Donal McDonnell, David Hegarty, Jenny Harris, Deborah Franklin, Dafydd Evans, Anne O'Connell, Dr Frank Burke and Prof. Denis O'Mullane. The annual dinner will take place on Thursday evening with guest of honour Dr Peter Cooney, a Cork graduate who is now Canada's Chief Dental Officer. For bookings contact Elaine at 01 295 0072 or Email: elaine@irishdentalassoc.ie.

Metropolitan Branch, IDA – Scientific Meeting

October 18 Hilton Hotel, Charlemont Place, Dublin 2
There will a short presentation by Shirley Coulter from the IDA on 'Meeting your legal health and safety requirements'. Speakers are Dr Frank Burke ('Wear are we now?') and Dr Margaret Tuite ('Gaining and maintaining co-operation – strategies in paediatric dentistry').

FDI World Dental Congress

October 24-27 Dubai, United Arab Emirates
For further information contact www.fdiworldental.org or congress@fdiworldental.org. Details of the scientific programme and very favourable accommodation rates in Dubai are available at www.fdiworldental.org/microsites/dubai/congress4.html. Direct flights are available from Dublin to Dubai.

Irish Endodontic Society Meeting

October 25 Dublin Dental Hospital, 7.30pm
Speaker is Dr Mary Freda Howley.

Faculty of Dentistry, Royal College of Surgeons in Ireland – 'Oral Care for the Older Patient'

October 25-26 Royal College of Surgeons in Ireland, St Stephen's Green, Dublin 2
The Faculty of Dentistry will present the latest developments and trends in oral care for the older patient. This meeting brings together many leading international clinicians who are currently engaged in the care of the older patient. For further information contact www.fodasmrcsi.ie.

DIARY OF EVENTS

November 2007

IDENTEX dental exhibition

November 9-10 The Pavillion, Leopardstown Racecourse,
Foxrock, Dublin 18

Further details will follow when available.

Orthodontic Society of Ireland – Autumn Meeting

November 9-10 Druids Glen
The Orthodontic Society of Ireland will hold their Autumn meeting in
Druids Glen on November 9 and 10. Speaker is Dr Bill Clark. Subject
is 'New horizons in orthodontics and dentofacial orthopaedics'.

European World Clinical Laser Institute Symposium

November 9-11 Guoman Hotel, London, UK
For more information about this event please go to
www.learnlasers.com.

Metropolitan Branch, IDA – Scientific Meeting

November 15 Hilton Hotel, Charlemont Place, Dublin 2
Speakers are Dr Michael O'Sullivan ('Getting the best from your
laboratory') and Dr Ailbhe McDonald ('Restoring the compromised
tooth').

Irish Endodontic Society Meeting

November 22 Dublin Dental Hospital, 7.30pm
Speaker is Dr John O'Brien.

Irish Dental Association – Golf Outing: Christmas Hamper

November 30 Portmarnock Links Hotel and Country Club
For further information contact Ciaran Allen, Tel: 047 71400.

December 2007

Metropolitan Branch, Irish Dental Association

Christmas Party: 50th Anniversary Party

December 1 Minerva Suite, RDS,
Ballsbridge, Dublin 4
Dinner, drinks and dancing with jazz
duo (ex Moving Hearts) and the Paul
Ashford Band.



January 2008

Metropolitan Branch, IDA – Scientific Meeting

January 17, 2008 Hilton Hotel, Charlemont Place, Dublin 2
Speakers are Dr David Ryan ('Pet hates and pitfalls') and Dr Rachel
Doody ('Aesthetic considerations in periodontics and implant
dentistry').

Irish Endodontic Society Meeting

January 25, 2008 Dublin Dental Hospital, 7.30pm
Further details will follow when available.

February 2008

'Dentistry in the UK' – British Dental Association

February 7, 2008 British Dental Association offices, London
This brand new event is primarily aimed at European Union dentists
who would like more information on working in the UK. 'Dentistry in
the UK' will cover dentists' regulatory obligations and the regulations
regarding health and safety, infection control, radiation protection
and CPD, as well as information on how to avoid common pitfalls. For
more information please contact the events team at events@bda.org
or visit the BDA events website – www.bda.org/events.

Metropolitan Branch, IDA – Non Dental Evening

February 21, 2008 Hilton Hotel, Charlemont Place, Dublin 2
Guest speaker will be Senator David Norris, and the evening
commences at 8.00pm.
The retired dentists' dinner will take place at 6.00pm in the Hilton
Hotel.

Metropolitan Branch, IDA – Annual Scientific Meeting

February 22, 2008 Hilton Hotel, Charlemont Place, Dublin 2
Includes short presentations, a multidisciplinary dental team
presentation, table discussions and trade show.

Irish Endodontic Society – Case Discussion

February 28, 2008 Dublin Dental Hospital, 7.30pm

March 2008

Metropolitan Branch, Irish Dental Association – Annual General Meeting and Dental Quiz Evening

March 13, 2008 Hilton Hotel, Charlemont Place, Dublin 2
Further details will follow when available.

April 2008

Irish Endodontic Society Meeting

April 3, 2008 Dublin Dental Hospital, 7.30pm
Speaker to be confirmed.

Metropolitan Branch, Irish Dental Association – Golf Outing

April 6, 2008 Woodenbridge Golf Club



IDA Annual Scientific Conference 2008 – Operation Wexford

April 23-26, 2008 New White's Hotel, Wexford Town

May 2008

Irish Dental Association – Lyttle Cup Golf Outing

May 16, 2008 Royal County Down Golf Club

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The Dentists' Provident Society. Through Liberty Asset Management you can access this UK based scheme operated on a Mutual Protection Basis.

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www.lam.ie



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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 October 11, 2007, 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.

POSITIONS REQUIRED

German dentist, specialised, places implants in your clinic and provides prosthetic follow-up. Single tooth replacement and edentulous jaws. Dublin preferred. Please contact: implantdentist@web.de.

Experienced TCD graduate seeks associate position in Dublin. Please phone 01 657 1046 after 1.00pm.

Experienced French orthodontist (registered with Dental Council) seeks half-time position as associate. Practising for 20 years – fixed appliances in different techniques and orthopaedic appliances. Tel: (France) 03 84 93 78 21 or 03 84 40 36 69. Email: jeanlouis.saloman@gmail.com. CV can reach.

Experienced and enthusiastic TCD graduate seeking associate position in the Dublin area. Tel: 085 146 9828.

Experienced dentist seeks associate position in the Dublin area. Locum work considered. Tel: 087 278 4241.

Experienced dentist looking for a full-time associate position in Limerick City or within a commutable distance. Email: tooth11@gmail.com.

Available for locum work. Greater Dublin area, July to mid October 2007. Graduated 2005. Vocational training 2005-2006. Senior House Officer Dublin 2006-2007. Email: houlihanlaura@gmail.com.

Experienced dentist, currently working abroad while travelling, returning to Ireland mid-October 2007. Seeking full-time or part-time employment in the Dublin area or surroundings. Please Tel: 091 523056 or 086 329 5518.

POSITIONS VACANT

Associate dentist required. New, modern, state-of-the-art dental clinic based in the Naas/Newbridge area requires associate dentist for general dental procedures. Knowledge of cosmetic/aesthetic dentistry an advantage. Please reply with CV to conexdent@yahoo.ie.

Associate required, full-time or part-time, for fully computerised practice in Dublin 4. Tel: 086 331 9950.

Modern busy Galway city centre general practice, digital OPG, etc., seeks an associate dentist. Unique opportunity. Telephone Frank on 086 231 9994.

Part-time dental associate wanted for dental practice near Cork City. Please ring 086 866 2063 after 7.00pm.

Dentist required as associate for group practice in Dundalk starting September 2007. Air-conditioned surgery. Fully computerised practice

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up to 25 words	€75	€95
26 to 40 words	€90	€110

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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

with digital x-ray, hygienists and support of other colleagues. Email: dentalsurgery@dbholly.com or Tel: 087 287 9858.

Associate wanted. Full time. Busy modern practice in major shopping centre, west Dublin. Tel: 086 224 5017 any time, or Email: associate@gums.ie.

Associate dentist wanted for practice in southwest Dublin starting September. Tel: 01 451 3453.

South Kildare. Associate required in July. Full-time position available but would consider part-time hours for suitable candidate. OPG, intra oral camera, full clinical freedom. Tel: 087 659 8181.

Associate wanted to replace departing colleague in Dundalk, Co. Louth. Please Tel: 087 278 5239 for more details.

Associate: experienced dentist required to replace departing colleague, with a view to partnership for a suitable applicant. Very busy mixed practice. Excellent support staff. Tel: 00 353 86 855 7173 for details.

Associate sought for modern dental surgery in Wexford Town. Tel: 087 205 4077 after 6.00pm.

Experienced dental associate required for a very busy, modern dental practice in Galway city, Ireland. Fully equipped and computerised. Digital x-ray, OPG, hygienist, etc. Please Tel: 00 353 87 803 4514 anytime or Email: lisatuohy2006@yahoo.ie.

Associate required, part-time initially, Dublin 7. Computerised modern surgery, full book, friendly supportive staff await. Call Rod on 087 772 1828 evenings/weekends.

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

Dental associate required for modern well-equipped practice in Galway. Tel: 087 997 2877.

Associate required. Modern four-surgery practice 20 mins ex-Galway city. Newly equipped, computerised, digital-radiography incl. OPG. Excellent support staff, incl. hygienists. Will suit enthusiastic, ethical dentist: be part of motivated young team. Start Aug/Sept. Tel: 00 353 (0) 93 60333 (surgery), or Email: abbeydent@eircom.net.

Experienced associate required for busy computerised practice in south Dublin, to replace outgoing colleague. Treating private, PRSI and medical card patients. Email: jen@iol.ie.

Navan, Co. Meath. Full-time associate required to replace departing colleague, part-time also considered. Busy, modern surgery, Kavo chair with fibre-optics. Experienced staff. Tel: 087 688 9919, or Email: dentist@esatclear.ie.

Associate required, part-time one to two days in busy Athlone practice. Private and PRSI. Fully computerised, OPG, digital radiography. Contact dentalvacancy@hotmail.com.

Dental associate required. Location: Fairview, Dublin 3. Up to 4.5 days available. Replacing departing colleague. Well-equipped surgery, OPG. Contact Ken on 087 250 6622, preferably evenings, or Email: kenjodonnell@gmail.com.

Position available for associate dentist in Dublin city centre digital general practice. Great team. Excellent conditions. Contact Frank on 086 231 9994, or Email: hughbradley@eircom.net.

West of Ireland associate sought for modern computerised surgery. Full book from departing colleague (three years). Contact Hilda at 00 353 86 6001719, or Email: garrywh@hotmail.com.

Full/part-time associate required, Baltinglass, Co. Wicklow, to replace departing colleague. Start September 2007. Busy mixed practice. Good support staff. Excellent equipment. Tel: 059 648 2749 (9.00am-5.00pm), or 087 685 1568 (evenings).

Part-time dental associate required, Dublin south central from September 2007 with a view to partnership for a suitable applicant. Please forward CV to Box No. J307.001.

Part-time associate required in Bray, Co. Wicklow. Fully computerised, digital x-ray, OPG, hygienist, etc. Tel: 087 688 9708, or Email: caitrionamag@hotmail.com.

Are you the person to be my successor? Great opportunity for a mature generalist. High quality general practice with special interests in orthodontics and implantology. Principal willing to act as hands-on mentor. Great location, four surgeries. Post enquiries to Box No. J307.002.

Part-time associate required for busy practice in Bray, Co. Wicklow. Hygienist, good support staff. Tel: 087 983 1135, or Email: poarta95@gmail.com.

Part-time associate required Wicklow, three-day week, to replace departing colleague. Start September 2007. Busy mixed practice. Good support staff. Excellent equipment. Tel: 087 685 1568.

Part-time associate for Dublin 2 city centre practice (Thursday, Friday and Saturday). Fully computerised, OPT and hygienist. PRSI and private patients. Experience essential. Email CV to dpgal@eircom.net.

Part-time dental associate required for busy two-surgery modern Dublin 5 practice with private and PRSI fees only. Hygienist support. Tel: 01 833 6128 (evenings or weekends).

Experienced dentist needed for approximately two sessions per week in Ashford, Co. Wicklow. Tel: 0404 40242 or Email: fanningbrendan@yahoo.ie.

Kilkenny city. Newly equipped surgery, fully staffed, available two days per week on sessional basis to a registered dental specialist. Contact Billymccollam@yahoo.co.uk.

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Locum dentist required for maternity cover August to December. Part-time two to three days per week. Modern, very well equipped private practice in Dublin 2. Tel: 087 903 5461, or Email: reddy_mary@hotmail.com.

Locum required. Maternity leave. Starting November 2007 full/part-time. Co. Louth, 25 minutes from Dublin. Tel: 086 232 6212.

Locum required for July to September in Monasterevin, Co. Kildare. Busy practice with flexible hours. Four days a week available but would accept reduced hours for suitable candidate. Tel: 087 659 4867.

Locum required for September 2007 in busy Co. Louth practice. Please contact 041 685 3235 or 086 395 4048.

Part-time locum required from August, SCR Dublin 8 area. Please call 01 453 1859 between 10.00am and 5.00pm.

Locum dental surgeon required to work in the Community Dental Service of the Health Service Executive in Dublin south city for six months from September 2007 to February 2008. Email: colleen.oneill@mailm.hse.ie.

Oranmore, Galway. Six-month locum position available October 2007 to April 2008. Ideal for dentist contemplating return to Ireland. Part-time hours possible post locum. Email: phewatal@eircom.net.

Portmarnock, Co. Dublin. Modern friendly practice. Part-time locum dentist to cover maternity leave three days a week from November 2007 to June 2008. Tel: 01 816 9474.

Part-time (three days per week) general dental surgeon required to work in busy Health Service Executive dental clinic. At least three years postgraduate experience required. Email: jane.renehan@mail.hse.ie.

Dental surgeon required to work Saturdays in large dental practice in Dundalk. Excellent remuneration. Email: dentalsurgery@dbholly.com.

Sessions available for oral surgeon in specialist practice with possible use of GA facilities locally. 90 minutes from Dublin. Enquiries to alldent@eircom.net.

Galway city centre. Orthodontist required to cover maternity leave. Long-term position possible. Email: braces@ireland.com.

Orthodontist required for northside Dublin orthodontic practice. Position also available in Dublin 2. No transfer cases. Experienced staff and lab on site. Tel: 087 130 4410.

State-of-the-art dental clinic, Dublin 2. Looking for part-time/locum orthodontist and prosthodontist. Busy practice, big demand for specialties. Great environment, rewarding opportunity. Tel: 01 472 1226, or Email: ctaylor@optilase.com.

Full/part-time positions available in specialist private prosthodontic practice, beginning start of August. To organise an interview, please Tel: 045 901725 and speak to Deirdre.

Hygienist required for busy two-surgery practice in south-west Dublin. Email: ada@smileclinic.ie.

Part-time dental nurse required in Donnybrook, Dublin 4. Some experience necessary. Tel: 01 269 1010, or Email: setonmenton@eircom.net.

Rewarding opportunity for practice receptionist with dental nursing experience to join friendly team in Dublin 2. Full-time, non-smoker. Tel: 01 661 4659 or Email: info@fitzwilliamdental.com.

PRACTICES FOR SALE/TO LET

Superb opportunity for orthodontist. Surgery available to rent on a sessional basis in purpose-built specialist dental surgery 90 minutes from Dublin. OPG and lateral Ceph on site. Enquiries to alldent@eircom.net.

Specialist periodontist and endodontist wanted to rent surgeries in purpose-built dental referral centre in northwest. Excellent opportunity to build up practice in area with large population and huge need for your expertise. Email: dandckennedy@eircom.net.

New Ross surgery. Property to rent as surgery, Waterside side of bridge. 800-2,400 sq ft. Cat 5 cabling and ISDN lines. Can redesign or alter to suit. Car spaces available. Contact John on 086 256 3710.

Waterford surgery. Property to rent as surgery, Penrose Lane. Just off the Quays beside Aldi with 400 car spaces. 2,600 sq ft with Cat 5 cabling and ISDN lines. Can redesign or alter to suit. Contact John on 086 256 3710.

For sale, south Kildare. Busy practice in expanding town off M7. Currently one surgery with room for expansion. OPG, intra oral camera, leasehold, good price for quick sale, Tel: 087 659 4867.

Dental surgery needed. Granary Court Medical Centre (Edenderry). Doctors surgery and chemist confirmed. Designated parking in town centre included. Tel: 087 329 2429, or Email: conaldavey@yahoo.com.

State-of-the-art new surgery available for rental to a specialist dentist in Ranelagh, within a new large primary care facility. Digital radiography, OPG and lateral Ceph supplied. Interested parties Tel: 087 988 7821.

For sale, Carlow town. Single surgery. Large room to expand (plans available). Long established in the heart of town. Realistic price for fast sale. Dentist retiring. Tel: 086 807 5273.

For sale, Co. Kildare. Expanding town – one hour from Dublin. One-man surgery. Excellent equipment. Long lease. Reasonable rent. Large room to expand. Only practice in town. Tel: 086 807 5273.

For sale, Meath. Excellent location. Large passing trade. Good equipment, OPG. One-man surgery. Room to expand. Long lease low rent. Very busy. Excellent figures. Tel: 086 807 5273.

For sale, Wicklow/Carlow border. Two surgeries. Expanding town one hour from Dublin. Very busy. Excellent equipment. Leasehold/freehold flexible options. Large new patient numbers. Realistically priced. Tel: 086 807 5273.

Absolute bargain! Dublin City northside. Principal semi-retiring for family reasons, wants to stay part-time. 30 years established. Three surgeries. Five dentists working 8.00am-8.00pm and Saturdays (in shifts). OPG, orthodontist. Good mix private/PRSI/GMS. Fully audited figures. Tel: 086 237 7437, or Email: nice2let@hotmail.com.

Rooms available in newly-built medical facility in Midland town. Would suit dentist or orthodontist. Tel: 057 867 9828 or 086 848 8704.

Charlestown, Co. Mayo. Brand new 1,000 sq ft unit to let, ideal for dental surgery (nearest surgery 12km), above established pharmacy. Good parking, town centre, can redesign or alter to suit. Broadband. Available from December 2007. Contact Ian on 086 172 9143.

For sale, long-established single-handed dental practice and house for sale, south Dublin, with pp for extension to three surgeries. Excellent location beside three schools and health centre. Ideal for GP with options to expand or orthodontist. Tel: 087 671 3485.

Space available for dental specialists in Dublin north orthodontic practice and Charlemont Clinic orthodontic practice. Tel: 087 130 4410.

EQUIPMENT WANTED

Equipment wanted. Second-hand OPG machine in very good working order. Contact 087 686 6180.

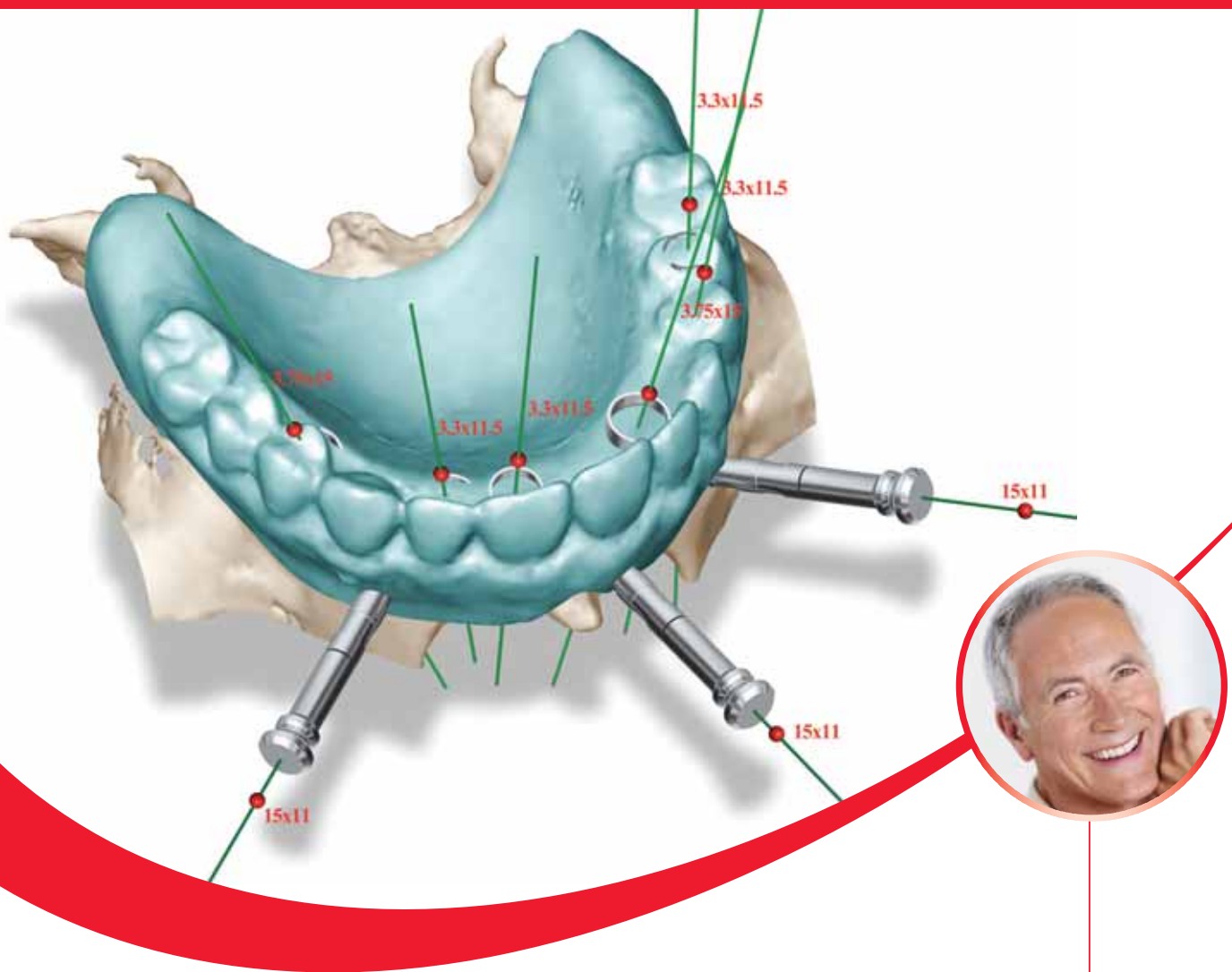
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