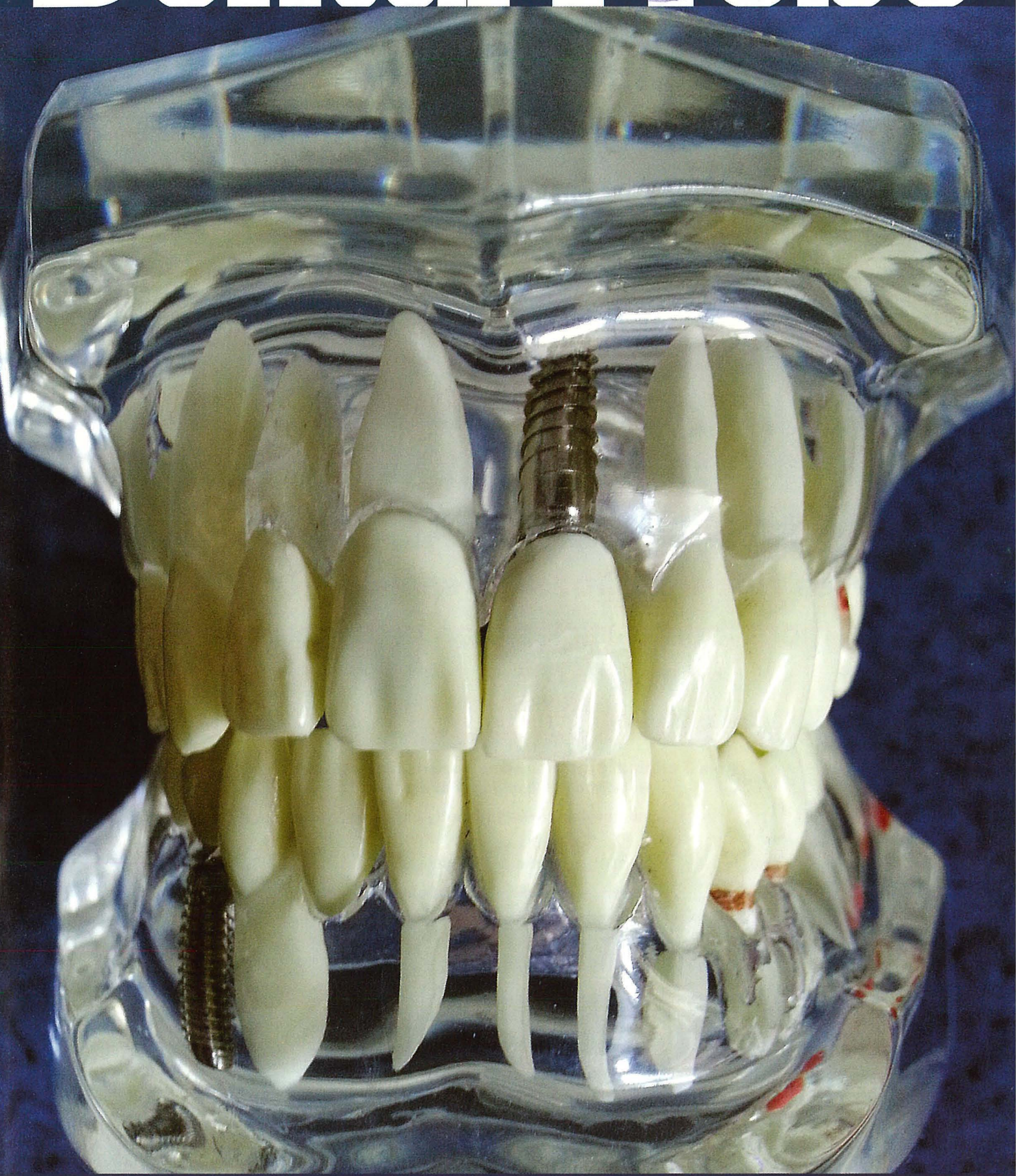
ISSUE
47
SEP13

The Dental Probe

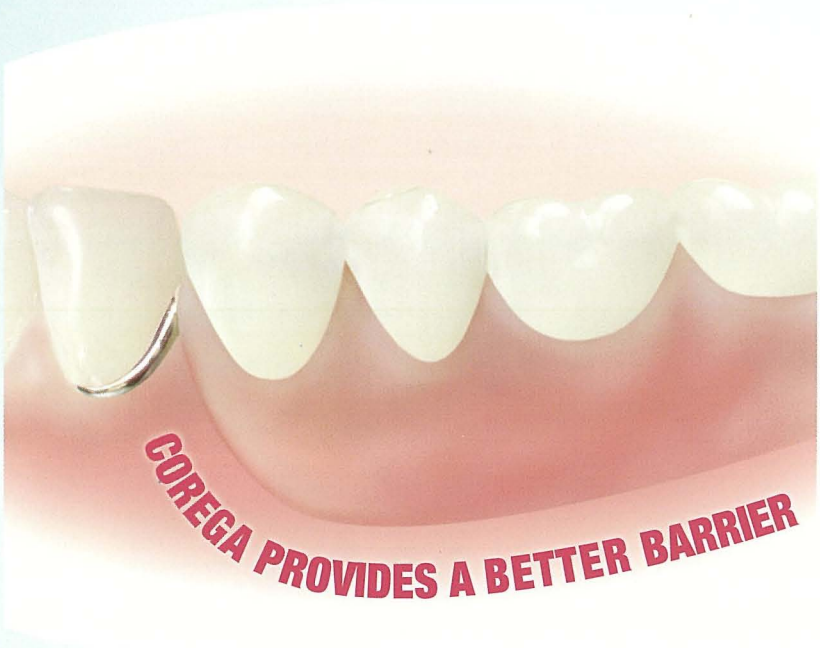
The Maltese Dental Journal



The #1 issue

among full and partial denture wearers?

Food trapped under their dentures.



NEW CLINICAL DATA

proves zinc-free Corega® seals out up to 74% more food particles than no adhesive.[1,2]

NEW DATA

from 3 clinical studies among patients with well-made, well-fitting* full and partial dentures

Zinc-free Corega® significantly improves

- Food occlusion[1,2]
- Comfort, confidence and satisfaction[2,3]

*Determined by clinical assessment using the Kapur index.

References: 1. The Use of Soluble Denture Adhesives to Prevent Food Particles From Becoming Trapped Under Full Upper and Lower Dentures, Study L3920658, 2010. Publication in progress. **2.** The Use of Soluble Denture Adhesive to Block Food From Migrating Under Removable Partial Dentures, Study L3920659, 2009. Publication in progress. **3.** A Study of Denture Adhesives in Well-Fitting Dentures, Study L3510566, 2008. Publication in progress.

ISSN 2076-6181

Editorial

DENTAL ASSOCIATION OF MALTA
The Professional Centre,
Sliema Road, Gzira
Tel: 21 312888
Fax: 21 343002
Email: info@dam.com.mt

By Dr David Muscat

Dear colleagues,

Summer is over and I hope you all had a well deserved break. The latest dental events in Malta are listed on the right.

As from 25th October 2013 all dentists and doctors need to have professional liability insurance. According to directive 2011/24/EU of March 2011 on' the application of patients rights in cross border healthcare', the directive has to be in place by 25 October 2013 in all EU member states to comply with the directive. They shall forthwith inform the commission therof (article 21)

There has to be clear information on invoices, prices, as well as authorization or registration status ,insurance cover or other personal or collective protection with regard to professional liability.

The cover photo has been kindly supplied by Dr Kristian Vella. Besides coping with his dental practice Kristian is also a great photographer and an accomplished musician.

Best regards,

David

Dr David Muscat B.D.S. (LON)
Editor / President, P.R.O., I.R.O. D.A.M.

RECENT/PLANNED EVENTS

12 JUNE
DAM Skyfall lecture by Professor Victor Grech at the Maritime Museum followed by dinner at Don Berto sponsored by Abbott.

26 MAY
Ziplining event at Mtahleb

19 JUNE
CADCAM CEREC event at Bart Enterprises Ltd.

25 JUNE
Arcoxia event at Corinthia Hotel sponsored by Associated Drug Company

18 JULY
GUM lecture and BBQ at Corinthia San Gorg

18 JULY
DAM outing and talk by Dr Keith Buhagiar at St Leonards cave chapel in Lunzjata limits of Rabat

10 OCTOBER
Wine tasting at Meridiana – sponsored by Ganado and Associates

23 OCTOBER
Lecture by Dr. Thomas Attard gastroenterologist with reception

20 NOVEMBER
Dr Alan Kendall lecture on Dental Hypnosis sponsored by Sanofi at Guze Restaurant

Advertisers are responsible for the claims they make in their ads and the opinion of the advertisers and editors of articles in the issue are not necessarily the opinion of the DAM.

DAM FOOTBALL QUIZ

ST APOLLONIA 2013-02-10

With which football team did the following recently sign up with?

1. David Beckham
2. Mario Balotelli
3. Alexander Doni
4. Christopher Samba
5. Zdracko Kuzmanovic
6. Mattia Cassani
7. Rolando
8. Udo Nwoko

Which is the 'Stadium Of light?'

Who does Chris Smalling play for?

Who once scored with his hand and said 'it was the hand of God'

ANSWERS:

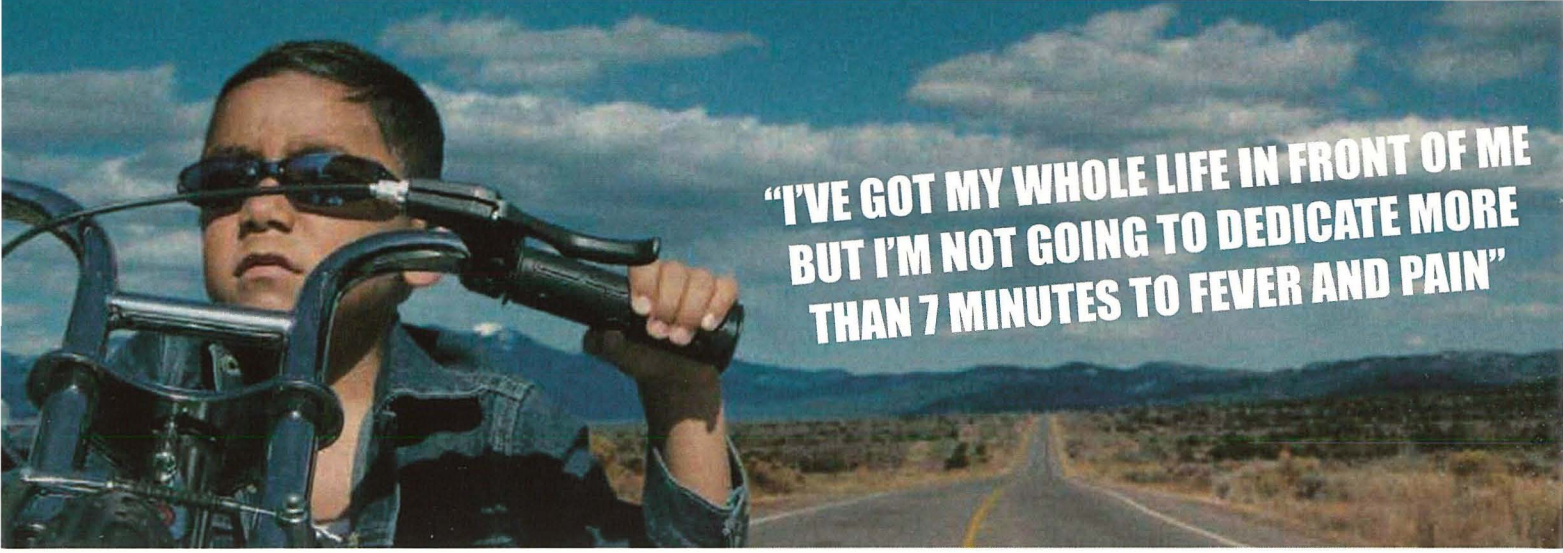
1. PSG
2. Milan
3. Botafago
4. QPR
5. Inter
6. Genoa
7. Napoli
8. Floriana

Stadium of light is Sunderland

Chris Smalling plays with Man Utd

Maradona

The first prize went to Dr Ray Catania, a past football player himself who is very active in the Naxxar Football team committee.



ALGIDRIN 600

Ibuprofen Lysinate in single dose sachets

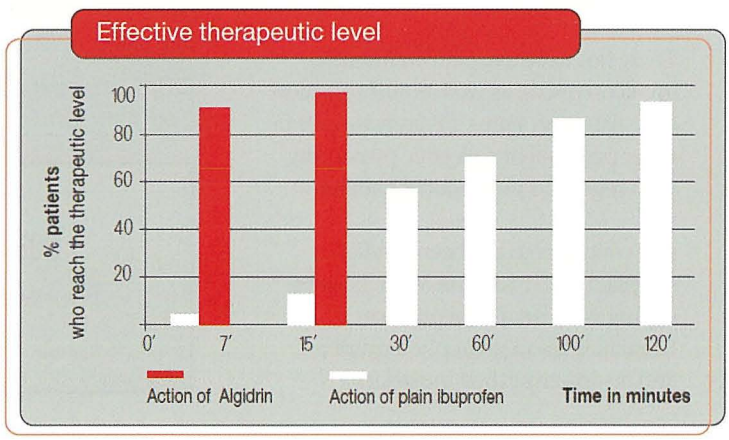
Less time to alleviate the pain

Algidrin ibuprofen lysinate **reaches plasma levels faster** than plain ibuprofen:

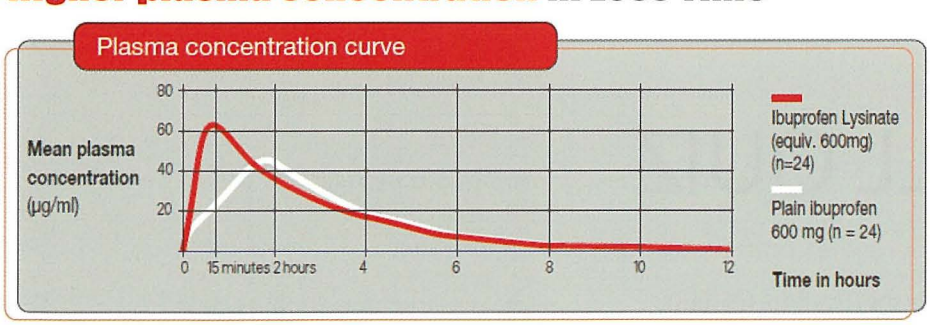
- Effective in **92% of patients at 7 minutes.**(1)

- And **effective in 100%** of patients **at 15 minutes.**(1)

Meanwhile, **plain ibuprofen needs nearly 2 hours** to achieve the same results.(1)



Higher plasma concentration in Less Time



For further info on Algidrin kindly refer to SPC or contact your Europharma Medical Representatives on info@europharma.com.mt

europharma FARDI

(1) Portolés A, Vargas E, García M, Terleira A, Rovira M, Caturla MC, Moreno A. Comparative Single-Dose Bioavailability Study of Two Oral Formulations of Ibuprofen in Healthy Volunteers. Clin Drug Invest 2001; 21 (5): 383-389.

CED EU INFO

Issue 3 – August 2013

SECTION I – EU TOPICS RELEVANT TO THE DENTAL PROFESSION

DIRECTIVE ON THE RECOGNITION OF PROFESSIONAL QUALIFICATIONS (PQD)

On 26 June 2013, the Committee of Permanent Representatives (COREPER) in the Council of the European Union endorsed the agreement reached on 12 June 2013 between the Irish Presidency of the Council and the European Parliament's representatives on the review of the Professional Qualifications Directive.

The aim of the review of the Directive is to make the current system of mutual recognition of professional qualifications more efficient in order to obtain greater mobility of skilled workers across the European Union.

The main features of the agreement with regard to the dental profession include the basic dental training comprising at least five years of study, which may in addition be expressed with the equivalent ECTS credits and consisting of at least 5 000 hours of full-time theoretical and practical training, a possibility for a Member State to refuse partial access to the profession on the grounds of public health concerns, an obligation for competent authorities of Member States to alert, through a specific alert mechanism, the authorities of other Member States about professionals who are no longer entitled to practice the profession as a result of a disciplinary action or criminal conviction and a possibility for competent authorities of Member States to conduct language controls in order to verify that the professionals are in possession of necessary language skills.

The plenary vote in the European Parliament is scheduled on 7 October 2013.

GENERAL DATA PROTECTION REGULATION

During the meeting of the European Parliament's Civil Liberties, Justice and Home Affairs (LIBE) Committee on 9 July 2013, the rapporteur for the General Data Protection Regulation, MEP Jan-Philipp Albrecht (Greens, Germany), informed that the vote on his draft report was postponed to autumn due to the very high number of amendments tabled and tough negotiations.

He also informed that there has been progress in finding compromise and that the trialogue negotiations with the Council might start in autumn after the vote in LIBE Committee.

The vote in plenary is scheduled on 15 January 2014.

MEDICAL DEVICES

The vote on the future Medical Devices Regulation which was initially planned to take place in the European Parliament's Environment, Public Health and Food Safety (ENVI) Committee on 10 July 2013 has been postponed to 18 September 2013.

The MEPs remain divided over the pre-market approval procedure proposed by the rapporteur, MEP Dagmar Roth-Behrendt (S&D, Germany), reprocessing of singleuse medical devices and notified bodies.

In the meantime, the European Parliament's Internal Market and Consumers (IMCO) and Employment and Social Affairs (EMPL) Committees adopted their final opinions on the future Regulation.

The indicative vote in plenary will take place on 22 October 2013. In the Council (Employment, Social Policy, Health and Consumer Affairs) four Working Party meetings have already been scheduled for this year.

The legislation is expected to be adopted in 2014 and would come into force between 2015 and 2019.

TOBACCO PRODUCTS DIRECTIVE

On 21 July 2013, the Council of the European Union agreed a general approach on the draft EU Tobacco Products Directive which aims at making tobacco products less attractive by strengthening the rules on how they can be manufactured, presented and sold.

The agreement includes a ban on the use of cigarettes and roll-your-own tobacco with characterising flavours, an obligation for combined picture and text health warnings to cover 65% of the front and the back of packages of tobacco products for smoking, a ban of any misleading labelling, the extension of the scope of the directive to novel tobacco products, nicotine containing products and herbal products for smoking, and a possibility for Member States to decide to ban cross-border distance sale of tobacco products and to introduce more stringent rules on additives or on packaging of tobacco products.

On 10 July 2013, the European Parliament's Environment, Public Health and Food Safety (ENVI) Committee adopted the draft report on the Tobacco Products Directive.

The Committee voted in favour of stronger EU tobacco rules: a prohibition of the use in tobacco products of additives and flavours that make them more attractive, a ban of any misleading labelling, an obligation for health warnings to cover 75% of external area of packets and packaging of tobacco products for smoking, a ban of slim cigarettes, an obligation for e-cigarettes to be placed on the market under existing rules on medicinal products.

Continues on page 6.

CED EU INFO

Continues from page 5.

The vote in plenary is scheduled on 10 September 2013.

DEADLINE FOR IMPLEMENTATION OF SHARPS DIRECTIVE

Directive 2010/32/EU implements the Framework Agreement on prevention from sharp injuries in the hospital and healthcare sector signed by the European social partners HOSPEEM and EPSU on 17 July 2009, which is an annex to this Directive.

The aim of the Directive is to implement the Framework Agreement in order to prevent workers' injuries caused by all medical sharps (including needlesticks), protect workers at risk and set up an integrated approach establishing policies in risk assessment, risk prevention, training, information, awareness raising and monitoring.

The deadline for implementation of the Directive into national laws of Member States was on 11 May 2013 at the latest.

COSMETICS REGULATION

On 11 July 2013, the new EU Regulation 1223/2009 ('Cosmetics Regulation') came into force. It strengthens the safety of cosmetic products and streamlines the framework for all operators in the sector.

The Cosmetics Regulation replaces Directive 76/768/EC which was adopted in 1976 and has been substantially revised on several occasions.

The new Regulation provides a strong regime aimed at strengthening product safety by taking into consideration the latest technological developments, including the possible use of nanomaterials.

The most significant changes introduced by the Cosmetics Regulation include strengthened safety requirements for cosmetic products, introduction of the notion of 'responsible person', centralized notification of all cosmetic products placed on the EU market, introduction of reporting of serious undesirable effects and new rules for the use of nanomaterials in cosmetic products.

ENTREPRENEURSHIP 2020 ACTION PLAN DRAFT RESOLUTION

On 9 July 2013, the European Parliament's Industry, Research and Energy Committee (ITRE) adopted a motion for resolution on the Entrepreneurship 2020 Action Plan presented by the rapporteur MEP Paul Rübig (EPP, Austria).

In his draft resolution the rapporteur calls for promotion of entrepreneurial spirit and entrepreneurial education and training, emphasises the necessary environment and framework conditions for entrepreneurship suggesting a European charter for the liberal professions, as well as calls for actions reaching specific target groups.

SECTION II – GENERAL EU POLICY EPSCO COUNCIL MEETING

The Employment, Social Policy, Health and Consumer Affairs (EPSCO) Council met on 20-21 June 2013.

The Council agreed a general approach on a revised draft Tobacco Products Directive aimed at making tobacco products less attractive by strengthening the rules on how tobacco products can be manufactured, presented and sold.

It took note of Presidency progress reports on a draft regulation on clinical trials of medicines and on two draft regulations on medical devices and in vitro medical devices.

The Council also adopted a directive on the minimum health and safety requirements regarding the exposure of workers to the risks arising from electromagnetic fields.

PRIORITIES OF LITHUANIAN PRESIDENCY

During the Employment, Social Policy, Health and Consumer Affairs Council (EPSCO) on 21 June 2013, the Lithuanian Minister of Health, Vytenis Povilas Andriukaitis, presented the priorities in health sector during the Lithuanian Presidency of the Council of the European Union.

The Minister named the revision of the Tobacco Products Directive, concentration on sustainable heath systems, continuity of Ireland's efforts to reach general approach on clinical trials on medicinal products for human use and mediating the discussions on the Regulations on medical devices as well as on in vitro diagnostic medical devices as the priorities during the Lithuanian EU Council Presidency.

WELCOME CROATIA!

On 1 July 2013, Croatia became the 28th Member State of the European Union.

NEW EUROPEAN OMBUDSMAN

On 3 July 2013, the European Parliament elected a new European Ombudsman, Ms Emily O'Reilly.

Ms O'Reilly is currently the Ombudsman in Ireland and will take up the duties of the European Ombudsman on 1 October 2013.

Comments, questions and contributions please contact: ced@eudental.eu

THE COUNCIL OF EUROPEAN DENTISTS GENERAL MEETING

DUBLIN – 24/25 MAY, 2013

A summary by Dr David Muscat
International Relations Officer, Dental Association of Malta

The CED constitutes an effective voice of dentists across Europe by providing expertise to the EU institutions and by promoting high standards of oral health and patient safety.

It is ongoing CED policy to influence legislation on medical devices, data protection, tobacco products, amalgam, tooth whitening and liberal professions.
The EU Mouth Cancer day is set for 17/9/2014.This will involve free check ups throughout Europe.
The Leonardo Partnership provides a website on oral cancer for dentists and doctors at www.oralcancerldv.org

WORKING GROUP E HEALTH

A CED policy to be enacted on websites posting evaluations of dentists.

WORKING GROUP ORAL HEALTH

Proposal for CED resolution on the Proposed Tobacco Directive.

WORKING GROUP AMALGAM

Still awaiting draft opinions of the scientific committees. The UNEP convention has stated that there must be progress in reducing mercury in dentistry and national goverments could pace their actions according to national needs. There is an emphasis on the need for amalgam separators. Dr. David Muscat is one of the CED representatives on the amalgam working Group.

WORKING GROUP ON EDUCATION AND PROFESSIONAL QUALIFICATIONS

a. Preparation of a CED resolution on vocational training
b. Contribution to the Joint Action on EU health Workforce planning and forecasting.
c. Definition of competences for different health and social care professions.
d. Report of CED lobby activities.

DECISIONS

1. adoption of the resolution on CPDs
2. Adoption o f competencies of general practitioners
3. Adoption of revised mandate of the WG on Education and Professional qualifications in regard to vocational training.

WORKING GROUP INFECTION CONTROL AND WASTE MANAGEMENT

Sharps, contaminated objects and waste management are now incorporated into national Law in Greece.

WORKING GROUP MEDICAL DEVICES

Points of concern regarding the implant card, nano-materials, custom made devices and reprocessing of single-use devices.

WORKING GROUP PATIENT SAFETY

CED members contributed 11 different documents to the process.

The Quality of care working group would focus on

1. Reporting and learning systems in member states
2. Education and training of health workers on patient safety
3. Revision of the reflective paper on quality of healthcare

WG LIBERAL PROFESSIONS
Works towards simplification of regulation, internationalization and access to finance

WORKING GROUP TOOTH WHITENING

Pediatric dentists provided a summary of conditions where bleaching of teeth of minors was desirable as it would avoid more invasive treatments.

Comments were made regarding advertising of TWP's in Italy are totally inappropriate and misleading as they inform the public that TW can be performed by non-dentists.

In addition there was a recent court case in the UK in which a non-dentist was found guilty of illegal practice. Whitening has now been defined as the practice of dentistry.

There are however concerns about products other than hydrogen peroxide being used by non-dentists such as chlorine dioxide ,which is extremely acidic and damages enamel.

The CED had requested interpretation of the European Commission on the use of sodium perborate and boric acid and on the use of the terms 'use' and 'supply'.

The CED is to request an opinion of The Scientific Committee on Consumer Safety on the use of chloride dioxide in oral hygiene products and tooth whitening products.

WG Antibiotics in Dentistry-
Antibiotics are becoming ineffective as they are disease resistant. A CED position is needed on the prudent use of antibiotics.

THE INTERNAL MARKET

The main areas of concern are 'consent' and 'The right to be forgotten.'

A message from **Mouth Head and Neck Cancer Awareness Ireland (MHNCAI)** to the **Council of European Dentists (CED)**

The various groups who make up MHNCAI ask member countries of CED to consider the possibility of taking part in a European Mouth Cancer Awareness Day in 2014. We believe the time is right for a European approach to mouth cancer for the following reasons:

1. There is a worrying increase in the incidence of oral cancer in Europe.

2. Oral cancer is projected to increase by 1% per year over the next 20 years unless there are decisive public health measures (Mistry et al. 2001)

3. In contrast to other cancers, mouth cancer 5 year survival rates have shown little improvement over the last 20 years.

4. The majority of cases of mouth cancer are diagnosed by dentists or members of the dental team. The dental profession need to lead the way in the battle against mouth cancer.

5. Mouth Cancer Awareness Day in Ireland has significantly increased awareness of this disease in the general public and in the dental profession.

6. This campaign has highlighted the role of the dentist as an oral physician.

7. This campaign has attracted more positive media interest them any other 'dental issue' in previous years.

8. A European Mouth Cancer Awareness Day with thousands of participating dentists carrying out free examinations, on the same day, would have significant benefits for our patients and for the profession.

9. A European MCAD would be a significant opportunity to improve research about this disease (e.g. epidemiology, diagnosis, outcomes, etc.) This type of European approach has worked before. See euromelanoma.org

10. Our proposal is to hold European Mouth Cancer Awareness Day on Wednesday, September 17th 2014. European Oral Health Day (Thursday, September 12th 2013) would be an ideal opportunity to publicize the day in each participating country.

MHNCAI is a partnership between the following bodies:

Dublin Dental University Hospital, Cork University Dental Hospital, Irish Dental Health Foundation, Irish Cancer Society and the Irish Dental Association.

A message from the **Leonardo Da Vinci Partnership** to the **Council of European Dentists (CED)**

The LDV partnership strongly believes that 'Mouth cancer prevention and early detection' should be an important topic for EU dentists and for European regulatory bodies when planning Continuing Professional Development (CPD) requirements for dentists.

The following are some of the reasons why we ask you to give this proposal serious consideration:

1. Patient Safety – The primary purpose of dental EU regulatory bodies is to protect the public and ensure their safety through regulation of the dental team.

   Mouth cancer (including oropharyngeal and cancer of the lips) is one of the few oral diseases encountered by the dental team that can result in significant premature mortality (early death), particularly when the diagnosis is delayed.

2. Mouth cancer rates have been rising rapidly in most EU countries and are projected to continue to do so. Accordingly, the dental team can expect to encounter mouth cancer more frequently in the future.

3. Mouth cancer is now occurring more frequently in young people without obvious risk factors.

4. The prognosis for this disease is extremely good if detected early and extremely poor if detected late.

   In contrast to other cancers, mouth cancer survival rates have shown very limited improvement over the last 20 years.

   Only about 50% of patients diagnosed with tongue or oropharyngeal cancer can expect to be alive after 5 years. However the majority of mouth cancers are curable if diagnosed early.

5. Dentists and their team are ideally positioned and have a responsibility to diagnose early signs of mouth cancer (during routine dental examinations) and to raise patient awareness of risk factors (e.g. tobacco and alcohol).

6. Because this disease is relatively infrequently encountered, it is essential that dentists are continually educated in order to improve the rate of early detection.

7. Ideally we would like 'Mouth cancer prevention and early detection' to become a core CPD subject in EU countries where directives and opportunities exist for training.

8. Core CPD may be delivered in different ways including online resources, webinars, seminars and presentations.

   One example of a learning resource for EU dentists is: www.oralcancerldv.org

9. The dental profession need to lead the way in the battle against mouth cancer.

Thank you for giving us this opportunity.

Prof. Alexander Rapidis
Mrs. Iphigenia Thermidou
Greek Anticancer Institute

Prof. Saman Warnakulasuriya
Mr. Andrew Gould
King's College London

Prof. Juan Manuel Seoane
Prof. Pedro Diz Dios
Universidade de Santiago de Compostela

Dr Paul McEvoy
Dr Conor McAlister
Irish Dental Association

MEETING OF THE MFPA EXEC COUNCIL WITH MINISTER B

By Dr David Muscat

On Tuesday 4th June Dr. David Muscat President of the Dental Association of Malta together with other representatives of the Malta Federation of Professional Associations had a formal meeting with Hon. Minister Evarist Bartolo Minister of Education at the federation's premises at the Professional Centre in Sliema Road Gzira.

Dr. David Muscat, President representing the Dental Association meeting the minister of Education Hon. Evarist Bartolo at the Board Room at The Federation of Professional Associations of Malta on Tuesday 4th June. Various issues were discussed including CPE, professional indemnity, competent authorities, MEUSAC , education, University courses and Civil society There was an excellent rapport and a further meeting is planned.

The Federation of Professional associations was set up in 1970 with 7 organisations. Today the membership has 14 organisations, and the Federation has its own premises which include five board rooms and a conference hall.

Dr Roger Vella and Dr. Magri Demajo have both served as Presidents of the MFPA . We owe a lot to them. Dr. Magri Demajo fought hard to obtain the existing premises we own.
A number of organisations within the Federation have legal recognition within the Laws regulating the particular profession, whilst others have recognized representation on their respective competent authorities.

Each organisation can nominate a representative to sit on the council of the federation and the council officials are elected yearly.
The main impetus of the federation is to facilitate an interdisciplinary approach to activities by member associations whilst maintaining their professional independence, standards and code of ethics. Member organisations promote and organize continuous professional training for their members. The federation promotes the professions as a group and contributes towards society's interests in general.

At a European level the Federation is involved with The Council of Liberal Professionals of Europe and has collaborated on a number of directives related to professionals, education and health and contributed towards the drafting of a professional code of ethics with The European Council of the Liberal Professions. CEPLIS.

The member Associations include

- Association of Speech-Language Pathologists
- Chamber of Engineers
- Dental Association of Malta
- Chamber of Architects
- Malta Association of Professional Conservators and Restorers
- Malta Association of Physiotherapists
- Malta Association of Social Workers
- Malta Association of Youth Workers
- Malta Chamber of Pharmacists
- Malta Institute of Accountants
- Malta Veterinary Association
- Medical Association of Malta
- Malta Psychological Association
- Society of Medical Radiographers

The main items discussed with Hon Minister Bartolo included

1. LEGISLATION
Related to the delivery of professional services
The organizations would like a say in the warranting process.

COMPETENT AUTHORITIES
Association members should be represented on competent authorities. The Federation could support the competent authorities in the warranting process.
(Dentists and doctors are represented on the Medical Council and elections are every 3 years.)

WARRANTS/ CPD AND INDEMNITY INSURANCE
CPD should become mandatory. At first a voluntary drive to be undertaken. Dentists already have this service by the DAM
More resources are required to

UTIVE ARTOLO

fund and assess CPD courses . The support of the University of Malta and other educational institutions is desirable.

Professional Indemnity insurance particularly for self employed is necessary.
(For doctors and dentists it becomes mandatory across the EU as from October 2013.)

2. EDUCATION
The Federation should be regarded as a key stakeholder when education reforms are being drawn up and should be consulted.

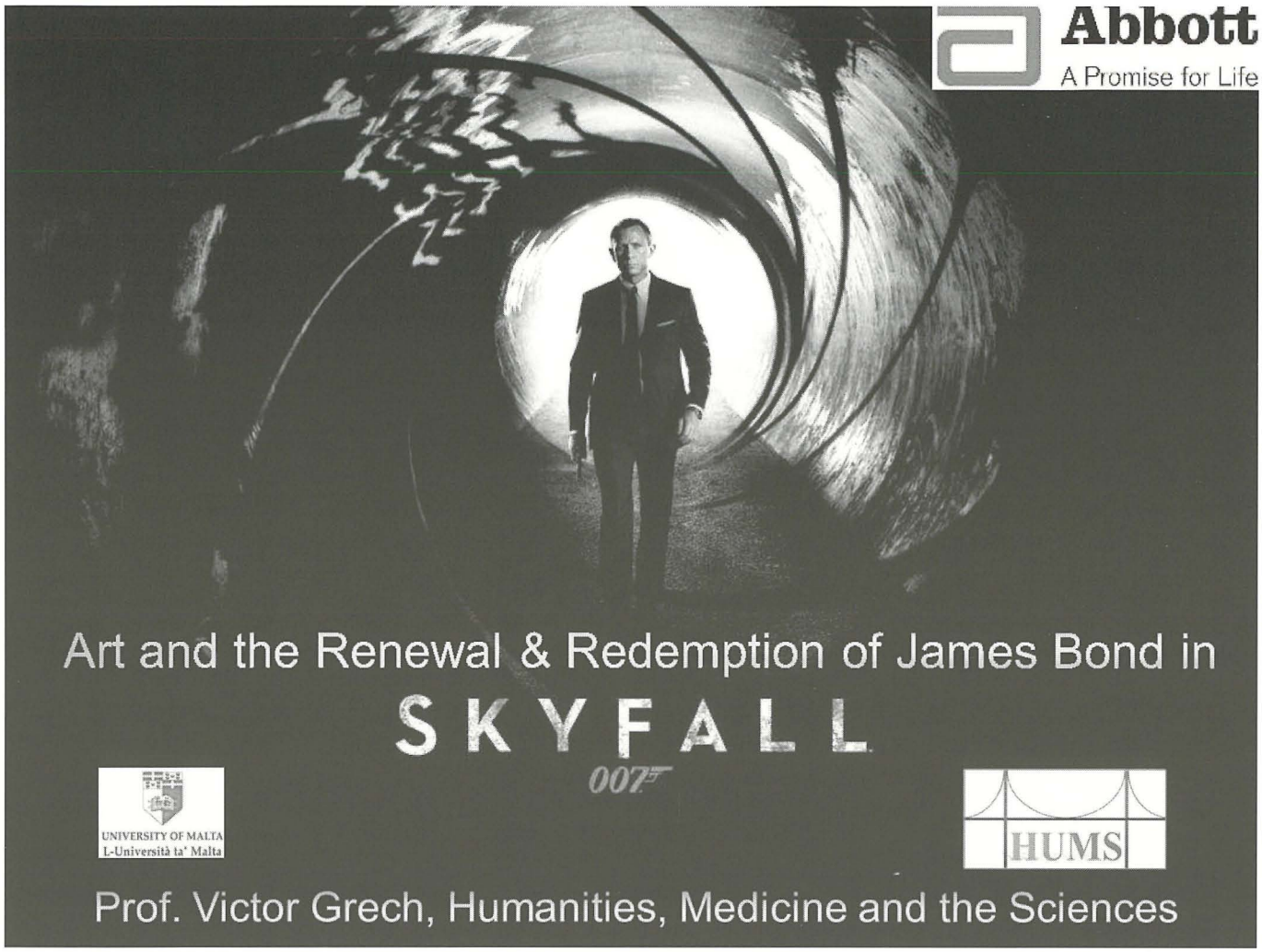
Participation of the Federation at Faculty level in developing appropriate courses is required. Each member of each organization should form part of the Faculty.

3. CIVIL SOCIETY
The Federation contributes via MEUSAC Malta EU steering Committee. Two of the three of the representatives for civil society within Meusac come from the Federation and contribute towards civil society and civil life.

MCED
Malta Council for economic and Social Development Federation representative heads this committee.

The Federation plays an active role in the advancement of society and the nation as a whole. Information for this article was gleaned from a prepared document by the MFPA.

The President is Ing. Helga Pizzuto from the Chamber of Engineers and the Vice Presidents are Mr. Ben Rizzo from the Malta institute of Accountants and Ms. Maryanne Ciappara from the Malta Chamber of Pharmacists.



SKYFALL LECTURE

By Professor Victor Grech

Bond also returns to duty without the snazzy gadgets to which audiences have become accustomed to over the years. His first encounter with the quartermaster, Q, is fraught with symbolism.

They meet in the National Gallery and both sit facing the west wall of room 34, a chamber replete with emblematic British paintings. Three paintings by John M. W. Turner face them, two clearly, Rain, Steam and Speed – The Great Western Railway (1844) to the right and The Fighting Temeraire tugged to her last berth to be broken up (1839) directly in front of the duo, the painting on which the camera lingers longest.

These paintings accentuate two themes: the old replacing the new and the quintessential Britishness of Bond. The former of the two paintings contains a small hare just in front and to the right of the train's front end, and this may symbolise the violent encroachement of the pastoral countryside, represented by the hare which is running out of the way of the oblivious and uncaring juggernaut.

The latter painting portrays an old and venerable but redundant warship, a retired three-masted warship (the Temeraire), being towed away to be ignominiously scrapped by an ugly but functional new steam boat in the setting of a sunset, conjuring up the nostalgic remembrance of the passage of the era of British empire and naval supremacy. This is popularly considered the greatest painting in Britain and is iconic of the Victorian age of the great British Empire.

Q comments on the painting "always makes me feel a bit melancholy. A grand old war ship, being ignominiously hauled away for scrap. The inevitability of time, don't you think?" Hare and sailing ship may be signifiers for the elderly M and middle-aged Bond, who are threatened with replacement by the new. Interestingly, Turner lived at 119 Cheyne Walk in London in the early 1800s as did Ian Fleming, Bond's creator, in 1923-26.

Behind Bond and Q are another two paintings, Joseph Wright of Derby's Experiment on a Bird in the Air Pump (1768) which demonstrates the then cutting edge of science, an experiment with bird in an air pump, an appropriate backdrop for Q. The other is Thomas Gainsborough's Mr and Mrs William Hallett (The Morning Walk - 1785) which depicts a wealthy couple in their marriage finery about to embark on life's adventure with a dog looking adoringly at its mistress, a possible comparison of Bond and M or the Queen. These two actors are therefore cleverly framed by paintings which signify their characters.

Continues on page 24.

TePe®

We care for healthy smiles

Implant care for every need

Proper home care is vital for long-term health of implants. The wide TePe range for daily implant maintenance enables a tailored solution for every patient´s oral hygiene need. All our products are developed in collaboration with dental expertise to meet the demands of professionals and consumers worldwide.

Made in Sweden

Distributed in Malta by:

ags alfred gera &sons LTD

Alfred Gera & Sons Ltd.,
10, Triq il-Masġar,
Qormi, QRM 3217
info@alfredgera.com

T: 00 356 2144 6205

www.tepe.com

BIOLOGICAL WIDTH AND PINK STUFF

Most dentists are extremely good at looking at teeth. Without even thinking about what you do, during an examination, you can minutely analyse the surface texture, characteristics, hue, and so forth of the teeth you are examining.

But do you do this with the surrounding pink stuff too?

Can you identify the different parts of the soft tissue around teeth and what to call them? Do you understand what tissue biotype is all about? And do you know what is and what is not possible in the realm of soft tissue surgery? If you have answered "no" to any of these questions, then read on!

In this first of a series of articles I will start by discussing the soft tissue anatomy and explain, in my own words the concept of biological width. I will also give you some new words for your aesthetic vocabulary to help you communicate with your periodontist and your technician.

When you probe around a tooth, the probe is sitting in the gingival sulcus - which when it is pathologically deepened is called a periodontal pocket (1).

This part of the gingiva is known as the free gingiva while the part of the keratinised tissue apical to this is the attached gingiva. Attached gingiva is known as such because dense collagen fibres attach the firm connective tissue to the underlying root surface and bone. In periodontal-speak, the free and attached gingivae are collectively known as the keratinised tissue.

The mucogingival junction is the imaginary line where the keratinised tissue ends and the thinner, looser and more elastic mucosa begins.

The papilla is that part of the gum which fits in between the teeth. Around posterior teeth, the papilla usually forms a double peak (one peak on the buccal side and one on the lingual) with an interdental col area. The interdental col is unique because it is formed of two junctional epithilia standing back to back.

Papilla blood supply is an interesting thing because apart from being supplied from the tissue it also receives blood supply from the adjacent periodontal ligament.

Unfortunately, implants don't have periodontal ligament so consequently 'the papillae' which form around implants are less well vascularised - indeed this applies to all the peri-implant soft tissue (2,3,4).

Peri-implant tissue (strictly speaking you can't call it gingiva because gingiva requires presence of teeth!) has many similarities to gingiva but as already mentioned, it has fewer blood vessels and more collagen fibres than gingiva.

In gingiva the collagen fibres are "functionally oriented" – that is each fibre has purpose and connects something to something else. There are fibres going from connective tissue to tooth (supra-alveolar fibres), fibres going from connective tissue to bone (gingiva-alveolar fibres), fibres going from tooth to tooth (transseptal fibres) and others like circular fibres.

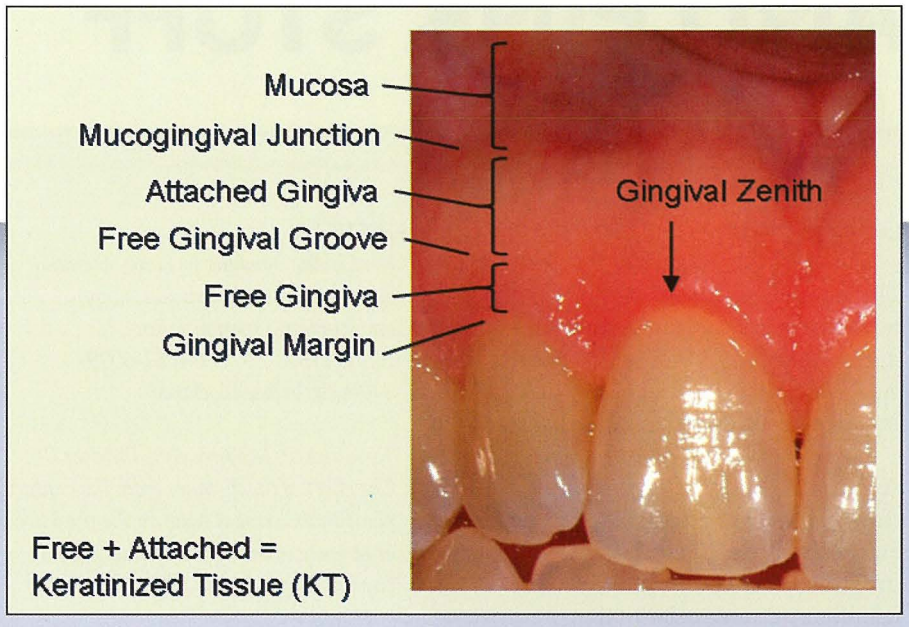
Most important are the "sharpey fibre" insertion points where the collagen connects to the root surface cementum. In peri-implant tissue the collagen tends to be a bit more like scar tissue with the fibres running parallel to the implant surface but not actually connecting to it.

Biological width is a term that is often a source of confusion. Lets dispel that. Biological width is the minimum allowable distance between the margin of a restoration and the crest of the bone.

Starting from the bone and moving coronally, there needs to be about 1mm of supra-alveolar connective tissue attachment (the gingival fibres). Next is the junctional epithelium, again, for simplicity, lets call it 1mm.

Finally, we add another 1mm of sulcular depth to make a total distance of 3mm. This does not mean that the sulcus is actually 1mm deep all the time. It means that the restoration margin should not get closer than 1mm to the junctional epithelium. This is an arbitrary or empirical distance dictated by a concept of minimal distance (5,6,7,8). If you want your restoration

By Dr Edward Sammut
BChD, MSc, MClinDent, MFDS MRD RCSEd



margin to be "biologically safe", then try to keep it supragingival!

However, if the patient has a subgingival tooth fracture and you have judged the tooth as otherwise restorable, then you or your periodontist should crown lengthen the tooth such that the margin of the bone is 3mm away from the planned crown margin.

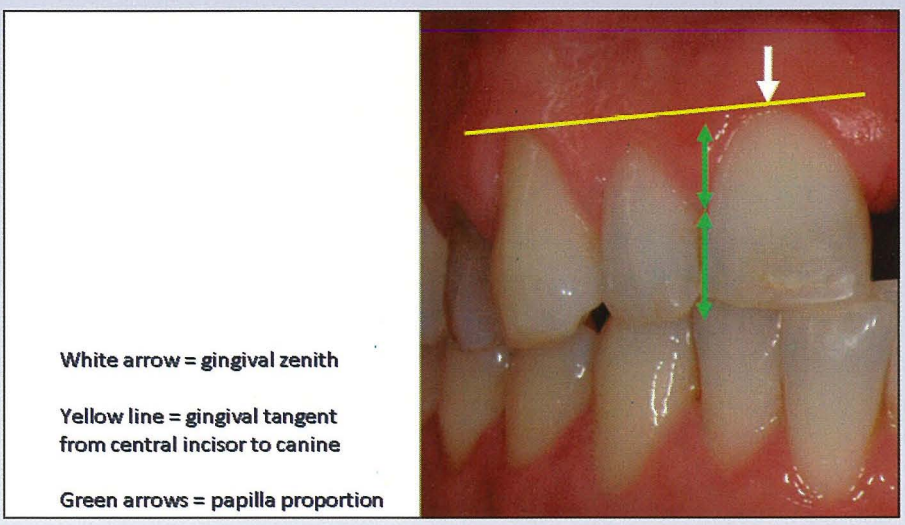
The surgery therefore must include removal of bone. Removal of soft tissue with electro-surgery or laser only is not going to achieve this.

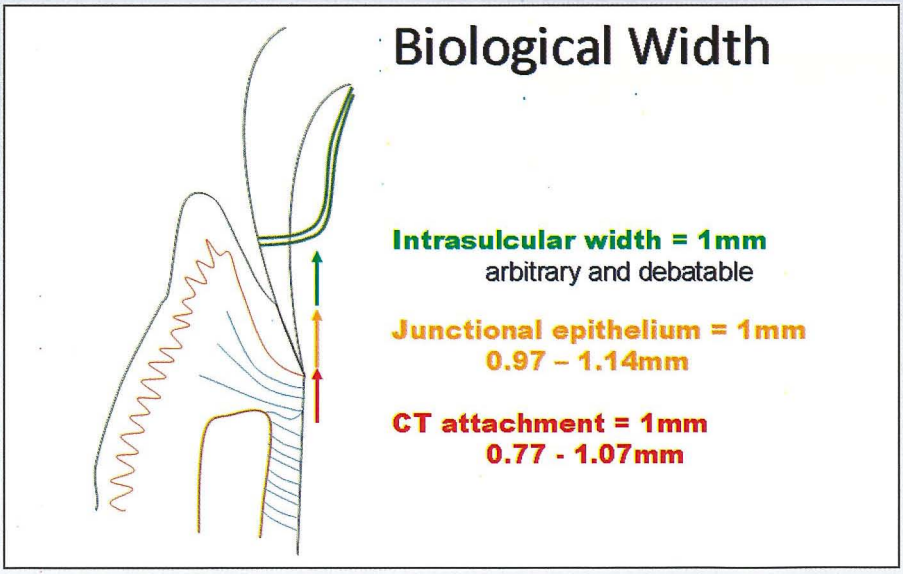
It is interesting to note that in cases of treated periodontitis the biological width can end up being quite long, this is mainly due to the long junctional epithelium which is the usual 'repair' type of healing seen following periodontal therapy.

Therefore although the biological width is defined by the bone crest, it is important to probe the tooth clinically to establish the clinical attachment level before carrying out any treatment. When looking at the shape of the gingival margin around anterior teeth, look at the outline of the curve.

On central incisors the gingival zenith (most apical point on the buccal gingival margin) is usually 1mm distal to the vertical bisected midline (straight line drawn down the middle of the tooth).

Continues on page 16.





BIOLOGICAL WIDTH AND PINK STUFF

Continues from page 15.

Therefore the gingival margin is not a symmetrical Roman arch but it's a bit skewed towards the distal side. This effect is present but less pronounced around lateral incisors.

A gingival level tangent (line drawn from one gingival zenith to another) from the maxillary central incisor to the maxillary canine will usually be 1mm apical to the gingival zenith of the lateral incisor, helping to maintain the proportions of this tooth relative to the central incisor (10).

The papilla proportion is that proportion of the interproximal space which is filled by the papilla.

This is on average about 40% but will tend to vary depending on the soft tissue biotype (9).

Next time, I will discuss the issue of biotype and the implications that this holds for treatment of patients.

REFERENCES

1. *Jan Lindhe, Niklaus P. Lang, Thorkild Karring. Clinical Periodontology and Implant Dentistry, 5th Edition ISBN: 978-1-4051-6099-5 (2008); Wiley-Blackwell*
2. *Tarnow DP, Magner AW, Fletcher P. The effect of the distance from the contact point to the crest of bone on the presence or absence of the interproximal dental papilla. J Periodontol 1992; 63:995-996*
3. *Palmer RM, Farkondeh N, Palmer PJ, Wilson RF. Astra Tech single-tooth implants: an audit of patient satisfaction and soft tissue form. J Clin Periodontol 2007; 34: 633–638.*
4. *Tarnow D, Elian N, Fletcher P, Froum S, Magner A, Cho SC, Salama M, Salama H, Garber DA. Vertical distance from the crest of bone to the height of the interproximal papilla between adjacent implants. J Periodontol. 2003 Dec;74(12):1785-8.*
5. *Gargiulo A, Wentz F, Orban B. Dimensions and relations of the dentogingival junction in humans. J Periodontol 1961;32:261–267.*
6. *Vacek JS, Gher ME, Assad DA, Richardson AC, Giambarresi LI. The dimensions of the human dentogingival junction. Int J Periodontics Restorative Dent 1994;14(2):154–165.*
7. *Ingber JS, Rose LF, Coslet JG. The "biologic width": a concept in periodontics and restorative dentistry. Alpha Omegan 1977;70(3):62–65*
8. *Nevins M, Skurow HM. The intracrevicular restorative margin, the biologic width, and the maintenance of the gingival margin. Int J Periodontics Restorative Dent 1984;4(3):30–49*
9. *Chu SJ, Tarnow DP, Tan JH, Stappert CF. Papilla proportions in the maxillary anterior dentition. Int J Periodontics Restorative Dent. 2009 Aug;29(4):385-93.*
10. *Chu SJ, Tan JH, Stappert CF, Tarnow DP. Gingival zenith positions and levels of the maxillary anterior dentition. J Esthet Restor Dent. 2009;21(2):113-20.*

PAYMENT FORM

Please cut out this section and send with a cheque for 50 euro payable to **Dental Association of Malta** for your 2013 DAM membership – the best 50 euro investment ever!

TO:

The Treasurer, Dr Noel Manche,
The Dental Association Of Malta,
Federation Of Professional Associations,
Sliema Road,
Gzira.

NAME: _____

ADDRESS: _____

_____

_____

Are you ready for a better way to relieve tooth sensitivity?

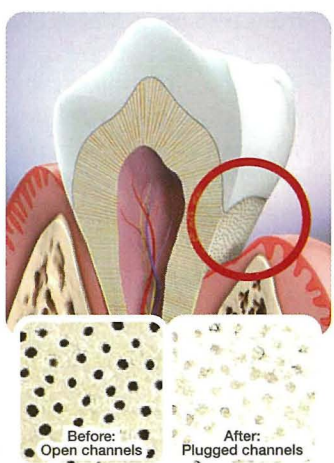
That sharp, stabbing feeling of sensitivity is something you may no longer need to endure.

Announcing the arrival of a toothpaste so revolutionary, so different, it addresses the cause of sensitivity, not just the signs.

And with direct application, it can give instant sensitivity relief.*

New Colgate® Sensitive Pro-Relief™ is the only toothpaste to contain the advanced PRO-ARGIN™ technology. This breakthrough formula works by instantly plugging the channels leading to the tooth centre.

Brush twice a day for lasting sensitivity relief.



In vitro CLSM photographs

1 APPLICATION FOR 1 MINUTE INSTANT SENSITIVITY RELIEF*

Sounds incredible? That's why we want you to try Colgate® Sensitive Pro-Relief™ for yourself. For details, or to learn more, log on to www.colgatesensitive.com.

Instant and Lasting Sensitivity Relief... *prove it to yourself.*

* For instant relief massage a small quantity directly on the sensitive tooth for one minute.

Exclusively distributed by von Brockdorff Imports Ltd.

Use of allograft materials in fresh extraction sockets prior to delayed implant placements.

A Systematic Review.

Lara Cassar
B Ch D, MSc Imp Dent, Dip Imp Dent RCS (Eng)

The purpose of this systematic review was to evaluate available studies that investigate the effect that allografts have on bone healing, when used for extraction site preservation, in relation to implant placement.

A MEDLINE/ Pubmed and Cochrane database search was carried out from 1988 up to March 2011.

Reference lists were reviewed and conference proceedings were screened for randomised control trials, case control trials and prospective studies, which abide to the set inclusion criteria.

Out of the 2090 studies initially screened, 30 studies were analyzed in full text, out of which 10 fulfilled the selection criteria. Data was extracted and processed for analysis from the selected studies.

Results were expressed in mean differences and standard deviations for continuous data: width/ height bone dimensions and percentage vital bone in histological sections.

CONCLUSIONS
The heterogeneity of the studies, the wide variability in the outcomes and the lack of adequate follow-up of implants placed in preserved sites do not make it possible to conclude that the technique of site preservation using allograft enables a more predictable implant placement and integration.

However, future studies with standardized protocol on the subject might inform practice.

Success of an implant is not solely osseointegration of the fixture to the surrounding bone, but also the achievement of a restoration, which is harmonious to the rest of the dentition, even aesthetically. The surrounding soft tissue architecture follows bone.

The ideal situation would be for an extraction site to heal with new bone formation, preserving and recreating a ridge with the original dimensions. However, in reality this is not the case. During uninterrupted healing of an extraction socket, there are internal and external morphological changes, which occur due to remodelling phenomena.

These changes alter both height and width so that the original dimensions are never reached. The volume of the extraction site becomes occupied by reparative tissue, which fills the bony defect, precluding the socket to fill with new bone (Atwood, 1963). This finding led to the development of the concept of guided bone regeneration.

The use of bone substitutes is aimed to preserve and optimize the amount of bone infill after an extraction, as it might potentially assist osteogenic cells to infiltrate in the area and displaces the lamina propria of the gingival tissue before these colonize it. On the other hand, some authors advocate their use is solely to support barrier membranes for space maintenance (Adriaens, 1999).

The success of site preservation techniques, has been the subject of a multitude of clinical studies, however there are challenging authors who claim that this is an over-treatment.

Nowadays, there are multiple biomaterials available on the market, all have or claim to have, different potential for mechanisms of action to preserve and optimize the amount of bone infill in the extraction site before implant placement.

No available bone substitute to date, satisfies all the properties of the ideal graft material.

The aim of this review is to investigate the effectiveness of allografts on bone preservation. Allografts are derived from the same species as the host, but from a different individual.

With the increasing requirement of bone grafting, there was a fifteen-fold increase in the past decade and it accounts for more than one third of all bone grafts performed in the United States (Boyce, 1999). The processing of donated cadaveric bone, to render it safe for use, could potentially and

Methodological Quality of selected studies

Study	Random allocation/ allocation concealment	Defined inclusion/ exclusion criteria	Blinding of participant/ outcome assessors	Balanced experimental groups	Identical treatment between groups except for intervention	Quality of report/ follow-up	Overall assessment of bias
Zubillaga et al (2003)	Yes	YES	Unclear	Yes	Yes	Low	Moderate
Beck et al (2010)	Yes	Yes	Unclear	No	Yes	High	Moderate
Lee et al (2009)	No	Unclear	Unclear	No	Yes	High	High
Wang et al (2008)	Not applicable	Unclear	Unclear	Not applicable	Not applicable	Low	High
Vance et al (2004)	Yes	Yes	Yes	Yes	Yes	High	Low
Babbush (2003)	Unclear	No	Unclear	Not applicable	Not applicable	Unclear	High
Simon et al (2000)	Not applicable	Unclear	Unclear	Not applicable	Not applicable	High	High
Smukler et al (1999)	No	Unclear	Yes	Unclear	NO	Unclear	High
Iasella et al (2003)	Yes	Yes	Unclear	Yes	Yes	High	LOW
Froum et al (2002)	Yes	Yes	Yes	Yes	Yes	High	LOW

significantly alter the physical and biological properties, initially present.

The ideal biomaterial is one which actually induces bone to grow, and is not solely osteoconductive. Bone allografts are non-vital, and as such they potentially can work, primarily, by the mechanisms of osteoconduction and possibly by osteoinduction, to elicit new bone by host.

The biological basis of bone morphogensis was first discovered by Marshall Urist, who proved that demineralized segments of bone matrix induced new bone formation. This discovery which was made when bone matrix was implanted heterotopically in muscle pouches in rabbits was published in 1965.

He later coined the name of bone morphogenic proteins (BMPs), as the protein which is responsible for osteoinduction in the Journal of Dental Research in 1971.

The osteoinductive potential of allografts has been attributed to these proteins, which are claimed to be activated by the demineralization process.

Continues on page 20.

Use of allograft materials in fresh extraction sockets prior to delayed implant placements. A Systematic Review.

Continues from page 19.

There are three types of bone allograft available: Fresh or fresh-frozen bone, freeze-dried bone allograft (FDBA) and demineralized freeze-dried bone allograft (DFDBA). DFDBA is further decalcified with hydrochloric acid, which will remove the calcium and expose the bone inductive proteins. The two main concerns are transmission of disease and allogenicity, which is their potential to elicit an immunological response in the host.

Multiple studies investigated clinically and histologically whether allografts are effective, to elicit bone infill in extraction sockets, producing a type of bone which is enough to support osseointegration of dental implants.

Proprietary processing procedures, employed by different tissue banks may result in the possibility of a variation in the residual clinical performance of allografts (Holtzclaw et al, 2008).

In a position paper developed in 2001, by the Committee on Research, Science and Therapy for the American Academy of Periodontology, the authors suggested that bone banks should evaluate the potency of all the batches and give detailed description of the residual components to the clinician.

Looking at the literature on the ability of allograft to induce bone formation, the variability of clinical and histological results is quite striking.

This variability could be attributed to different quantities of BMPs in different batches, some of which might not be present in amounts high enough to reach threshold.

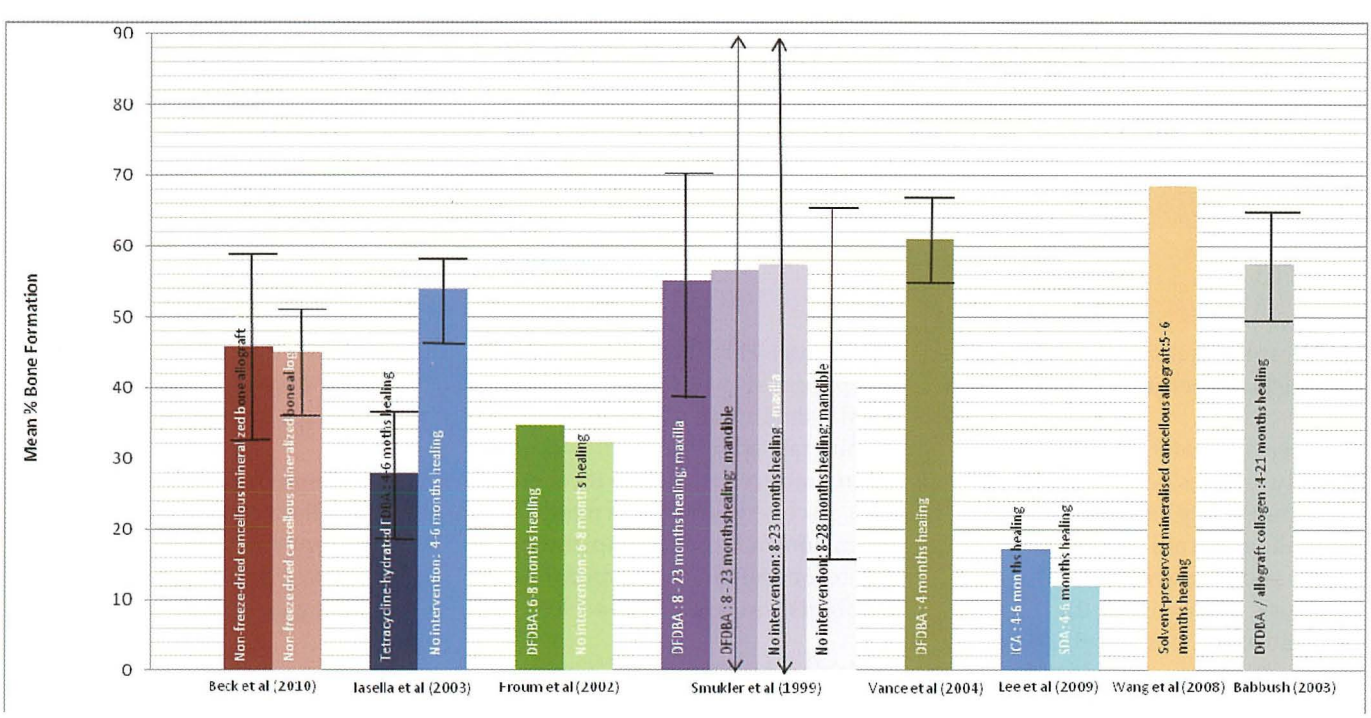
This could be partly attributed to donor-related variability.

Another possibility, is that although tissue banks have to adhere to guidelines set by AATB (American Association of Tissue Banks) in procuring, processing and sterilizing the bone, their exact methods are still proprietary (Committee on Research, Science and Therapy for the American Academy of Periodontology, 2001).

Schwartz et al (1996) suggested that osteoinductivity of allografts varies depending on the donor age and the type of bone used. The authors suggested that bone banks should give more information on the tested osteoinductivity potential, if any, of all the batches of allograft manufactured.

There is controversy on the effect that exposure of ethylene oxide and irradiation for sterilization has

Figure 1: Overall histomorphometric analysis: Mean % bone formation



on the effectiveness of allografts. Animal studies conducted by Tshamala et al (1999) reported that irradiation has no effect, however Zhang et al (1997) concluded that it reduces bone osteoinductivity and supported ethylene oxide.

Russo & Scarborough, 1995 have reported that the risk of HIV transmission with all the screening processes done nowadays stands at a risk of 1 in 2.8 billion, when DFDBA is used.

In his animal study, Becker et al (1995) show that addition of recombinant bone morphogenetic protein and non-collagenous proteins (rhBMP/NCP) to commercially available DFDBA does infact increase the bone induction potential.

Howell et al (1997) investigated whether it is feasible to use rhBMP-2 on an absorbable collagen sponge device carrier as material grafted in sites which require preservation or augmentation.

They reported a dose-related response, with a mean height response of 0.32mm, equalling a complete fill of the extraction socket.

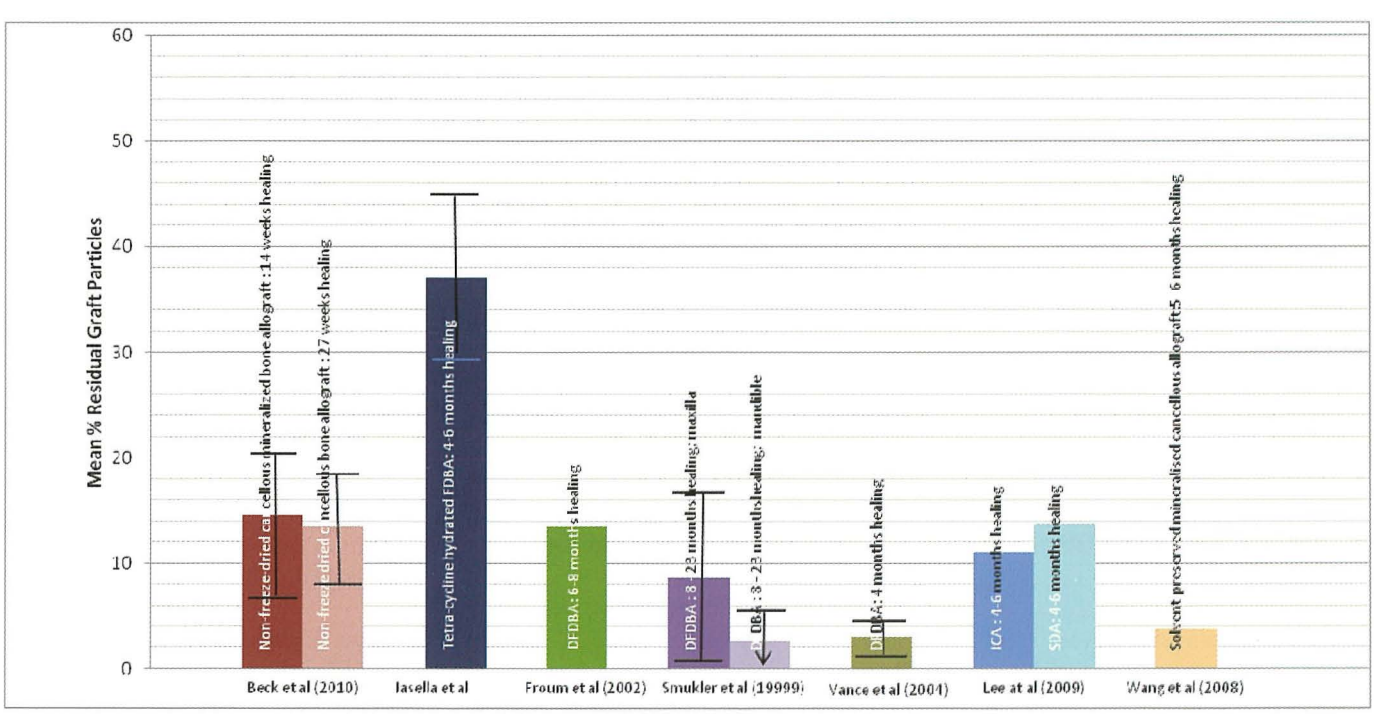
In 1998, Schwartz et al proposed the use of commercial preparations of DFDBA as a carrier of recombinant BMPs to target bone induction. In their animal study, the authors found a dose-dependent effect of added BMPs on bone formation, which produced "reproducible, consistent bone induction".

The amount of BMPs in allograft varies, if it is at all present. Addition of BMPs by recombinant technology could set the osteoinduction process in action, and bone formation will follow predictably. This could shed light to the more predictable use of allograft in the future. Fiorellini et al (2005) conducted an RCT, which reported an increasing bone formation with increasing concentrations of BMPs used. The higher the concentration of rhBMP-2, the lower the incidence that additional bone augmentation is required at implant placement, recording this as being only 14% when 1.5mg/Ml rh-BMP-2 was used.

The objective of this review was to test the following null hypothesis, which state that following tooth extraction, there is no difference between using allograft material versus spontaneous healing of the extraction socket, considering residual bone volume (as measured in height and width from specified reference points), histomorphmetric analysis (percentage

Continues on page 22.

Figure 2: Overall histomorphometric analysis: Mean % residual bone particles



Use of allograft materials in fresh extraction sockets prior to delayed implant placements. A Systematic Review.

Continues from page 21.

new vital bone growth, residual bone graft particles and connective tissue), success or failure of socket preservation procedure, implant success or survival, aesthetic outcome, stability of implants placed and improvement in the ability to place implants.

The studies selected, all of which followed a delayed (as per Esposito et al, 2001) implant placement protocol, record most of the desired outcomes, but fail to consider some others. For example no study recorded the aesthetic outcome after implant placement.

This review identified ten publications of prospective case series, case-control studies, and randomised controlled trials, which investigate bone healing after placement of allograft, mostly DFDBA with the intent of preserving bone dimensions for implant placement.

Excluded studies involved immediate implant placement, possibly placing graft material around implants in the extraction socket to preserve bone, sinus augmentation and placements in the presence of peri-apical infection.

Inter-study comparisons of materials must be approached cautiously, due to different:

- experimental protocols, namely different reference points used to measure changes in bone dimensions
- management of soft tissue to cover these materials,
- population characteristics,
- healing times.

In fact, a meta-analysis was planned to be carried out, only if the studies considered have comparable outcome variables, that is if population characteristics and experimental protocols allow.

CONCLUSION

Overall, allograft seem to incorporate well with newly formed bone, varying from 68.45% in Wang et al (2008) to 17.2% in Lee at al (2009).

From the results of the selected studies, the most striking conclusion that can be drawn is the variability in the behaviour of allografts, which indicates that allograft showed an unpredictable behaviour resulting in mixed evidence.

The variability of the results could be caused by multiple factors. These could be associated mainly with different study design, properties associated with bone healing, variability in the method of histomorphometric analysis, different reassessment times and processing of allografts.

Comparisons amongst studies have to be approached cautiously, because from this literature review, it's apparent that there is no standard healing time with a reliable and proven model system. Therefore methods and assays for studying the ability of allograft to produce new bone formation should be developed and standardized.

No recommendations on best surgical technique employed to support ridge preservation, can however, be given since there is no consistent evidence about which technique provides the most stable result.

To date, there are no conclusions which evidently show that placement of allograft improves the ability to place implants.

However, future studies with standardized protocol might inform practice on the most appropriate use and technique of preserving a post-extraction site using allograft, to achieve the best clinical results.

Lack of comprehensive and consistent data makes it impossible to reject the null hypothesis stated for this systematic review.

REFERENCES

1. *Adriaens PA. Preservation of bony sites. In: Lang NP, Karring T, Lindhe J (eds). Proceedings of the 3rd European Federation of Periodontology: Implant Dentistry. Chicago: Quintessence, 1999:266–280.*
2. *Atwood, DA (1963). Post-extraction changes in the adult mandible as illustrated by micrographs of mid-sagittal sections and serial cephalometric roentgenograms. Journal of Prosthetic Dentistry 13,810-824.*
3. *Babbush CA. Histologic evaluation of human biopsies after dental augmentation with a demineralized bone matrix putty. Implant Dent. 2003;12(4):325-32.*
4. *Beck TM, Mealey BL. Histologic analysis of healing after tooth extraction with ridge preservation using mineralized human bone allograft. J Periodontol. 2010 Dec;81(12):1765-72. Epub 2010 Jul 27*
5. *Becker W, Urist MR, Becker BE, Tucker. Human demineralized freeze-dried bone: Inadequate induced bone formation in athymic mice. A preliminary report. J Periodontol. 1995 Dec;66:882-828.*
6. *Boyce T, Edwards J, Scarborough N. Allograft bone: the influence f processing on safety and*

performances. Orthop Clin North Am 1999; 30:571-81

7. *Commitee on Research, Science and Therapy of the American Academy of Periodontology. Tissue banking of bone allografts used in periodontal regeneration. J Periodontol. 2001 Jun;72(6):834-8.*

8. *Esposito M, Coulthard P, Worthington HV, Jokstad A. Quality assessment of randomized controlled trials of oral implants. Int J Oral Maxillofac Implants. 2001 Nov-Dec;16(6):783-92.*

9. *Joseph P. Fiorellini, T. Howard Howell, Cochran D, Malmquist J, Lilly LC, Spagnoli D, Toljanic J, Jones A and Nevins M. Randomized Study Evaluating Recombinant Human Bone Morphogenetic Protein-2 for Extraction Socket Augmentation. Journal of Periodontology, April 2005, Apr;76(4):605-13.*

10. *Froum S, Cho SC, Rosenberg E, Rohrer M, Tarnow D. Histological comparison of healing extraction sockets implanted with bioactive glass or demineralized frees-fried bone allograft. A pilot study. J Periodontal 2002;73:94:102*

11. *Holtzclaw D, Toscano N, Eisenlohr L, Callan D The safety of bone allografts used in dentistry: a review. J Am Dent Assoc. 2008 Sep;139(9):1192-9*

12. *Howell TH, Fiorellini J, Jones A, Alder M, Nummikoski P, Lazaro M, Lilly L, Cochran D. A feasibility study evaluating rhBMP-2/absorbable collagen sponge device for local alveolar ridge preservation or augmentation. Int J Periodontics Restorative Dent. 1997 Apr;17(2):124-39.*

13. *Iasella JM, Greenwell H, Miller RL, Hill M, Drisko C, Bohra AA, Scheetz JP. Ridge preservation with freeze-dried bone allograft and a collagen membrane compared to extraction alone for implant site development: a clinical and histologic study in humans. J Periodontol. 2003 Jul;74(7):990-9.*

14. *Lee DW, Pi SH, Lee SK, Kim EC. Comparative histomorphometric analysis of extraction sockets healing implanted with bovine xenografts, irradiated cancellous allografts, and solvent-dehydrated allografts in humans. Int J Oral Maxillofac Implants. 2009 Jul-Aug;24(4):609-15.*

15. *Russo R, Scarborough N. Inactivation f viruses in demineralized bone matrix. FDAworkshop on Tissue Transplantation and Reproductive Tissue Bethesda, 1995,20-21*

16. *Schwartz Z, Mellonig JT, Carnes DL Jr, De La Fontaine J, Cochran DL, Dean DD, Boyan BD. Ability of commercial demineralized freeze-dried bone allograft to induce new bone formation. J Periodontol. 1996; 67:918-926.*

17. *Schwartz Z, Somers A, Mellonig JT, Carnes DL Jr, Wozney JM, Dean DD, Cochran DL, Boyan BD. Addition of human recombinant bone morphogenetic protein-2 to inactive commercial human demineralized freeze-dried bone allograft makes an effective composite bone inductive implant material. bility of commercial demineralized freeze-dried bone allograft to induce new bone formation is dependent on donor age but not gender. J Periodontol. 1998;69:1337-1345.*

18. *Simon BI, Von Hagen S, Deasy MJ, Faldu M, Resnansky D. Changes in alveolar bone height and width following ridge augmentation using bone graft and membranes. J Periodontol. 2000 Nov;71(11):1774-91.*

19. *Smukler H, Landi L, Setayesh R. Histomorphometric evaluation of extraction sockets and deficient alveolar ridges treated with allograft and barrier membrane: a pilot study. Int J Oral Maxillofac Implants. 1999 May-Jun;14(3):407-16.*

20. *Tshamala M, Cox E, De Cock H, Goddeeris BM, Mattheeuws D. Antigenicity of cortical bone allografts in dogs and effect of ethylene oxide-sterilization. Vet Immunol Immunopathol. 1999 Jul 1;69(1):47-59.*

21. *Urist MR, Strates BS. (1971). Bone Morphogenic Protein. Journal of Dental Research 1971 50 (6): 1392–1406.*

22. *Vance GS, Greenwell H, Miller RL, Hill M, Johnston H, Scheetz JP. Comparison of an allograft in an experimental putty carrier and a bovine-derived xenograft used in ridge preservation: a clinical and histologic study in humans. Int J Oral Maxillofac Implants. 2004 Jul-Aug;19(4):491-7.*

23. *Wang HL, Tsao YP. Histologic evaluation of socket augmentation with mineralized human allograft. Int J Periodontics Restorative Dent. 2008 Jun;28(3):231-7.*

24. *Zhang Q, Cornu O, Delloye C. Ethylene oxide does not extinguish the osteoinductive capacity of demineralized bone. A reappraisal in rats. Acta Orthop Scand. 1997 Apr;68(2):104-8.*

25. *Zubillaga G, Von Hagen S, Simon BI, Deasy MJ. Changes in alveolar bone height and width following post-extraction ridge augmentation using a fixed bioabsorbable membrane and demineralized freeze-dried bone osteoinductive graft. J Periodontol.* 2003 Jul;74(7):965-75.

You make a difference to those who suffer from dentine hypersensitivity

The majority of people who suffer from dentine hypersensitivity experience pain, but simply cope with it[1]

Suffering in Silence

Research conducted by Sensodyne, involving over four thousand people, showed that as many as 67% of people who suffer wouldn't ask about the condition[1]. They don't associate painful twinges with tooth sensitivity and so don't talk about it.

Talking motivates patients

Talking about tooth sensitivity during their regular dental appointment was shown to be the key trigger for patients to start actively managing their dentine hypersensitivity[1] with a specially formulated sensitivity toothpaste such as Sensodyne.

Your Sensodyne recommendation makes a difference

Diagnosing sensitivity, educating sensitivity patients and recommending Sensodyne can make a real difference to the lives of your patients with dentine hypersensitivity.

Twice daily brushing with Sensodyne is clinically proven to provide ongoing protection from the pain of dentine hypersensitivity.†[2–8]

*With twice daily brushing

SENSODYNE®

Dentists recommend Sensodyne®

By recommending Sensodyne, you can help your patients to confidently manage their dentine hypersensitivity.

†Clinical relief after as little as 2 weeks brushing

gsk GlaxoSmithKline

References:
1. GlaxoSmithKline. Data on file. Sensodyne – path to purchase research. January 2012. 2. Jeandot J *et al.* Clinc (French) 2007; 28: 379–384. 3. Leight RS *et al.* J Clin Dent 2008; 19: 147–153. 4. Nagata T *et al.* J Clin Periodontol 1994; 21(3): 217–221. 5. Salvato AR *et al.* Am J Dent 1992; 5(6): 303–306. 6. Silverman G. Compend Contin Educ Dent 1985; 6(2):132–136. 7. Silverman G *et al.* Am J Dent 1994; 7(1): 9–12. 8. Troullos ES *et al.* GSK data on file. 1992.

Continues from page 12.

In actual fact, the paintings in the museum are arranged somewhat differently and there is a couch, not a backless bench in the middle of the room, and this is not in front of the abovementioned paintings.

Other paintings are also cleverly showcased, including Amedeo Modigliani's La Femme a l'Eventail (Woman With a Fan – 1919) which was stolen from the Musée d'Art Moderne de la Ville de Paris in 2010.

In the final scene Bonds meets Mallory (who has become M) and who asks Bond "[a]re you ready to get back to work?" to which Bond replies "with pleasure, M. With pleasure." The painting behind Mallory is also symbolic as it is Thomas Buttersworth's, "The Battle of Trafalgar" showing the HMS Victory engaging the Franco-Spanish fleet in Battle of Trafalgar.

This is one of the most famous naval battles wherein Nelson used guile and unconventional tactics against great odds to lead his fleet to victory. Furthermore, the dying Nelson at Trafalgar asked the ship's captain to kiss him, just as Bond kissed M as she died in his arms after being shot in the firefight with the Spanish Silva.

Moreover, the Temeraire (featured in Turner's painting) is seen here in its heyday, in action thirty years before the events in Turner's painting, rejuvenated and in the thick of the action, during which it rescued the Victory, Nelson's flagship, when it was attacked by several ships.

As they drive off to Scotland, Bond remarks that they are going "back in time. Somewhere we'll have the advantage." Bond, M and an old gamekeeper then prepare for Silva's attack in Bonds "beautiful old house" on a foggy King Arthurian moor. The entrance to the estate is flanked by the sculpture of a deer which is strongly reminiscent of Edward Landseer's 1851 Monarch of the Glen.

Silva's assault includes a melodramatic entrance on a helicopter with blaring loud music (The Animals "Boom Boom") in a scene reminiscent of Francis Ford Coppola's 1979 Apocalypse Now, an American epic war film set during the Vietnam War.

Like Skyfall, Apocalypse Now showcases a Junghian shadow, Colonel Walter E. Kurtz, a highly decorated US Army Special Forces officer who goes renegade, thereby depicting war as a potential Conradian I leart of Darkness. In Apocalypse Now Kurtz swoops in to attack by helicopter while loudly playing "The Ride of the Valkyries" (Die Walküre) by Richard Wagner.

The DAM James Bond SKYFALL EVENT

By Dr David Muscat

The DAM organized a lecture on the Film 'Skyfall' by Professor Victor Grech at the maritime Museum followed by dinner at Don Berto sponsored by Abbott. A generous collection was made towards the Maritime Museum. The event was organized by Dr Lino Said and Mr. Liam Gauci Curator and was very well attended and thoroughly enjoyed by all. After the lecture Dr David Muscat ,President presented prizes sponsored by Abbott to 'The Best James Bond character lookalikes.'

These were:

Best James Bond: Dr Noel Manche
Best Bond Girls: Drs Ann Degaetano, Gabriella Cordina and Sara Vella
Best Mallory: Dr Paul Chetcuti Caruana
Best M: Mrs Olivia Gauci (wife of Dr Vince Gauci)
Best Villians: Pierre Zammit, Dr.Edmond Falzon and Dr Walter Debono.

PROFESSIONAL INDEMNITY INSURANCE COVER FOR DENTISTS

Allcare Insurance Limited has recently launched a tailor-made Professional Indemnity Insurance for Dentists who are members of the Dental Association of Malta.

THE COVER

This cover, which is competitively priced, has been designed to offer reliability and peace of mind. It covers a dentist's legal liability for bodily injury, illness, disease or death of any patient caused by a negligent act, error or omission committed in the course of the profession.

TREATMENTS

This coverage is aimed to cater for the various risk exposures faced by a General Dental Practitioner including Implantology, Oral surgery, endodontic, Prosthetics and any other branch of dentistry that falls under the auspices of the warrant of a Dental Surgeon

Judith Galea
Chief Executive
Allcare Insurance Limited

EXTENSIONS

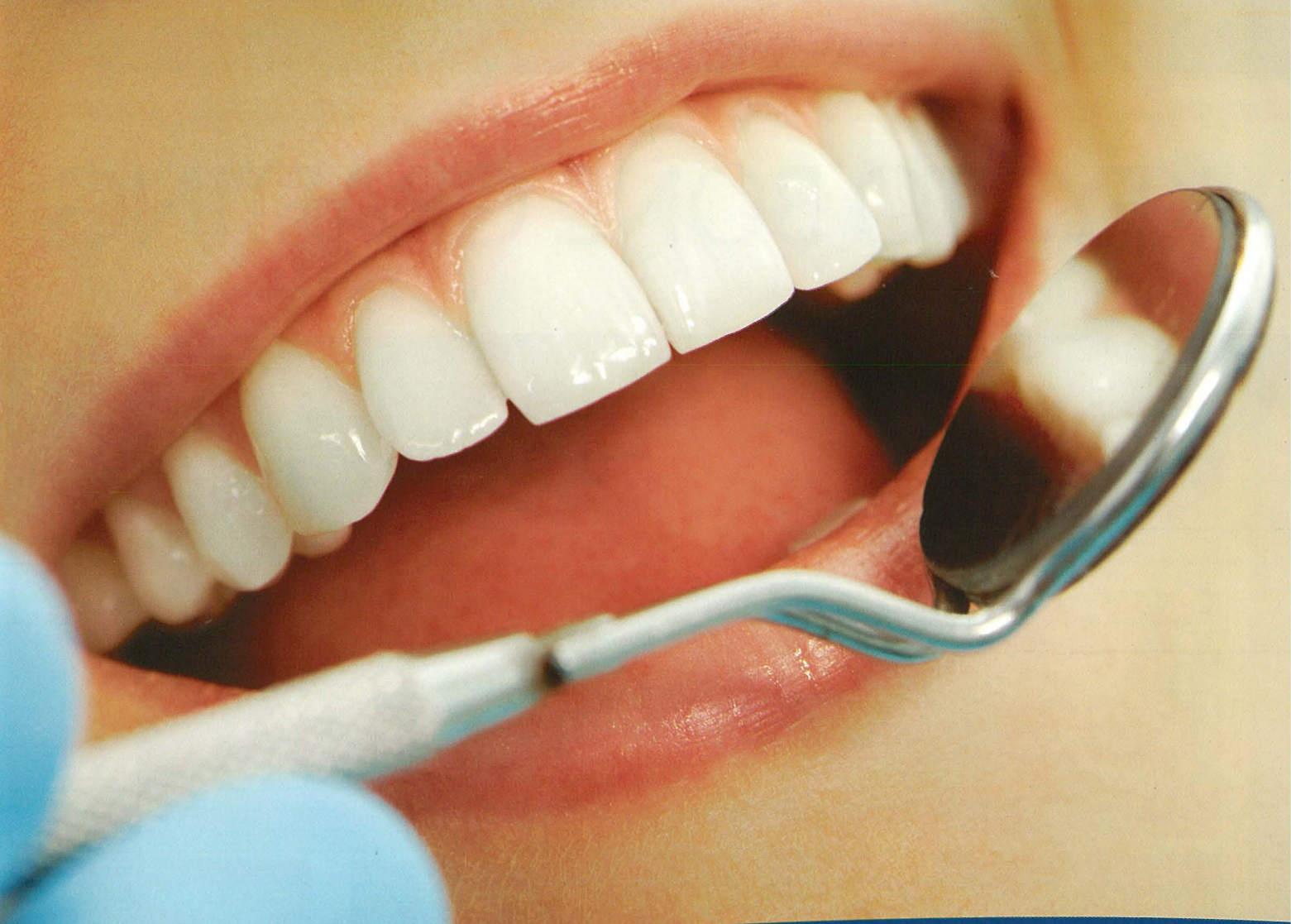
A number of extensions can be taken up including Retroactive cover.

Allcare's commitment to its clients remains that of offering competitive and innovative insurance solutions in addition to offering a personalized and efficient service from the time one enquires about a product to when a claim is lodged and settled.

Allcare Insurance Limited, is licensed by the Malta Financial Services Authority (MFSA) to carry on business of general insurance in Malta.

Call us today on 21 33 00 11 for a quotation.

Allcare Insurance Limited
University Roundabout, Msida
Tel: 21 33 00 11
www.allcare.com.mt



MOTOR HOME TRAVEL BUSINESS HEALTH MARINE PETCARE

PROFESSIONAL INDEMNITY INSURANCE

FOR DENTISTS

University Roundabout, Msida MSD1751 - Malta
T: +356 2133 0011 **F:** +356 2134 7947/8
E: info@allcare.com.mt **www.allcare.com.mt**

allCare
INSURANCE LIMITED

KEYS TO BONE GRAFTING

Keys to Bone Grafting

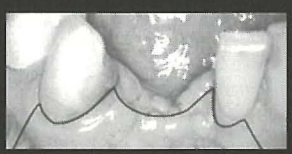
- absence of infection
- soft tissue closure
- space maintenance
- graft immobilisation
- growth factors , bmp s
- size and topography of the defects
- provisional

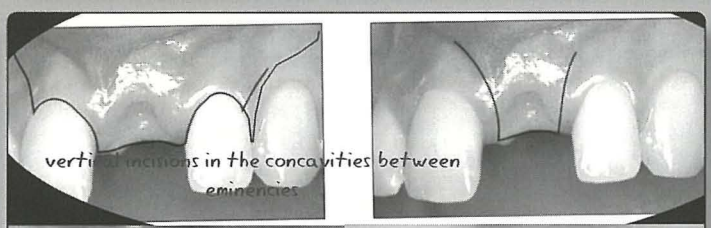
Absence of infection

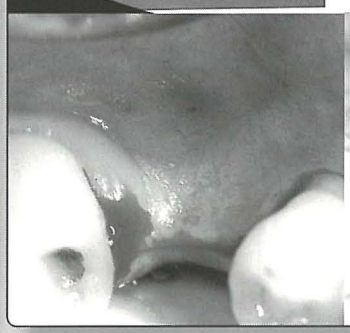
- ph < 2
- allograft resorbtion < pH 5,5
- contamination through endogenuous bacteria, saliva (primary closure) absence of sterile conditions.

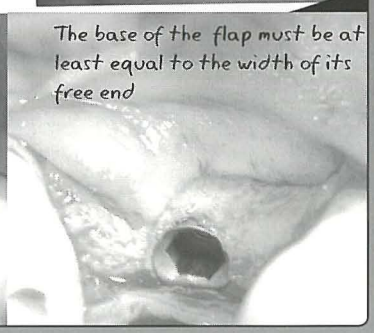
Sterile/ clean technique

Steribase









The flap should offer adequate access and have an adequate blood supply

- The flap must be of adequate size and fullyre flected
- The edges must lie on the sound bone

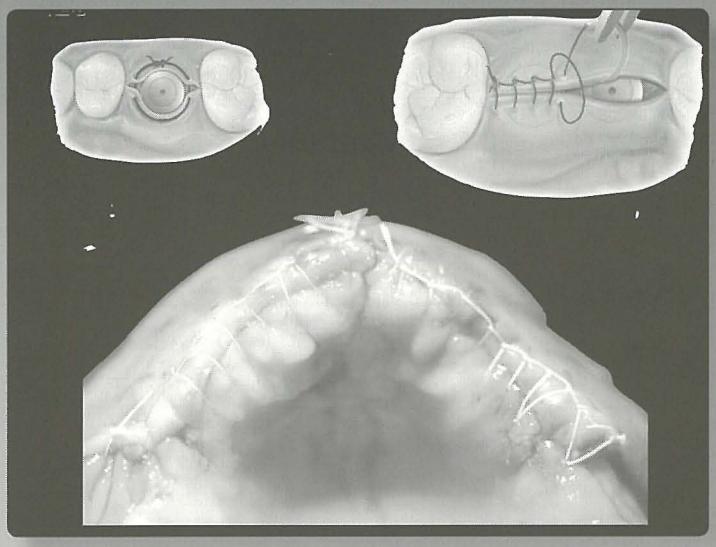
Soft Tissue Closure

- primary incision in keratinised tissue, crestal paracrestal lingual
- less palatal flap reflecting
- horisontal scoring of the periosteum paralel with the incision line <5mm
- tunnel technique

By Henriette Lerner DMD

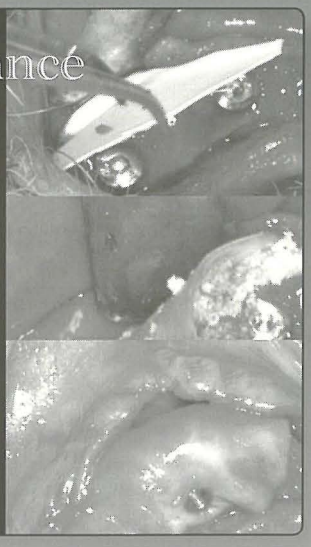
Dr. medic. stom. Henriette Lerner (DDS)
Associated Prof. Univ."Gr. T Popa" Iasi
Private Practice, Baden Baden Germany
Speciality:Implantology, Periodontology and Aesthetic Dentistry
ICOI Diplomate
DGOI Expert

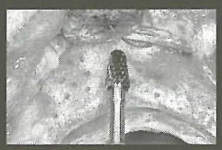
BDO Member
ASA Member
DGÄZ Member
DGZMK Member
National and international lecturer on topics of:
Aesthetic dentistry ,Sinus elevation, Bone Grafting



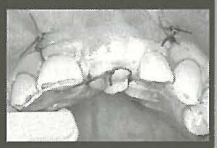
Space maintenance

- Tent
- bulky grafting, in excess





- regional acceleratory phenomenon
- host bone blood vessels



Growth factors

- present in bone matrix
- released during remodeling
- targeting the local osteoprogenitor cells

Box 36-1 Growth Factors

1. Platelet-derived growth factor (PDGF)
2. Fibroblast growth factor (FGF)
3. Transforming growth factor (TGF)
4. Insulinlike growth factor (IGF)
5. Platelet-rich plasma (PRP)
6. Bone morphogenetic proteins (BMP)

BMPs

- in extracellular bone matrix
- induce mesenchimal bone differentiation into chondroblats and osteoblasts

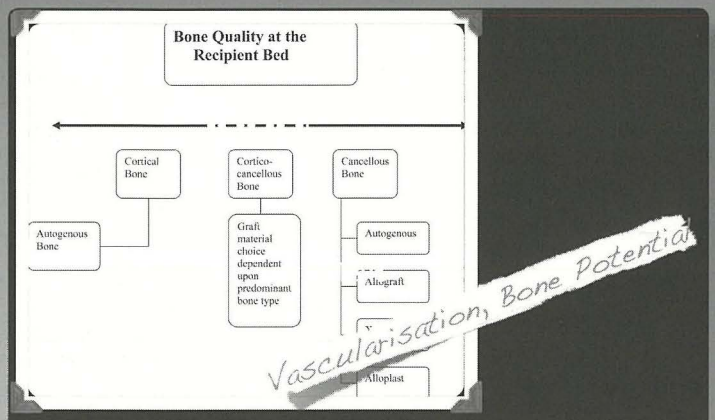
4 methods to increase bone growth and growth factors

- PRP
- autologuous bone (peak at 6 weeks)
- allograft (less BMP s)
- RAP

Continues on page 30.

KEYS TO BONE GRAFTING

Continues from page 29.



The Bone-Grafting Decision Tree: A Systematic Methodology for Achieving New Bone Dennis Smiler, and Muna Soltan,

Augmentationsmaterialien

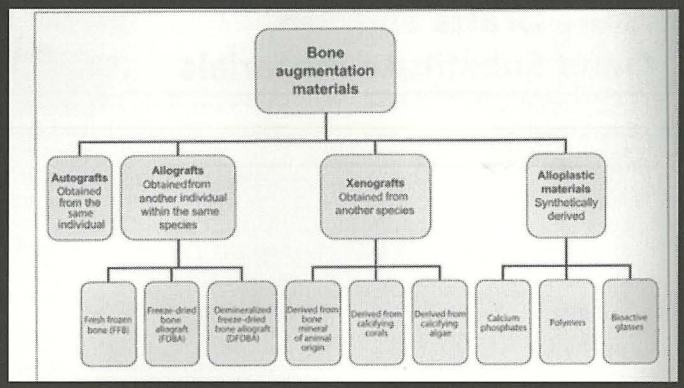


Table 36-2 Alloplasts

TYPE	MATERIAL	BRAND NAMES	STRUCTURE PARTICLE SIZE	RESORBABLE	RESORPTION TIME/%
Ca phosphates	HA synthetic HA natural Bovine bone derived	Osteograf D	Crystalline HA	N	–
		Bio-Oss	Cancellous (0.25-1.0 mm) or cortical (1-2 mm)	Y	1.5 to 2.5 yr+/100%
		Osteograf N	Micro + macroporous N-300 = 250-420 µm N-700 = 420-1000 µm	Y	1.5 to 3 yr+/100%
		PepGen P-15	Peptide + microporous HA	Y	↓ time for osteoconduction 1.5 to 3 yr+/100%
	Allogeneic bone (FDB)	Putos MinerOss	Mineral + collagen	Y	± 6 mo to 1 yr
	TCP	Cerasorb Curasan	βTCP micropores and macropores (10-65 µm) TCP + crystalline HA Round particles (50-150µm, 150-500µm, 500-1000µm, 1000-2000µm)	Y	3-24 mo/100%
Ca carbonate	Coral	Interpore 200 (coralline)	Porous HA Blocks-granules	±	Very long
		Biocoral	Natural coral aragonite 98% $CaCO_3$	Y	5-7 yr+/partial
Bioactive glass ceramics		Bioglass	Ca salts + P + Na salts + silicone	N	7 yr+
		Perioglass	Ca, P, Silicone, Na 90-710µm	N	5 yr+
		Bioglass	Ca, P, Si, Na 300-355µm	Y	
Ca sulfate		Capset	$CaSO_4$ (Plaster of Paris)		
Polymer		BioPlant HTR	Composite polymer + Ca hydroxide	Y/N	Very long; 4-5 yr Partial

Alloplastic Bone substitute

- size, interconectivity can be controled
- knowledge about material tissue interaction is limited
- Ca p, Ha, TCP good documented

Bone Blood Supply

Phase I: Osteogenesis–bone regeneration
Surviving cells 4 weeks (osteoid)
Phase II: Osteoinduction
BMP release 2 weeks to 6 months; peak at 6 weeks
Phase III: Osteoconduction
norganic matrix–space filler
Phase IV: Cortical plate, barrier membrane

Autogenous particulate graft

- osteogenic, osseoinductive, osteo conductive
- safescraper - 5 cm3/ bone chipper
- bone collector- contamination

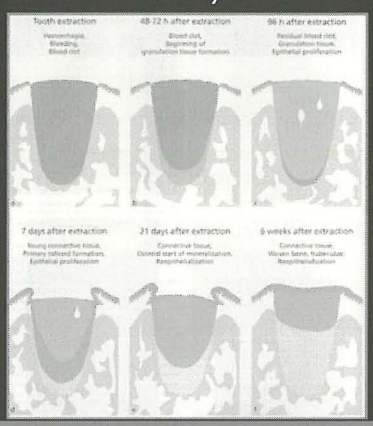
Demands

- biocompatible
- porous, macroporous for interconnectivity
- surface roughness,cristalinity--initial protein absorbtion,attachment of osteoblasts and osteoclasts
- in the regions you need Bone-resorbable Material
- In the regions You need Volume - non resorbable material

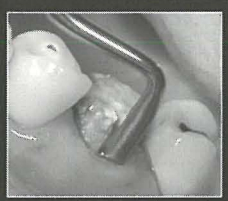
Membranes

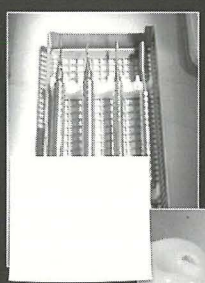
- Non-resorbable - PTFE, Ti reinforced (not in the esthetic Zone,can be expose, space maintenance) ,Nieman, Dahlin, 1980
- 1990 Resorbable - polimeric-polilactid, poliglyc -collagen membranes from animals (no exposu esthetics, no space maintenance)

- Extraalveolar processes
- Intraalveolar processes

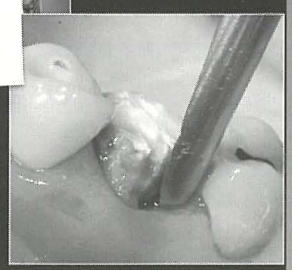


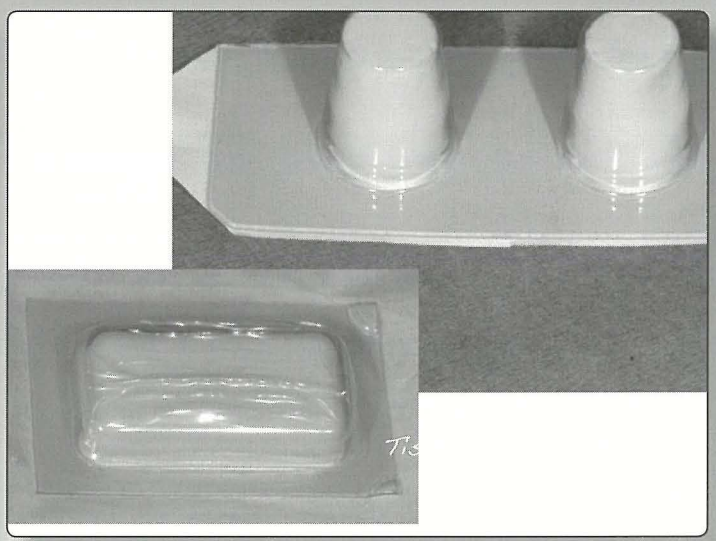
- Atraumatic tooth extraction

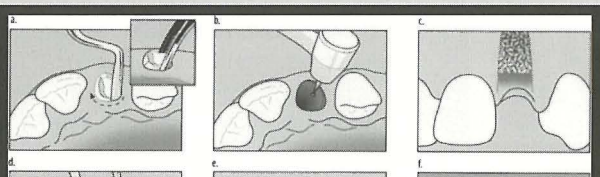


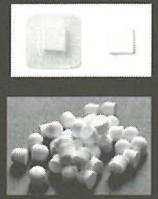


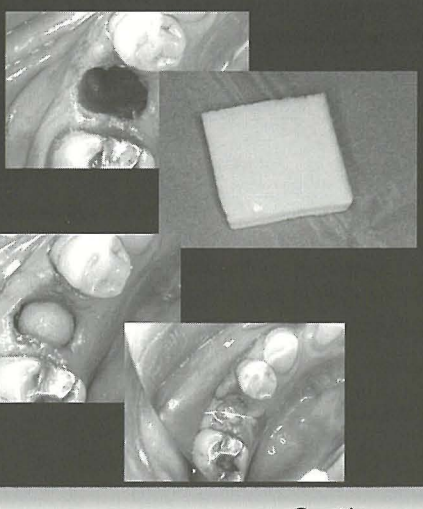
- Periotomes







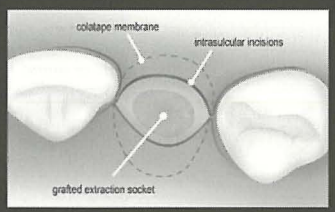


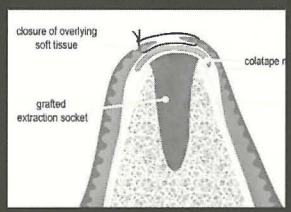


Continues on page 32.

KEYS TO BONE GRAFTING

Continues from page 31.





THE DECISION PROCESS

- What is the quality of the recipient bone at the graft site?
- What type of material should be grafted?
- How much recipient bone is present?
- How should it be grafted?

5 BONY WALL DEFECT - RGM
(RESORBABLE GRAFT MATERIAL)

4 BONY WALL DEFECT - MINERALISED ALLOPLAST,ALLOGRAFT + BARRIER MEMBRANE

2,3 BONY WALL DEFECT - ALLOPLAST ALLOGRAFT + AUTOGRAFT AND MEMBRANE 2 PHASES

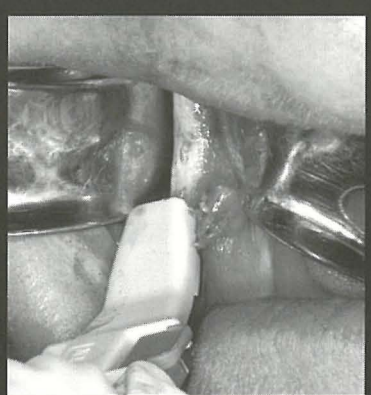
1 BONY WALL DEFECT- CORTICAL AUTOGRAFT 2 PHASES

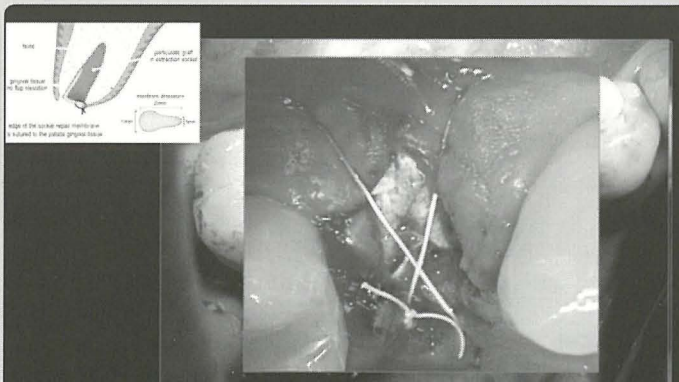
5 BONY WALL DEFECT - RGM
(RESORBABLE GRAFT MATERIAL)

4 BONY WALL DEFECT - MINERALISED ALLOPLAST,ALLOGRAFT + BARRIER MEMBRANE

2,3 BONY WALL DEFECT - ALLOPLAST ALLOGRAFT + AUTOGRAFT AND MEMBRANE 2 PHASES

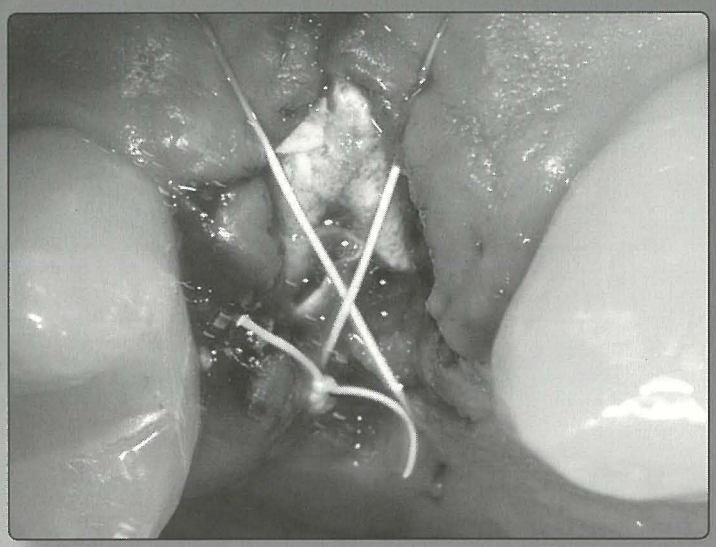
1 BONY WALL DEFECT- CORTICAL AUTOGRAFT 2 PHASES

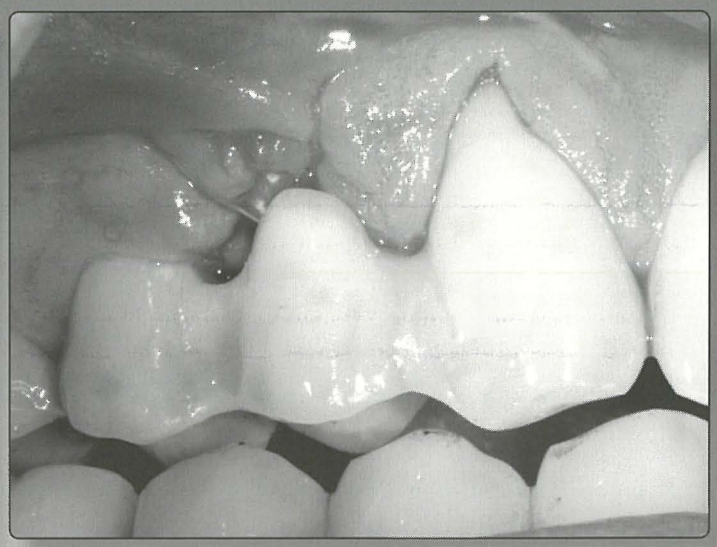


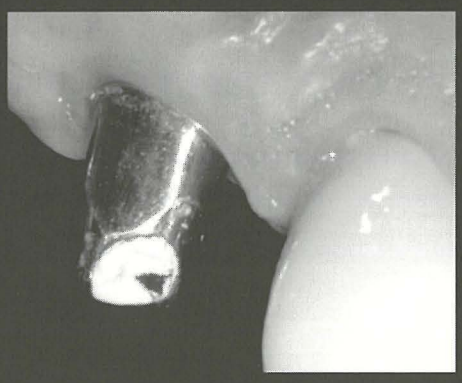


R. Buch1, W. Wagner2, T.E. Reichert1
Alveolar-Ridge-Preservation
– Eine Literaturübersicht -

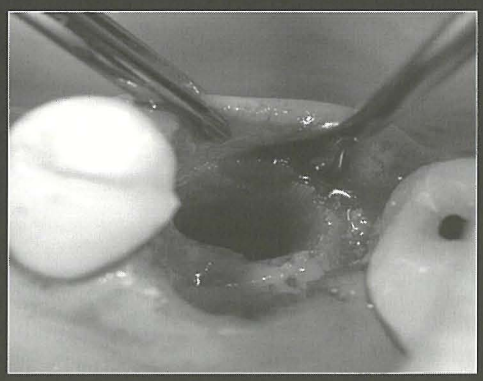
Howell et al. konnten durch die Alveolenstabilisierung mittels BMP-versetzter chwämme aus Polylactid und Polyglycolid scheinen nach Serinoet al. Er untersuchte 39 Extraktionsalveolen von denen 26 mit einem Schwamm aus Polylactid und Polyglycolid aufgefüllt wurden. 13 Alveolen blieben als Kontrollgruppe ungefüllt. Anschließend wurden alle Alveolen mittels Mukoperiostlappen plastisch gedeckt. Nach sechs Monaten konnten signifikant geringere Knochenverluste an den Testalveolen nachgewiesen werden [56].







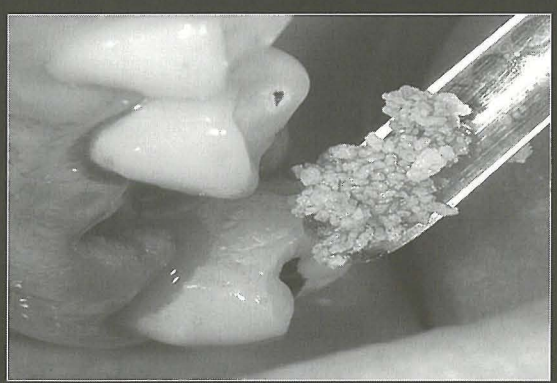
Alveolar Ridge Preservation



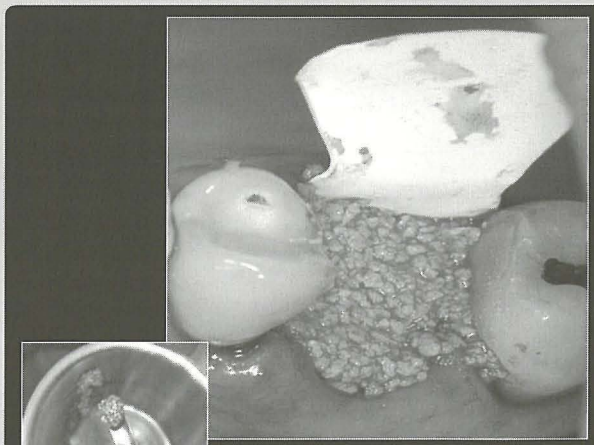
Min
mali

224

Alveolar Ridge Preservation



225

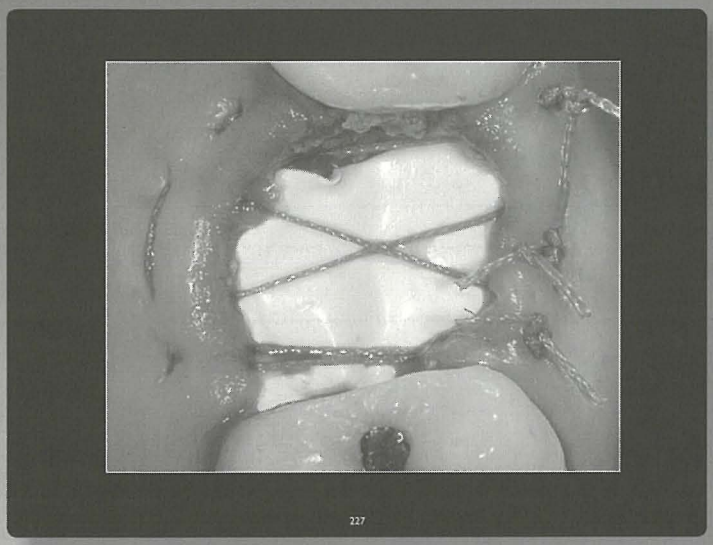


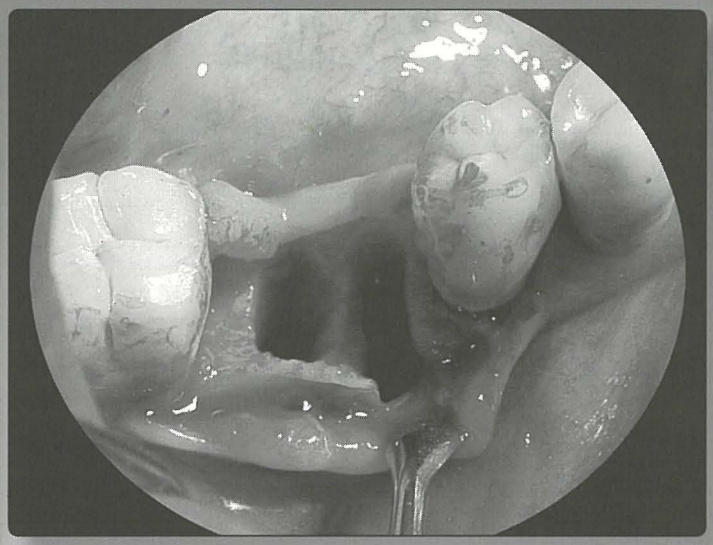
226

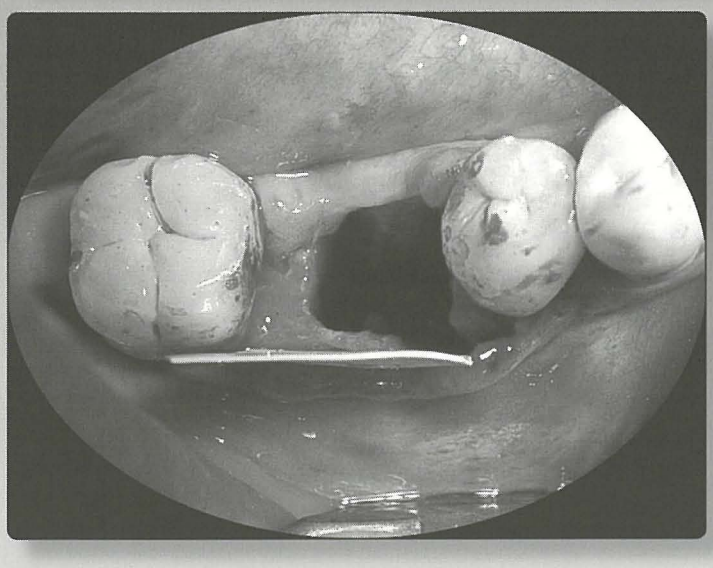
Continues on page 34.

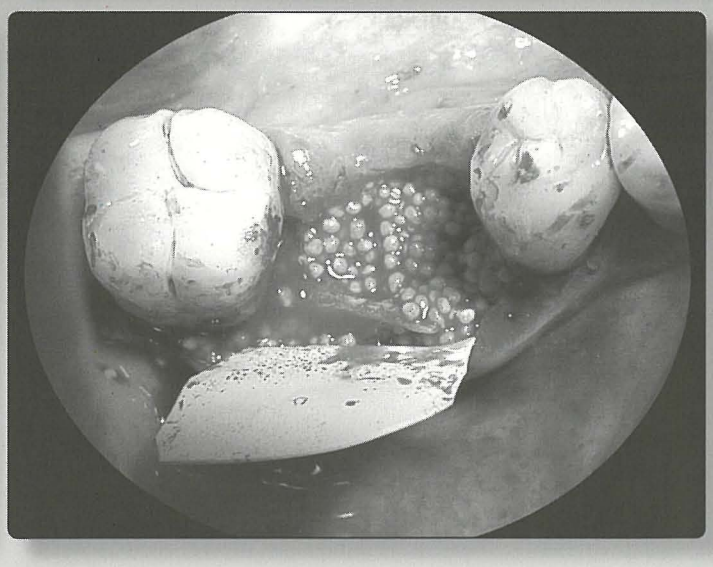
KEYS TO BONE GRAFTING

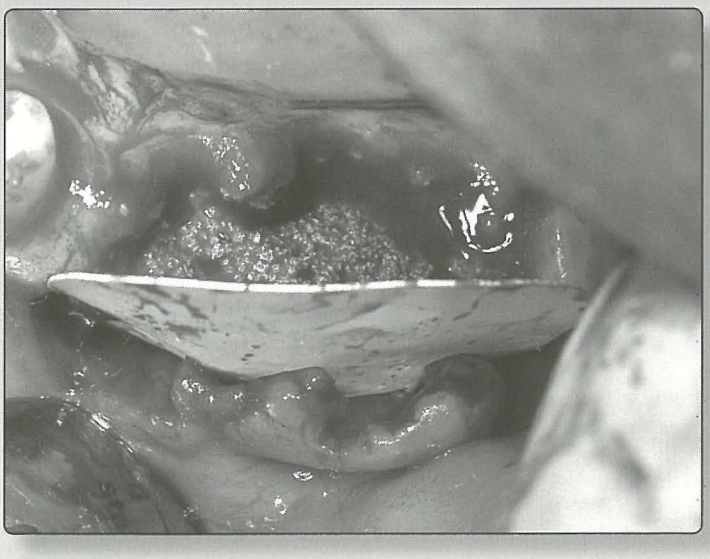
Continues from page 33.







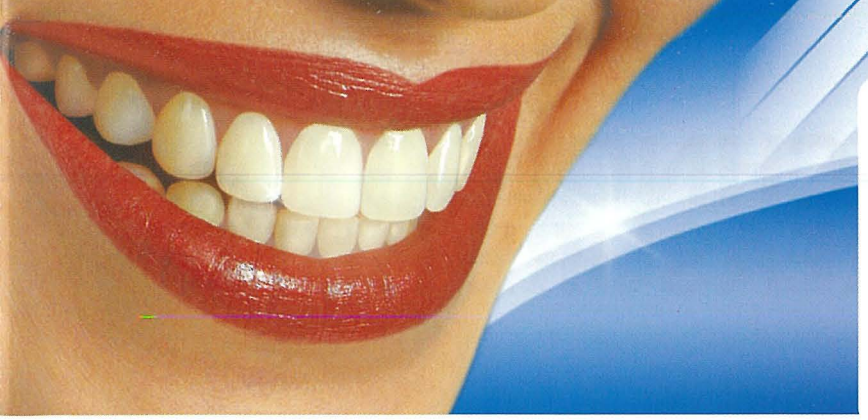




Analysis of Neogenesis in extraction sockets treated with Guided Regeneration methods

Neiva / Giannobile

Implant placement 3 Months after Extraction and regeneration with Membrane



125 JAHRE ANS ANNI YEARS

Trisa® OF SWITZERLAND

DANKE - MERCI - GRAZIE - THANK YOU

Feel the difference!

TRISA Sonicpower BATTERY helps protect tooth enamel and gums while enabling a thorough cleaning.

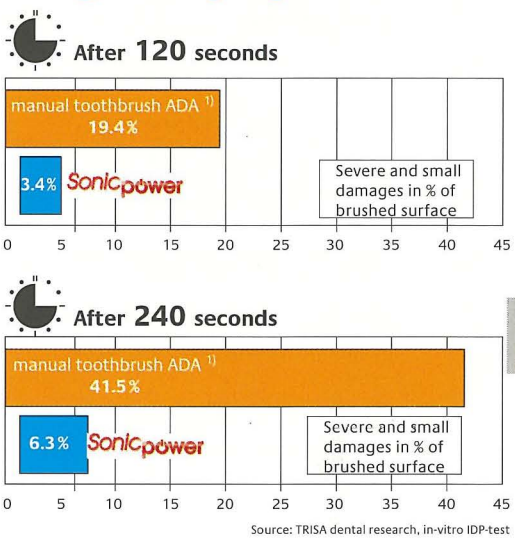
Replaceable battery

The enclosed Energizer® battery lasts for about 3 months of tooth cleaning (3 x 2 minutes per day).

Brush head change system

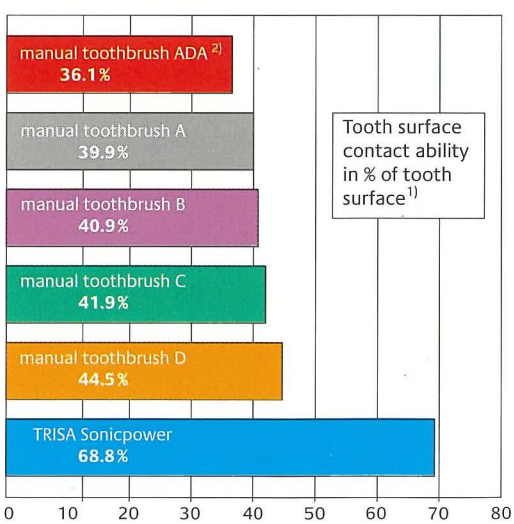
The easy-to-use change system allows a simple replacement of the brush head every 3 months (recommended by dentists).

Gingiva injury (in vitro)



Source: TRISA dental research, in-vitro IDP-test

Cleaning efficiency (in vitro)



Source: TRISA dental research, in-vitro IDP-test

1) Horizontal brushing technique
2) Benchmark manual toothbrush of American Dental Association ADA

September 2013 – Issue 47 ADA

TRADE ENQUIRIES:
Class Co Ltd,
36, Bishop Caruana Str Msida - MSD 1410,
T : 2381 1400 / E: wsale@classoptical.com

made in Switzerland

Our comprehensive oral hygiene range covers all your needs.

THE PAGE TECHNOLOGY DAM FUN TREASURE HUNT

7TH MAY 2010

ONE OF THE BEST TREASURE HUNTS IN THE CAPITAL

A very intelligently planned treasure hunt by Raphael Psaila which started and finished at D'AGOSTINOS IN VALLETTA. Retrieved and written up by Dr David Muscat for posterity.

Time: 1 hour 50 minutes starting at 6pm.

1. Name the Peaceful Pope in Republic street
   Ans. Pope Pius V

2. The new singing latrine in a particular street in Valletta. Present 1 fiscal receipt from this place and write down at least 5 words starting with the letter V displayed on its window
   Ans. Virgin,valentine,vague,value,va in,valium, Valletta,vacation,vagina

3. The Franciscan Church of Saint Mary of Jesus (Ta'Giezu Church). Can you mention the name of the present 'Guardian' of this Valletta Friary? He is particularly well known for his communication skills.
   Ans.Fr. Marcello Ghirlando

4. The number of windows on the facade of the Auberge de Castille
   Ans 31

5. The number of cannons in the saluting battery – *Ans. 8*
   Which one of these is being fired at Noon this week? – *Ans. 5*

6. An establishment that could belong to 'Superman", in a street parallel to St .Pauls Street.
   Ans. Clarks

7. Produce a postcard depicting an aerial view of Valletta.

8. The exact date of the George Cross presentation to Malta
   Ans. April 15th 1942

9. The famous 'Gut"-No 124 is
   Ans.The –SMILING PRINCE BAR

10. A BEAUTIFUL GARDEN IN THE UPPER PART OF VALLETTA HOUSES A BEAUTIFUL REPLICA OF 'LES GAVROCHES". Who created this beautiful statue?
    Ans. Antonio Sciortino

    Where is the original bronze sculpture exhibited?
    Ans. National Museum of fine arts.

11. A small market that has seen many seasons. One that has a millennium connotation. Clue-Found in Archbishop street, close to the Ursuline Sisters. It has a small door number.
    Ans Equinox 2000.

12. The Great Siege monument is situated opposite a prominent Valletta landmark.
    Write down the Roman Numerals on this statue *Ans. MDLXV*
    Translate these numerals to modern day numerals;ans. *1565*

13. The same beautiful garden in no.11 above, holds many beautiful monuments and plaques. One of these celebrates a great scientist who lived between 1874-1937. Who is this scientist?
    Ans. Guglielmo Marconi
    Who unveiled this plaque?
    Ans. the president emeritus Censu Tabone

14. Produce 3 pictures of Football players who will take part in the world cup to be held in South Africa this summer.

15. On Wednesday the 12th May 2010,this theatre will host a concerto called 'Schumann & Brahms for piano and Strings." Can you mention who will be playing the cello?
    Ans. Angelica Galea

16. The notorious Gut once again. Door no. 49
    Ironically the birthplace of the blessed.....
    Ans. Nazju Falzon.

17. A store named like an international famous football Mecca
    Name.....*Wembley Store*
    Number.....*305*
    Year established.....*1924*

18. The Hastings gardens hosts a token of friendship between 2 Nations
    Which 2 Nations .....
    Malta and Armenia

19. In which Football season did the team hailing from the Capital win all the possible honours that Maltese football has to offer? *Ans. 2000/2001*
    How many honours were won? *Ans.6*
    Can you mention all of them
    Ans:
    Air Malta centenary Cup
    Rothmans Premier League
    Rothmans trophy
    Lowenbrau Cup
    Rothmans Super Cup
    Super 5 Cup

20. The church dedicated to St. Francis of Assisi includes several important paintings. Mention two of the most celebrated artists whose works are exhibited there
    Ans:
    Mattia Preti
    Giuseppe Cali

OVERALL WINNERS

First prize:
TEAM of Dr Robert Lautier AND Dr Neil Schembri

Second prize:
Dr David Muscat and Dr Hugh Bonnici

Third prize:
Professor George Camilleri and Dr Audrey Camilleri.

8 actions against the frequent problems identified by dentists.

ORDINARY TOOTHPASTE

- ☑ Cavity protection
- ☑ Whitening
- ☑ Fresh breath
- ☑ Strenghtened enamel

Signal FAMILY PROTECTION

- ☑ Cavity protection
- ☑ Whitening
- ☑ Fresh breath
- ☑ Strenghtened enamel
- ☑ Reinforced gums
- ☑ 18hr anti-plaque effect
- ☑ Anti-tartar
- ☑ Anti-bacteria

Signal | BRUSH DAY+NIGHT | fdi

FDI recognizes that twice daily brushing with a fluoride toothpaste is beneficial to oral health

Signal mouths make great moments

Rediscovering Malta's late medieval heritage:

The St Leonard cave-church and the Carmelite Church at Lunzjata (Rabat, Malta)

DAM activity.
By Anthony Charles

On a very hot Sunday, 28th July 2013, Lino Said organised an outing for the Dental Association members. It was a visit to St. Leonard cave-church at Lunzjata, limits of Rabat.

This Chapel forms part of the Carmelite Convent which was given to the Order by Donna Margherita D'Aragona of Noto in 1441. The guide, Dr. Keith Buhagiar, is an expert of Medieval Maltese history. His expertise held us mesmerised for more than two hours and the detail with which he imparted to us gave us a new outlook to this very little known part of our historical heritage. The area around this chapel, even though it was sun-bleached, is extremely beautiful with ancient olive and other indigenous trees.

We learned why cave dwellings were very important for the early Maltese of that time; they were relatively easy to construct, were strategically difficult to be seen from a distance by invaders, had favourable ambiance for the dwellers in hot and cold weather and unlike houses could not be destroyed by marauding pirate and other invaders. Dr. Buhagiar made comparisons with the Sicilian situation at that time, especially with regards to the distribution and delivery of water and the similarities were many.

The Chapel, made out of a man-made cave, is very interesting whilst at the same time it reserves a shock for the visitors. The paintings had been recently "repainted" in such a garish way that it is irreversible for future restorations. Portland cement which is a curse for Maltese stone was used to plaster when it is well known in stone restoration that only a combination of "hydrolique" lime is used. The attempted "restoration" is a clear example of how-not-to-do things unless one is an expert.

Thank you, Lino Said. Count me in for another such expedition which you ably organised.

MEDIEVAL CAVE SETTLEMENT IN MALTA

By Dr David Muscat

Medieval Cave settlement location was mainly determined by upper coralline limestone and blue clay distribution. Blue clay is the most important rock, as it is due to its presence that an easily accessible water table, referred to as the 'perched aquifer' exists. Water stored above this impermeable rock deposit has always been recognized as a vital resource. It was the only reliable water source in Malta until the mid nineteenth century.

The adaptation of caves into houses and cultic shrines represents an ancient Mediterranean practice .Examples are found in Granada in Spain, Matera in Basilicata (Italy) , Matmata in Tunisia and Cava d'Ispica in Sicily .

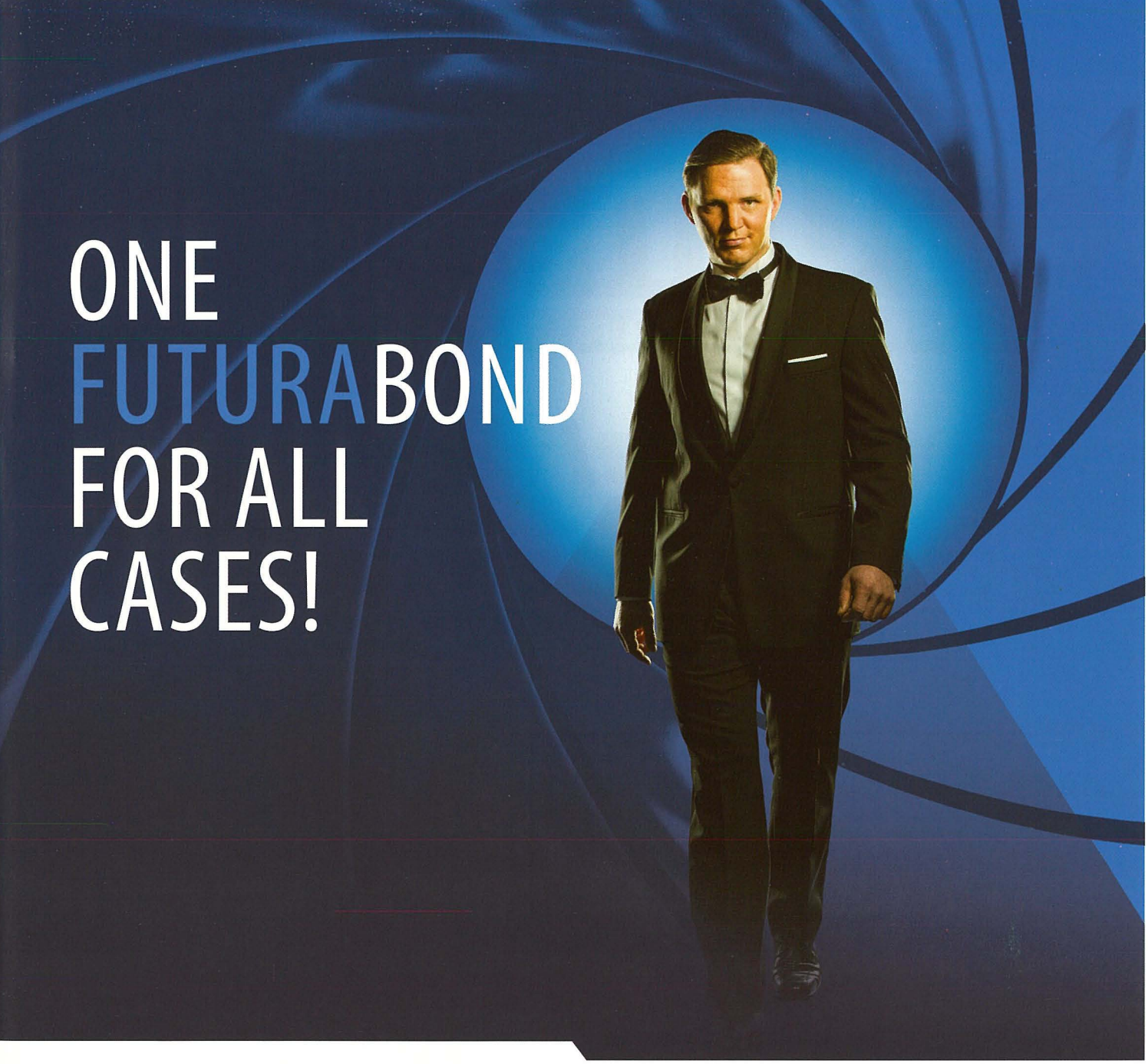
People chose caves and grottoes to provide convenient, cool, often defensible dwelling, stores, stalls, cisterns, churches, burial places and catacombs.(Luttrell 1979,461).

Water galleries are hewn into the Mtarfa Member deposits at a right angle to the rock face.

There is a gallery in Lunzjata in Rabat, Malta which is over 90 metres long. Galleries are level with the highest terraces field on the valley side, with water transported from the gallery's entrance to any adjoining and underlying fields by means of stone canals. The agricultural set up was called 'giardini'.

Several caves in the north of Malta were also used as bee hives for honey production.

Ref. Caves In Context – The Late Medieval Maltese scenario by Dr Keith Buhagiar.



DUAL-CURING UNIVERSAL ADHESIVE

Futurabond® U

- One bond for all – no other adhesives required in your practice
- Self-etch, selective-etch or total-etch – the choice is yours!
- Outstanding versatility of application
  - for direct or indirect restorations
  - fully compatible with all light-curing, dual-curing and self-curing composites – without additional activator
  - secure adhesion to various materials such as metal, zirconium and aluminium oxide, as well as silicate ceramics – without additional primer
- Applied in one layer – just 35 seconds total working time

NEW

MADE IN GERMANY 100%

VOCO
THE DENTALISTS

VOCO GmbH · Anton-Flettner-Straße 1-3 · 27472 Cuxhaven · Germany · Tel. +49 4721 719-0 · www.voco.com

SUNSTAR

G·U·M®

HEALTHY GUMS. HEALTHY LIFE.®

SensiVital®

Pleasant taste for daily use

Fluoride-containing formulations

Gentle on gums

GUM® SensiVital® provides rapid pain relief of sensitive teeth. Additionally, its special formulation with revitalizing ingredients heals and soothes irritated gums providing a protective shield and preventing their progressive damage providing natural protection to both gums and teeth..

www.SunstarGUM.com

Distributed by:

CW Collis Williams
EST: 1860

T: 21244847, 21224104
E: info@colliswilliams.com