

British Society of Prosthodontics
Annual Conference 2015



Confronting the Grey Areas

**Friday 27th &
Saturday 28th March 2015
British Library, London**



**British Society of Prosthodontics | www.bsspd.org
Fixed - Removable - Implant - Maxillofacial**

Welcome

As the current BSSPD President I am delighted to welcome you all to London. Although I have been involved with postgraduate teaching and education for some years this is the first time that I have had the opportunity to organise such a big conference. Anyone who has worked with me knows that wherever possible I try to be evidence-based. However, as many will say - the evidence can only take you so far. I therefore wanted the scientific focus of our 2015 conference to be on the 'Grey Areas' of our understanding of clinical Prosthodontics. Presentations will explore the following topics: occlusion, implant use in the periodontally-susceptible patient, imaging, prosthodontic planning, cracked teeth, the dento-legal challenges of prosthodontics and the restoration strategy for worn teeth.



I have asked Professor Daniel Edelhoff, from Munich Germany, to deliver two lectures to conference on the clinical application of CAD-CAM and 'all-ceramic' technology. I am looking forward to the debate on the implications of the phase-down on Dental Amalgam which will involve Phil Taylor and Trevor Burke. I know that all my speakers enjoy strong reputations in education and teaching. I am also delighted that the London Dental Foundation trainees are joining us for the first day of conference. I know that they will enjoy both the educational and social aspects of conference and the hospitality of the BSSPD. We hope to see them at future conferences and hope they remain involved with the BSSPD for many years to come. I know that Kushal Gadhia, our BSSPD young practitioner chair, will encourage them to join us.

The programme also includes a strong competitive research programme which includes: The Schottlander oral presentation prize and the Schottlander poster presentation display and prize. The society provides a perfect environment for young research dentists to display their work and talents. The judges comment each year that standards continue to rise. I am also proud that we are running two parallel workshops on Saturday (please book quickly as places are limited). One deals with the issue of whether immediate or delayed implant placement is best (Chair Kushal Gadhia, speakers Lloyd Searson and Shakeel Shahdad). The other focuses on: Multi-Disciplinary Team (MDT) patient care at Queens



University Hospital which will be run by the Nottingham team which will include Neil Poyser and Jason Watson.

The conference dinner will take place at the Pullman Hotel on the Friday evening and we will be joined by a very entertaining after dinner speaker, Dr Phil Hammond (who will be well known to many of you from his work on television and radio).

It is the first time that BSSPD has run the conference on a Friday and Saturday. We have responded to the feedback of many who felt that this format will reduce the impact on time away from their professional commitments. We hope that this works well and allows you to enjoy the conference and also to make the very best of our amazing capital city. Do not forget to sign the attendance register with your GDC number to ensure that you receive your CPD certificate. I hope to catch-up with as many of you as possible over the next two days. Finally, I would like to pass on my sincere thanks to all of our speakers, and the BSSPD team, who have worked extremely hard over the last 12 months to make this conference possible.

Best wishes,
Peter Briggs

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Conference programme

Friday 27th March

- 08:30 Registration and coffee
[Session Chair: Peter Briggs]
- 09:15 **Welcome and Opening of 2015 BSSPD London Conference**
Liz Jones OBE, Postgraduate Dean, HEE,
London Dental Education and Training
- 09:30 **Prosthodontic Management of Tooth Wear – The Grey Areas**
Ken Hemmings, Eastman Dental & Private Practice
- 10:30 Coffee, trade and poster display
[Session Chair: Julian Satterthwaite]
- 11:00 **Modern thinking on the management of Fractured and Cracked Teeth**
Richard Porter, St George's Hospital, London
- 12:00 **Dento-Legal Grey Areas in Prosthodontics**
Kevin Lewis, Director DPL
- 12:40 **Morning panel discussion**
Ken Hemmings / Richard Porter / Kevin Lewis
- 13:00 Lunch, trade and poster display
[Session Moderator: Professor Peter Briggs]
- 14:00 **BSSPD Society Debate on the Implications of the Minamata Convention on mercury to Dental Amalgam – Should our patients be worried?**
Professor Trevor Burke, Birmingham and Phil Taylor, London
- 15:15 Poster display and Judging (tea served)
- 15:45 **Is CAD/CAM Technology and all-ceramic restorations the answer to all of our problems?**
Daniel Edelhoff, Munich, Germany
- 16:45 Session close
- 17:00 **British Society of Prosthodontics AGM**
- 19:00 Drinks reception – Pullman Hotel, St Pancras

If you are presenting a poster please note that this will need to be put up on your allocated poster space at the conference venue by 10am on Friday. You are asked to stand by your posters between 3:15 and 3.45pm to answer questions from the delegates and judges. The posters do not need to be removed until Saturday.



Saturday 28th March

08:30 Registration and coffee

[Session Chair: Mike Fenlon]

09:00 **Implant Use in the Periodontally Susceptible Patient - The Grey Areas**
Professor Dominic O'Sullivan, Bristol

10:00 **The Potential and Clinical Indications of the Newer Indirect Ceramic and Glass Materials** - Daniel Edelhoff, Munich Germany

11:00 **Panel Discussion**

11:10 Coffee and trade

[Session Chair: Dr Phil Smith]

Venue: Main Lecture Theatre

11:30 **Schottlander Research Prize Presentations**

Venue: Break Out Rooms 1 and 2

11:30 **Parallel Workshops (pre-booked with numbers strictly limited)**

Workshop 1: Multi-Disciplinary-Care (MDT) clinical workshop – 'The Clinical-Technical Interface'. Restorative MDT Cases from Nottingham – diagnosis, planning and treatment. Led by Neil Poyser, Consultant in Restorative Dentistry with Jason Watson

Workshop 2: Immediate or delayed implant placement a debate with specialists with Shakeel Shahdad and Lloyd Searson. Led by Kushal Gadhia, Chair of young BSSPD Practitioners and Consultant in Restorative Dentistry

13:00 Lunch and trade

[Session Chair: Phil Taylor]

13.50 **Presentation by Brian Schottlander – Product update**

14.00 **Announcement of the Schottlander Prize Results**

14.10 **The Grey Areas of 3D Scanning and Dento-Facial Imaging in Prosthodontics** - Jimmy Makdissi, BHT and private practice

14.40 **Managing Complex Prosthodontic Problems and Failure – some clinical tips** - Shakeel Shahdad, BHT and private practice)

15.30 Tea and trade

[Session Chair: Peter Briggs]

15.30 **The Grey areas of Occlusion in 2015 – The Balance between Evidence and Clinical Experience** - Paul Tipton, Specialist Practitioner and Postgraduate Educator Manchester

16.30 **Afternoon Session Discussion**

16.45 **Handover to New President and Conference Close**

Invited speakers

Ken Hemmings

Prosthodontic Management of Tooth Wear – The Grey Areas

Adhesive or Conventional Dentistry for the restoration of broken down or worn teeth - which is best and why? Ken Hemmings, a well-known Consultant and Specialist practitioner will present his personal views on the options of direct / indirect adhesive dentistry or conventional restorative techniques when restoring broken down and worn teeth.

Ken has published widely in this area and will outline the factors that he looks for when considering both options. The presentation will be practical and informative with take home advice for clinicians of all levels of experience.



Ken Hemmings graduated with honours in Dental Surgery from Bristol University in 1982. Junior hospitals posts followed at Bristol, Birmingham and Torquay before gaining a Registrar in Oral Surgery position at the Royal London Hospital. He gained his London fellowship in 1986 before entering the specialty of Restorative Dentistry. Whilst studying for a two year MSc programme in Conservative Dentistry at the Eastman Dental Hospital he avoided financial destitution by working part-time as a Registrar and in general dental practice. He completed Senior Registrar training at the Eastman in 1993. He took up a full time consultant post in the departments of Conservative Dentistry and Periodontology in August 1995. He is recognised by the GDC as a specialist in Restorative Dentistry, Prosthodontics, Periodontology and Endodontics. He has been an examiner for the fellowship of dental surgery of the Royal College of Surgeons of England until recently. He continues as examiner for the Membership of Restorative Dentistry of the Royal College of Surgeons of Edinburgh. His research interests and publications have covered the management of: toothwear, hypodontia, tooth replacement and periodontal/restorative interactions. He now splits his time between hospital and private practice. He is current President of the BSRD. His wife and three children make for a busy and fun home life with a little time for cycling or golf at weekends. Ken is an active coach of junior rugby at Amersham and Chiltern RFC.



Richard Porter

Modern thinking on the management of Fractured and Cracked Teeth

Cracked Teeth - What is best treatment option for vital and non-vital cracked / fractured teeth? Most accept that cracked and fractured teeth are becoming more and more common. There are many approaches recommended for this problem. Richard Porter will discuss these issues from a clinical viewpoint and offer advice for conference delegates on what is the best way forward to manage this difficult clinical problem.



Richard Porter is a Consultant in Restorative Dentistry and is current Clinical Lead of the department of Hospital Dentistry at St. George's Hospital, London. He is registered on the specialist in: Prosthodontics, Endodontics, Periodontics and Restorative Dentistry. He teaches and examines for the Royal College of Surgeons of England. He is a dental implant mentor and as has placed and restored over 2000 implants. He has lectured nationwide to various groups to include: British Dental Association, British Society of Restorative Dentistry, Dental Protection Society Young Dentists Conference, National Head and Neck Cancer Society meetings and many others. He is actively involved and is well published in a number of key areas to include: restoring heavily damaged teeth, tooth whitening, dental aesthetics, oral cancer, oral rehabilitation and tooth wear. He bases his work entirely around quality and ethics and can often be heard lecturing on this ethos to various dentists throughout the year. He is a husband and father before everything else but loves to ski, shoot, cycle and run (now the rugby playing days are over).

Kevin Lewis

Dento-Legal Grey Areas in Prosthodontics

The UK is now the riskiest country in the world in which to practice prosthodontic dentistry. Kevin Lewis, Director of Dental Protection Limited, has kindly agreed to address our 2015 conference on this important and difficult subject. He will explain the reasons for the increased risk to both NHS and private practitioners and suggest strategies to control this risk. He will look into the future and explain how the defence agencies are planning to cope with this trend in the future.



Invited speakers (continued)

Kevin Lewis has developed special interests in preventive dentistry and practice management during twenty years in full-time general practice. He has written two textbooks on dental practice management and countless articles. He was the Associate Editor of Dental Practice for twenty-five years and is now the Consultant Editor and a regular columnist for Dentistry magazine. He has lectured extensively all over the world, and has been involved with Dental Protection since 1989, initially on the Board of Directors, then as a Dento-Legal Adviser, before being appointed Dental Director in 1998. He is a member of the Executive Committee and Council of the Medical Protection Society (MPS). Kevin is the DPL Lead for members in Australia, New Zealand, Hong Kong, Singapore and Malaysia

Trevor Burke and Phil Taylor

BSSPD Society Debate on the Implications of the Minamata Convention on mercury to Dental Amalgam – Should our patients be worried?

Loss of Amalgam to the UK - 'Phase down' of amalgam: A Society Debate on the Implications of the Minamata Convention on mercury to Dental Amalgam - Should we and our patients be worried? Is the UK dentistry ready for the planned phase-down and eventual 'banning' of dental amalgam? Are the bsspd concerned about this and are there still some clinical circumstances where dental amalgam is likely to perform better than the alternatives. The society will debate both sides of the argument which in turn will allow us to produce and publish a position paper. Phil Taylor, from Barts Health Trusts and QMUL, will outline the case for continuing use of amalgam and Trevor Burke, from University of Birmingham, will argue the alternatives. Conference delegates will be encouraged to contribute to the debate and vote on management strategies for different clinical circumstances.

Phil Taylor worked for 12 years in NHS general dental practice as an associate, a principal and a VT Trainer. He has worked as a senior lecturer in Adult Oral Health at QMUL and is also honorary Consultant in Restorative Dentistry since 2003. He is a registered Specialist in Restorative Dentistry & Prosthodontics. Phil is current clinical director of the dental institute at Barts Health Trusts and also is clinical lead in restorative dentistry. He is dental regional advisor for Dentistry (N Thames Region) for RCS Edinburgh and course director for the Masters in Clinical Dentistry Prosthodontics which is a recognised training course for the monospecialty of Prosthodontics. His clinical interests



include: Fixed and removable prosthodontics (crowns, bridges, implants, dentures), quality of performance, success and failure. His research interests include: Tooth Wear measurement, cost effectiveness of treatment versus quality.

Trevor Burke is a Professor of Primary Dental Care and Hon Consultant in Restorative Dentistry. He is programme director of a Masters course in Advanced General Dental Practice. This was set up 12 years ago and being part time suits the needs of the busy dental practitioner. Trevor is (co-) author of 280 papers published in peer-reviewed journals and three books. His principal interests are in the translation of in vitro research on dental materials into the clinical situation. In this regard, he co-ordinates the work of two practice-based research groups (The PREP Panel, with 33 dentists UK-wide and BRIDGE, a West Midlands group with 18 dentists) who carry out clinical evaluations of a variety of materials and other practice-based studies. He is Chair of the Practice-based Research Network of the IADR and is editorial director of Dental Update. Until recently he Chaired the Board of Dental Protection.



Daniel Edelhoff

Is CAD/CAM Technology and all-ceramic restorations the answer to all of our problems?

The Potential and Clinical Indications of the Newer Indirect Ceramic and Glass Materials

Ceramics, CAD CAM technology & digital clinical scanning - Is CAD/CAM Technology and all-ceramic restorations the answer to all of our problems? Are people 'stuck-in-the-past' who still use conventional indirect intra and extra coronal restorations, with traditional impression techniques? The society is delighted that Daniel Edelhoff from Munich, Germany has agreed to share his views and experiences on this important subject. His Dental Institute and students have the choice of several systems. He is a world renowned expert on digital CAD CAM technology and associated tooth preparation. He will also demonstrate the use of this technology for the minimal restoration of patients with tooth wear.



Daniel Edelhoff trained as a Dental Technician in 1982 before becoming a dental surgeon. He qualified as a dentist in 1991 in Aachen, Germany gaining in 1992 a licence to practise Dentistry. Appointed in 1993 as research assistant in the department of Prosthetic Dentistry at the University Hospital of the Institute

Invited speakers (continued)

of Technology of North Rhine-Westphalia (RWTH) Aachen. Obtained a Dr med Dent in 1994. In 1998 awarded best presentation to the German Society for Prosthodontics and Material Sciences (DGZPW). In 1999-2001 was awarded a German research foundation (DFG) scholarship to visit Dental Clinical Research Center of Oregon Health and Sciences University in Portland, Oregon, USA. In 2002 appointed as senior physician in the Department of Prosthetic Dentistry, University Hospital of RWTH Aachen. 2003 author of the scientific opinion of the German Society of Dental Oral and Cranio-mandibular Sciences (DGZMK) ("Restoration of endodontically treated teeth"). In 2006 was appointed as Chair of Dental Prosthetics and Dental Material at Ludwig Maximilians University of Munich. Since this time a member of the Board of the German Society of Implantology. 2009 elected as member of the American Academy of Esthetic Dentistry (AAED).

Dominic O'Sullivan

Implant Use in the Periodontally Susceptible Patient - The Grey Areas

Implants and Periodontal patients - When are periodontal patients ready for dental implants? With increased of evidence highlighting the growing problem of peri-implantitis now seems a good time to clarify the timings and needs of patients who want teeth, that are lost because of periodontitis - replaced with dental implants. Dominic O'Sullivan from Bristol University will provide conference with his views on this controversial subject area with delegates able to take away sensible and practical advice.



Dominic O'Sullivan qualified in Dentistry in 1991 following time spent in Oral and Maxillofacial surgery posts, general practice and private practice. Dominic joined a European Research Team in 1996 led by Professor Neil Meredith developing the use of Resonance Frequency Analysis - as a tool to assess the stability of dental implants as a predictor of implant success and failure. Following the completion of a PhD in dental implant design (2001) he entered specialist training in Restorative Dentistry gaining a Consultant Senior Lecturer post in Bristol Dental School in 2006. He was the developer of the University of Bristol MSc in Dental Implantology and currently acts as programme director. He is also the Graduate Director for the School of Oral and Dental Sciences in the University and a member of the Faculty of Medicine and Dentistry Quality Enhancement Team with an interest in the quality assurance of medical and dental education. He is currently collaborating on research that looks at aspects

of patients' decision making when considering dental implant treatment and has an active research interest in the quality assurance of dental education. Dominic was appointed as Chair (University of Bristol) in 2011 and was elected as a Fellow of the International Team for Implantology in 2012.

Jimmy Makdissi

The Grey Areas of 3D Scanning and Dento-Facial Imaging in Prosthodontics

The Grey Areas of 3D Scanning and Dento-Facial Imaging in Prosthodontics - Who better than Jimmy Makdissi to take us through this dilemma. How often and for what cases should we be using 3D scanning in 2015? How do we best balance the risk to the patient of using CBCTs in Prosthodontics? Are we at risk of hiding behind technology? Where are the clear indications and benefits compared to conventional imaging techniques?



Jimmy Makdissi is a Clinical Senior Lecturer / Hon Consultant in Oral & Maxillofacial Radiology Associated Centre/s: Clinical and Diagnostic Oral Sciences. He joined QMUL, London in November 2004. He qualified in 1993 from the University of Aleppo, completed a postgraduate diploma in Oral and Maxillofacial Surgery from the University of Damascus in 1995 and then undertook a Master of Medical Sciences in Oral Surgery (Queen's University of Belfast). Obtained fellowship in 1999 and completed specialist training in Dental and Maxillofacial Radiology at Guy's Hospital in 2004. Now directs the Dental and Maxillofacial Radiology programme for the undergraduate BDS curriculum. Supervises SSM modules for undergraduate MBBS students and delivers didactic and clinical teaching to postgraduate students, senior house officers and medical and dental specialist registrars. He teaches on the fellowship programme (RCS) and on the MSc in implantology at Warwick University. He sits on the education committee of the International Association of Oral and Maxillofacial Radiology. Has been invited speaker on several national (British Dental Association and British Association of Oral Surgery) and international (Australia: The Royal Melbourne Hospital, Pakistan: Asia Pacific Dental Congress, Hungary: International Association of Head and Neck Radiology) scientific conferences. Jimmy was nominated for staff president of the Student / Staff Association by the students. Former Dental Tutor and faculty tutor at RCS(Eng).

Invited speakers (continued)

Shakeel Shahdad

Managing Complex Prosthodontic Problems and Failure – some clinical tips

Managing Complex Prosthodontic Problems and Failure - some clinical tips - Shakeel Shahdad, a well known Consultant at BHT and private practitioner will discuss his approach to managing complex failing / failed conventional and implant prosthodontic cases. We all understand that the need to be able to manage these problems will grow as the current middle-aged population grows older. We look forward to hearing sensible advice about this problem from an expert such as Shakeel who balances his time between the hospital and general practice environment.



Shakeel Shahdad was born and brought up in the beautiful valley of Kashmir. In 1988, he commenced his studies in dentistry and qualified in 1992 as a dentist from the University of Mysore, India and moved to the United Kingdom in 1994. He attained a Master's degree in Restorative Dentistry from the Queen's University of Belfast in 1995. He completed his Fellowship in Dental Surgery from the Royal College of Surgeons of Edinburgh in 1998. He moved to Dubai for a short time in 1999 and worked as Restorative and General Dentist for Emirates Airlines. In 2000 he returned to the UK and commenced his Specialist Registrar training in Restorative Dentistry at the Newcastle Dental Hospital. He attained his exit Fellowship in Restorative Dentistry 2004 and completed his specialist training in 2005. During this period he also completed a 4-year part time research degree and successfully submitted his thesis for attainment of Doctor of Dental Surgery (DDS) from Newcastle University. He was appointed as a Consultant at The Royal London Dental Hospital in 2005 and was subsequently appointed as Honorary Senior Clinical Lecturer at Queen Mary University, Barts and The London School of Medicine and Dentistry. Shak is a specialist in Restorative Dentistry, Periodontics, Prosthodontics and Endodontics. His areas of interest includes: aesthetic implant dentistry, and management of complex restorative cases including functional and aesthetic rehabilitation of patients with hypodontia. He is the Lead for postgraduate implant training at The Royal London Dental Hospital. He is an executive member of the Specialty Advisory Board for Diploma in Implant Dentistry at The Royal College of Surgeons of Edinburgh. He is a Fellow of the International Team for Implantology (ITI), and a Diplomate of British Society of Oral Implantology (BSOI). He also runs a multi-specialist referral practice in the West End of London.

Paul Tipton

The Grey areas of Occlusion in 2015 – The Balance between Evidence and Clinical Experience

Occlusion in 2015 - What has changed with occlusion over the last 20 years? Who better to talk about this topic than the renowned private Prosthodontic practitioner and postgraduate teacher Professor Paul Tipton. Paul has been asked to “tease out” the Grey areas of Occlusion and explain his approach to this controversial subject. It is the first time Paul has spoken for BSSPD - so not to be missed.



Paul Tipton is a well-known specialist Prosthodontist in the UK who has worked in private practice for more than 30 years. He is founder of both Tipton Training Ltd; one of the UK's leading private dental training academies and the BARD (British Academy of Restorative Dentistry). He has written over one 100 scientific articles published in the dental press. In 2010 Paul was voted in the Top 10 'most influential UK dentists' by his peers in Dentistry Magazine. Paul's qualified from Sheffield University in 1978. He continued to build his skills and reputation, studying at the Eastman Dental Hospital under Prof Derrick Setchell in 1987-1989; where he obtained a MSc in Conservative dentistry. Paul was awarded an honorary Diploma in General Dental Practice in 1992 and appointed a member of the British Dental Association's Independent Practice Committee. In 1999, he was entered on the GDC Specialist list in Prosthodontics. Professor Tipton's teaching career began at Manchester University in 1989 where he taught on the MSc programme. He now regularly lectures at home and abroad. To date, over 2500 dentists have passed through the Tipton Training Academy. He has recently established an on-line Training Academy for Dentists which allows remote access to study groups.

Parallel sessions

Neil Poyser (with Jason Watson)

Multi-Disciplinary-Care (MDT) clinical workshop – ‘The Clinical-Technical Interface’. Restorative MDT Cases from Nottingham – diagnosis, planning and treatment.



Successful, functional and aesthetic oral and facial rehabilitation for our oncology, cleft, deformity and trauma patients demands high-level multi-disciplinary teamwork. Neil would like to invite you to an exciting and interactive treatment planning and case discussion session led by himself and his Consultant Maxillofacial Prosthetist colleague, Jason Watson. Jason has developed the in-house maxillofacial laboratory service at the Queen's Medical Centre, Nottingham, especially in the areas of Cad-Cam 3D planning and printing. He has a wealth of technical knowledge and his attention to detail and artistry is exemplary. Neil has worked closely with Jason, including joint treatment clinics, since his consultant appointment at the QMC 9 years ago. They will be discussing the clinical and technical aspects of patient care, including high priority hospital patients and cases managed in specialist restorative/implant practice. They believe the session would be of particular interest to specialist trainees wishing to gain insight into the management of MDT cases at another unit.

Neil Poyser is a specialist in Restorative Dentistry and was appointed as Consultant in Restorative Dentistry at the Queen's Medical Centre, Nottingham. His specialist training was completed at Guy's, King's and St Thomas's Dental Institute, and St George's and Mayday Hospitals, London. Prior to this, he worked in the dental teaching hospitals of Sheffield and Leeds, having been in general practice in Norwich. Neil is also a Fellow of the Royal College of Surgeons of Edinburgh and a General Dental Council specialist in Endodontics, Prosthodontics, Periodontics and Restorative Dentistry. Neil is interested in the areas of adhesive fixed prosthodontics, endodontics and the implant rehabilitation of patients with defects related to dental cancer or trauma. His implant team was awarded the National Smile Award 2009 for facial reconstruction and we were very proud of this achievement. He is particularly interested in the area of tooth wear and has lectured, published articles and carried out clinical research in this field. Neil has contributed to the dental literature and published articles in dental journals, including the European Journal of Prosthodontics and Restorative Dentistry, British Dental Journal, Journal of Oral Rehabilitation and Dental Update. He is keen to develop the skills of local practitioners and is actively involved in postgraduate education having provided lectures and hands-on courses at local and national level. He is a member of the British Society for Restorative Dentistry, Association of Consultants and



Specialists in Restorative Dentistry, British Society for Periodontology and the British Endodontic Society.

Kushal Ghadia (with Lloyd Searson)

Immediate or delayed implant placement a debate with specialists with Shakeel Shahdad and Lloyd Searson.

Kushal would like to welcome conference delegates to join in the debate and discussion on Immediate (Lloyd Searson) vs Delayed (Shakeel Shahdad) implant placements. These very experienced clinicians will present cases and justify their preferred choice of implant surgical protocols, with live audience participation using case based discussions.



Kushal Ghadia qualified as a dentist from Bristol in 2005 and worked in general dental practice as well as in various hospital positions gaining experience in Oral and Maxillofacial surgery, Restorative Dentistry and Paediatric dentistry, during which he obtained his Membership of the Faculty of Dental Surgery. He was appointed as a Specialist Registrar and Honorary Lecturer in Restorative Dentistry at the Eastman Dental Hospital in 2009 and has successfully completed his specialist training in Periodontology, Prosthodontics, Endodontics and Restorative Dentistry. He has a particularly keen interest in Periodontology and Implant Dentistry. Since graduating, Mr. Ghadia has won over 13 national and international awards for his commitment to dentistry.

He is the Chair of the Young Practitioners Group for British Society of Prosthodontics (BSSPD), Treasurer of the Specialist Registrar in Restorative Dentistry Group (SRRDG), Chair of the Junior Staff Committee at the Eastman Dental Hospital and has sat on various national committees within Periodontology, Prosthodontics and Restorative Dentistry. He has organized various national and international study days and conferences, as well as being actively engaged in teaching post graduates, general dental practitioners, dental nurses, on the implant course at the Eastman Dental Hospital and at the Royal College of Surgeons, England (RCS). He is actively engaged in clinical research and had published over 20 peer-reviewed articles. In his spare time, he has a passion for music, plays various musical instruments and enjoys travelling.

Delegates need to have prebooked their place on the parallel sessions as there is limited availability – please see Kirstin if you have not pre-booked in case there are any spaces available.

Schottlander oral presentation abstracts

Electronic Cigarettes and Prosthodontics: an update of the current literature, an audit of reporting and staff knowledge and analysis of the erosive potential of e-liquids

R Holliday* (co-investigators G Bourne, C Stubbs and M Corson)

Newcastle Dental Hospital

Email: rholliday26@hotmail.com

Electronic cigarettes (e-cigarettes) are devices that deliver a vapour containing nicotine, flavourings and diluents. Since their introduction in 2006 they have seen a significant rise in popularity with an estimated 2.1 million users in the United Kingdom.

The aims of this study were twofold: firstly to determine if e-cigarette usage was being recorded in the medical records and to determine staff/student knowledge, and secondly selected e-liquids were analysed for their erosive potential.

Round 1: 464 patients each completed a questionnaire prior to their clinical visit. Their medical records were later examined for evidence of e-cigarette reporting. 50 staff and 50 students were asked a series of simple questions to determine their knowledge.

Intervention: Staff lunchtime talks and undergraduate lectures delivered.

Round 2: 150 patients and 20 staff/ 20 students.

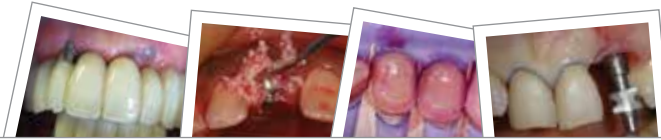
Approximately 5% of the patients sampled were using an e-cigarette in both rounds. Recording rates were 28% in the first round and improved to 50% in the second round. Staff knowledge was mixed in both rounds.

E-cigarette usage is poorly recorded in the medical records. Staff and students knowledge is mixed.

E-liquid analysis measured the pH and titratable acidity of a range of nicotine containing solutions (e-liquids) manufactured for electronic cigarettes.

The average pH of the e-liquids was pH 7.43, with a range from pH 4.42 to pH 8.86. Four e-liquids had a pH<7. The 'e-liquid with the largest buffering capacity required 217µl of 0.1M NaOH to reach pH 5.5 and an additional 600µl to reach pH 7.

The majority of the e-liquids tested were neutral or slightly alkaline. We identified four acidic e-liquid solutions, all being custom mixtures ordered off the internet, from the same manufacturer. The buffering capacity of the acidic e-liquids, to get to the critical pH of 5.5, was relatively small, approximately a tenth that of orange juice. The clinical relevance of these results needs to be investigated further.



A Novel Zirconia Dental Implant Design For Immediate Single Tooth Replacement in the Aesthetic Zone: Research and Clinical Perspectives

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In collaboration with industrial partners, we introduced and investigated a new implant system with a novel biomechanical design in an attempt to exploit the promising properties of zirconia and overcome the drawbacks associated with the other commercially available systems. The proposed design utilises a relatively low strength glass fibre composite abutment bonded with resin cement to an injection-moulded, soft tissue level, zirconia implant. This design can theoretically reduce catastrophic failures affecting the implant and favour retrievable failures that are confined to accessible areas above the engineered weak connection. In terms of surface treatment, implants have acid-etched surface (MDS: Maxon Dental Surface) which exhibited superior osseointegration capacity in comparison to machined zirconia. Findings may answer some pressing concerns including;

- Mechanical reliability of the system and durability of the connection between the different components given the poor bonding capacity to zirconia. A long-term dynamic fatigue tests was performed on samples prepared in a similar manner for clinical application
- The effect of low-temperature degradation or ageing phenomenon on the performance of the characteristics of the material using cutting edge crystallographic and nano-mechanical studies

The White Implant Development Corp, The Netherlands and Maxon Dental, Germany

3-D printing of a copy denture template; a case history

A Keeling*, S Dillon, P Hyde

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Conceived in the USA, the 'copy denture technique' was adapted and developed in the UK by stalwarts of BSSPD John Heath foremost in advocating its use. Papers continue to recommend the technique because of the perceived advantage of accurately reproducing the polished surfaces of the dentures and so allowing patients to easily adapt to their new denture. However, Kippax investigated and Polyzois compared the accuracy of reproduction of dentures; both found the technique did not produce accurate copies. Although a useful method of denture construction, the problem of inaccuracy in the reproduction of the denture templates remains. If the polished surface shape could be maintained, patients would benefit. An inexpensive, high resolution optical scanner coupled with 3-D printing offers the opportunity to rapidly and cost-effectively print denture templates for use in the copy denture technique. This paper presents a case using a printed denture template. A structured light 3D scanner was constructed using a projector (Vivitek Qumi Q5, Vivitek Corporation, Hoofddorp, NL) and two cameras (uEye 1240LE, IDS Imaging, Obersulm, Germany). Software was written to triangulate the data, with a point density sampling of 50µm. The denture was printed using a stereo-lithographic printer (DWS 020D, DWS Systems, Vicenza, Italy) which supports an X-Y resolution of 50µm, and a slice thickness of 10µm.

The printed template was substituted for the normal denture template and the copy denture produced in the usual way. The advantage of the solid and accurate copy denture template facilitated a precise replication of the original denture; in particular on the polished surfaces.

This technique of producing a copy denture template has proved to be convenient and low cost with the advantage of a more accurate template. The challenge for this research is to make the technology more readily available in the market place.

The Denture Cleanliness Index

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We outline a method for determining the quality of patients denture hygiene and assessing their compliance to given denture hygiene instructions.

The Denture Cleanliness Index aids in assessing patient's compliance to denture hygiene instructions. The DCI semi-quantitatively grades the severity of denture hygiene according to staining of the denture fit surface, which is stained using a plaque disclosing solution. Scores range from 0-4, with 0 equating to optimal denture cleanliness and 4 indicating calculus present.

The DCI has been utilised in 3 separate situations, primary care, secondary care, and tertiary district hospital care; and its clinical use has been evaluated.

Primary and secondary care DCI scores indicated denture hygiene was less than optimal at baseline, and improved after intervention at 1-month review. Similar results were observed for oncology patients seen in a tertiary care at a regional head and neck unit within a general hospital setting.

The DCI allowed for quick evaluation of denture hygiene, and allowed for determining compliance to given denture hygiene instruction.

Denture hygiene instructions as well as oral hygiene instructions worked well especially in patients that are treated in a multidisciplinary environment.

The DCI is a quick and simple method for assessing denture hygiene, patient compliance, and as an objective patient motivational tool.

Dentures are medical devices, and medico-legally, denture hygiene instructions (DHI) should be demonstrated to and by patients; the DCI can be utilised as a toolkit to aid in record keeping and delivery of DHI

Additional medium to long term studies with larger cohort sizes are needed to further evaluate the effectiveness of the DCI scoring system.

Implant Utilization and Time to Oral Rehabilitation in Conventional and Advanced Fibular Free Flap Reconstruction Techniques of the Maxilla and Mandible

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Conventional fibular free flap reconstruction (FFFR) for head and neck tumours (HNT) has often lead to suboptimal results and increased surgical times due to the imprecise planning. Over the past decade, FFFR involving the jaws has evolved in the planning, surgical reconstruction and oral rehabilitation techniques. This shift has been shown to improve the accuracy and reliability of the preoperative plan that can reduce the number of surgeries and lead to a more precise operative result. In the advanced technique, a virtual surgical plan for resection and reconstructive surgery is created using a 3D application and Surgical Design and Simulation (SDS) which will include osseointegrated implant oral rehabilitation. This pathway uses advanced digital computer programs, planning and rapid prototyped devices. Both the FFFR techniques aim to reconstruct the patient's defect, restore function and aesthetics with oral rehabilitation. The purpose of this study was to compare implant utilization and time to oral rehabilitation between conventional (non-SDS) and advanced (SDS) FFFR techniques for the treatment of HNT patients.

19 subjects with HNT were selected. Two examiners evaluated the outcome data using archival clinical records and photographs. Eight of the subjects were included in the SDS group and 11 were in the non-SDS group. In the SDS group, two of the eight subjects had a history of radiation therapy (RT) and six of the eleven subjects in the non-SDS underwent RT as part of their HNT treatment. The primary outcome measures assessed were implant utilization (difference in number of implants installed and number of implants connected to the implant prosthesis) and time to oral rehabilitation (time from FFFR to placement of implant prosthesis). Secondary measures assessed were patient demographics.

There was a significant difference in the implant utilisation between the two groups ($t = 2.456$, $df = 12$, $p = 0.03$, two-tailed). In the SDS group, 97% of the implants were utilized compared to 76% of the implants in the non-SDS group. Eight subjects in the SDS group were recorded to have 33 implants pre-planned for installation, 32 were installed and 31 were connected to implant prostheses. Eleven subjects in the non-SDS group had 36 implants planned to be installed, 49 were installed and 37 were connected to implant prostheses. For the time to oral rehabilitation, there was a significant difference between the two groups with average time of 9months for the SDS group and 55months for the non-SDS group.

This study showed a higher implant utilization and earlier time to oral rehabilitation in the SDS group. Longer follow-up data and a larger sample are needed to assess treatment outcomes in the advanced reconstructive technique. Future studies on health economics and health technology assessment for advanced techniques in jaw reconstruction and rehabilitation will further assist in bringing advanced jaw reconstruction techniques to the international HNT reconstruction community.

Evaluation of the shear bond strength of two adhesives to different dentine substrates

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The aim of this in vitro study was to evaluate the shear bond strength of a resin-modified glass ionomer and an etch-and-rinse bonding agent to normal and previously eroded dentine, with or without pumice surface treatment, used to bond direct resin composite restorations. 120 human dentine specimens were created and divided into eight equal-sized groups. Sixty specimens comprised a non-eroded group (NE) while the remainder were immersed in an erosive solution (E) before use. Prior to the bonding of a resin composite cylinder (3x3 mm), all specimens were stored in distilled water at 37° C. Subsequent composite bonding followed the application and curing of either Adper Scotchbond Multipurpose (3MESPE, St Paula, USA) or Vitrebond (3MESPE, St Paula, USA) directly to the dentine surface or following pumice treatment. All specimens were then stored for seven days in distilled water at 37° C prior to undergoing a shear bond strength test conducted using a universal testing machine at a crosshead speed of 1mm min⁻¹). The shear bond strengths varied between 6.75 ± 5.32 MPa (E pumice/ Vitrebond) and 2.81 ± 3.27 MPa (NE direct Vitrebond). A one-way ANOVA revealed significant differences ($P < 0.05$) between the groups. Pairwise analysis demonstrated a significant difference between E dentine treated with pumice/ Vitrebond and the NE directly placed Vitrebond groups ($P < 0.05$). Weibull analysis demonstrated that the most reliable bond to E specimens was achieved following pumice/ Vitrebond application (Weibull modulus= 7.50, SE= 0.21, mean shear bond strength= 6.75 ± 5.23 MPa), and for the NE specimens when using Scotchbond without surface treatment (Weibull modulus= 5.91, SE= 0.32, mean shear bond strength= 5.05 ± 3.54 MPa). Within the limitations of this study, Vitrebond may be considered a promising alternative to etch-and-rinse adhesives when treating erosive dentine wear and pumice pre-treatment may improve this bond.

Schottlander poster presentation abstracts

Mineral Grafting Versus xeno-grafting in small and medium loss of substance

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Code **001**

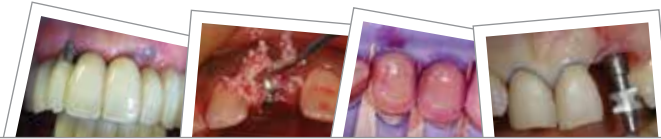
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The rehabilitation of different forms of edentulous, but also of the intra-oral substance losses requires a complex clinical algorithm, a great importance for the clinical result belonging to the specific preparation stage out of regard of the implantation. This study is part of a vast research quantifying through computer programs and 3D modelling the integration degree of augmentation materials in the case of rehabilitation of small and medium oro- maxilo -facial substance loss in the contextual biomechanical behaviour of different types of prosthetics.

The study aims at a comparative analysis of the usage of mineral grafting or of the xeno-grafting, selection dictated by the specific features of the clinical case and the therapy solution chosen. An important role in the selection of one category or the other of grafting is due to the cito-architecture of the intra-oral substance loss or the degree of re-absorption and the atrophy of the edentulous ridge, associated with the use of the collagen membranes or of the titan mesh. During the first stage, a mathematical model was created in order to reiterate the clinical situation of the case which is about to be solved. This was doubled by experiments on animals in order to evaluate the pressures exerted during different fixed or mobile therapeutic solutions, correlated with different types of applied implants, quantifying the degree of re-absorption and bone re-modelling post-grafting with one type or another of substitutes. The second stage aims a representative number of cases (300 patients) to which it was applied the therapy solution of election and the type of grafting according to the factorial sum which influences the therapy results. In this study we used 3D Robodent navigation system, designed so as to increase the degree of accuracy of the insertion of dental implants and to quantify the degree of bone density. The selection of mineral grafting or the xeno-grafting is dictated by the particularity of the clinical case. The positive evolution of the case is fully according to the type and number of implants used and, of course, the prosthetic solution chosen and anchored in the field of the fixed or mobile prosthetics in the field of the meto-ceramic or entirely non-metallic biomaterials.

The binominal material grafting – mucous-bone support structure influences in a decisive way the evolution of the clinical case. The success of the final result depends on the surgical technique used and the selected prosthetic solution. The use of the 3D navigation system ensures the real-time visualization of the intervention of implantation, accuracy, precision and reducing working time compared to classical technique.



The effects of bulk on the dimensional stability of Pattern Resin used in the construction of verification jigs

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Osseointegrated dental implants have been used successfully to replace missing teeth worldwide and have demonstrated excellent long-term clinical survival. However, several studies highlighted numerous mechanical and biological complications attributed to the lack of passive fit of framework of implant supported fixed prosthesis.

Several methods have been suggested to improve the fit of implant supported prosthesis. Verification jigs are routinely used to verify the accuracy of the master cast before the metal framework is constructed although several materials are used to fabricate verification jigs. yet their dimensional accuracy is unknown. The aim of the study was to determine whether the differing bulk of added polymerising pattern resin on implant abutments when constructing verification jigs affects accuracy in verifying the spatial relationship between multiple implants. Our objectives were:

1. To identify the amount of distortion due to polymerisation shrinkage of autopolymerising pattern resin on custom made verification jigs.]
2. To determine the bulk at which the pattern resin gives a better fit of the verification jig on the Master model.

Duralay resin was used to construct 10 verification jigs each of 4 and 8 mm height on a master model. Ten further jigs were constructed using a metal rod tagged to implant abutments with a minimal amount of Duralay. The dimension of these jigs was measured using Incise dental scanner to provide a comparison.

A one-way analysis of variance (ANOVA) at $p < 0.05$ showed a significant difference between the master model and 4 mm and 8 mm Duralay jigs. Whereas there was no statistical significant difference between the Master model and the Metal rod verification jigs.

Significance of Primary Stability for Successful Osseointegration of Dental Implants: a Systematic Review

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Primary stability is considered as one of the main factors in successful osseointegration of a dental implants and its long-term successful clinical outcome.

The objective of this systematic review was to evaluate the significance of primary stability on the success or survival of dental implants.

Electronic databases were searched from 1993 up to and including May 2014 using variations of key terms. Review findings regarding study results and quality were summarized in tables by topic, using the PRISMA Statement for reporting and the Cochrane bias assessment tool for quality assessment, respectively.

From the 942 titles (1018 before removing duplicates) obtained after the database search, 76 publications were identified as potentially relevant for the focused PICO question. The evaluation of abstracts yielded 8 studies eligible for full-text analysis. Five publications met the inclusion criteria and were included in this systematic review. Most of the included studies claim, in some way, that a high level of primary stability in delayed-loaded implants raises the probability of success of an implant while a low level does the reverse. However, none of the included studies have analysed the primary stability values to the success or failure of dental implants. Although, primary stability is supposedly associated with successful osseointegration, the results of the 5 included studies limit any definitive conclusion as none of them compare the success or survival between implants with high or low primary stability. Specific studies comparing implants placed with high and low primary stability are necessary to determine the significance of primary stability as a success indicator for delayed-loaded implants.

Oral Health related Quality of Life in denture Wearers Attending a Secondary Care centre

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Appreciating patients' difficulties with conventional dentures relies on more than physical examination of the prosthesis and oral anatomy. Quantifying these issues by means of oral health related quality of life tools may help communication between patient and clinician during treatment. We aimed to investigate the impact of wearing a removable prosthesis on patients oral health related quality of life. 131 consecutive patients who consented for the study completed an Oral Health Impact Profile (OHIP-14) questionnaire when attending Glasgow Dental Hospital for routine replacement of their conventional removable prosthesis. Participant demographics and denture information was also recorded. Ethical approval was granted for the study. The cohort mean age was 70.3 ± 11.4 years and included 35 (46%) males. Within the sample 90 participants wore a combination of complete dentures, the remaining 41 a combination of partial dentures. The mean OHIP sum was 17.8 ± 13.7 with a range of 0-56. Gender, denture type, fit, and quantity of saliva reached a level of significance (0.05) with OHIP sum. Participants aged 50-59 years experienced the greatest impact on quality of life (24.8 ± 13.6). Four-year-old dentures scored the greatest mean OHIP sum (20.4 ± 13.7). In general, as the number of remaining teeth decreased the greater the impact on quality of life. Many factors must be taken into consideration when considering the impact of removable prosthesis on patient's oral health related quality of life. Not all of these factors are within the clinicians' control.

The restorative management of cleft lip and palate

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Specialists in prosthodontics and restorative dentistry will often be challenged with the rehabilitation of patients who have a congenital cleft of the lip and/or the palate. The nature of the defect, missing or malformed teeth in the cleft region, arch-width discrepancies, reduced vertical dimension and the restorative status of the teeth present will often determine the complexity and restorative management of these cases.

Our aim is to present the restorative management of three multi-disciplinary cleft lip and palate cases treated in conjunction with Oral and Maxillofacial Surgery and Orthodontics and share with colleagues different treatment modalities available for this group of patients.

The three cases highlight a range of complexity these patients can often present with. All the patients were satisfied with the functional and aesthetic outcome of the treatment.

The rehabilitation of patients with cleft lip and palate is challenging and requires multidisciplinary care for optimal functional and aesthetic outcome. Moreover, with lack of robust evidence on management of these patients it is essential clinical experience is shared amongst specialists and junior trainees to increase the knowledge base.

The Oral Cancer Patient: rehabilitating the edentulous mandible with fixed superstructures

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Ablative surgery and resection of the mandible has a significant effect on the patient's function and facial aesthetics. There are a number of well-established reconstructive surgical options to restore hard and soft tissue. Dental rehabilitation is important as it can improve lower facial appearance, contour, support for the lower lip, speech and masticatory function.

Following surgical reconstruction of the mandible; lack of sulcal depth, reduced denture support area, bulky composite flaps and restricted tongue function are all challenges faced during dental rehabilitation. These factors can compromise the retention and stability of removable prostheses or make them impossible. The use of fixed implant retained superstructures can therefore have significant benefit in the rehabilitation of the mandibular arch. In this presentation, we will describe the use of fixed, implant supported superstructures to rehabilitate edentulous mandibles in surgically reconstructed oral cancer patients. The clinical stages involved will be discussed in detail and the advantages and disadvantages of using milled bars for the bridgework will be considered.

Management of cracked tooth syndrome - the use of direct resin composite

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Incomplete tooth fractures are commonly encountered in general dental practice, and it is estimated that one posterior tooth fractures in 23 adults each year.

Symptoms are often diffuse and non-specific, ranging from sensitivity to hot and cold, to a more specific pain on biting. These symptoms have given rise to the term cracked tooth syndrome (CTS). The diagnosis and treatment of teeth with CTS can be a particular challenge for the dental practitioner.

This case describes a patient who presented with poorly localised pain on biting from the upper right quadrant.

On examination the upper right quadrant was lightly restored, with no clinical or radiographic pathology of note. A tooth slooth indicated the 15 as the source of pain, and transillumination suggested a palatal cusp fracture. Results were inconclusive, so the 15 was ortho-banded, and on review, the symptoms has resolved. The 15 was diagnosed with CTS. The tooth was treated with a cusp covered direct resin composite. This was completed using Filtek Supreme XTE Universal, under rubber dam, with a Palodent Plus matrix system. On review the patient's symptoms had resolved. The diagnosis and treatment of teeth with CTS can be difficult. Treatment is particularly difficult in premolars, which, due to their size and position, provide minimal coronal surface area, and require aesthetic restorations.

There are limited long-term clinical studies on the success of restorative treatment for teeth with CTS. Several therapies have been described, including root treatment and full cuspal coverage, bonded cast or ceramic onlays, and bonded amalgam.

There is a growing body of evidence to support the use of direct resin composite for the restoration of teeth with CTS. Dental practitioners should be aware that direct resin composite can successfully be used to treat teeth with CTS.

An Investigation into the Accuracy of Two Currently Available Dental Impression Materials in the Construction of Cobalt-Chromium Frameworks for Removable Partial Dentures

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Removable partial prostheses are commonly constructed today to compensate for the effects of tooth loss, which include compromised appearance, speech and mastication. Irrespective of declining levels of partial edentulousness (Adult Dental Health Survey 1998), the era of removable partial prostheses does not seem to be drawing to an end.

Irreversible hydrocolloid materials enjoy considerable use as impression materials for the provision of master casts and subsequent cobalt chromium framework

construction. However, contemporary wisdom recommends the use of addition-cured polyvinylsiloxane. There is sparse literature to support or reject the use of irreversible hydrocolloid as an impression material for cobalt chromium framework construction.

This research investigated the potential suitability of irreversible hydrocolloid as an impression material for cobalt chromium framework construction. This was performed by recording five impressions, in customised trays, using alginate, and five impressions using addition-cured polyvinylsiloxane, of a silver-plated cast, which represented an individual with a Kennedy Class II Modification I scenario. The resultant ten casts, and the silver-plated master cast, were profiled using a contact co-ordinate measuring machine, yielding ten highly accurate and reproducible digitised topographical scans. These digitised scans were superposed to quantify the differences between surfaces between the different casts in all combinations. Within the limitations of this study, this data highlighted the variability of reproduction of alginate and silicone as impression materials, as well as quantification of the differences between surfaces between casts derived from each impression material.

The investigation revealed that digitised scans of casts obtained from alginate and addition-cured polyvinylsiloxane impression materials, when superposed, exhibited a high degree of coincidence. However, certain features, such as undercut areas, resulted in a lower degree of coincidence of scans.

In light of these findings, irreversible hydrocolloid appears to be a viable alternative to addition-cured polyvinylsiloxane as an impression material for cobalt chromium framework construction.

An alternative method of speech bulb fabrication

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Soft palate defects resulting from surgical intervention can have significant functional, psychological and social implications for patients. They can also present as considerable challenges for surgeons to reconstruct. Obturators are used to improve mastication, speech, and swallowing through restoring the separation of the oral and nasal cavities. The conventional method of constructing a soft palate obturator involves fabricating the definitive denture prosthesis upon which a retentive loop is added. It would extend into the soft palate defect. A functional impression of the soft palate defect can then be recorded and the impression material would then be converted to acrylic resin. This case describes an alternative technique in which the functional impression of the soft palate defect in an edentulous patient is taken earlier in the process. An acrylic base plate with a retentive loop is constructed on the master cast. A functional impression of the palatal defect is then taken and the definitive heat-cured denture base and speech bulb is fabricated. The jaw registration and try in stages can be completed on the denture base. The definitive acrylic teeth can then be processed onto it. The advantage of the method described is that the speech bulb component of the obturator can be evaluated at a very early stage of the process and the occlusal registration can be recorded on a stable, rigid cured base plate.

Combined periodontal and prosthodontic management of Peri-Implant Disease: a case report

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Peri-implant diseases involve inflammatory lesions in the tissues adjacent to osseointegrated dental implants and are the result of the host response to bacterial biofilms. Peri-implant mucositis describes reversible inflammation limited to the soft tissues surrounding an implant where as peri-implantitis affects both the soft tissues and bone and can ultimately lead to loss of the implant. Management of peri-implant mucositis is centred on the removal of plaque and calculus deposits and effective maintenance of oral hygiene.

A number of different strategies for the management of peri-implantitis have been proposed which include various antimicrobial treatment regimes combined with both non-surgical and surgical debridement, sometimes with the addition of resective or regenerative techniques. The efficacy of these has been the subject of a Cochrane review, however it was concluded that there was too little evidence to suggest which intervention was most effective. This poster details the management of a patient who presented with peri-implantitis in the upper anterior region. The implants had been placed many years earlier into grafted bone and restored with fixed restorations. Non-surgical and surgical treatments were provided which resolved gingival inflammation and the other clinical signs of infection. However, due to altered gingival architecture in the area the aesthetic result was sub-optimal. This was successfully addressed by the use of a removable acrylic gingival veneer.

This case demonstrates some of the challenges that treatment of peri-implantitis can present, particularly when it occurs in the aesthetic zone.

Prosthodontic clinical audit in a primary care educational environment

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Clinical audit lies at the centre of clinical governance. At the University of Portsmouth Dental Academy (UPDA), we teach our final year students not only enhanced clinical skills but also the fundamental elements of clinical governance. Final year KCLDI students attend UPDA for four clinical days per month for 10 months as preparation for primary care. The total input into their dental programme is less than 3% of educational time. We therefore invite students to devise self-directed clinical audits if they wish to engage with this micro-educational opportunity and staff act as mentors. In two years eleven audits and two repeat audits have been completed. Two audits are presented as exemplars of the students' "audits in action". "Efficiency of denture provision" and "Crown and bridge laboratory work". The removable prosthodontic audit revealed that the majority of audit standards established were met; 100% of denture discharges supervised by clinical staff, 0% need for denture remake and 100% of dentures delivered to patients. 90% of dentures were constructed in fewer

than 8 appointments and 97% of dentures had two or less reviews. The audit of the laboratory work from a commercial laboratory revealed that 9% of work had to be returned. Of that 26% was recorded as deficient margins and 13% was due to impression errors. 15% were recorded as poor fit. Overall the majority were due to clinical errors. Clinical audit is presented to the students in a dynamic self-determining manner encouraging participation, rather than coercion, thus providing our junior colleagues a powerful opportunity to realise the excitement and patient benefit of well-planned and executed clinical audit in primary care.

Bulk-fill flowable composite base materials; where is the evidence? A systematic literature review investigating the validity of manufactures' claims

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Dentsply reports 25 million applications of its SDR material since 2009. Competitors now exist, including Venus Bulk-Fill, Filtek Bulk-Fill Flowable and X-tra base. Manufacturers highlight features including; reduced polymerisation shrinkage stress, reduction in internal and marginal voids, depth of cure up to 4mm, optimum degree of conversion and reduction in cuspal deflection and microleakage.

We aimed to assess the quality and level of evidence available to support manufactures' claims for bulk-fill flowable composites in relation to depth of cure and microleakage.

In January 2015, an electronic search of MEDLINE and EMBASE databases was undertaken, via Ovid SP, using the broad search term "bulk fill". In addition, an electronic search of the SCIENCEDIRECT database was completed using the term "bulk fill flowable composite". The resulting abstracts were hand checked for subject matter and full text articles were obtained for those relating to "depth of cure" and "microleakage". Following critical appraisal of the full text articles, data extraction was performed and the results tabulated where possible. The database searches found 190 articles via MEDLINE and EMBASE and 304 articles via SCIENCEDIRECT. 36 articles were found to meet the inclusion criteria. These papers were then critically appraised. The results supporting and contradicting manufactures' claims are summarised using tables and graphs. There is great diversity in both the quality and outcomes of the predominantly laboratory based studies. There is evidence to both support and question manufactures' claims regarding both the depth of cure and microleakage.

Evaluation of Experimental Coating to Improve the Zirconia-Veneering Ceramic Bond Strength

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Technical complications for core-veneered zirconia restorations have been a major reason for failure of the restorations. One of the most common complications is the chipping of veneering ceramic or delamination of the veneer from its core. The incidence of chipping has been reported to be between 15 to 25%. The purpose

of the study was to evaluate the shear bond strength (SBS) between zirconia and veneering ceramic following different surface treatments of zirconia. The efficacy of an experimental zirconia coating to improve the bond strength was also evaluated. Zirconia strips were fabricated and were divided into four groups as per their surface treatment: polished (control), airborne-particle abrasion, laser irradiation, and application of the experimental coating. The surface roughness and the residual monoclinic content were evaluated before and after the respective surface treatments. A scanning electron microscope (SEM) analysis of the experimental surfaces was performed. All specimens were subjected to shear force in a universal testing machine. The SBS values were analysed with one-way ANOVA followed by groupwise comparisons. The fractured specimens were examined to observe the failure mode. The SBS (29.17 MPa) and roughness values (0.80) of the experimental coating group were highest among the groups. The residual monoclinic content was minimal (0.32) when compared to remaining test groups. SEM analysis revealed a homogenous surface well adhered to an undamaged zirconia base. The other test groups showed destruction of the zirconia surface. The analysis of failure following bond strength testing showed entirely cohesive failures in the veneering ceramic in all study groups. The experimental zirconia surface coating is a simple technique to increase the micro roughness of the zirconia surface, and thereby improve the SBS to the veneering ceramic. It results in the least monoclinic content and produces no structural damage to the zirconia substructure.

Dental management of Head and Neck Cancer patients in Northern Ireland: a retrospective analysis

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Head and neck cancer principally affects the oral cavity, nasal cavity, sinuses, salivary glands, pharynx and larynx. Approximately 8,800 people are diagnosed with such a malignancy in England and Wales every year. The aim of this retrospective analysis was to determine the oral health outcomes and standard of care provided for 96 head and neck oncology patients referred for pre-treatment dental assessment to the Centre for Dentistry, Queens University, Belfast between June 2013 and November 2014. Comparison was made with published guidelines and a review of the relevant literature. Standards were set using guidelines from the Royal College of Surgeons of England, the National Institute for Clinical Excellence, and the British Association of Head and Neck Oncologists. Information on the patient's planned oncology treatment, dental assessment, and dental treatment plan, was determined from their dental notes and their electronic care record. Only 3 patients were assessed within the recommended 7 days post-diagnosis. In terms of dental pathology, 43% were diagnosed with caries, 46% periodontal disease, 10% periapical pathology, and 7% showed evidence of toothwear. Ten patients were edentulous. Ninety-one (95%) had planned radiotherapy with 39 (43%) of these patients requiring at least one extraction. Extractions completed within the Centre were carried out on average 11 days prior to the start of radiotherapy. Eight had extractions within the high-osteoradionecrosis-risk 10-day interval period pre-radiotherapy, whilst 14 had extractions post-radiotherapy. Forty-one (43%) were awaiting or had had surgery within the oral cavity. 72% of patients were registered with a GDP.

Given the high prevalence of pre-existing oral disease amongst head and neck cancer patients, prompt dental assessment and treatment intervention is vital. Efforts aimed at improving the care pathway are on-going within the Restorative Department through the implementation of a mandatory referral pro-forma and a dedicated assessment clinic.

The topography of polyamide denture base material

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The aim of the study was to investigate roughness and surface topography of a polyamide denture base material (Valplast®) compared to conventional polymethyl methacrylate (PMMA).

A polyvinyl silicone mould (Duplicating material Pourable Silicone® Chaperlin & Jacobs, Sutton, UK) was used to fabricate the wax patterns for the specimens. Two groups of ten specimens were constructed: Group D was compression-moulded heat-polymerised PMMA Diamond D® (Keystone Industries, NJ, USA) and Group V was injection-moulded heat-polymerised polyamide Valplast® (Valplast Int. Corp., NY, USA). Specimens from each group were randomly divided into 5 subgroups according to surface treatment; untouched surface (control), pumiced, polished, machined, and chairside polished group. Surface topography and roughness (Sa, Ra) of polyamide (Valplast®) specimens were measured using white-light confocal profilometry against a control (PMMA) after various surface treatments. Scanning Electron Microscopy investigations were undertaken to assess the topography of the surfaces. Numerical data was handled using non parametric tests.

The roughness measurements (Ra, Sa) showed statistically significant differences in the surfaces investigated and the SEM study showed a surface that is a unique and unusual surface in dentistry. The surface treatment of Valplast® was smoothest as a polished surface, while machining and chairside adjustments increased surface roughness significantly. Machining and chairside adjustments increased surface roughness of Valplast® significantly. The Clinical relevance of the results demonstrates the difficulty of obtaining a smooth surface of polyamide denture base materials after adjustments, even after polishing with recommended chairside adjustment kits.

An investigation into the effect of finishing and polishing protocols on the surface roughness and characteristics of two different ceramic systems

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The recent introduction of monolithic full-contour all-ceramic restorations raises the question of grinding damage elimination, following intra-oral adjustment of the restorations via the processes of finishing and polishing. This is particularly applicable to zirconia-based restorations (due to the difficulty of polishing zirconia) and the recently introduced novel resin matrix ceramic composite material, due to the limited

amount of research and literature based on this subject. Ultimately, the appropriate surface finishing protocol for different types of ceramic systems is relatively unknown.

The aim of this in vitro study was to investigate the effect of various finishing and polishing protocols on the surface roughness and characteristics of a commercially available CAD/CAM yttrium oxide stabilized zirconia material (Ivoclar Vivadent IPS e.max ZirCAD) and a novel commercially available CAD/CAM resin matrix ceramic composite material (VITA Zahnfabrik Enamic).

Thirty-two specimen plates of each material were fabricated. These plates were divided into four equal groups containing 8 specimen plates each. The first group acted as a control and contained unadjusted/untouched plates. Plates in the remaining three groups were ground in order to simulate intraoral adjustment and subsequently polished using graded diamond burs, graded aluminium oxide coated polyester discs and diamond impregnated silicone points (with diamond polishing paste) respectively. Non-contact optical profilometry was used to obtain mean surface roughness values (Ra) and SEM was used to qualitatively analyse the specimens' surface characteristics.

All three of the polishing techniques tested created an increase in mean surface roughness relative to the material's control group, which was statistically significant using ANOVA and post hoc Tukey testing ($p=0.05$). Diamond bur polishing resulted in the highest mean surface roughness, followed by silicone point polishing and finally aluminium oxide disc polishing.

It is recommended that graded grit aluminum oxide coated polyester discs be used sequentially for polishing of these restorative ceramic materials. However the surface roughness created by such polishing discs is still statistically significant when compared to an unadjusted/untouched surface. Ultimately, the ideal surface is one that is left untouched or unadjusted.

A displaceable maxillary alveolar ridge – fibrous replacement or gingival overgrowth?

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We document a case report of a 73-year old female, who presented with a poorly retained maxillary denture and failing dentition in the mandibular arch. The focus of the poster concerns the resolution of displaceable tissue on the edentulous maxillary alveolus, initially diagnosed as a fibrous replacement ridge (FRR). Furthermore, the poster will review relevant literature and consider how this finding may impact upon assessment and treatment of patients presenting with displaceable tissue in edentulous regions, whom are typically diagnosed with FRR.

Initial examination of the soft tissues identified a displaceable maxillary alveolar ridge and drug-induced gingival overgrowth of the anterior mandibular dentate region. During construction of the complete maxillary prosthesis various techniques were utilised to address the displaceable ridge. However, following a change to her anti-hypertensive drug regime (cessation of Amlodipine) resolution of the displaceable tissue in the edentulous maxilla was observed, suggesting a drug-related pathophysiology not characteristic of FRR.

There remains a dearth of research regarding drug-induced gingival overgrowth affecting edentulous regions. A literature review identified animal studies and case reports detailing this phenomenon and questioning the role of teeth/PDL in gingival overgrowth. However, no previous research considers the completely edentulous arch and none consider possible resemblance to FRR. Many studies investigate drug-induced gingival overgrowth in periodontics but those in prosthodontics are lacking. This is therefore an interesting area for further research in this field.

Whilst research on the presence of FRR is well evidenced, it remains possible that an edentulous alveolar ridge may display gingival overgrowth, possibly mimicking a mild-moderate FRR. Indeed, it may be beneficial to consider this in patients prescribed drugs which may induce gingival overgrowth. It may also be prudent to further investigate drug-induced gingival overgrowth as a possible mechanism for the presentation of some displaceable ridges in edentulous regions.

Audit of Dental Assessments in Head and Neck Oncology Patients at the Royal Preston Hospital

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Oral cancer has a global incidence of approximately 400,000 cases annually and survival rate of 60%. The pathway from diagnosis to treatment requires a multidisciplinary approach. Restorative dentistry plays a pivotal role in pretreatment dental assessment (DA) and rehabilitation. The following information was ascertained for head and neck oncology patients:

1. Period from referral for DA to the initial restorative consultation
2. Number of patients requiring extractions prior to surgery +/- chemo-radiotherapy
3. Period from referral for extractions to the procedure.

Patients included were referred from Maxillofacial Surgery, ENT and Oncology between October- mid December 2013. Data was obtained from SCR, the oncology department and clinic lists. Statistical software was used for analysis.

A total of 32 patients were included. Of these, DA was carried out in 22% patients pre-surgery, 59% patients post-surgery prior to radiotherapy and 19% patients prior to radiotherapy where surgery was not indicated. Patients were seen for a DA in Restorative Dentistry within an average of 7.6 days (range 0-18) and of these 28 (87.5%) required extractions. 61% patients had extractions under local anaesthesia and 32% under general anaesthesia at the Royal Preston Hospital. 7% patients had extractions at their referring hospital.

Pre-treatment dental assessment was carried out, on average in a week's time. In addition, 100% of patients were provided preventive advice as recommended by BAHNO. Importance of timely DA, extractions and preventing delay in definitive treatment was highlighted. The audit helped in streamlining the service further. Protected extraction appointment slots were facilitated. A timed pathway is now complete and currently in use at the RPH.

Management of Diminutive Upper Lateral Incisors using Indirect and Direct Composite Resin

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Hypodontia is the developmental absence of one or more teeth affecting the primary and/or permanent dentition. In the UK it is estimated to have a prevalence rate of 4-4.5% and a higher predominance in females. It is associated with microdontia, which commonly affects the upper lateral incisors that tend to have ovate tapered crowns. This clinical presentation has restorative implications concerning aesthetics, which can have unforeseen psychological impact on the patient. We aimed to demonstrate and compare the use of direct and indirect composite resin as a suitable first-line treatment option in hypodontia teeth. We used a case series of patients with diminutive upper lateral incisors treated at Guy's Hospital using direct or indirect composite resin techniques. Current treatment options for diminutive upper lateral incisors include direct or indirect composite resin, porcelain veneers, porcelain-bonded to metal or all-ceramic crowns. Decisions regarding the most appropriate option are dependent on a variety of interrelating factors such as age, tooth size, angulation, space and crown height. Porcelain veneers may be inappropriate in young patients as the gingival margin is not fully mature, meaning over time the restoration margin can become exposed and unsightly, and cannot be added to. Composite resin offers a conservative approach and predictability in achieving optimum aesthetics. There are no known long-term trials of success using composite resin to restore diminutive teeth. However, composite resin has shown to have a median survival time short of 6 years when placed in localised anterior toothwear cases.³ Indirect composite resin can be used as an alternative to the direct technique offering the advantage of clinical time efficiency, establishing a better emergence profile and can be undertaken with minimal or no preparation, therefore maintaining maximum surface area of enamel for adhesive bonding.

Reconstruction of a Maxillectomy Defect with a Free Iliac Crest Bone Graft

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Maxillary defects are traditionally reconstructed with prosthetic obturators or free tissue transfer techniques. Malignant lesions often require post-operative radiotherapy, potentially limiting reconstructive options. However, a maxillectomy undertaken in the management of benign tumours may enable a wider spectrum of reconstructive potential. Here, we present a case of maxillary defect restoration using a free iliac crest bone graft and implant placement.

A 36-year-old female presented with an odontogenic myxoma in the right maxilla in 2006. This benign tumour was treated with a maxillectomy. Palatal and alveolar mucosa was preserved and soft tissue closure of the oro-antral communication took place. A chrome cobalt denture restored initial function and aesthetics, but the patient

preferred a long-term, fixed, restorative solution. Following full consideration of all available options, a decision was made to undertake a free iliac crest graft placed between the pterygoid plates and upper canine region. To ensure procedural accuracy, bone was harvested using a stent created from a 3D model. The graft, secured with two screws, was placed in a soft tissue envelope between the mucosa and scar tissue that had formed. After three months, a standard first stage implant was placed and excellent primary stability was achieved. Implant restoration took place successfully. There was no evidence of odontogenic myxoma recurrence. Controversy exists regarding the use of vascularised versus non-vascularised bone grafts for bony defect reconstruction. Vascularised flaps have good survival rates, but increased risk of morbidity. Free bone grafts may reduce these risks, benefitting defects where radiotherapy is not required. Maxillary defects do not generally lend themselves to free grafting. In selected cases, however, a second procedure involving a simple bone graft in a soft tissue envelope may be considered prior to restorative rehabilitation.

A survey to compare the use of intra-radicular posts amongst dental practitioners

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Restoring a root filled tooth with limited coronal tooth tissue is challenging. Dentists are presented with a wide variety of intra radicular posts and materials to choose from. These include both metal and non-metal based posts systems in both cast and prefabricated forms. The indications for placing a post are well known, as are the factors affecting their survival. However, it is not clear what posts dentists choose to use and when to restore teeth and the rationale behind their selections. This study used a survey distributed between two different target populations to find any differences in the use of intra-radicular posts.

There were no statistically significant differences between the two groups, in selecting intra radicular posts according to particular clinical scenarios or the types of post systems used in their own clinical practice. It was found that non clinical factors, such as the year of qualification of the dentist and post graduate qualifications was shown to influence the choice of intra radicular post systems. It can be concluded that whilst there is no significant difference between the two groups of dentists with regard to their use and selection of intra radicular post systems, there is a greater effect than previously thought by non-clinical factors on the use and selection of post systems.

Conference dinner

The conference dinner will be held at The Pullman St Pancras Hotel on Friday 27th March at 7.00pm

Dress Code: Lounge Suit

After dinner speaker

Dr Phil Hammond is our guest after dinner speaker on Friday 27th March. He is a doctor, journalist, broadcaster, campaigner, comedian and a welcome guest to the 2015 London bsspd Conference. He qualified as a GP in 1991 and currently works in a specialist NHS centre for children and adolescents with chronic fatigue syndrome/ME. Phil is also a presenter on BBC Radio Bristol and has been Private Eye's medical correspondent since 1992, campaigning for patient empowerment, open data in healthcare and for the NHS to be honest and transparent about the harm it causes as well as the good it does. In 2012, he was shortlisted with Andrew Bousfield for the Martha Gellhorn Prize for Investigative Journalism for a Private Eye Special Report about the shocking treatment of NHS Whistleblowers. Phil has also won awards for broadcasting, popular health journalism, comedy and teaching. He is Vice President of the Patients' Association and a patron of Meningitis UK, the Doctors' Support Network, the Herpes Viruses Association, Patients First and Kissing It Better. Phil is well-placed to provide an insightful after dinner speech - which should entertain and educate conference delegates in equal measure. BSSPD looks forward to welcoming Phil.



CPD certificates

This meeting will provide 12 hours of verifiable CPD in total (6 hours Friday 27th March & 6 hours Saturday 28th March). Delegates wishing to obtain verifiable CPD must sign in on both days to be awarded the hours allocated for that day.

Following the conference, delegates will receive an email containing a link to the conference on-line feedback form. Once this form has been completed, the CPD certificate can be downloaded.



Progress and Precision in Prosthodontics

The British Society of Prosthodontics 2016 Annual Conference

Friday 18th & Saturday 19th March 2016

Bridgewater Hall, Manchester

The 2016 Annual Conference will take place in Manchester on Friday 18th & Saturday 19th March. The conference will be held at the iconic Bridgewater Hall which is centrally located with excellent transport links having direct rail links from the city centre to most parts of the UK, and an international airport only a short metro journey from the city centre. There is a huge range of hotels to suit every budget – no frills rooms to pampered exclusivity!

The theme for the conference will be 'Progress & Precision in Prosthodontics', with the aim being to show how advances in technology and greater understanding of disease processes mirror a background and history of precision work. Topics to be covered will include prosthodontics planning, digital scanning and milling, attachments and copings, and oro-facial prostheses. Confirmed speakers include Dr Chris Orr, Dr Anil Shrestha, Dr Nigel Rosenbaum, Prof Julian Yates & Dr Rutger Schepers.

It has been many years since the conference came to the city and it is a great privilege to be able to showcase Manchester and its proud industrial heritage (and apparently there are a couple of football teams here!) Given the increasingly prevalent use and discussion of implants in prosthodontics, I cannot help but reflect on the fact that screw standardisation has its roots (sorry, no pun intended) in Manchester with the work of Whitworth, whose name and influence, along with that of Turin, Dalton, Rutherford, still abounds. The conference dinner will take place in the Town Hall, a tremendous venue steeped in history, just a few minutes walk from the conference venue. There also are many attractions to visit in Manchester, both historical and contemporary, from museums, galleries and country houses, to boutique and big-brand shopping.

We look forward to seeing you all in 2016.

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The society would very much like to thank our most generous sponsors to whom we owe a great deal. Please make time to visit their stands and enter the prize draw.