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The Dental Probe

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DENTAL ASSOCIATION OF MALTA
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Editorial

By Dr David Muscat

Dear colleagues,

The Medical Council elections have been held. There were three candidates. Drs Anthony Charles and David Muscat have been elected for a period of three years. Dr Nicholas Bezzina came third.

An EGM has been held to discuss the issue of new Dental schools opening in Malta as well as the dental clinic inspections. Both issues are still being worked on. We are also currently in talks regarding the outsourcing of dental fillings to dentists in private practice.

An excellent DAM endodontics hands-on course and a lecture on local anaesthesia was held at the Hilton on 7 and 8 May, sponsored by the Hilton, Bart Enterprises, Gum and 1A Pharma. The course was run by Dr. Vipul Kataria and Dr.Sameena Choudhry from Kings London.

The next DAM event is on 15 June at The Federation Hall, Gzira on at 8pm. 'Law and Ethics 2' by Dr Julienne Cassar Demajo sponsored by Kin.

We will inform you of other events through the Summer. Enjoy your break! The cover picture is St Ursula street watercolour by the artist Jacqueline Agius.

Best regards,

David

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

Dr David Muscat, Medical Council of Malta member, addressing the meeting of the Federation of Dental Competent Authorities and Regulators in Barcelona on Friday 27 May. At that meeting, at the instigation of Dr Muscat, FEDCAR declared that in the interests of patient safety, tooth whitening is a practice of dentistry and should only be done in Dental Clinics (and not in Beauticians' salons or similar venues). The motion was approved by all countries present.

Dr. David Muscat President of the Dental Association of Malta and editor of the Dental Probe presents the Dental Probe to Professor Alfred J Vella Rector of the University of Malta on 13 May 2106. Dr David Muscat, as President of the Dental Association of Malta was appointed External Expert to the Shareholders Committee appointed to review the Taught Programmes offered by the Faculty of Dental Surgery.

8 DAY CPD PROGRAM IN ROME – 7 TO 16 FEBRUARY 2016

FROM MALTA TO ITALY

A BRIDGE TOWARDS ENHANCING QUALITY DENTISTRY

By Dr Nicholas Busuttil Dougall
IT Officer, DAM

Funded by the Erasmus+ Programme of the European Union

After obtaining funds from the European Union through the Maltese national Agency, the Dental Association of Malta carried out its first Key Action 1 (KA1) activity in Rome, Italy.

After a call from applications and a selection process, 8 members were chosen to travel to Rome for 9 days in February 2016.

The candidates attended a comprehensive course on occlusion and temporo-mandibular Disorders. The course was given by Professors and Senior Lecturers from the Dental Department of La Sapienza University.

Whilst in Rome, the candidates were also invited to attend the annual congress of Aesthetic Dentistry hosted by the Italian Association of Conservative Dentistry (SIDOC).

Renown international speakers such as Ignazio Loe, Francesca Vailati, Luiz Narciso Baratieri and Lorenzo Vanini gave excellent presentations on various topics from Aesthetics to tooth wear.

During their stay, a social program was also organised whereby the members were taken on guided tours of Rome, Vatican City and Tivoli. From the Dental Association, Dr. Noel Manche and myself accompanied the candidates and I must say it was a pleasurable and rewarding experience all around.

Everybody participated actively and conducted themselves in the highest professional manner. Thank you all for your participation and good company!

In the next editions of the probe, we will be publishing reports from the candidates who attended the course as a means to disseminate the knowledge learnt during these fantastic 9 days of cutting edge dentistry.

More photos on page 6

FROM MALTA TO ITALY

A BRIDGE TOWARDS ENHANCING QUALITY DENTISTRY

Full report and photo on page 5.

BASIC PERIODONTAL EXAMINATION (BPE): THE LATEST GUIDELINES

By Claire McCarthy RDH(TCD) FAETC CERT ED PGCE MA HPE FHEA IADEA

Accurate assessment of the periodontal and peri-implant tissues is an essential component of ethical patient care. The Basic Periodontal Examination (BPE) is an efficient screening tool that can be used to highlight the extent of periodontal examination needed and provides simple, straightforward guidance on treatment that is required (1).

The BPE was first developed by the British Society of Periodontology in 1986 (2). There have been minor adjustments made over the years and the most recent version, which will be outlined in this article, was published in March 2016.

In recent times,dento-legal claims regarding inappropriate periodontal and implant care have increased exponentially and are now the most common reasons for litigation in dentistry. Therefore, screening patients should be a regular component of every new patient appointment (3). The BPE should be considered together with other factors such as patient susceptibly and individual risk factors.

HOW TO MEASURE AND RECORD THE BPE FOR THE DENTAL CLINICIAN

The periodontal probe is the most important clinical tool for obtaining information about the health status of the periodontal tissues. Probing is the act of walking the tip of the probe along the junctional epithelium within the sulcus or pocket for the purpose of determining the presence of past disease activity (4). Good probing technique is essential to achieve accuracy in your measurements as diagnosis, treatment procedures and clinical outcome will be based on these recordings. The accuracy of measurements obtained by probing can vary significantly depending on the clinician's skill, size and design of the probe, probing technique and tissue health (5).

- The dentition is divided into six sextants,consisting of molar and premolar, and canine and incisor, as shown in Figure 1.

All teeth in each sextant are examined except 3rd molars. For a sextant to qualify for recording, it must contain at least two teeth. If only one tooth is present in a sextant, the score for that tooth is included in the recording for the adjoining sextant.

- A World Health Organisation (WHO) CPITN-E probe is used and is specifically designed to facilitate the BPE. The probe (Figure 2) has two distinctive features: the "ball end", 0.5 mm in diameter; and a black band, from 3.5 mm to 5.5 mm. The ball end is used to detect calculus and permit accurate tactile feedback to the clinician of the extent and location of sub-gingival deposits. The black band is a clear indicator of the extent of the pocket probing depth and is a fast way to screen patients and determine if pockets are shallow (<3.5 mm), moderate (3.5 mm-5.5 mm) or deep (>6 mm). The probe should be held in a relaxed, modified pen grasp and a light probing force is recommended at 20-25 grams.
- The probe should be inserted into the gingival crevice of each tooth in every sextant and "walked" along the junctional epithelium (Figure 3) using a methodical approach to ensure that no sites are omitted from the examination. The clinician should insert the probe into six sites on each tooth (distobuccal, buccal, mesiobuccal and, likewise, on lingual/ palatal surfaces). The highest score for each sextant should be recorded (6). Keep the end of the probe in contact with the tooth surface and parallel to the long axis.

Maintain contact with the tooth while passing the probe in an apical direction until the resilient stop of the soft tissue attachment is felt.

This may easily be distinguished from the sudden hard stop of subgingival calculus or a ledge on a restoration. When measuring interdentally, an oblique angle of the probe as to be applied in order to reach the mid-line of the interdental area where the tissue loss is usually greatest. This will slightly overestimate the pocket depth.

Continues on page 10.

Upper right (17–14)	Upper anterior (13–23)	Upper left (27–27)
Lower right (47–44)	Lower anterior (33–33)	Lower left (34–37)

Figure 1: Box chart

Figure 2: WHO probe

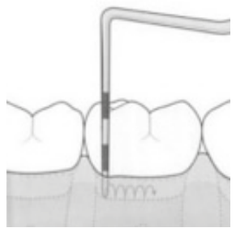

Figure 3: Walking stroke

BASIC PERIODONTAL EXAMINATION (BPE): THE LATEST GUIDELINES

Continues from page 9.

- As soon as a score of 4 is identified in the sextant the clinician is probing, they may cease probing that sextant and move directly onto the next sextant. However, it is better clinical practice to continue to examine all sites in every sextant to ensure that a full understanding of the periodontal status is established and all furcation involvement is documented.

Each sextant is allocated a score using the numbering codes outlined in the Table 1 and the * should be recorded along with a number if a furcation is detected.

Figure 4 will give the dental team an outline of how a completed BPE chart should be recorded and may appear in the patient notes. A referral letter from a GDP to a periodontal specialist should include a BPE that will indicate that specialist intervention is required.

WHEN TO RECORD A BPE

- All new and recall patients should havea BPE recorded as part of a thorough initial assessment.
- In patients who present with codes of 0, 1 or 2, the BPE should be recorded at least annually.
- In patients with BPE codes of 3 or 4, more detailed periodontal charting is advised:
  - Code 3: measure probing pocket depths of six sites around each tooth in the sextant where the code 3 was recorded.
  - Code 4: a BPE code 4 found in any sextant requires a full 6-point pocket chart throughout the entire dentition.
- New guidance suggests when a -point chart is indicated, it is only necessary to record sites of 4mm and above to save time, however probing should be thorough and include the entire circumference of each tooth.
- BPE does not provide information about how sites respond to treatment and, therefore, is unsuitable for the evaluation of a course of periodontal therapy.
- For patients who have undergone a course of initial periodontal therapy, and are now in a maintenance programme of care, a full 6-point pocket chart is required annually.
- Peri-implant tissues require a 4 r 6-point probing and recording. The BPE should not be applied to implants, as they require a more detailed examination.

2*	1	2
4	3	4

Figure 4: Sample BPE chart

INTERPRETING BPE CODES AND
establishing the treatment need
In order to establish what is required once the patient has been allocated a BPE code for their periodontal condition, general guidance on treatment for each score is provided to assist in the treatment planning process and to know when a specialist referral may be required (Table 2).

RADIOGRAPHS
Radiographs to assess alveolar bone levels should be obtained for teeth or sextants where BPE codes 3 or 4 are detected (7).

Periapical images are considered the gold standard for periodontal assessment as the crestal bone levels should be visible.

CONCLUSION
All clinicians should regularly screen patients to detect and record the presence of periodontal disease (2).

A BPE is simple, quick and should be part of every new patient assessment and recall appointment as record keeping is the most essential part of managing periodontal disease (3). It takes a matter of minutes to complete and will elevate the quality of care for each and every patient.

About the Author
A graduate of Trinity College Dublin, Claire has 22 years clinical, research and academic experience teaching undergraduate and post-graduate Periodontology at Kings College London and at New York University. She has a Masters Degree in Higher Education and is a fellow of the Higher Education Academy. Claire recently received the Vivienne Wohl KCL Studentship Award to complete a PhD in risk communication as a means for patient behaviour change in primary dental settings. Claire specialises in the delivery of hands-on masterclasses in Periodontal and Implant maintenance and advanced non-surgical instrumentation techniques for individuals and small groups. For Free online CPD, articles, instrument guides and to learn more about screening patients for periodontal disease go to clairemccarthy.co

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CODE	CLINICAL FINDING
0	No pockets >3.5mm, no calculus or overhangs, no bleeding on probing. Black band completely visible
1	No pockets >3.5mm, no calculus or overhangs, bleeding on probing. Black band completely visible
2	No pockets >3.5mm, presence of supra/subgingival calculus depositions and/or overhangs, bleeding after probing. Black band completely visible
3	Probing depth >=3.5mm-5.5mm. Black band partially visible, indicating pockets of 4-5mm
4	Probing depth >5.5mm. Black band entirely within pocket and no longer visible. Pocket of 6mm or more
*	Furcation involvement

Table 1: Clinical finding

CODE	TREATMENT NEEDED
0	No need for periodontal treatment
1	Oral hygiene instruction (OHI)
2	OHI, removal of plaque retentive factors, including all supra- and sub-gingival calculus
3	OHI, root surface debridement (RSD)
4	OHI, RSD. Assess the need for more complex treatment. Specialist referral may be indicated
*	OHI, RSD. Assess the need for more complex treatment. Specialist referral may be indicated

Table 2: Treatment need

	BPE SCORE	GUIDANCE
Complexity 1	Code 1–3 any sextant	Can be treated in general practice by GDP and/or dental hygienist
Complexity 2	Code 4 in any sextant	Treat by GDP/dental hygienist or specialist referral
Complexity 3	Code 4 in any sextant plus one or more risk factors such as smoking, <35y, systemic factors	Most will need a specialist referral

Table 3: When to refer patients – guidelines for clinicians based on BPE codes

Advanced Non-Surgical Periodontal Therapy and Implant Maintenance Skills for Maltese Dental Hygienists

Earlier this year, The Directorate Allied Health Care Services (DAHCS), Ministry for Health organised and sponsored an advanced training course for Dental Hygienists working within the public sector. This significant event had the cooperation and logistical support from the Department of Dental Surgery and the Faculty of Dental Surgery. Visiting Professor at NYU and former head of BDS undergraduate Periodontology at Kings College London, and current Doctorate researcher Claire McCarthy delivered this 4-Day programme.

The objective of this intensive course was to further the education of the dental hygienists in the diagnosis and treatment of periodontal disease, the non-surgical use of periodontal instruments, patient education, behaviour modification and disease prevention. As a result of this professional development it is envisaged that Maltese Dental Hygienists improve efficiency, productivity and periodontal outcomes by acquiring knowledge and competency of new technologies and the necessary skills to provide updated periodontal and implant maintenance. The President of the Malta Association of Dental Hygiene and representative of the Ministry for Health articulated how 'this was an historical opportunity, anticipated to be the first of many to come, for Dental Hygienists to update theoretical knowledge and enhance practical skills in order to maintain standards and to deliver the best quality care to their patients'. President of the Dental Hygiene association, Veronica Montebello herself participated in this professional development programme along with fifteen dental hygiene professionals from Malta and Gozo. We were also joined on one of the sessions by local periodontist Elizabeth Martinelli, who also teaches at the faculty of dental surgery.

This 4-day programme consisted of tutorials, small group work, live demonstrations, phantom head work and daily assessments. Each learning activity had clear learning outcomes to qualify for verifiable CPD hours. Course participants received didactic teaching methods and hands-on practical exercises throughout the entire programme. Emphasis was placed upon effective and efficient non-surgical instrumentation and debridement of root surfaces, as well as educating patients on self-care and the role of plaque in the progression of periodontal disease and peri-implant mucositis and periimplantitis.

A combined approach to root surface debridement is considered the gold standard and the use of well designed, ergonomic and efficient hand and powered instruments are an essential part of every clinicians toolkit. Feedback from course participants was extremely positive and overall deemed a worthwhile, empowering and educational experience for all.

PREPARATION OF THE ROOT CANAL SYSTEM USING CONTEMPORARY NITI INSTRUMENTATION

The DAM hands on course at the Hilton

By Dr Viul Kataria and Dr Sameena Choudrey from Kings College Dental Institute London

Summarised by Dr David Muscat

An Apex Locator is important to use in RCT. The canal has to be damp. The largest file that binds snugly at the red bar. O ready is the point at which the pulp becomes PDL.

- A 30 degree curvature is moderate.
- A 27 gauge needle in terms of file size is 40-42.

One needs a size of 25-30 –the irrigant with light pressure only goes 1-2 mm apical to where the needle is placed.

Hand instruments should be used with

a. Wide canals
b. open apices
c. complex curvatures
d. attempting to bypass fractured instruments and ledges.
e. removing gp.

The technique is based on the canal. Tactile feel in endodontics. When a canal disappears on a radiograph , that is where it divides.

BIOLOGICAL OBJECTIVES

a. Confine instruments to roots
b. No infected debris beyond foramen
c. Remove all tissue from root canal space
d. Eliminate bacteria and toxins
e. Creation of sufficient space for intra-canal medicament.

The inflammatory response will get rid of the parts you left eg. in lateral canals.
A crown down approach allows time for irrigation and this is very important. Bend endo needle 1mm short. Use an endo activator.

Get corresponding gp point or next size-up and down –turbulent flow. Use 17 per cent EDTA liquid and leave 1 minute per canal. Remove the smear layer. Final wash with hypochlorite If you use chlorhexidine with sodium hypochlorite you will get a precipitate which will block tubules.

If you mix chlorhexidine with EDTA you get a precipitate Always replenish the hypochlorite as it lasts only one minute. Use finger pressure only so you can see the syringe moving.

You want a turbulent flow of irrigant. Keep it up and down and keep moving. Use a size 25 and then step back to size 40.

Use an up and down motion with size 6,8,10 otherwise you may get apical transportation. Rotations and balanced forces.

PRINCIPLES OF ACCESS CAVITIES

a. direct line access
b. remove roof of pulp chamber
c. avoid damaging the pulp chamber
d. preserve tooth tissue
e. retention and resistance form for temporary and permanent restoration.

Go apical to 25-30 and each successive layer file is placed 0.5-1mm less into canal to produce a taper. Recapitulate between each step.

DISADVANTAGES

a. possible extrusion
b. curved canals likely to straighten
c. apical area may get blocked with debris
d. first files to apical region.

Stainless steel files are all 02 taper. Apical gauging-if file goes through-curve bigger than a 25 at the end. Then go to 35,40 till the first one stays.

ANTI CURVATURE FILING

Filing away from the inner curve of the root to reduce the risk of a perforation. The MB roots of an upper molar and the Mesial roots of the lower molar are most at risk. Use in cases with moderate to severe curvature. File furcal walls once but the M,D,L and B walls are filed 3 times. We prepare slightly shy of the final part of the curvature. Use tactile feedback to find curvature. An X gates is gates gliddens all in one.

Continues on page 14.

PREPARATION OF THE ROOT CANAL SYSTEM USING CONTEMPORARY NITI INSTRUMENTATION

Continues from page 12.

THE BALANCE FORCE TECHNIQUE
Initially designed to be used with flex R files –k files with a modified tip. Rotate quarter turn till you engage the dentinal wall. Rotate approx three quarters anticlockwise whilst maintaining apical pressure to grip the dentine – a click may be heard .

Check and clean file. Repeat and you will see file going progressively further. Use sequentially larger files.

THE STEP DOWN TECHNIQUE

1. Access – keep using irrigant. Create glide path up to size 35 file to just before curvature or 4mm from EWL. using watch winding or balanced force GG4 into orifice and then GG3and GG" further apically. Place away from furcation and towards outer wall and irrigating between each drill. Use GG drills only in straight part of the canal. Obtain true WL zero reading minus 0.5mm. Prepare at WL using up to a minimum MAF of size 25;thev natural apical anatomy may not conform in size or shape of the file and so you must prepare to the smallest file that binds at the WL ensuring patency filing with a size 10 between each file.
2. Coronal flare
3. Zero reading with apex locator write length down and size. Go ½ mm short of it.
4. Apical stop.
5. Step back 0.5mm/1mm up to size 70.
6. Apically gauge canal with MAF. Whichever stays firm eg.25 – then step back. You are relying on tactile feedback.

- Sx file
- K flex 6,8,10
- K flex files and others.

A Hedstrom file is a reverse Christmas tree – a push pull action to be used. Always use this coronal to the curvature. The K flex has a cutting angle that is more diagonal, more central and less aggressive.

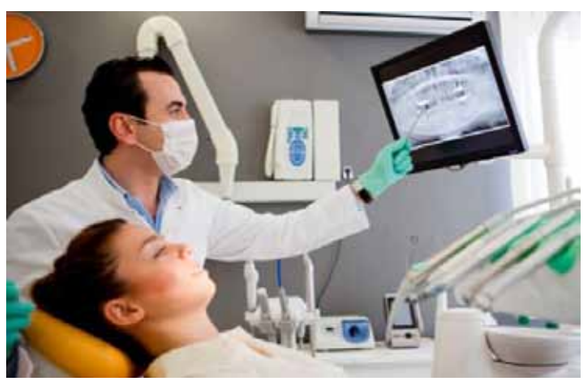
THE STEP DOWN TECHNIQUE
Open up the coronal portion before the curvature starts. Get a glide path to 25-40. Maintain patency to the curve. Work up sequence.

Other alternatives-hand instruments produce more debris. Then use a gates glidden2 to the point before the curve. Peck it down. Clear the path for gates gliddens 4,3,2..then patency file and recapitulate same time. Lean on it on outer wall and brush out-aim is to remove triangle of dentine. A gates glidden 4 is enough so that the drill disappears into the orifice and no more than that.

Continues on page 16.

An opportunity has arisen to run a dental clinic in a medical centre, with a very good client base, located centrally in the south of Malta.

Applicants must have a degree in dentistry, be knowledgeable about the operations of a dental clinic, have excellent communication and managerial skills, have a motivational approach, and an ability to collaborate within a multidisciplinary healthcare team. Experience is highly considered, yet it is not a requisite.



Interested individuals may send an updated C.V. together with a passport photo and covering letter to camilleri.j255@gmail.com by not later than Monday 18th July 2016.

All applications will be treated in the strictest confidence.

PREPARATION OF THE ROOT CANAL SYSTEM USING CONTEMPORARY NITI INSTRUMENTATION

Continues from page 14.

Keep clear-if you force a hand file you will get a ledge. The outer wall relocated so we have direct line access to curvature.

Establish zero using EAL. Verify glide path with a size 10 file. Push/pull motion until size 10 file is loose .Use plenty of irrigant. Whatever you do the size 10 file has to be loose in a push/pull motion.

Balance force-file down to working length. Between each file you maintain patency. Mix the exhausted irrigant with new irrigant. Recapitulate.min size 25-30. If you use a size 27 gauge needle no hope to get to 1mm short apex. The sizes 55, 60, 70 are used in the straight part of the canal.

Prepare to working length 0.5mm short of the zero reading. Look at silicone on your file when you do the quarter turn. Step back to size 70 file either 0.5mm or 1mm.Patency with size 10 between every file. The taper of the canal is wider than the taper of files.

APICAL GAUGE
With each file remember
- Patency
- Irrigate
- Recapitulate

With the Sx lean on the outer canal and remove the triangle of dentine. Protaper Next – brush on outer stroke. Swaggering. Keeps cross sectional shape small but the envelope of the cut is large.

The Protaper philosophy:
- X1 TIP 0.17
- X2 TIP 0.25
- X3 TIP 0.3
- X4 TIP 0.4
- X5 TIP 0.5

There is a wider mill to the diameter of the fiel –brush with it. EDTA 17% used-X1 programmed to 300m rpm. Use gp pumping, endo activator, ultrasound. Then hypochlorite and activate it .

- Access
- Coronal flare
- Zero reading
- Apical prep

With Protaper Next – fill chamber with irrigant. With this system you can take it beyond the curve. Take X1 down. Brush outer wall. Coronal flaring using X1 and X2.

Alternatively- use GG drills. Sx orifice openers etc. Irrigate- move needle, c reate turbulent flow of irrigant. Obtain reading with EAL. Verify the glide path. Keep size 10 nice and loose. Glide path to 0.5mm short of zero reading. Then X1 and X2.

IMPORTANT
Once you hit the apex with X1 say goodbye and don't use again. Patency fill/recapitulate frequently. 17% EDTA ,final 2% NAOCl.

SEQUENCE
1. glide path 10,15 or 10 and proglide
2. X1 yellow just past curvature-brush outerstroke and irrigate
3. Working length –apex locator –depends on size of canal
4. X1 to working length then X2 to working length. Check with size 25- does it go down
5. X3

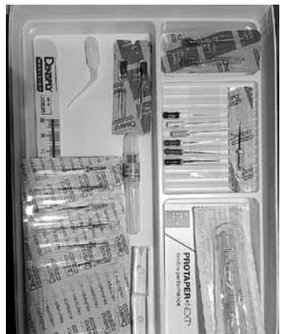
WAVE ONE GOLD
50% MORE resistant to cyclic fatigue than Waveone. Covers wider range of canal morphologies. Shortens shaping time. It has reciprocating motion; evolving cross section; gold thermal treatment; optimized tip and variable taper.
1. Access cavity
2. Coronal flaring-primary drill
3. Zero reading
4. Apical prep-0.5mm short

Establish straight line radicular access. Estimate working length. Size to file loose to where you want drill to go Fresh irrigant each time. You need to have a ferrule of 2-3 mm and one can use a Nymar core in amalgam.

The floor of the pulp chamber is level with the CDJ. Leave 17% EDTA irrigant to soak through calcification. K flex files rhomboid in cross section. C plus file cutting tip. Access –coronal flare- just to curvature. 6,10. Half a mm short of zero reading. Maintain patency past zero reading

PROGLIDER FILES
Expensive. Will be 16 at tip. When you work to X2 kiss the apex and say goodbye. 0-3 mm apical terminal from radiographic apex.and frequently on the side. Rely on apex locator- gold standard. The radiograph is a back u if apex loose.

DETECTION OF FRACTURE
An isolated pocket .Place some la on side of root and reflect gigival margin.-May see vertical crack.

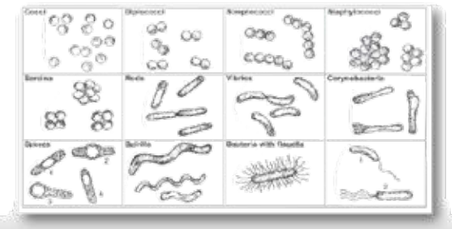


INFECTION PREVENTION: WHAT'S NEW?

By Christian Stempf, Hygiene Adviser
Member of CEN-TC102 wg5 + wg8 European Committee for Normalization

Bacteria

> There are around 7300 known species with a wide range of shapes:



Bacterial multiplication

> Bacteria grow to a fixed size → replicate through a form of asexual reproduction,
> Two identical clone daughter cells are produced, each with the same DNA.

Genetic material

1 → 2 → 4 → 8 → 16 → 32 → 64 → 128 . → 17'000'000 after 12 Hours (2^{24}).

Bacterial Endospores

> Under unfavourable conditions bacteria sporulate,
> Spores are resistant to heat (116°C), radiation, chemicals and desiccation,
> Under favourable conditions, spores are capable of germinating into a new organism,
> Spores in the tombs of the Pharaohs were able to germinate / grow when placed in appropriate medium.

Clostridium perfringens
Towards end of sporulation

Bacillus Anthracis rods
(Anthrax spores)

Viruses

> There are no "good" ones
> Generally viruses are much smaller than bacteria: 0,02 to 0,3 µm,
> Viruses are small infectious agents that can replicate only inside living cells.

Rotavirus

Constantly increasing risk

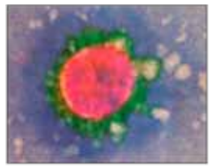
> Increasing population and international contacts generate more traveling

> 1950 → 20 million
> 2000 → 500 million
> 2011 → 2 800 million
> 2016 → 3 600 million → 100 000 flights / day

More travelling → increased risk

SARS Coronavirus (February - March 2003)

Within months after its emergence in Guangdong China, it had affected :
> *more than **8000** patients,*
> ***774 died,***
> *in **26 countries** on **5 continents**.*



The Severe Acute Respiratory Syndrome
The England Journal of Medecine (18 December 2003)

Continues on page 20.

INFECTION PREVENTION: WHAT'S NEW?

Continues from page 19.

Leading causes of death

> Each year 56 000 000 people die worldwide,

	2012 ⇩	2008 ⇩
> Cardiovascular diseases	31%	30%
> Infectious diseases	**23%**	27%
> Cancer	15%	13%
> Injuries	9%	9%
> Respiratory and digestive	12%	11%
> Others	10%	9%

2014

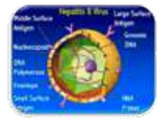
Leading causes of death

> Each year 56 000 000 people died worldwide,

	Annual mortality	Chronically Infected
> HIV / AIDS	1 600 000	34 000 000
> Tuberculosis	1 300 000	2 000 000 000
> Hepatitis B	700 000	350 000 000
> Hepatitis C	400 000	170 000 000

What is Hepatitis?
A, B, C, D, E

> Transmission modes: unsafe sex, blood transfusion, contaminated needles and perinatal,
> Incubation period: from 30 to 180 days,
> HBV may be detected 30 to 60 days after infection,
> HBV is 50 to 100 times more infectious than HIV,
> Unlike HIV, HBV can survive outside the body for at least 7 days.



14

Hepatitis C
Fact sheet

> Called the "silent" epidemic. Most people are not aware of being infected for as long as 10 to 20 years!
> About 3-4 million people ww are infected each year,
> Some 150 million people are chronically infected,
> More than 350 000 people die from HCV each year,
> HCV infection is curable using increasingly effective antivirals,
> Despite ongoing research, there is no vaccine to prevent HCV infection.

15

What is HIV?

> **H**uman **I**mmunodeficiency **V**irus,
> Causing **A**cquired **I**mmuno **D**eficiency **S**yndrome,
> **HIV** progresses to **AIDS** within 10 years,
> Allows life-threatening infections / cancers to thrive,
> HIV is transmitted by the transfer of blood, semen, body fluids or breast milk,
> Transmission modes: Unsafe sex, contaminated needles, breast feeding and perinatal.

10

AIDS
Signs and symptoms

> Respiratory infections (bronchitis, pharyngitis), prostatitis, skin rashes,
> Resistance is lost which leads to oral candidiasis and tuberculosis,
> Worsening of latent herpes viruses may cause recurrences of herpes simplex, Epstein-Barr virus or Kaposi's sarcoma (tumor).

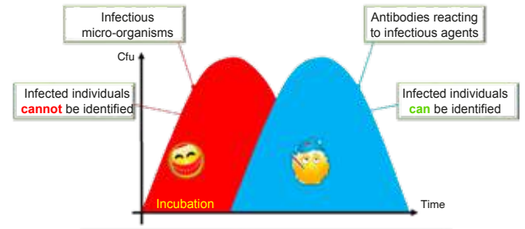
11

What is Tuberculosis?

> TB typically attacks the lungs but can also affect other parts of the body,
> TB is spread through the air by inhaling few germs,
> Most infections in humans result in an **asymptomatic** latent infection (2 000M),
> About 1/10 progresses to active disease killing >50% if left untreated,
> TB can be treated with a standard 6 months course of four antimicrobial drugs.

16

Who is infectious?



>90% of transmitted infections are from such "unknown cases"

HIV / AIDS
Antiretroviral therapy

> Therapy consists of the combination of 3 or more drugs,
> Controls virus reproduction and slows or stops progression of HIV related diseases,
> **They do not cure HIV.**
> **Individuals can still transmit HIV to others!**
> The average survival time was estimated to be more than 5 years as of 2005. Without therapy within a year.

12

What is Hepatitis?
A, B, C, D, E

> Hepatitis comes from the Greek *hepar* (liver) and *-itis* (inflammation),
> Hepatitis is acute (lasts less than 6 months) or chronic (persists longer),
> Acute shows limited/no symptoms (jaundice,fatigue, nausea, abdominal pain),
> Hepatitis B-C are serious infections leading to liver cirrhosis, cancer and **death.**

13

HCAI - Nosocomial infections
Fact sheet

> 7/100 hospitalized patients will contract HCAI (9/100 in developing countries),
> ~30% of patients in ICUs get infected,
> Prolonged hospital stays: 16 million extra days in EU,
> Massive costs estimated at □7 billion,
> Significant mortality,

	Infections / Year	Death / Year
USA	1 700 000 (4,5%)	99 000 (5,0%)

> **No institution or country can claim to have solved the problem yet.**

Who Report on the burden of HCAI worldwide
(http://www.who.int/gpsc/country_work/burden_hcai/en/index.html

Potential targets?

> The dentist,
> The dental assistant,
> The secretary,
> The dental technician,
> The patient,
> Their respective families.

Continues on page 22.

INFECTION PREVENTION: WHAT'S NEW?

Continues from page 21.

Risk in dentistry
Transmission modes

> Aerosols and splatter coming from the patient's mouth and nebulized water from the dental unit !

Risk in dentistry
Dental unit water line

Risk in dentistry
Dental Unit biofilm

> With up to 1000 times higher tolerance to disinfectants,
> There is the need of 10 times more chemicals to kill bacteria inside a biofilm.

Risk in dentistry
Dental compressors

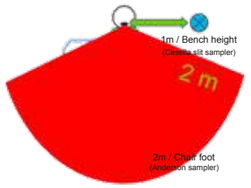
Risk in dentistry
Transmission of pathogens

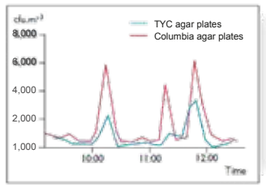
Air born diseases

> Tuberculosis,
> Pneumonia,
> Flu (H1N1),
> Influenza,
> Coughs and colds.

Streptococcus pneumoniae

Microbial aerosol concentration
in general dental practices





> Wear a surgical mask EN14683 (BFE>98%),
> Change mask between patients, at each interruption or when humid,
> Max 4 hours of continuous use.

Microbial aerosols in general dental practice
A. M. Bennett,1 M. R. Fulford,2 J. T. Walker,3 D. J. Bradshaw,4 M. V. Martin,5 and P. D. Marsh,6,7

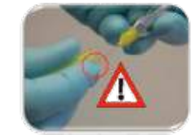
Risk in dentistry
Transmission modes

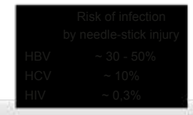
> Aerosols and splatter coming from the patient's mouth and nebulized water from the dental unit!
> Direct contact with blood droplets, saliva or any body fluid,
> Indirect contact via contaminated instruments, turbines or handpieces,

Risk in dentistry
Transmission of pathogens

Blood born diseases

> Hepatitis B-virus
> Hepatitis C-virus
> Hepatitis D-virus
> HIV
> EBOV (Ebola-virus)





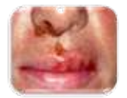
Risk in dentistry
Transmission modes

> Aerosols and splatter coming from the patient's mouth and nebulized water from the dental unit !
> Direct contact with blood droplets, saliva or any body fluid,
> Indirect contact via contaminated instruments, turbines or handpieces,
> Hands and staff□
> 75% of infections are transmitted by hands.

Risk in dentistry
Transmission of pathogens

Hands

> Smear infections (faecal - oral)
> Staphylococcus aureus
> Streptococci spec
> Herpes Simplex Virus (HSV).



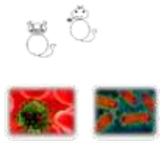
Hand Hygiene

> Change gloves between patients / procedures,
> Disinfect hands when changing gloves,
> Clean only if visible dirt or blood,
> Hand washing followed by friction should be avoided□
> Latex and nitrile gloves offer comparable barrier performance,
> Vinyl gloves are more porous compared to latex or nitrile.

Factors which increase the risk of infection

$$\text{Risk of infection} = \frac{\text{Number of micro-organisms X Virulence of the organism}}{\text{Resistance of the individual}}$$

> Succession of numerous patients,
> Understaffing,
> Lack of knowledge on hygiene procedures,
> Inappropriate equipment,
> Lack of training on the equipment.

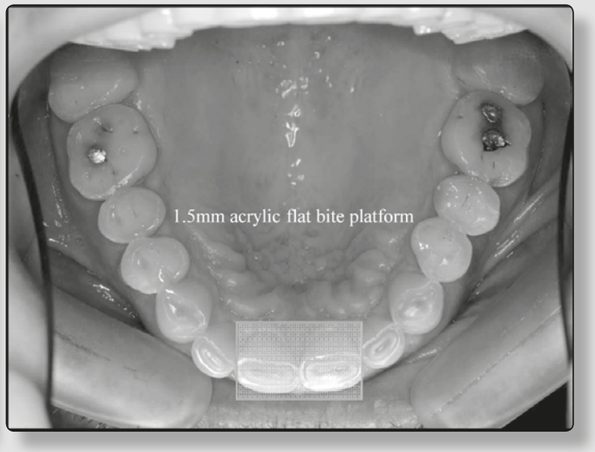


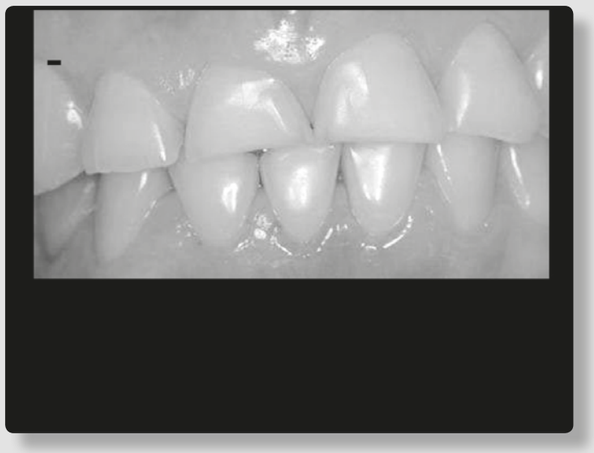
WEAR IS THE PROBLEM

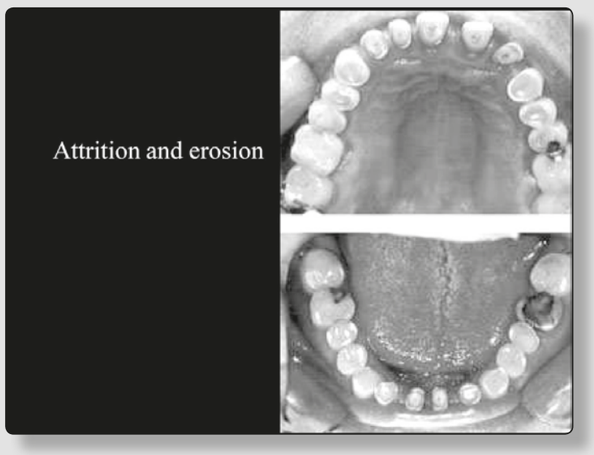
ASSESSMENT, DIAGNOSIS, PREVENTION, MONITORING, INTERVENTIONS, FOLLOW-UP

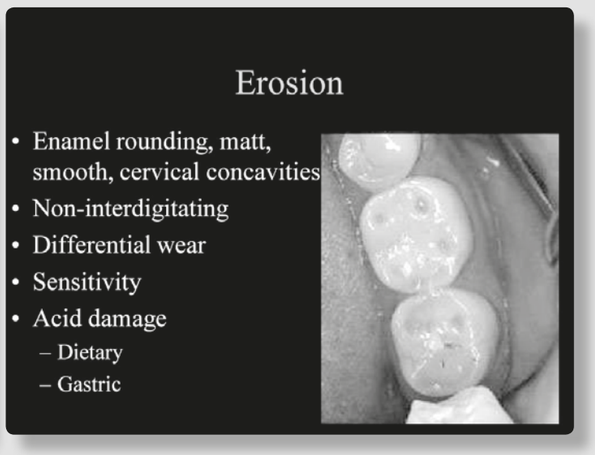
Professor Brian Millar

Director of Fixed & Removable Prosthodontic Graduate Programme. Consultant in Restorative Dentistry King's College London Dental Institute at Guys, King's College and St Thomas's Hospitals. Private Specialist Practice, London









Continues on page 28.

DO YOU HAVE THE RIGHT COVER UNDER YOUR PROFESSIONAL INDEMNITY POLICY?

Did you ever stop and think whether you are adequately covered by your Professional Indemnity policy?

European jurisdiction: have you extended your policy to include European jurisdiction cover especially if your clients include European nationals?

Do you perform Botox and/or derm fillers? Have you informed yo Professional Indemnity ins provider? The MIB De ance Scheme does in fac pecific cover for you f tices.

Did yo Retroactive Co that you have s cover for claims which you are currently unawar of that might arise from you services in the previous

Is your Limit of I adequate? H sen the correct I mnity, does it ref e exposure?

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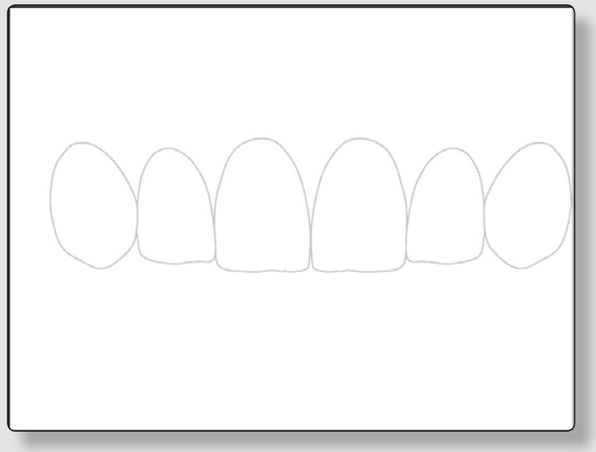
WEAR IS THE PROBLEM

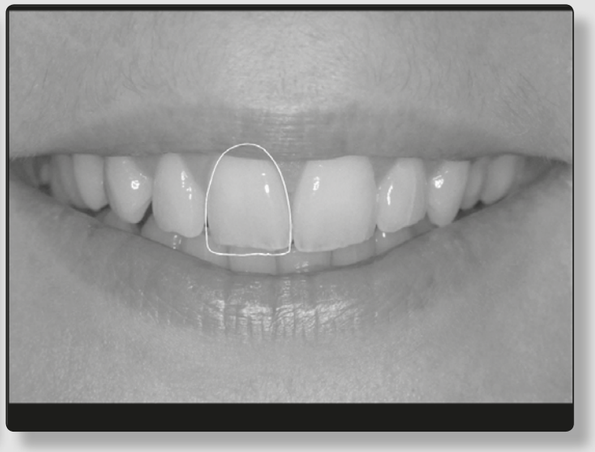
ASSESSMENT, DIAGNOSIS, PREVENTION, MONITORING, INTERVENTIONS, FOLLOW-UP

Continues from page 25.

Sensitivity

- This is not a problem in most patients with excessive tooth wear, as the teeth react to the exposed dentine and become less sensitive.
- Management:
  - Desensitising agents, toothpaste, ACP (Tooth Mousse, GC), chewing gum
  - Resin sealants, GIC, Biodentine



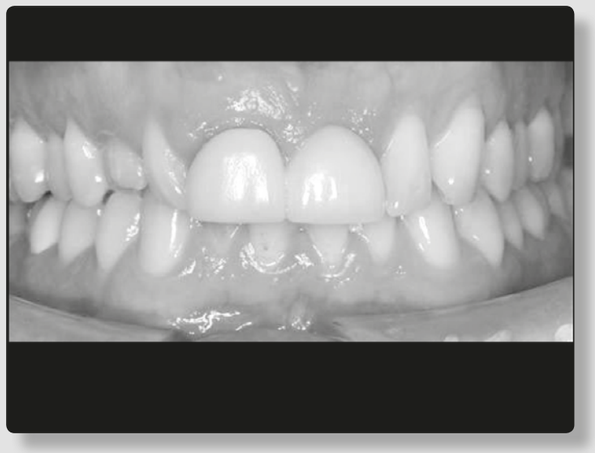


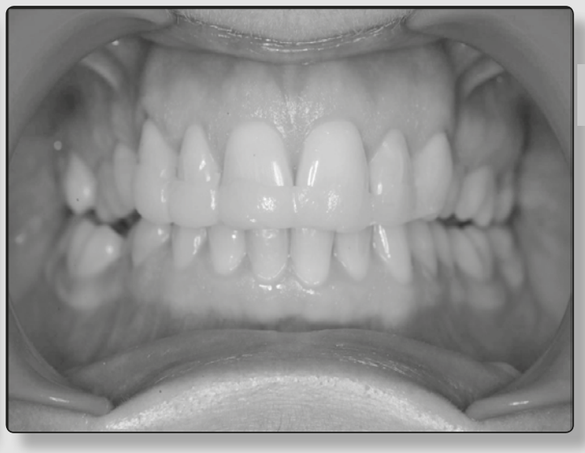
When to intervene

If the rate of wear is such that it is a source of concern or may affect the survival of the teeth

Attrition

- Flat teeth
- Interdigitate
- Physiological
- Rarely sensitivity
- Bruxism



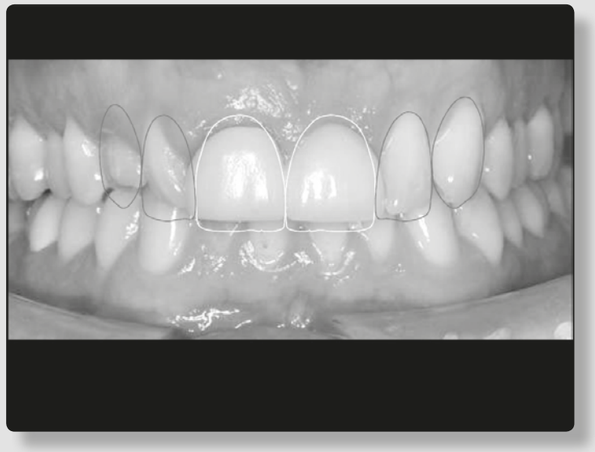


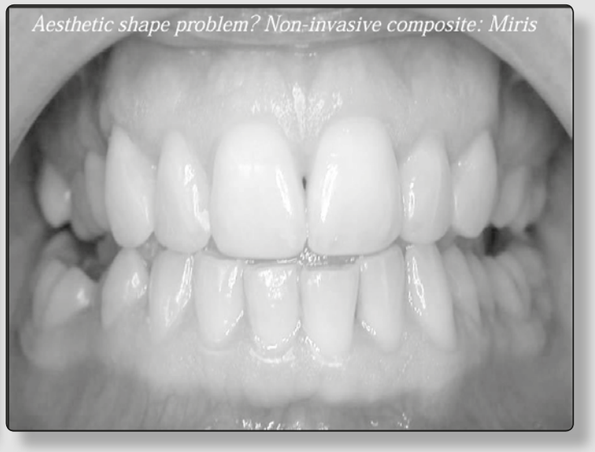
Normal wear

- Related to age and diet
- Could assume 20-100 µm per year which is 0.2-1 mm per decade
- Occlusal enamel is 2mm thick

Digital Smile Design (DSD)

Please note that digital design and mock-ups cannot guarantee the same as the final result





Continues on page 30.

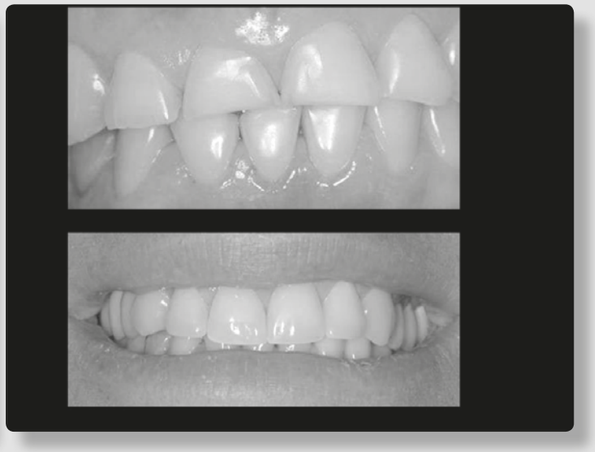
WEAR IS THE PROBLEM

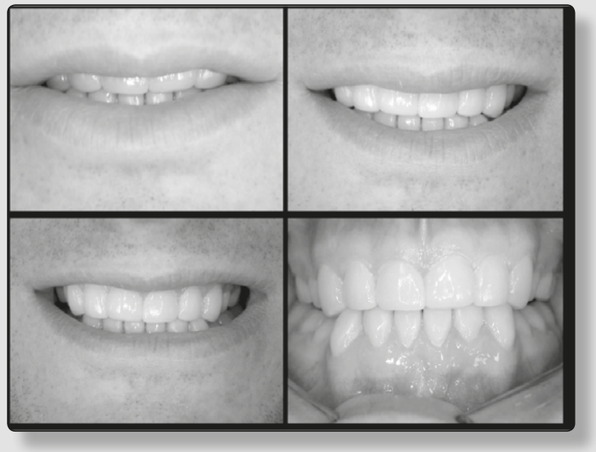
ASSESSMENT, DIAGNOSIS, PREVENTION, MONITORING, INTERVENTIONS, FOLLOW-UP

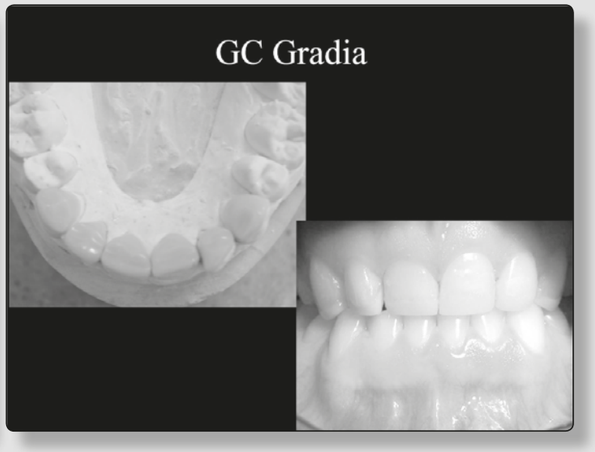
Continues from page 29.

Management of tooth wear

- See it – look for it
- Diagnose – identify cause
- Monitor – photograph, models, measure
- Prevent – eliminate/reduce further wear
- Intervene – only if necessary
- Replace – what is missing

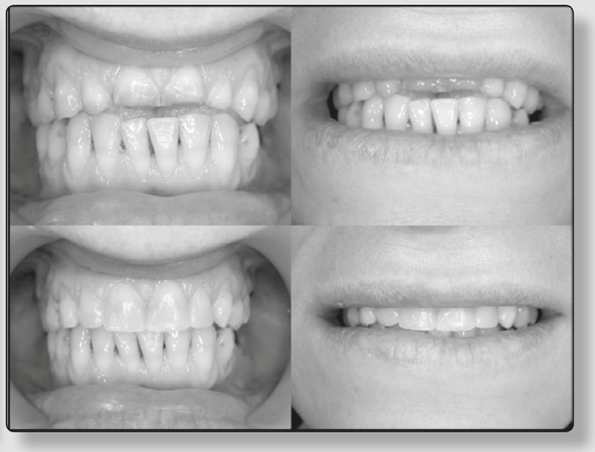


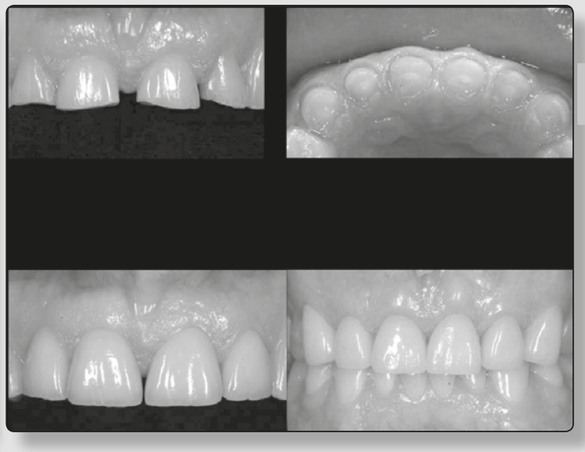




Make a Diagnosis

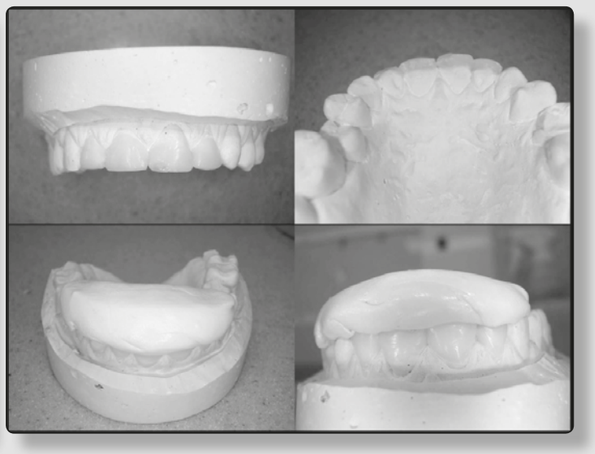
- Identify the cause
- Establishing the aetiology will help formulate appropriate prevention strategies





MI restorations

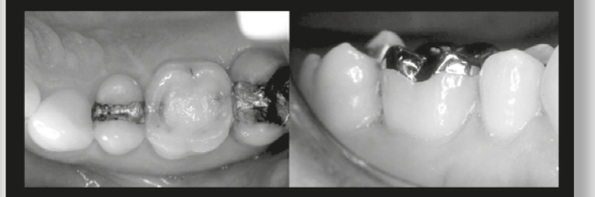
- Loss of OVD
  - If no change to ICP – use ICP
  - If ICP unusable – use CR
- Replace what is missing
- Occlusal adaptation (“Dahl”)
- Maintain and repair



Beware: Alveolar compensation

- Wear with no loss of OVD but lack of space, ie. alveolar compensation
- Crown lengthen?
- Does Dahl work?
- Difficult aesthetics, complex treatments

Occlusal gold onlay



Continues on page 32.

WEAR IS THE PROBLEM

ASSESSMENT, DIAGNOSIS, PREVENTION, MONITORING, INTERVENTIONS, FOLLOW-UP

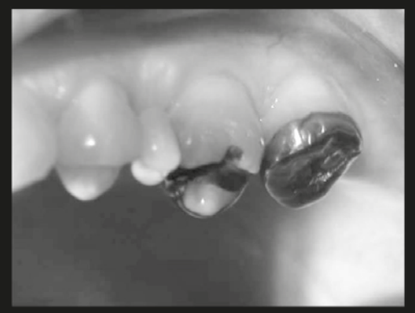
Continues from page 31.

Restoration - posterior

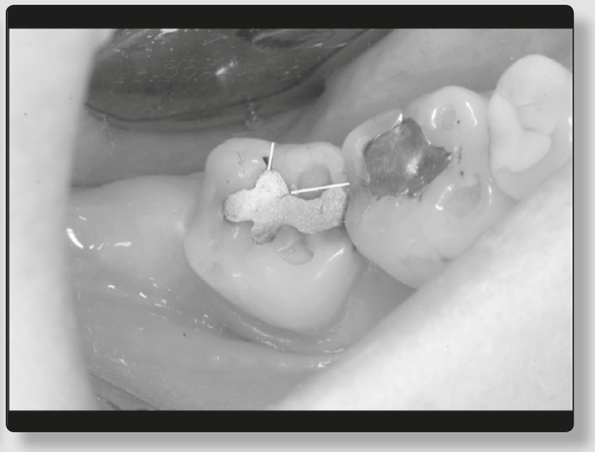
- Occlusal gold overlay, optional composite overlay
- Crowns? – only where large amounts coronal destruction

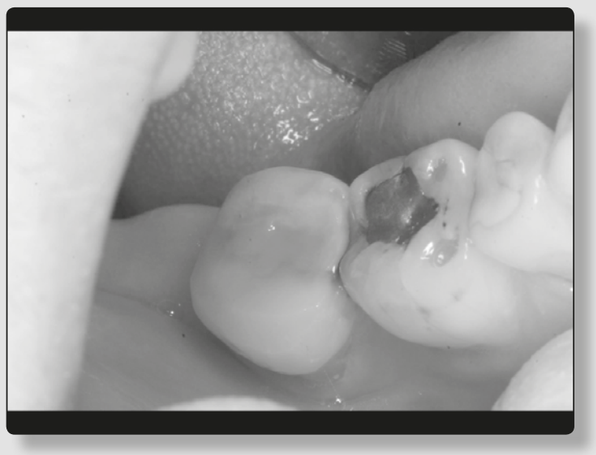
Cracked tooth syndrome

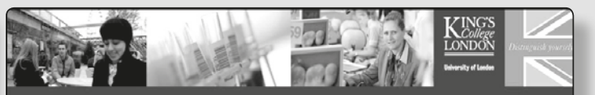
Occlusal gold onlay



- This one has been in function for 20 years with no debonds







Cracked tooth syndrome:

Direct Composite Splint
151 cases followed up
130 problem-free
Convert to definitive eg 3 mo

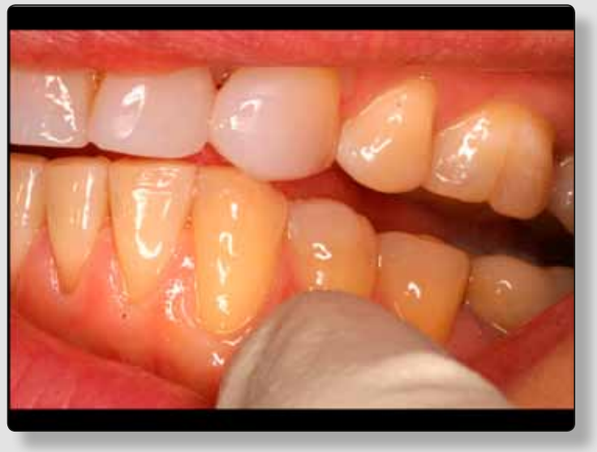
Banerji, Mehta, Millar J Dentistry 2014

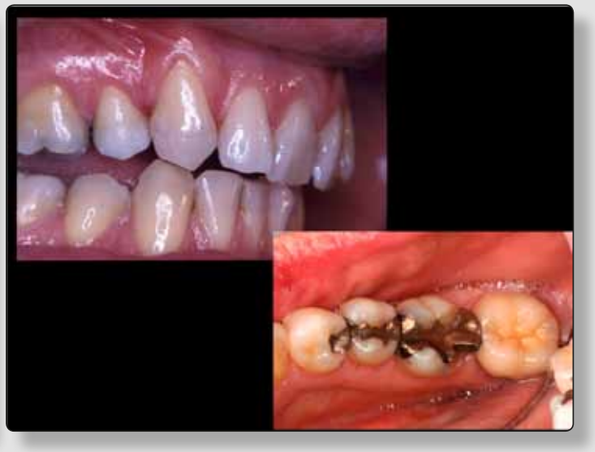
Continues on page 34.

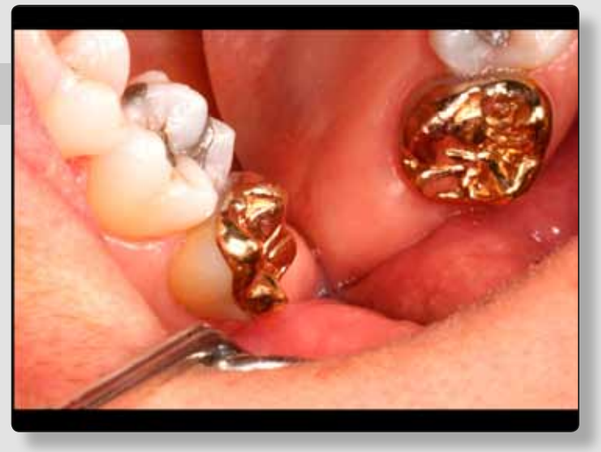
WEAR IS THE PROBLEM

ASSESSMENT, DIAGNOSIS, PREVENTION, MONITORING, INTERVENTIONS, FOLLOW-UP

Continues from page 32.







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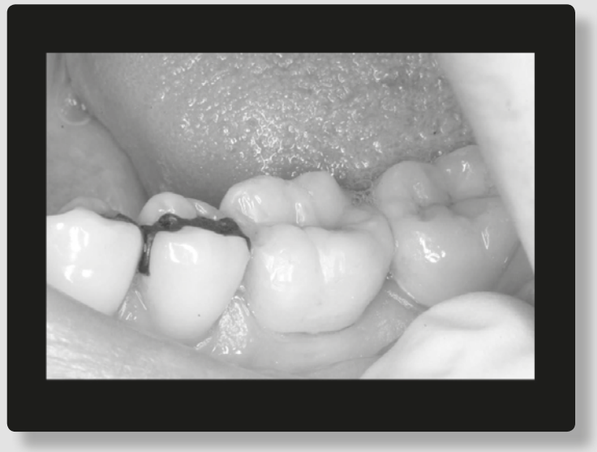
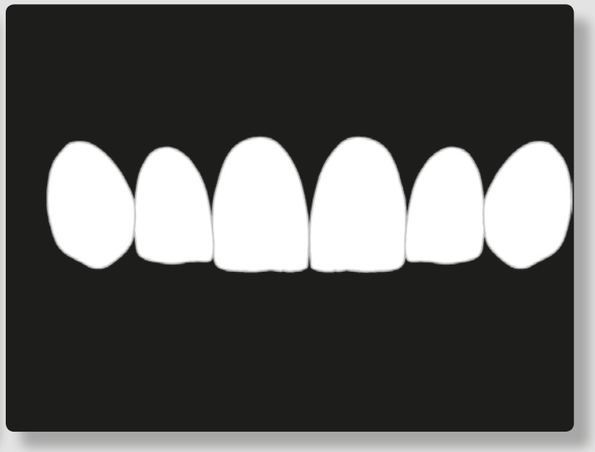
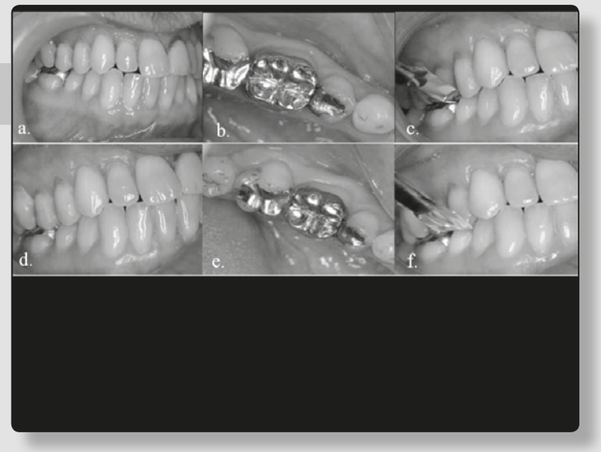
WEAR IS THE PROBLEM

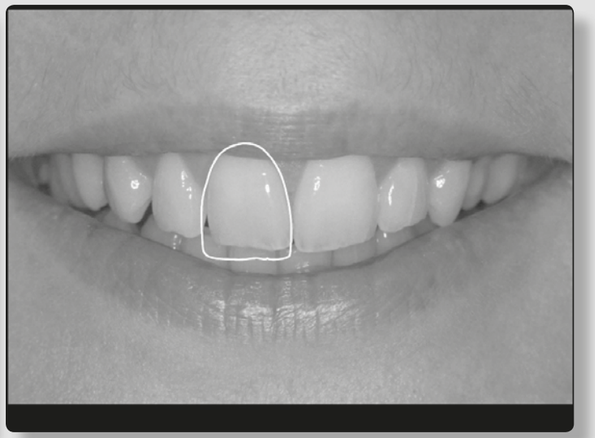
ASSESSMENT, DIAGNOSIS, PREVENTION, MONITORING, INTERVENTIONS, FOLLOW-UP

Continues from page 34.









Continues on page 38.

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The Treasurer, Dr Noel Manche,
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Sliema Road,
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NAME: _____

ADDRESS: _____

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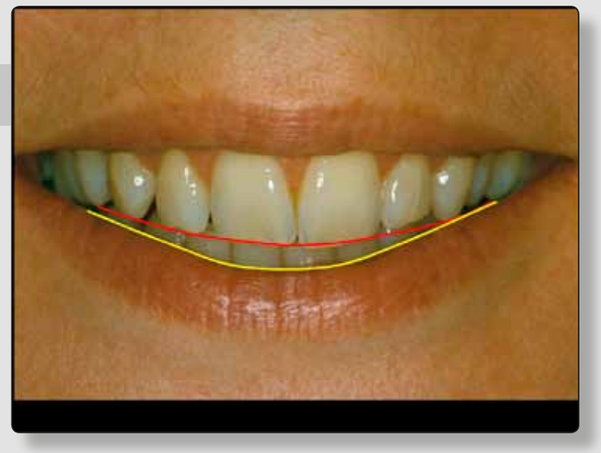
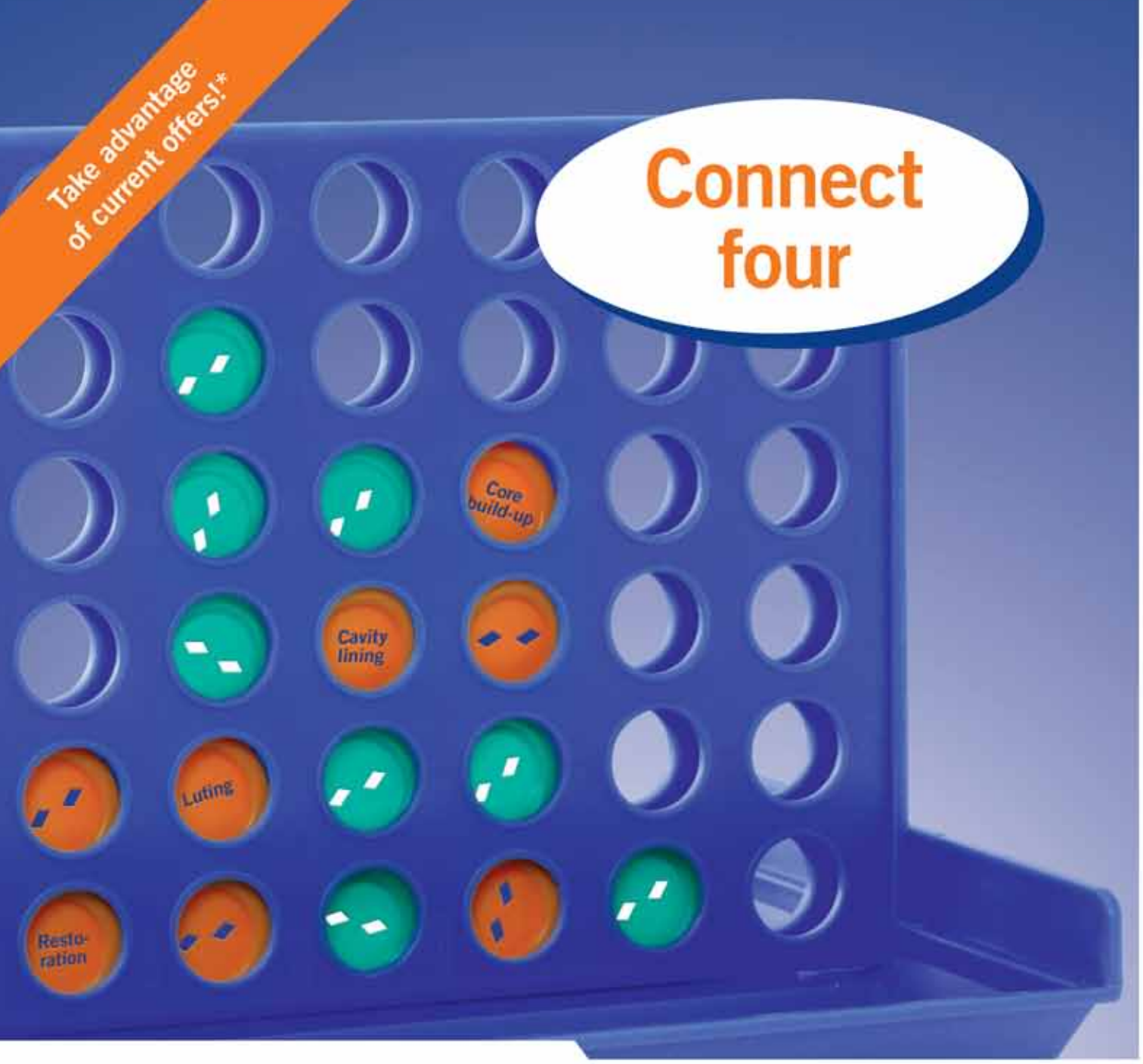
WEAR IS THE PROBLEM

ASSESSMENT, DIAGNOSIS, PREVENTION, MONITORING, INTERVENTIONS, FOLLOW-UP

Continues from page 36.





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