ISSUE 70 JUN19

The Dental Probe

The Maltese Dental Journal

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Editorial

By Dr David Muscat

Dear colleagues,

Dental practice owners were recently called to an Information session with the Healthcare Standards directorate. After an introduction by Ms Patricia Galea Director of Health Care Standards, Ms Joanne Farrugia went through the implementation of the New Inspection Reform.

There is to be a new self assessment form which will also cover certain details on employees in the practice– from Jobs Plus as well as questions regarding access for disabled persons (KMPD),DIER, Consumer products and product safety.

The Dam is involved in ongoing talks the phasing down of Dental Amalgam in Malta.

The DAM is organising a two day dental conference on 27 and 28 September 2019 at the Hilton Malta so please keep these dates free in your diary.

Recently there have been several dental courses and lectures in Malta. Some of these have been summarised in this edition.

The Sunday Dental Emergency co-op is going from strength to strength. This initiative, led by Dr Cassar Darien, and born within the Dental Association of Malta is a noble one. Currently several dentists take it in turns to see Dental emergencies that may arise on a Sunday morning in Malta. This is limited to two morning three hour shifts. Patients are seen against a surcharge of 50 euro. It is commendable and at some stage in one's career I feel it would be nice if everyone would help and contribute towards this cause. If you would like to join the scheme please send an e mail to maltadentalemergency@gmail.com and help your colleagues.

If you are abroad or you cannot attend to your patient there is a dentist out there you can rely on, on a Sunday morning. There is a great sense of camaraderie in this co-op. The emergency number is 99061800 and patients are seen between 830 am and 1130 am by appointment at your practice. If you cannot work on an appointed Sunday you may swap your session with another in the group.

The cover picture is a watercolour painting by Dr Noel Manche.

Best regards,

David

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

Presentation of Dental Probe to President of Malta

Presentation of The Dental Probe to H.E. Dr George Vella, President Of Malta, at The Palace Valletta on Monday 24th June on the occasion of the courtesy visit by The Medical Council of Malta

LENTEN TALKS AT BENEDICTINE MONASTERY

On Sunday 7th April Dr Lino Said the DAM spiritual and social organiser, led a group of dentists and their spouses and friends for Lenten talks at the Saint Peters church and Benedictine monastery in Mdina. This is a catholic Benedictine monastery for cloistered nuns. The adjacent church is dedicated to St Peter and St Benedict.

The present church was renovated in 1625 through the initiative of Bishop Baltassare Cagliares.

The altarpiece dated 1682 is the work of Mattia Preti and depicts the Madonna and child with St Peter , St Benedict and St Scholastia. Other works are the Resurrection of Jesus and Our Lady of the Pillar by Francesco Zahra. Father Mark Sultana, the DAM spiritual director gave a 30 minute talk on patience and kindness. This was followed by mass and then lunch was served in the refectory.

It is to be noted that in the church one may find the remains of blessed Sister Adeodata Pisani who was a cloistered nun in the middle of the 19th century. Sister Pisani was beatified by Pope John Paul 11 in 2001.

The dentists were joined by several members of the Civil Service sports club.

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Your dentures gave them confidence. We'll keep it going.

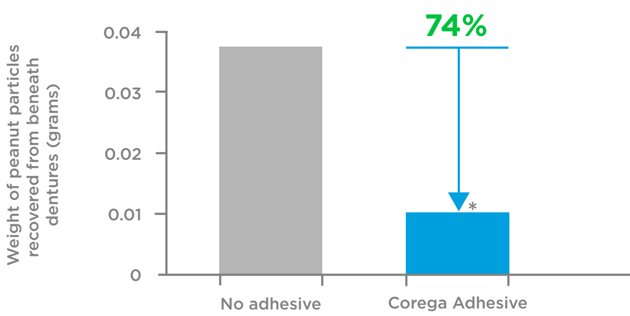
You can be confident in the knowledge that you've given your patients specially made and well-fitting dentures. However, your denture-wearing patients can have concerns around denture retention and trapped food, making it difficult for them to emotionally adjust to living with dentures. They may not tell you, but more than 1 in 3 denture wearers admit to skipping social activities because they are conscious of their dentures.[1]

Up to **29%** skip eating out in public,[1] **86%** experience food trapping under their dentures and **55%** experience denture movement.[2]

These everyday challenges can hold your patients back from living life to the fullest.

Maintain your patients' confidence and satisfaction with their dentures by recommending Corega Ultra Fresh denture adhesive.

Corega adhesive reduces food entrapment vs. no adhesive use (p<0.0001) in well-fitting dentures[4]



Randomised, blinded, 3-way crossover study to evaluate denture adhesive use against no adhesive use. Subjects with well made and well-fitting maxillary and mandibular dentures completed the study. Food entrapment was quantitatively measured by collecting and weighing residue from beneath the dentures after subjects chewed and swallowed 32 grams of peanut test meal.
*P<0.0001.

Corega Ultra Fresh denture adhesive can support your patients' throughout their denture-wearing journey.

- Corega adhesive **improves patient comfort, confidence and satisfaction** even in well-fitting dentures[3]
- Corega adhesive is proven to increase the bite force by 38% in well-fitting dentures,[3] **increasing patients' confidence to bite into varied foods**
- Corega adhesive **reduces patient discomfort[3]** caused by trapped food by sealing out up to 74%† of food particles[4]

Corega Ultra Fresh denture adhesive – Offering your patients reassurance for everyday life

Help your patients eat, speak and smile with confidence with Corega Ultra Fresh denture adhesive cream and Corega 3 Minutes denture cleansing tablets.

†vs. no adhesive

References: 1. P&G News. Denture Wearers Embrace New Smile Yet Avoid Popular Foods. http://news.pg.com/press-release/pg-corporate-announcements/denture-wearers-embrace-new-smile-yet-avoid-popular-foods. Accessed September 2013; **2.** GSK Data on File: Canadian Quality of life Study. 2005; **3.** Munoz CA *et al. J Prosthodont.* 2011;21(2):123-129; **4.** Fernandez P *et al.* Poster presented at the IADR 2011, Poster 1052.

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CHMLT/CHPLD/0003/15b (1)

The Sunday Dental Emergency Service Dentists Co-op

By Dr David Muscat

On Saturday 15th June the Sunday Emergency Service dental volunteers organised a lecture and get together at Trabuxu Wine Bar in Strait Street in Valletta .The event marked the fifth anniversary of the founding of this noble co-operative service by Dr Daniel Cassar Darien in conjunction with the Dental Association of Malta. This event was kindly sponsored by Bart Enterprises Ltd. Etienne Barthet and Souha Benslama dental representative were in attendance.

The Sunday Emergency Treatment Group is an organised roster of dentists that was set up initially as a pilot project to provide emergency treatment on Sunday mornings, similar to other models existing in the pharmacy and veterinary sector.

Cycles are very well organised with a high level of coordination and professionalism amongst all participating dentists. Dentists are on call for three hours on a Sunday morning with each dentist limited to one or two Sundays yearly. Treatment is provided against a surcharge of 50 euro to be added to the dentist's normal fee. Participation in the scheme is free.

Should any dentist be interested in joining future cycles e mail on maltaemergency@gmail.com.The emergency number is 99061800. You may inform your patients about the number and this scheme and one day they may be extremely grateful if they are in need of it!

After a short introduction by Dr Daniel Cassar Darien who remarked that this success shows how dentists can group together as one and co operate to deal with those genuine dental emergency cases on a Sunday morning , Dr Mark Diacono gave a short presentation on failures in implants and how to avoid them.

I will mention the salient points gleaned from the presentation.

Always tie your small instruments such as an implant screwdriver with silk thread. You may get a patient move and the patient will swallow or inhale it. This can be purchased as a roll and is preferable to dental floss which may fray.

When methotrexate is taken long term say for arthritis, this can cause problems with bone and you may lose the implants as well as with long term (eg 10 years)oral bisphosphonate use.

Beware of relying on 100% accuracy using CAD CAM. There is a small percentage discrepancy. Another issue is that is one gives an LA the template may not be seated properly on the alveolus and you may have blanching of the tissue underneath and you will not realise.

When doing the prosthetics with implants you may think you have four units parallel while in fact you have two that are parallel and two that are not.

When working with acrylic you need at least 3mm thickness or you will get a failure. When dealing with bruxists you need to protect porcelain with metal backings. When making bridges each tooth must be supported by a pin.

If acrylic fractures you can easily repair it but if porcelain fractures you need to remake the bridge.

Always get your technician to build up porcelain such as the patient may be able to get an interdental brush between to clean.

An implant that is 'lost' in the sinus must always be removed as the patient may end up with a serious sinus infection.

In hospital cases carried out by professors implant survival rates are very high but in reality in general practice there is an issue with at least 10% of implants. ■

THE PROHEALTH KIN LECTURE:

INTERCEPTIVE ORTHODONTICS AND FUNCTIONAL APPLIANCES

AT XARA LODGE, RABAT

By Dr Jan Muscat BCHd MSc(Lon) MJDFRCS(Eng) MOrthRCS(Edin), Specialist in Orthodontics

Pro Health Kin was represented by Ms Gaby Sultana

Summarised by Dr David Muscat

On Saturday 13 th April Pro Heath Kin organised an interesting event with two lectures by Dr Jan Muscat Orthodontist on Interceptive Orthodontics and Functional appliances. Dr Jan Muscat covered both the research and studies carried out and various approaches and then gave his own slant on them

The event was well attended. There was a collection for the Beating Hearts Foundation . A sum of 685 euro was collected from the attendees. This was matched by Pro Health as part of their social responsibility ,so a total of 1370 euro will now be donated to this charity.

The Beating Hearts foundation is a non profit organization dedicated to raising funds to help children with cardiovascular illnesses.

Ms Gaby Sultana described the Kin range of products. OrthoKin contains fluoride and CPC. (Cetylpyridinium Chloride 0.05%). Fluorkin Calcium contains fluoride and calcium. These are both indicated for daily use.

Cetylpyridinium is an antiplaque agent with a broad spectrum of action.Zinc is used with it and this has an added antiplaque effect and is also used to inhibit the formation of calculus.

Kin B5 is for daily use and contains CPC and Provitamin B5. Provitamin B5 Dexpanthenol helps to reinforce epithelium and mucous membranes and provides comfort.

Continues on page 8.

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27 full day - **28** half day **September 2019**

CONFIRMED SPEAKERS		
Minimally Invasive Management of Toothwear Application of Occlusion in Clinical Practice	Dr. Subir Banerji	Prosthodontist Kings College, London
Orthodontic Aligners	Dr. Rebecca Komischke	
Applied Clinical Dental Anatomy: Surgical Complications and a sneak preview into Facial Aesthetics	Dr. Apollonius Allen	Anatomist, Aesthetic and Facial Reconstructive Surgeon Ark G Academy, UK
Incidental Findings on Cone Beam CT Imaging: Diagnosis and Management	Dr. David Andrew	Specialist Dental and Maxillofacial Radiologist University of Sheffield, UK
Combined Lecture - Impacted lower third molars: Radiological assessment, complications and management	Dr. David Andrew Mr. Simon Atkins	Specialist Dental and Maxillofacial Radiologist Specialist Oral Surgeon University of Sheffield, UK
Ceramic implants: tension field of expectation and reality	Dr. Jonas Lorenz	Maxillofacial Surgeon Goethe University, Frankfurt
Biomaterials and Bone Regeneration	Dr. Minas Levantis	Oral and Implant Surgeon University of Athens, Greece
Dental Composites & Adhesive technology	Dr. Matthias Mehring	Dental Material Specialist Oldenburg University, Germany

CONFERENCE PRICES	MEMBER*	NON MEMBER
Applications before 15 July	€ 150.00	€ 300.00
Applications after 15 July	€ 200.00	€ 350.00

*Only Fully paid up members with no arrears may benefit from member rates.

Included in the Conference Package is free parking, coffee breaks, Friday lunch and Saturday lunch with wine.

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MEDITERRANEAN DENTAL CONFERENCE GALA RECEPTION

Join us with your guest for an evening Gala Reception with open bar at the Quarterdeck Bar, Hilton Malta, St Julians.
on Saturday 28 September. Price: € 50.00 per person.

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THE PROHEALTH KIN LECTURE:

INTERCEPTIVE ORTHODONTICS AND FUNCTIONAL APPLIANCES

AT XARA LODGE, RABAT

Continues from page 6.

Kin B5 is also alcohol free , so it does not irritate, dry or burn the oral mucosa and has no toxic effect. Kin B5 is suitable for long term use. It is also suitable for patients with implants and prosthesis.

There is a 0.2% chlorhexidine indicated post surgical use. Periokin comes as a mouthwash, gel and a spray. This is for intensive care.

Kin Care also contains 0.05% chlorhexidine with Aloe Vera and vitamins B3 and B5.

KIN B5 contains CPC and Provitamin B5 and comes as a toothpaste and a mouthwash. SensiKin can be used for sensitive teeth and contains Potassium Nitrate and Fluoride.

Kin Whitening contains fluoride and sodium bicarbonate. This may be used daily.

INTERCEPTIVE ORTHODONTICS

Interceptive treatment is beneficial in 25-63% of children aged 8-12.There is only so much one can do. This is an envelope of stability. Dr Muscat discussed several problems such as anterior cross bite, transverse discrepancies and early correction of rotations. Unerupted teeth were also discussed.

One needs to see as to whether early treatment will correct the problem or eliminate the need for comprehensive treatment at a later stage. For instance at age 8 ,reverse mandible with headgear is very beneficial and may reduce the need for surgery.Will early treatment reduce the risk of trauma?

Will early treatment result in greater skeletal growth? Will there be a positive psychological impact? Will there be a two phase treatment? Will early treatment exhaust long term compliance? Will treatment appease the anxious patient? Will we 'lose' the patient? What about payment? What is the cost benefit for both the patient and the practitioner?

With transverse discrepancies there is a greater chance of skeletal change if expansion is carried out before puberty. As you expand the arch the palatal cusps will drop and the overbite will reduce.

Early correction of rotations, notably the lateral incisor may have a high rate of relapse. With a posterior crossbite a quadhelix is most effective (Cochrane review 2014). One should have 6 months of retention following correction.

In Italy expansion of the upper arch is very common.(Cozzani et al 2002). Patients are treated at a young age 6-9 years .It is aggressive with 0.25 mm of expansion daily/alternate days. A maximum of 4-8 mm over 15 days .One stops short of a scissors bite. Do not overpromise.

If you expand the upper arch, the lower arch follows. With the unerupted maxillary incisor this is the third most commonly impacted tooth. Occurs in males more than females. Causes may be an odontome, dilaceration. Radiographic investigation is carried out. The cut off age is 9 years. Uncover the tooth and place glass ionomer so the tissue does not regrow over it.

With a dilaceration the sequence of eruption is the key to diagnosis. Use 3D imagery and consider several views. The unerupted maxillary canine has an incidence of 5-10% in Malta and there are both environmental and genetic factors.

Studies by Cochrane have shown that extraction of c's does not necessarily improve the situation.

Regarding the extraction of 6s with a bad prognosis(such as in MIH Molar Incisor Hypomineralisation) ,according to Professor Cobourne from Guys the timing of the extraction of 6s in the lower arch is crucial. One can extract when you have half the root of the 7 formed and when the bifurcation of the 7 is in place. The second premolar must be in the furcation of the E and there must be the presence of a third molar.

In Class ones one should carry out balancing extractions but not compensation extractions.

When an E does not have a successor consider building up the E to get above the contact point of the adjacent teeth.

With tongue suckers, there may be an asymmetric anterior open bite. There may be a posterior cross bite as the tongue prevents the palate from growing. One needs to make a removable habit breaker with tongue spurs.

With space maintainers – these are always made if there is early loss of an E except in spaced arches.

FUNCTIONAL APPLIANCES

This is orthopaedics with no extractions. These are good in well aligned arches. There will be problems in patients with increased FMA.

The changes are primarily dento alveolar. One may start when the permanent teeth have erupted. Eruption of first premolars is needed as otherwise the appliance will not retain.

Low angle cases are suitable for functional appliances – a short anterior face. Types include the Twin Bloc, the Frankel 2 (designed in Eastern Germany) and the Mara (this is placed on the vestibular side and is what Invisalign is based)

The Twin bloc is cheap, well tolerated, easy to adjust , easy to repair but there may be compliance issues, and one may end up with a posterior open bite.

Twin blocs need good block height, 7-8 mm thick. Do not use lower incisor capping.aim for an edge to edge Ones goes for an over correction .The best is when overjet is greater than 12mm . It is important to watch centrelines. Check that they are correct before you start. If there is a centre line issue it may l be due to local factors. If the centre line is due to an asymmetry try to correct it.

To check for centre line look from behind – between the eyes down the philtrum.

The Chemimart Curaprox Perioplus Event

AT THE CORINTHIA HOTEL, ATTARD

Summarised by Dr David Muscat

On Wednesday 22nd May Mr. Pierre Fava manager of Chemimart and a pharmacist gave a presentation on the new Curaprox Products to a group of dentists, dental hygienists and pharmacists.

46% of people use a mouthwash as a result of advertising. The average time spent brushing is 46 seconds. Only 2 to 10 per cent of patients floss regularly and effectively. Less than 18% reported daily interdental cleaning.

Mouthwashes may be for treatment of disease, oral hygiene, cosmetic or specific . Antiseptal mouthwashes are used for inflammation- gingivitis and periodontitis ,implants- peri implantitis, retainers, pre and post surgery, regeneration and improved oral hygiene.

Chlorhexidine is 1,6-di-(chlorophenyl-diguanido)hexane. This cationic molecule has two positively charged ends. These two highly charged ends give chlorhexidine the physical properties which allow it to exert both an immediate and a persistent antimicrobial effect.

Chlorhexidine is an effective anti plaque agent which is non toxic and free from microbial resistance. It stays active for up to 12 hours in the mouth. It is tried and tested with over 3000 clinical studies. It is the gold standard treatment for gingivitis and periodontitis.

The bacteriostatic effect occurs between the negatively charged bacterial cell wall and the cationic chlorhexidine. The interaction disrupts the cell membrane causing leakage of cellular components. However at this stage the cell is in stasis and if the chlorhexidine is removed the cell will repair itself.

The bactericidal effect of chlorhexidine is penetration of the cell, resulting in precipitation of the cytoplasm and this causes cell death. Antiplaque activity must have a prolonged effect. Because of the dicationic properties of chlorhexidine it can both adsorb onto the oral surface and continue to maintain an antibacterial effect up to 12 hours.

Chlorhexidine may stain but this is reduced by using only the required concentration and avoid the intake of tannin containing products. It may cause taste disruption so adding Citrox ,a natural bitter orange extract this is improved. Citrox enhances the effect as it is a polylysine – a polypeptide of the essential amino,L-Lysine and this has an antimicrobial effect against yeast ,fungi and bacteria.

Biofilm grows on freshly cleaned teeth. Saliva forms on the enamel, and bacteria then stick to the pellicle and organises as biofilm. Bacteria produce toxins which irritate the gums, which swell and bleed on probing.

The new Perioplus+ range now also contain Citrox besides chlorhexidine. Citrox is a natural ingredient

extracted from bitter oranges. This has anti microbial, anti oxidant and anti inflammatory properties.

It is combined with polylysine amino acids which enhance efficacy and prolonged working time. PerioPlus+ is alcohol free and also contains PVP-VA. This forms a protective film over teeth, gingivae and mucous membranes.

It is combined with xylitol. PVP-VA increases the working time of the mouthwash by up to 12 hours and has an anti caries effect.

PerioPlus + prevents the build up of plaque as it eradicates biofilm quickly and slows down its regrowth. It provides protection against bacteria and has a pleasant taste.

Overall Chlorhexidine and Citrox together have a synergistic effect and the combination of Citrox and Chlorhexidine showed the highest levels of antibacterial activity as opposed to levels with either Citrox or Chlorhexidine used alone. This was demonstrated in studies carried out by Malic, Emanuel,

Lewis, and Williams at the School of Dentistry Cardiff in and the School of Healthcare Science at Manchester Metropolitan University

The range of products include PerioPlus Forte mouthwash with the greatest concentration of chlorhexidine, PerioPlus Protect mouthwash with a lesser concentration, PerioPlus regenerate mouthwash for post op surgery, PerioPlus Balance mouthrinse for those who are at risk of dental disease as well as PerioPlus focus gel for targeted areas of the oral cavity and PerioPlus Support toothpaste.

The PerioPlus Regenerate mouthwash also contains hyaluronic acid. Hyaluronic acid maintains the structural integrity of the tissues. It regulates tissue hydration by binding to water molecules and maintaining the water balance. It regulates the passage of nutrients and the elimination of waste products.

Hyaluronic acid protects healthy tissue by forming a barrier to the passage of high molecular weight substances such as endotoxins, bacteria and viruses.

Hyaluronic acid stimulates the production of pro inflammatory cytokines by fibroblasts in inflammation. It regulates the migration of phagocytes in inflames sites. It interacts with fibrin to stimulate new tissue formation and more rapid regeneration.

It interacts with growth factors to stimulate the differentiation and growth of new tissue cells and encourages regeneration by stimulating new blood vessel formation ie angiogenesis.

GUIDED BIOFILM THERAPY – EMS

BART ENTERPRISES EVENT AT CORINTHIA MARINA ON 25/5/2019

Lectures by Professor Magda Mensi, Researcher and Professor in Oral Surgery and Periodontology at the University of Brescia and Medical Manager at Spedali Civili of Brescia. Summarised by Dr David Muscat

Guided Biofilm therapy is a new concept in non-surgical therapy. Erythritol, a low abrasive powder in conjunction with chlorhexidine (as a stabiliser) is used in this GBT protocol.

One must clean biofilm off implants without causing damage. There is a small size powder which also has less hardness. One may use this on the soft tissues, back of the tongue etc.

Guided biofim therapy is a system/a model-it is a minimally invasive protocol. The patient has to conceive a 'comfort' treatment. Perioflow delivers powder into the pocket.

The Piezon removes supra and sub gingival calculus. If there are no hard deposits then one may use Perioflow only. Warm water is used-hypersensitive patients appreciate this.

'Erythritol Powder Air olishing Therapy' – Minsi et al Quint Intad JOMI 2015.

One must decide as to whether this is a gingivitis or periodontitis patient. The first guide is the probe. Is there a sulcus, a moderate pocket or a sever pocket?

The second guide is the disclosing agent. Where is the biofilm? You need to show the patient where the biofilm is. One needs to motivate and give OH instruction. First use the Airflow.

Then use the Perio if there are pockets. Then use the Piezo if there is calculus. There is a correct sequence of Airflow, Perioflow and Piezon which deliver a pain free experience.

The first steps are to access, disclose, motivate, airflow, perioflow, piezon, check and recall. The Airflow is used above the cement-enamel junction, subgingivally, around brackets and implants.

The Perioflow is used subgingivally and around implants. The Piezon is used both supra and sub gingivally and around implants.

The Erythrithol is 13 microns. It is a non cariogenic (acariogenic)sugar like xylitol It also inhibits the metabolism of Streptococci and P. Gingivalis. It is gentle on soft tissues. It is very dense so it increases its efficiency. There are small particles in a restricted volume so even though there are small particles it is very efficient in calculus removal.

Continues on page 14.

CURAPROX

PERIOPLUS+

CHX – NATURALLY IMPROVED BY CITROX®

As a powerful antibacterial substance extracted from bitter oranges, CITROX® enhances the efficacy of CHX.

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IMPROVED COMPLIANCE through a pleasant-tasting solution that ensures unaltered taste sensation.

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SWISS PREMIUM ORAL CARE

Developed by

Continues from page 12.

There is a second powder – this is a Comfort Powder'. This is a small 40 micron sodium bicarbonate powder. The usual size is 120 microns of sodium bicarbonate.

There are three directions of flow but not apically. Apically there is just water. This is to avoid an emphysema. The tips are the PS tip, the P1tip and the PL1-2 tip.The tip is used on low power to remove scale. It feels like a massage in the soft tissues. The P1 tip is a tip used specifically for implants. It has a plastic tip.

One may use GBT for general dentistry, orthodontics, implant dentistry, pediatric dentistry, aesthetic dentistry, periodontology, gerodontology, endodontics and oral surgery.

GBT minimises the use of power and hand instrumentation. Airflow is minimally invasive. Disclosing biofilm helps remove all biofilm and prevents caries and gum disease in both children and adults. Airflow is preferable to rubber polishing cups which may damage the gingivae. Airflow maintains orthodontic appliances.

Airflow plus has the added advantage of heated water providing maximum comfort and minimal sensitivity impossible areas. With restorations GBT removes biofilm from margins.

Airflow plus powder is gentle on gingivae and soft tissues. It removes biofilm and early calculus from coronal surfaces and sulcus. The Piezon PS NO PAIN instrument removes the remaining calculus in a minimally invasive way. Perioflow with Plus powder preserves cementum during periodontal maintenance. It removes subgingival biofilm in residual deep pockets. The Piezon No Pain instrument removes the remaining calculus.

BGT maintains implants and are gentle on implant surfaces which metal instruments may scratch. Airflow can be used to treat mucositis and peri-implantitis.

50% of people have a form of periodontitis.11.2% have severe periodontitis. It is the 6th most prevalent human disease. Severe periodontal disease is the major cause of tooth loss. Periodontal disease needs to be stabilised before other treatments can be carried out. After 20 years of attempting to prevent caries we still today have the same incidence and prevalence.

Children need to be placed in a recall system. The prevelance of mucositis is 43% and the prevalence of peri-implantitis is 22%. These have to be identified. If you treat mucositis you will not get peri implantitis.

If you treat gingivitis you will not get priodontitis. There is no evidence to show that one needs root planning. There is a chronic inflammation in response to a microbial microfilm.

Primary prevention – healthy, do not need treatment. Secondary prevention- when to have treatment and prevent recurrences High risk profile patients have a rate of 2.15 of tooth loss.

A scaling tip has a limit of 10mm in length. If one has a 15mm [pocket one may not reach these areas so this is where the powder comes into play.

The stains near the gingival margins are most important. There is an improved removal of biofilm. The disclosing agent provides a guide so one works in the site in a targeted way. One must not spend more than 5 seconds in one site.

By using a non surgical approach one can reduce the need for surgery and reduce most of the pockets. Use Betadine for 6 weeks. Best results are obtained on teeth with only one root. Worst results are obtained withy multirooted teeth with associated smoking. ■

- Regular toothpastes† only protect the hard tissue, which is 20% of the mouth[2]
- The remaining 80% of the mouth is the tongue, cheeks, and gums, which can provide a bacteria reservoir for plaque biofilm recolonization

*In addition to fluoride for cavity protection, Colgate Total® provides 12-hour antibacterial protection for teeth, tongue, cheeks, and gums.
†Defined as non-antibacterial fluoride toothpaste.

References: 1. Fine DH, Sreenivasan PK, McKiernan M, et al. *J Clin Periodontol.* 2012;39:1056-1064. **2.** Collins LMC, Dawes C. *J Dent Res.* 1987;66:1300-1302.

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THE BART ENTERPRISES ENDODONTICS TRUNATOMY COURSE

WITH PROFESSOR GIUSEPPE CANTATORE AND DR ADRIENNE BUSUTTIL AT RADISSON BLU ST JULIANS ON 7 MAY 2019

Summarised by Dr David Muscat

This course included lectures and workshops and was attended by forty dentists. Professor Cantatore lectured widely on the TruNatomy system .The hands on was on Protaper gold and included the use of microscopes. Dr Busuttil lectured and supervised a hands- on re direct restoration of root filled teeth.

PROFESSOR CANTATORE

Minimally invasive endodontics is a new approach. The TruNatomy system has a different orifice opener.

Causes of weakness in a tooth could result from an access cavity, flaring, root canal shaping and obturation, and placing a post.

Calcium hydroxide can cause dehydration in a canal and should only be left for two weeks maximum. EDTA is used to help negotiate a canal. This removes inorganic matter. The sodium hypochlorite removes the organic matter.

For apexification nowadays one should use biodentine rather than calcium hydroxide.

In an older patient, dentine becomes more brittle and there is an increased risk of fracture. Preserving structural integrity is a key factor that determines prognosis. TruNatomy is flexible enough to negotiate curved canals. The maxillary premolar is susceptible to vertical fracture.

Posts with the same diameter as the last instrument used should be used and must be the same shape as the canal. Posts are only needed to retain the restoration material.

One must maintain pericervical dentine during root canal treatment.

PERICERVICAL DENTINE is defined as the dentine 4mm coronal to the crestal bone and 4mm apical to the crestal bone.

We need a ferrule effect for post endo restoration.

One may use the CBCT to localise orifices and hence use a smaller access cavity. The ultraconservative NINJA NEC is what is nowadays promoted. A small cavity needs a TruNatomy file. This is flexible and small to reduce the risk of transportation. There is a 3D Endo software one may download for one month for free. CBCT can measure the length of canals.

In root canal one must first create a glide path using a k File size 10. This gives smooth walls that allow penetration. The Proglider is a single file with a sharp blade and a semi-active tip. It is square in cross section with increased resistance to torsional stresses. With the Proglider one should use a pecking motion.2.5N and 300 revs per minute. In between one must clean the instrument with alcohol on a gauze.

The stages in TruNatomy are the K file, Orifice Modifier ,glider. Small. prime,medium instruments.

The alloy is superelastic and there is an increased resistance to fatigue so the files can be bent.

The maximum diameter of the Orifice Modifier is 0.8 .The Sx in comparison is 1.19. One requires a continuous taper file with 0.85 maximum diameter to the canal.

Irrigation should be with the needle 3 mm from the apex. The TruNatomy irrigation needle is made from soft poly propylene.

The protocol with negotiation and shaping is to use Sodium hypochlorite 5-6% at 40 degrees.

Preobturation irrigation should be with 3-5 minutes rinsing with 5-6% with sodium hypochlorite. Then 3 minutes rinse with EDTA and then rinse with saline 1-2 minutes.

Additional disinfection with 1-2 minutes with chlorhexidine 2%.Chlorhexidine has a disinfective effect for two weeks.

The H plus cleanser can then be used in the cavity and the tooth restored with SDR/resin. Long curved canals are ideal for TruNatomy as their files penetrate deeper.

There is a regressive taper so can be used safely. The maximum enlargement is 0.89mm.The thin canals are the mesial root of the mandibular molar and the buccal root on the maxillary molar.

When using the files look at the blades when you remove from the tooth. They should be completely covered with white dentine chips when you are ready.

When using protaper gold one uses the Gutta Core obturators. As an alternative one may use the new 'Comform Fit' GP points made from a latex free micronized formula which makes it easier to achieve a complete fill that flows all the way to the apex and into intricate canals.

DR ADRIENNE BUSUTTIL

Endodontic fillings have a 96% survival rate after 8 years. Tight seal is important. If the restoration fails then the survival rate falls to 18%.

Denaturation of collagen fibres occurs after root treatment and this will affect the adhesive process.

Studies by Ferrari et al and Hashmoto et al show that there is a degradation of composite after a certain time. There are changes in morphology and biomechanical behaviour under stress.

The marginal ridge can compensate for stresses generated by occlusal stress. This will resist fracture.

Cuspal coverage is very important. Teeth possess a protective feedback mechanism-proprioception.

If both marginal ridges are lost cuspal cover is advisable. If the walls are intact use a direct restoration.

Composites shrink when cured and reduce in volume towards the centre. Because it is stuck to the cavity walls it causes stress and exerts force on the bonded interface.

One does not wish to over-etch dentine so best use a selective etching procedure.

Continues on page 19.

INTERSTER®

Helix Test System

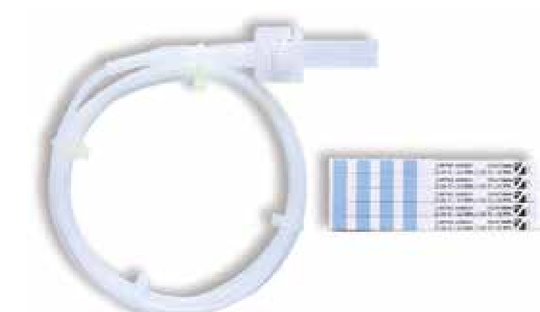
The Helix Test System by Interster is the ideal process challenge device (PCD) to perform a "worst case" scenario when sterilizing instruments. This test is suitable for every sterilization process in a loaded autoclave.

It can also be used to ensure maximum steam penetration where hollow instruments, or instruments with small lumina, are concerned.

The Helix strips are in compliance with EN 867-5 and EN-ISO 11140-1 (Type 2). It is easy to interpret the strip due to the clear and even colour change.

By keeping the Helix Test in the clinics records the practitioner ensures that there is proof of correct processing.

This test should be performed with each autoclave load to ensure that the load in question has been sterilized.



Bowie & Dick Type Autoclave Lean Pack

The Bowie & Dick Type Autoclave Lean Pack is a Type 2 chemical indicator packed in special paper with a cardboard outer packaging.

The Bowie & Dick Type Autoclave Lean Pack tests if steam penetration in the autoclave is at sufficient level through color change of the chemical indicator. The change of color of the chemical indicator will turn from blue to light pink and indicates if all parameters (time, pressure and steam penetration) are sufficient to approve the process.

The Bowie & Dick Test must be performed every day that the autoclave is used. It is performed in the morning before starting work.

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THE BART ENTERPRISES ENDODONTICS TRUNATOMY COURSE

WITH PROFESSOR GIUSEPPE CANTATORE AND DR ADRIENNE BUSUTTIL AT RADISSON BLU ST JULIANS ON 7 MAY 2019

Continues from page 17.

The Prime and bond Universal has a balance of hydrophilic and hydrophobic so you will not get gaps in the presence of water.

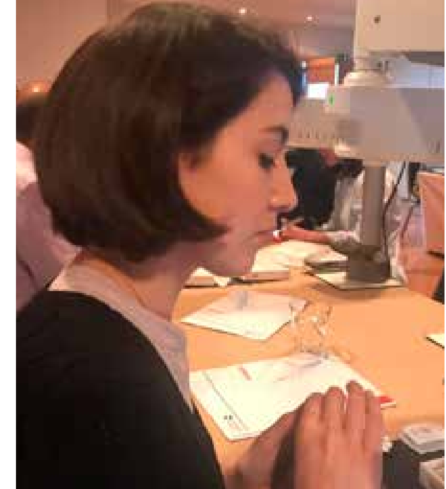
The material has a low surface tension so it spreads over the surface and avoids pooling. It has a low viscosity, low film thickness and has an important Penta molecule which gives it its bond strength.

The Ceram is a new ceramic structure with small micro barium glass particles and has a ball bearing effect. There is 2.3% shrinkage. An incremental placement technique has to be used.

The SDR bulk fill has low stress and can be used up to 4mm and one can cure this in 20 seconds. It has a low viscosity, is radio-opaque and compatible with composite.

One must not go past the contact point with this.SDR iis generally placed in areas that are prone to leakage.

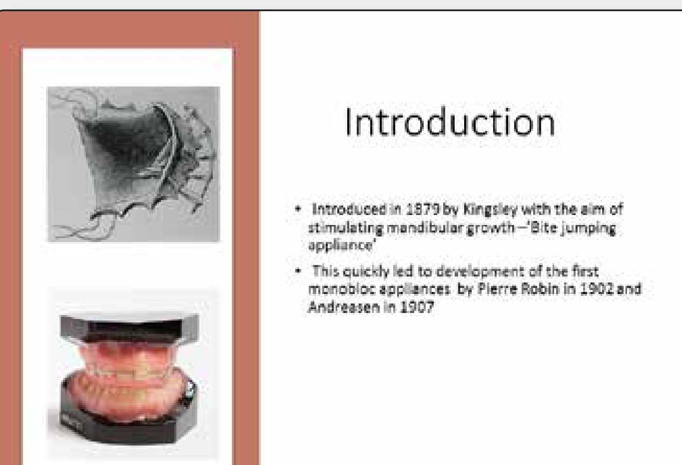
The Palodent Plus sectional matrix system is advisable for posterior composites.



FUNCTIONAL APPLIANCES

AN EVIDENCE-BASED APPRAISAL

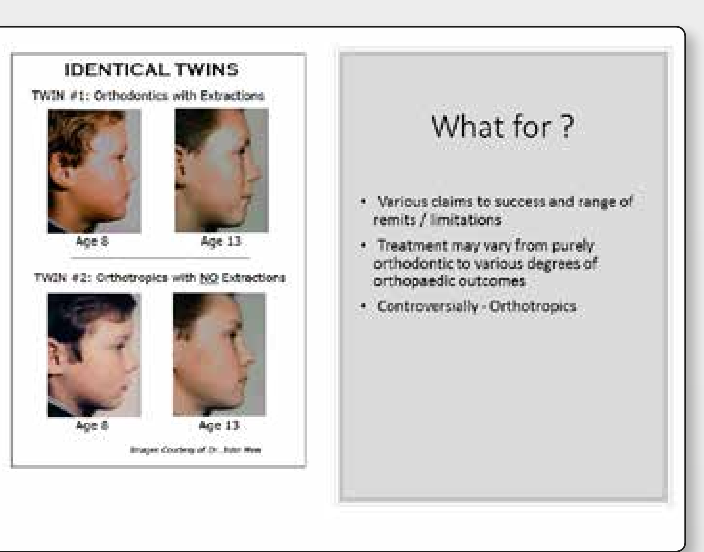
By Jan-Marc Muscat

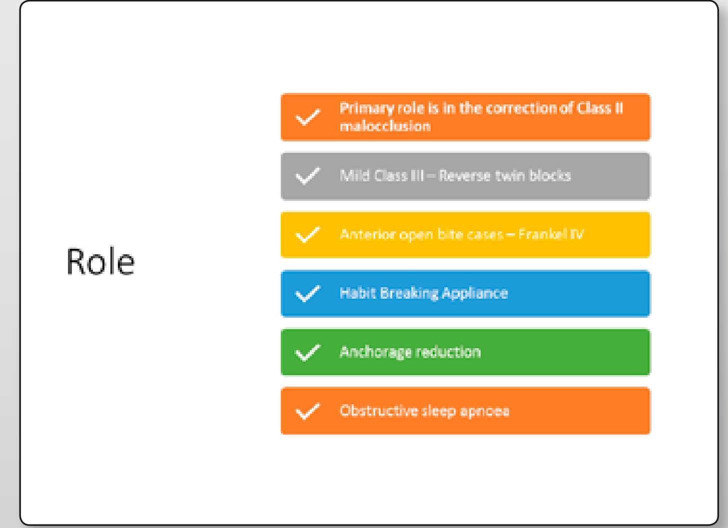


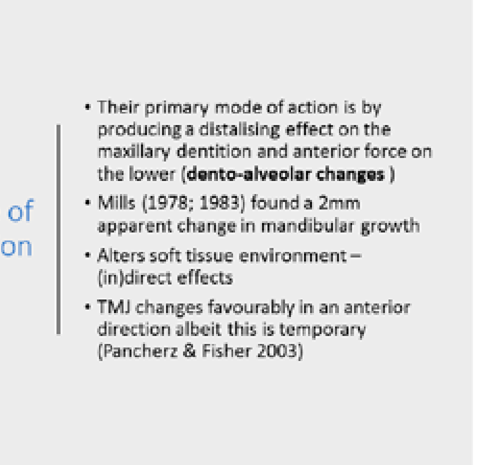
Working Definition

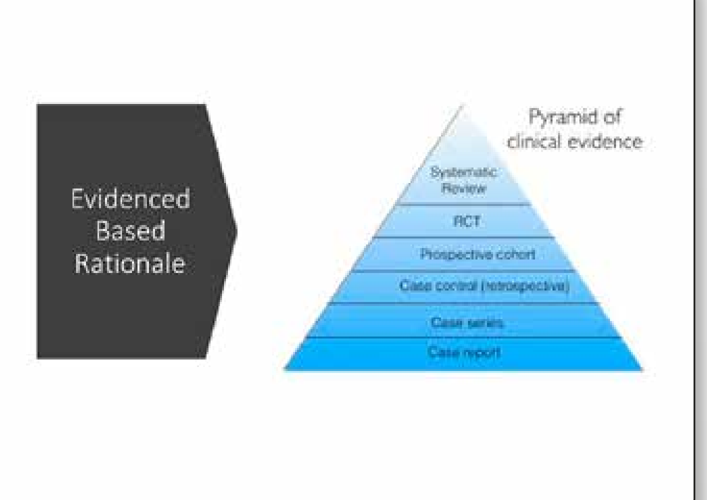
"An orthodontic appliance which harnesses (uses) the facial and masticatory muscles to produce changes in arch or tooth relationship"

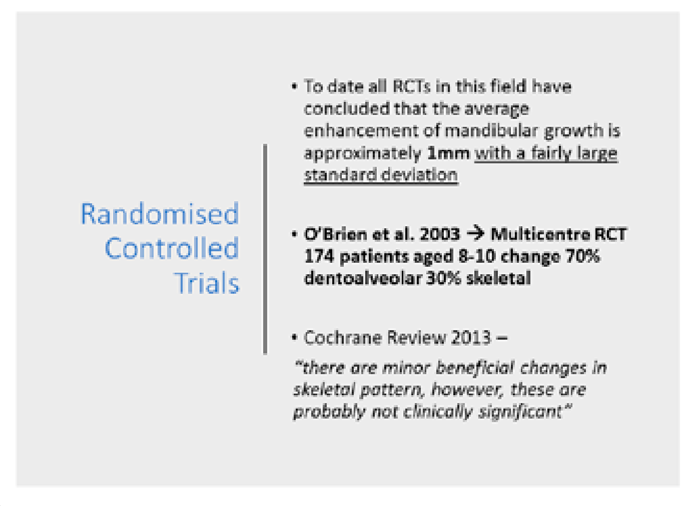
Prof. RT Lee 2011

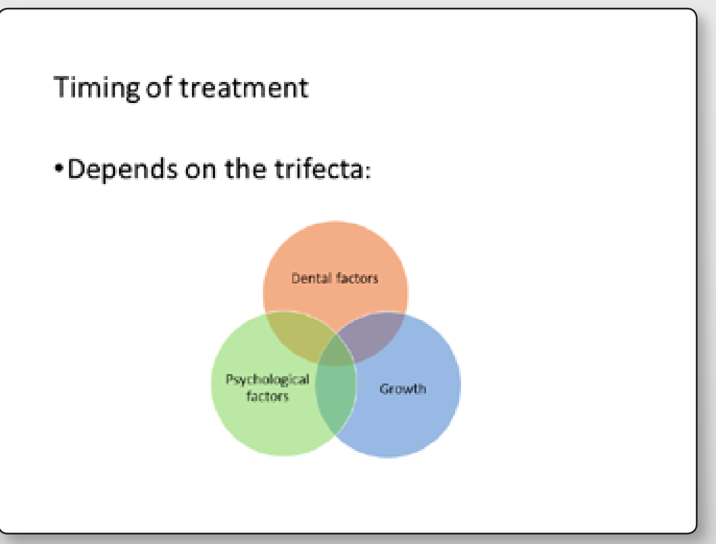












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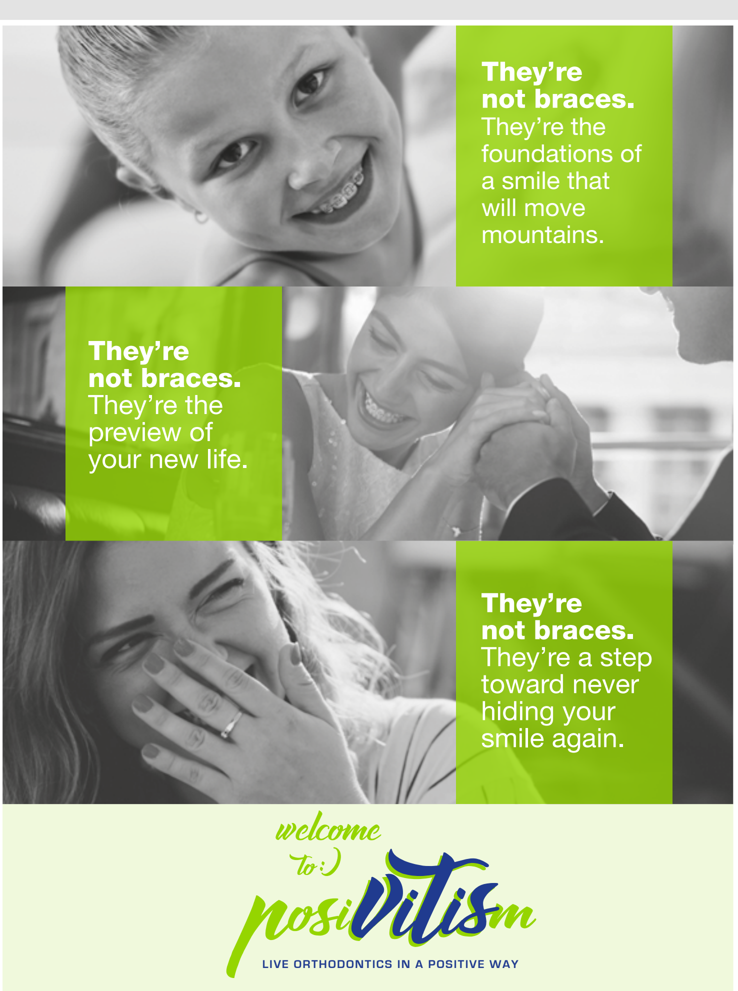

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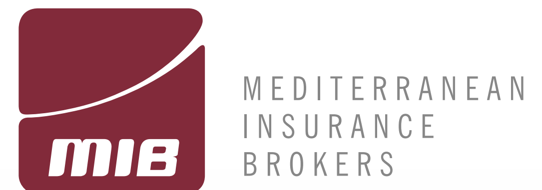

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RECOMMEND PARODONTAX COMPLETE PROTECTION – WITH 8 SPECIALLY DESIGNED BENEFITS FOR HEALTHIER GUMS AND STRONGER TEETH

4X greater plaque removal*1

48% greater reduction in bleeding gums*1

*Compared to a regular toothpaste following a professional clean and 24 weeks' twice-daily brushing.

Reference: 1. Data on file, GSK, RH02434, January 2015.

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FUNCTIONAL APPLIANCES

AN EVIDENCE-BASED APPRAISAL

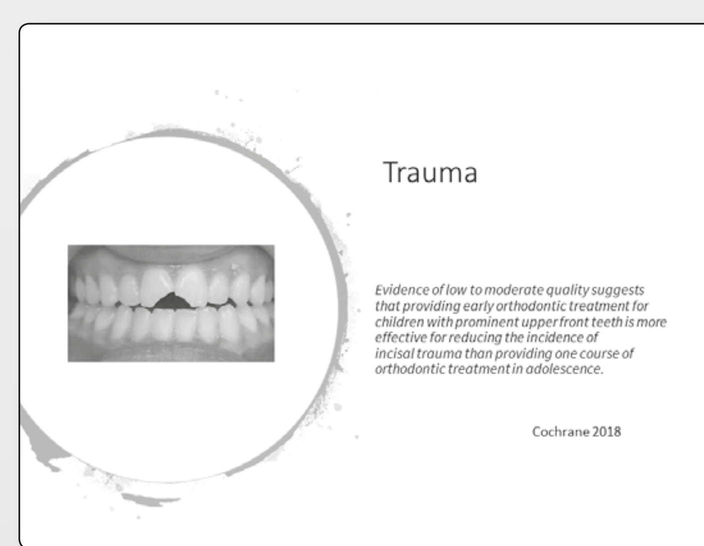
Continues from page 21.

1. Dental Factors

- Since the changes achieved are primarily dento-alveolar, it follows that the best time to start is when permanent teeth have erupted
- A thorough assessment of the dentition is required as this will influence choice and design of the appliance
- Problems with appliance retention due to shedding/morphology of primary teeth
- Eruption of first premolars (4s) is often considered as a good marker to indicate suitability for commencement of treatment

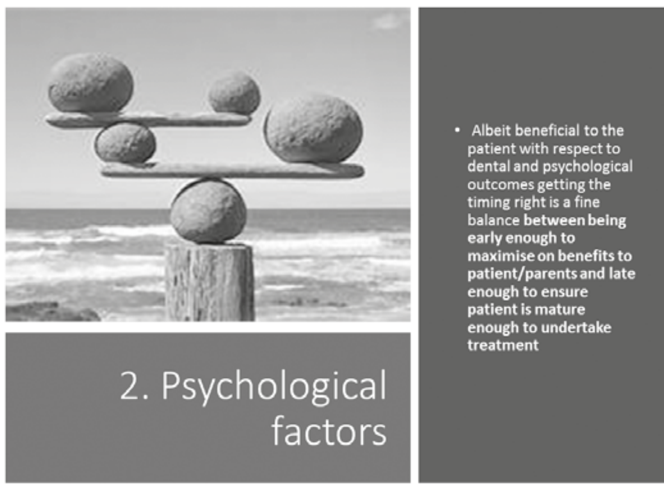
1. Dental Factors – Trauma

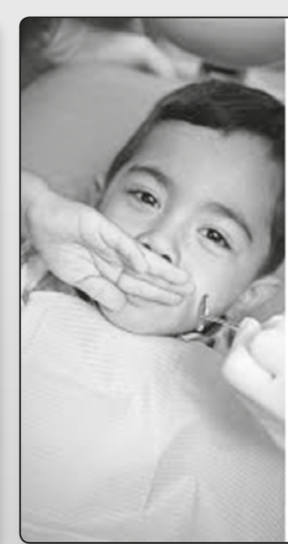
- **IOTN:** OJ > 6mm → definite treatment need
- **Todd & Dodd** → OJ >9mm are associated with a 45 % increased risk of trauma
- **Dewhurst** → 35% of 9 year olds have evidence of trauma regardless of OJ values



2. Psychological Factors

- O'Brien 2003 → increased self-concept and reduced negative social experiences
- O'Brien 2009 → patients receiving early treatment with twin block treatment were perceived to be more attractive than those who did not





2. Psychological factors

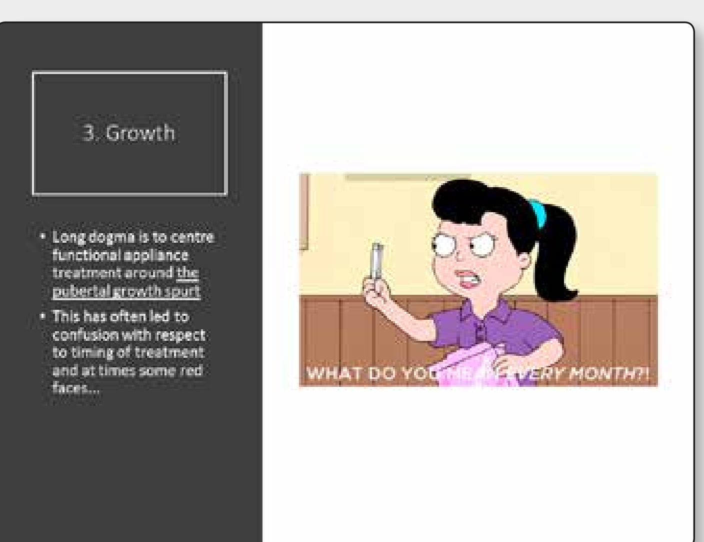
- A substantially earlier start/ two-stage treatment risks prolonging treatment with resultant patient fatigue compromising long term treatment aims and outcomes

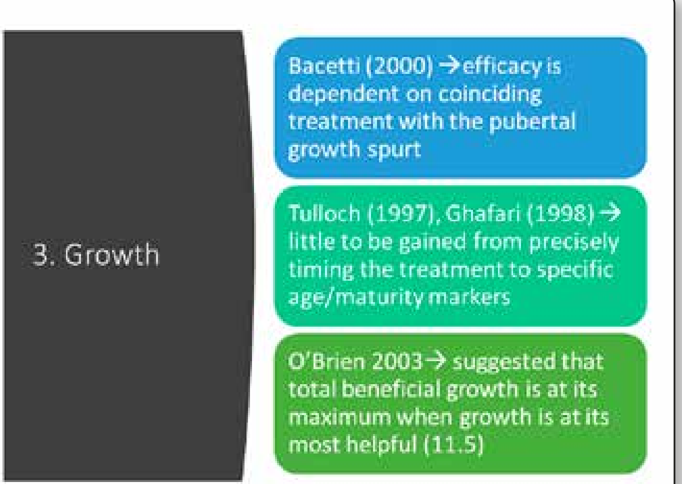
Continues on page 26.

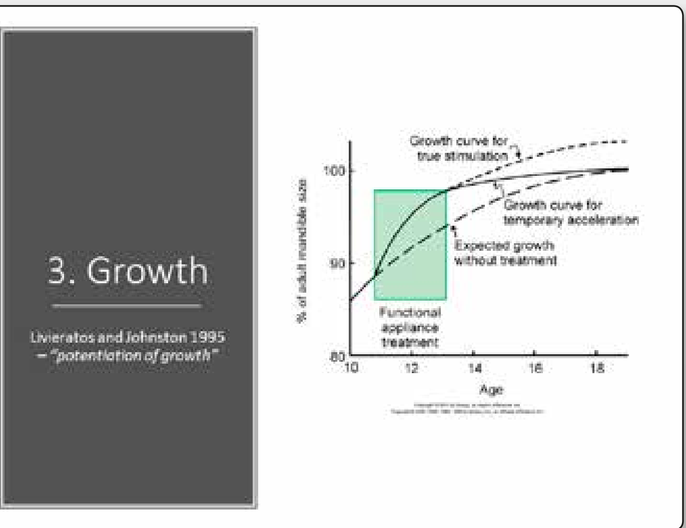
FUNCTIONAL APPLIANCES

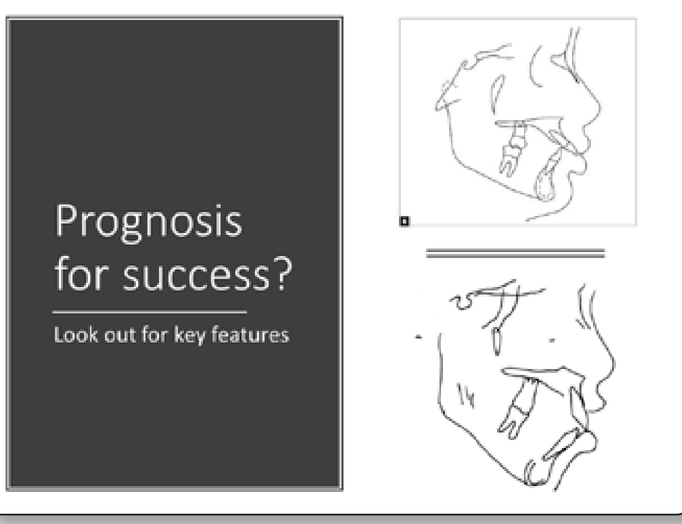
AN EVIDENCE-BASED APPRAISAL

Continues from page 25.









Continues on page 28.

DenFil™ N

Light-Cured Restorative
Nano Hybrid Composite Resin

Advantages

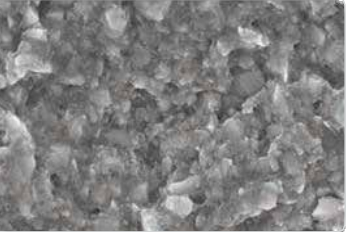
- Unsurpassed natural shade blend
- Optimal handling and non-slumping
- High wear resistance and mechanical properties
- Excellent polish retention

Nano-hybrid composite filling material

Indications

- Direct Anterior and Posterior Restorations
- Core Build-up
- Splinting

Sem of DenFil™ N



Shade

- Body: A1, A2, A3, A3.5, B1, B2, C1
- Opacity: A2O, A3O
- Special: BL

Packages

- 5 Syringes Kit
  - Syringe(4g x 5syringes)
    A pack(A1, A2, A3, A3.5, B2)
    B pack(A2, A3, A3.5, B1, B2)
    C pack(A1, A2, A3, A3.5, C1)
  - 5th Bonding agent 5ml x 1bottle & Etchant 3ml x 1 syringe or 7th Bonding agent 5ml x 1bottle
  - Accessories: Brushes, Brush holder, Mixing well, Mixing pad, Disposable tips(blue)
- 8 Syringes Kit
  - Syringe(4g x 8syringes)
    A pack + (A2O, A3O, BL)
    B pack + (C1, A2O, BL)
    C pack + (B1, A2O, A3O)
- Refill
  - Syringe(4g x 1syringe or 4g x 2syringes)
  - Shade: A1, A2, A3, A3.5, B1, B2, C1, A2O, A3O, BL
- Capsule
  - Capsule(0.25g x 20ea)
  - Shade: A1, A2, A3, A3.5, B1, B2, C1, A2O, A3O, BL

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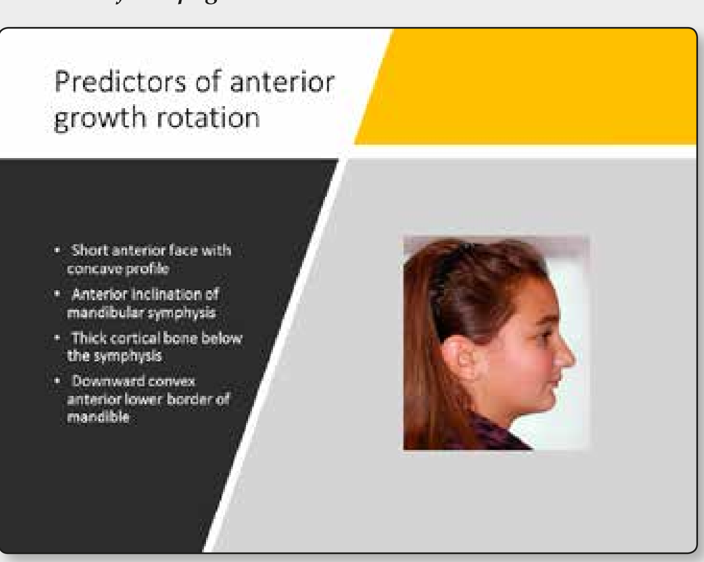
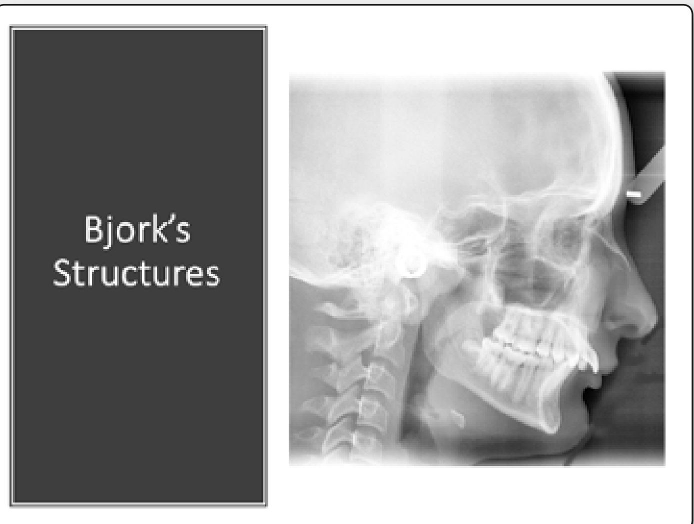
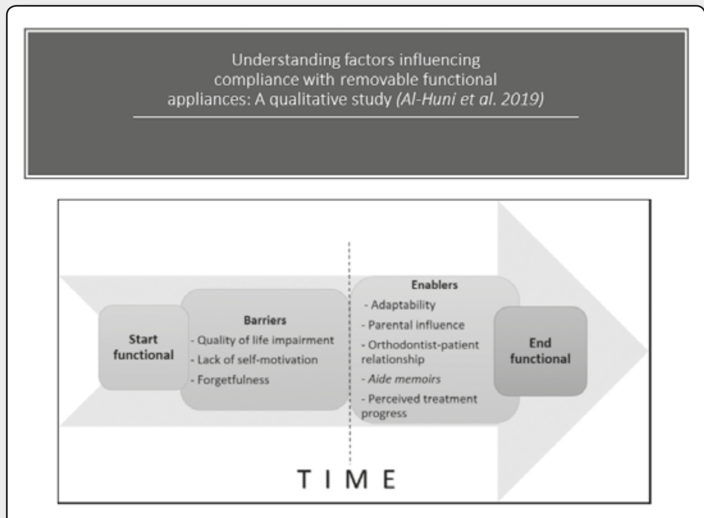
FUNCTIONAL APPLIANCES

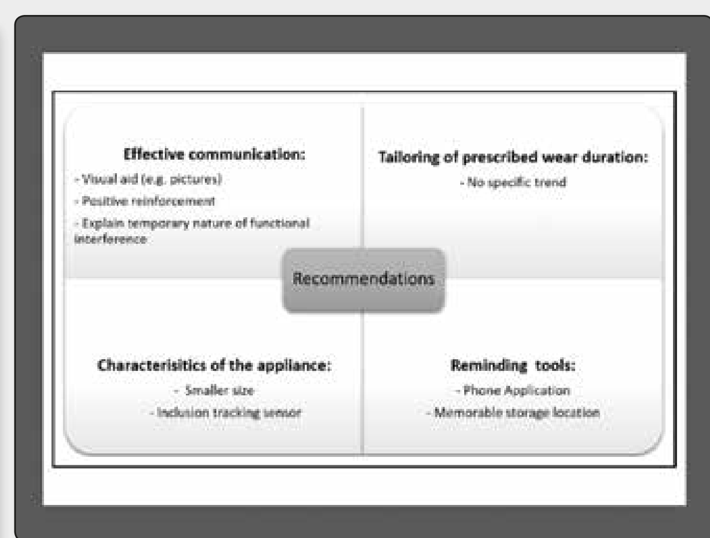
AN EVIDENCE-BASED APPRAISAL

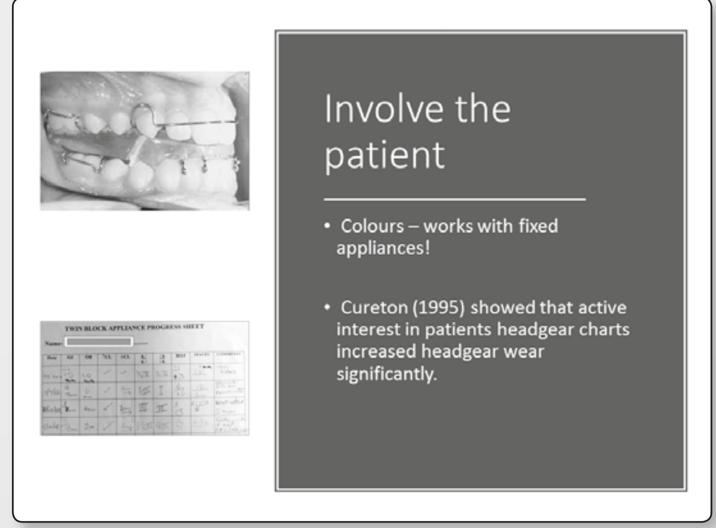
Continues from page 26.

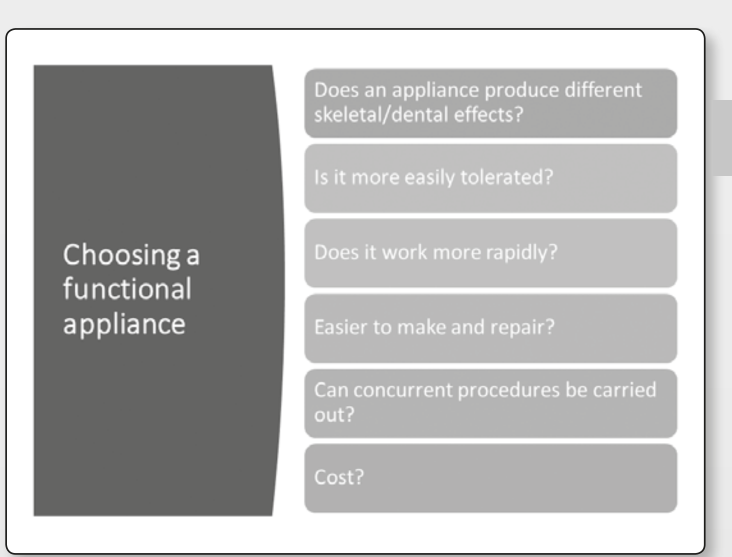


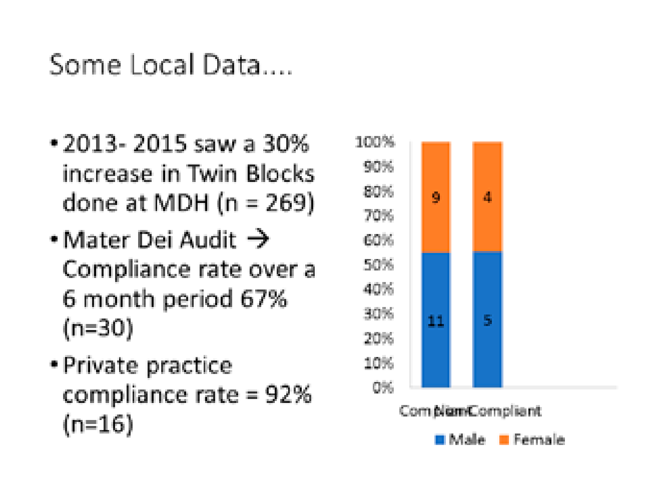


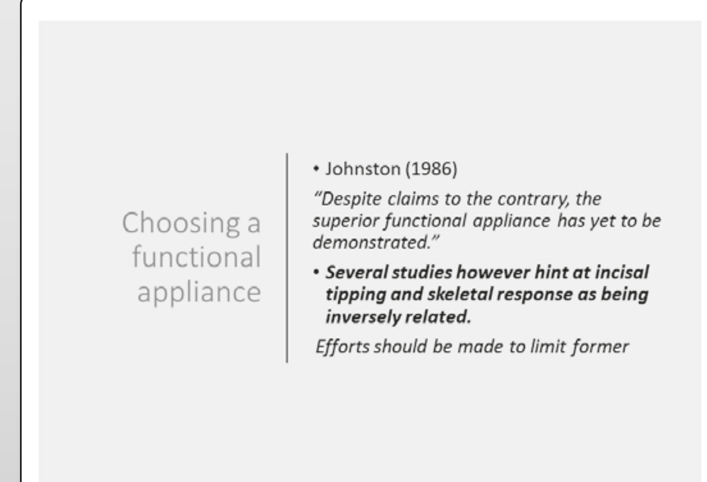


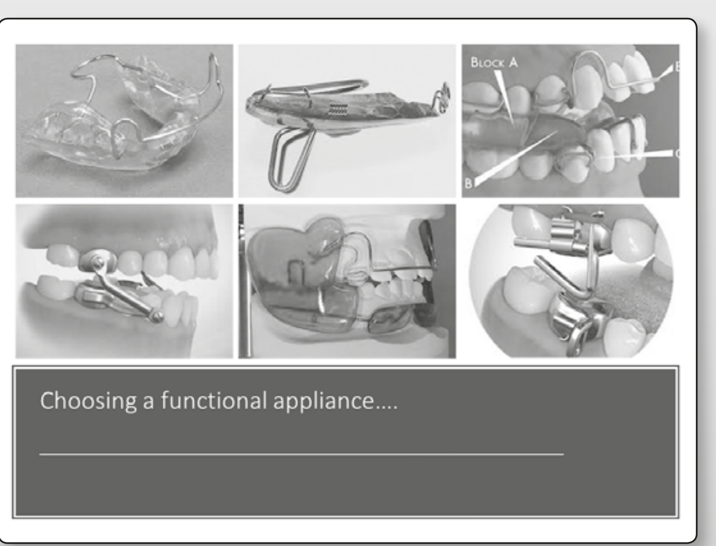












Continues on page 30.

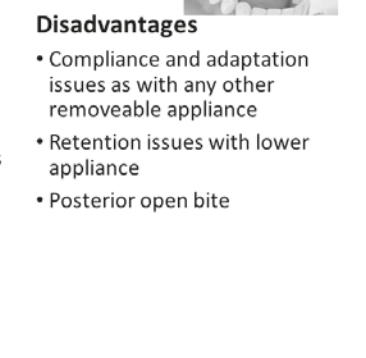
FUNCTIONAL APPLIANCES
AN EVIDENCE-BASED APPRAISAL

Continues from page 29.

Choosing a functional appliance....

- The list of functional appliances keeps growing every year
- Chadwick → **Twin Block** is the most commonly used functional appliance in the UK (75% of orthodontists)

Twin Blocks –Clark 1982

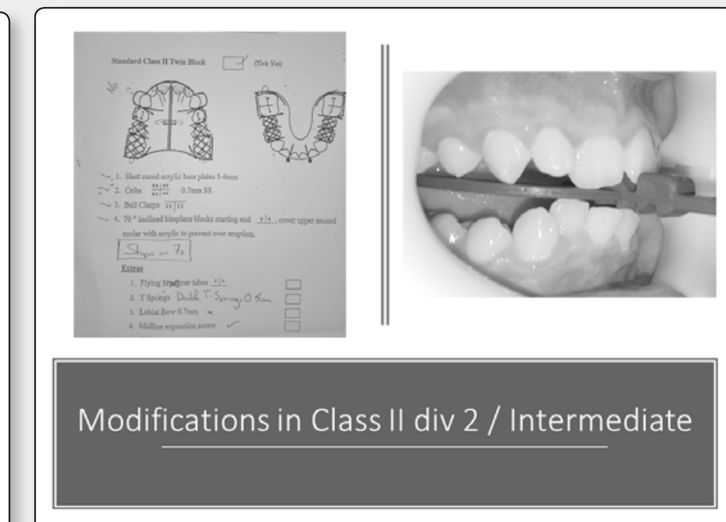


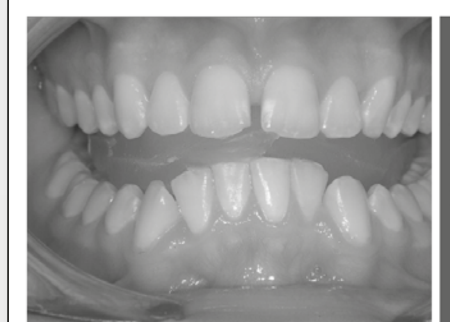
Advantages
- Well tolerated
- Easy to repair
- Fairly easy to advance
- Compensatory expansion is easy
- Suitable for mixed or permanent dentition

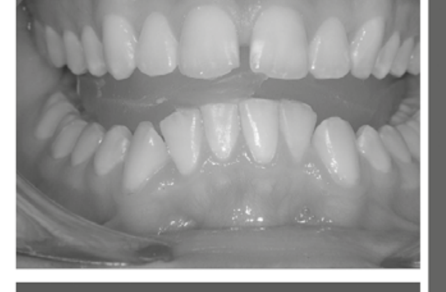
Disadvantages
- Compliance and adaptation issues as with any other removeable appliance
- Retention issues with lower appliance
- Posterior open bite

Modifications in Class II div 2 / Intermediate

Modifications in Class II div 2 / Intermediate



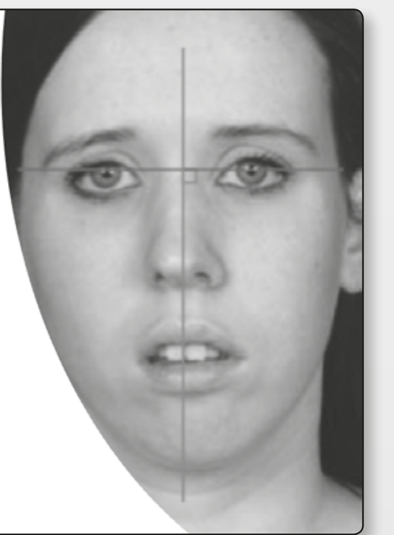




Twin Blocks – tips

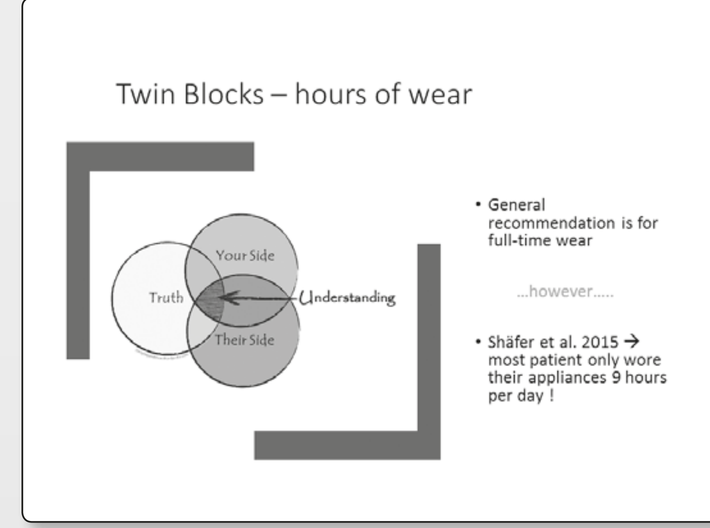
- **7-8mm thick bite is the secret of success with twin blocks**
- Over-correction
- Consider need for stepwise advancement when OJ greater than 1-12 mm
- Watch your centrelines!

Centrelines vs Facial asymmetry



- The middle of the **philtrum** is an important reference for the position of the upper centreline, particularly where nasal deviation is present.
- It is important to determine whether it is due to a true mandibular asymmetry or a displacement on closure due to an occlusal interference

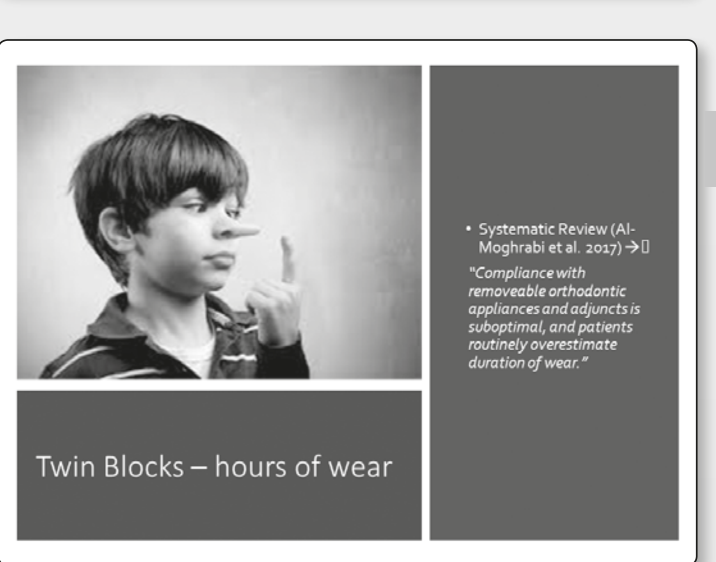
Twin Blocks – hours of wear



- General recommendation is for full-time wear

...however.....

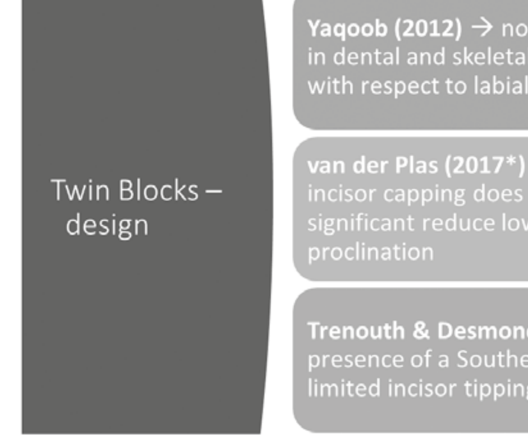
- Shäfer et al. 2015 → most patient only wore their appliances 9 hours per day !



Twin Blocks – hours of wear

- Systematic Review (Al-Moghrabi et al. 2017) →

"Compliance with removeable orthodontic appliances and adjuncts is suboptimal, and patients routinely overestimate duration of wear."

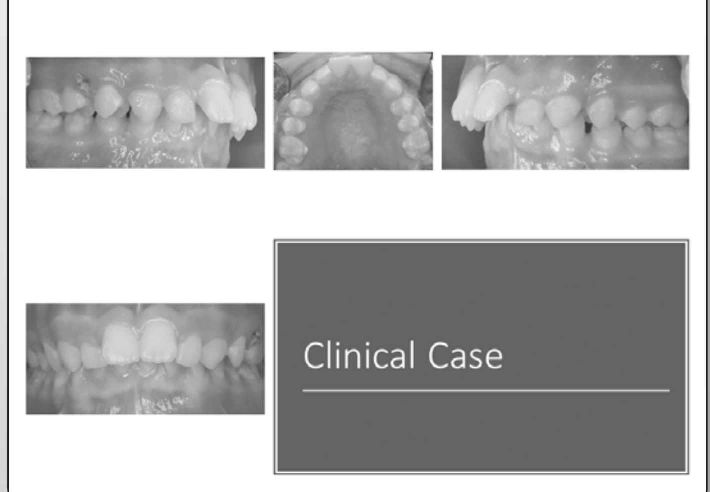


Twin Blocks – design

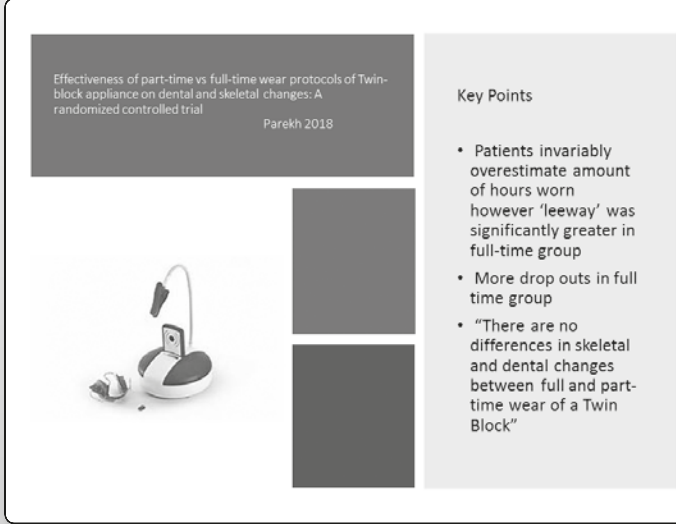
Yaqoob (2012) → no difference in dental and skeletal effects with respect to labial bow

van der Plas (2017*) → lower incisor capping does not significant reduce lower incisor proclination

Trenouth & Desmond (2014) → presence of a Southend clasp limited incisor tipping



Clinical Case

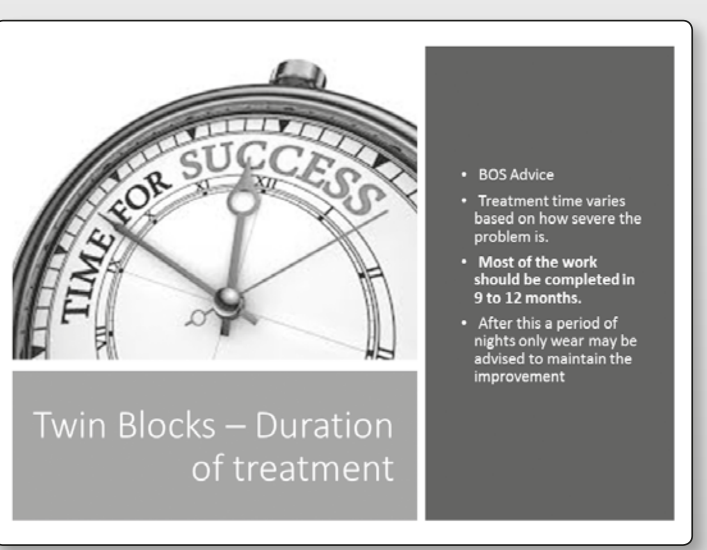


Effectiveness of part-time vs full-time wear protocols of Twin-block appliance on dental and skeletal changes: A randomized controlled trial

Parekh 2018

Key Points

- Patients invariably overestimate amount of hours worn however 'leeway' was significantly greater in full-time group
- More drop outs in full time group
- "There are no differences in skeletal and dental changes between full and part-time wear of a Twin Block"



Twin Blocks – Duration of treatment

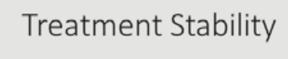
- BOS Advice
- Treatment time varies based on how severe the problem is.
- **Most of the work should be completed in 9 to 12 months.**
- After this a period of nights only wear may be advised to maintain the improvement

Continues on page 32.

FUNCTIONAL APPLIANCES

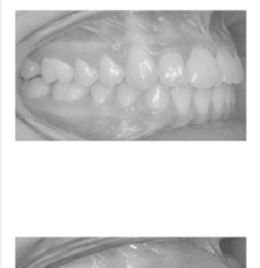
AN EVIDENCE-BASED APPRAISAL

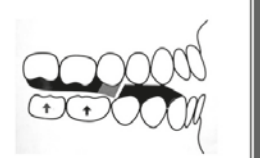
Continues from page 31.

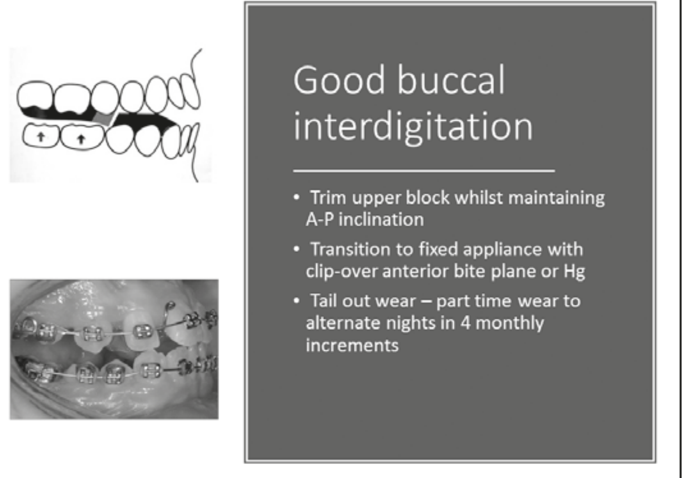


Treatment Stability

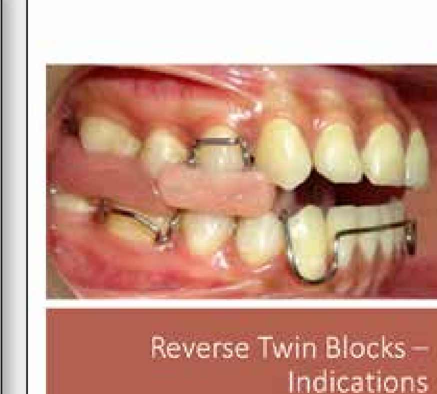
- Maxillary changes more stable than mandibular (Pancherz 1991)
- **Good buccal interdigitation** reduces need for relapse
- Lower lip coverage /competence
- Systematic Review (Bock 2015) –
- *Good stability expected but evidence limited to Herbst treatment*







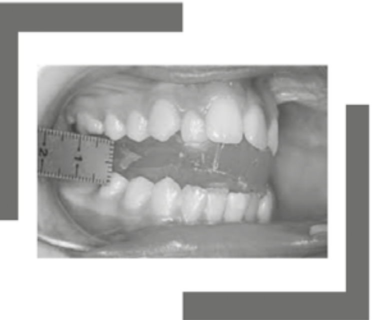
- Class III malocclusions are thought to be under stringent genetic control
- Limited soft tissue role in aetiology
- May play a small but useful part in your armamentarium for interceptive Class III treatment



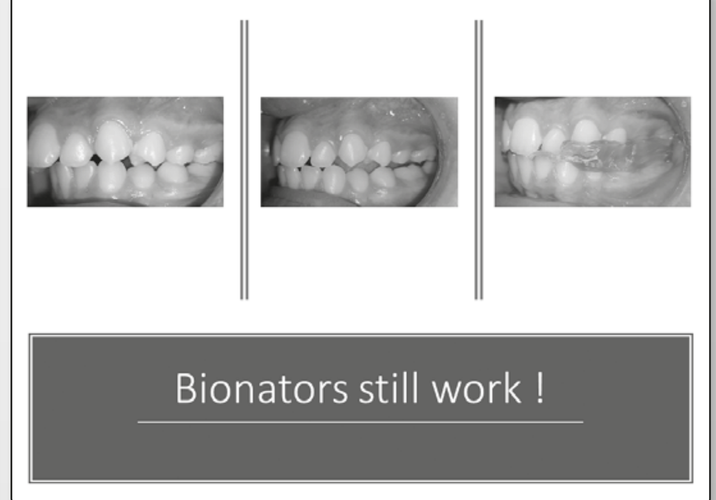
1) Mild Class III skeletal pattern
2) Average to low MMA
3) Minimal incisor compensation
4) Spacing in lower arch
5) Anterior displacement on closure
6) Increased overbite

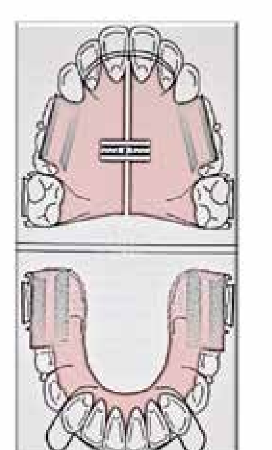
Seehra et al. 2010

Is it always the best choice?



- High angle cases are often tricky to treat as blocks wouldn't not have adequate thickness
- Options are for compensatory opening of the bite during registration **or consider using different appliance / plan**





Reverse Twin Blocks

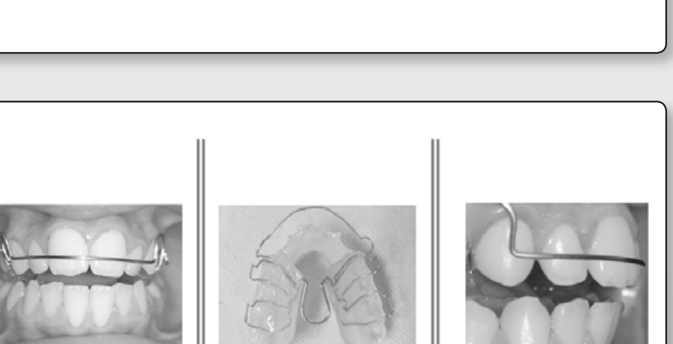
- Effects are mostly dento-alveolar
- Temporary restriction of mandibular growth
- Possibility of transverse expansion by introducing active elements
- Kidner et al. (2003) -

Mx. Incisor proclination = 5.1˚

Mn. Incisor retroclination = 4.5˚

- Average treatment time 6-7 months

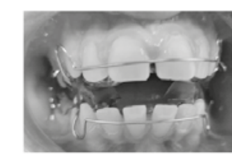
Reverse Twin Block Dr. Seehra

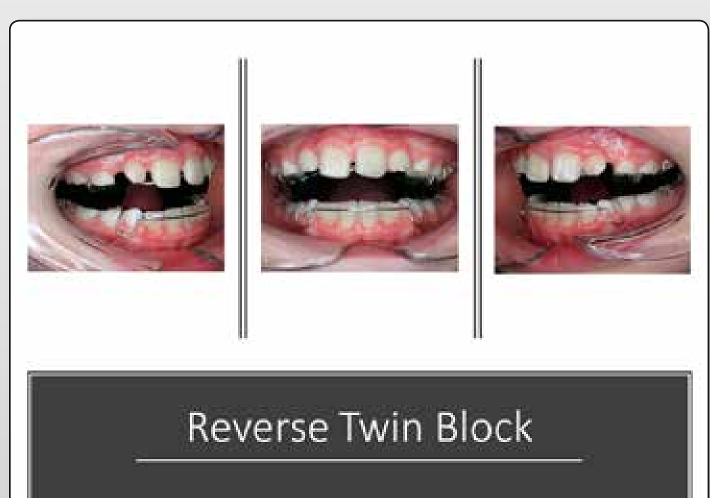


Bionator

Indications - Bionator

- High angle case
- Difficulty with retention
- Avoid in cases of proclined lower incisors





MEDICAL EMERGENCIES

A DENTAL ASSOCIATION OF MALTA COURSE

Course run By Dr Adam Bartolo using the latest European Resuscitation Guidelines in Basic Life Support
Course conducted on 31st October 2018 at Hilton Portomaso, Malta
Summarised By Dr David Muscat

Anybody suitably trained can carry out basic life support.80 percent of dental emergencies occur during treatment, particularly after LA is given.

15 % occur elsewhere in the practice.5% occur later, in a location outside the surgery.

A patient must not be left unsupervised. If a patient faints this may lead to an emergency. For example a patient may faint in the bathroom. It is thus important to have access to the bathroom.

One must remove deadlocks. Alternatively have a spare Or else have a lock that can be opened with a screwdriver. Discharge a patient fit and well, and keep in the waiting room for observation. Call a relative or a taxi. The dentist must be satisfied that the patient can leave safely.

In the career of a dentist, a dentist may see the following emergencies on average as follows:

Faint	0.5 years
Angina	6 years
Epilepsy	7 years
Myocardial infarction	151 years
Cardiac arrest	302 years

RISK MANAGEMENT STRATEGY

The best is prevention. Take a comprehensive medical history. Apply an alerting system to the patient's medical records.

Be aware of possible adverse effects. Know the principles of prevention and management of medical principles.

CONCEPT OF HIGH RISK

Put something on selective records to alert. Some software systems have this built in – pop ups –do not disable this feature.

USE BNF

Drug interactions-poly-pharmacy is commonplace. Rehearse and develop the management of emergencies with the team.

Be familiar with the working environment.

Ensure equipment functionality and log this.

Ensure drug expiry and log this.

Leave reminders so eg. Assistant A checks items per month.

EMERGENCY DRUGS

Safety and proper positioning – stop treatment and position the patient on their back.

Establish unresponsiveness by calling and shaking. Place the unconscious patient in recovery position. Place the patient on a firm surface to allow chest compression. Patients with respiratory problems may find the reclined position preferable.

In late pregnancy place the patient on the left side to divert the weight of the foetus from the vena cava.

PAYMENT FORM

Please cut out this section and send with a cheque for 50 euro payable to **Dental Association of Malta** for your 2019 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: ____________________

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Manage the relatives. If one faints you have another emergency. The dental chair is a good place for CPR, a solid surface and suction are available.

The floor is also a good place to move the patient to. Do this as early as possible.

GENERAL STEPS IN BASIC LIFE SUPPORT

- Airway
- Breathing
- Circulation
- Disability
- Exposure

One needs to follow a procedure of A, B, C.

AIRWAY

Look, listen and feel for signs of life. If absent, ensure the patient has an unobstructed patent airway.

Open the airway by tilting the head back. Airway may need clearing with suction.

One must exercise caution and ensure that one does not push the obstruction further down.

In the clinic we have the advantage of good light, suction, available instruments like tweezers etc.

BREATHING

When respiration is depressed, shallow, irregular or not spontaneous, begin rescue breathing or ventilate with oxygen.

In patients with congestive pulmonary disease, there are more problems with perfusion.

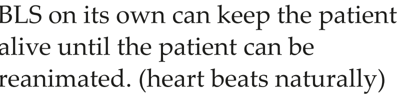
A mask simply delivers oxygen but does not ventilate so one has to be sure that the patient is ventilating. If the patient is not breathing you need to ventilate the patient irrespective of the oxygen and this is where basic life support comes in.

CIRCULATION

Time is of essence. CPR procedure if A B C is not followed patient may die.

DISABILITY COMES LATER

One has to assess the collapsed victim. Early resuscitation and defibrillation (within 1-2 minutes) can result in a greater than 60% survival.



BLS on its own can keep the patient alive until the patient can be reanimated. (heart beats naturally)

Every minute that is lost leads to a 10% decrease in survival.

Early recognition – calling for help asap. CPR and BLS buy time till defibrillation and hospital post resuscitation.

PROTOCOL

Unresponsive and not breathing normally = Call emergency services = Give 30 chest compressions = Give two breaths = Continue CPR 30:2.

If not, carry out the following:

The patient's tongue may seal the oropharynx so you need to do a head/chin lift. You hyperextend the neck and lift the chin. Engage the translation movement of the mandible- you are pulling the tongue. Look, listen and feel for normal breathing for no more than 10 seconds. Abnormal breathing is common in 40% of cardiac arrests. Heavy, noisy or gasping breathing are signs of cardiac arrest.

CIRCULATION

If the patient does not have breathing but has circulation you still start CPR, so you do not have to check circulation.

The defibrillator needs to be attached to the chest asap.BLS is a strenuous procedure. If one is working as a team then it is good to have a division of labour.

Ring 112. It is important not to hang up before you are told to do so. Give a chance to explain the severity, and also a clear location of where you are. Also leave a number where they can call you back.

In Malta usually it is a nurse in the ambulance not a paramedic.

CPR

30 Chest compressions are given the heel of one hand is used with the other hand on top.

The fingers are interlocked. Ensure pressure is on sternum and not on ribs.

COMPRESS THE CHEST

Rate 100-120 per minute ie. Two per second so very fast.
Depth 5-6 cms. (you have to compress the heart)

VENTRICULAR FIBRILLATION

In VF the heart beats so fast that it does not have time to refill, so too much is also bad. The heart has to have time to refill with blood. The head needs to be tilted back and the chin lifted. Pinch the soft tissue part of the nose ,lips over mouth and blow. Take one second. Allow the chest to fall and repeat.

Continues on page 36.

MEDICAL EMERGENCIES

A DENTAL ASSOCIATION OF MALTA COURSE

Continues from page 35.

Do not interrupt the chest compressions for more than 10 seconds. The tidal volume of the lungs is half a litre so if you give too much, the air will go into the stomach and the patient may vomit.

Chest compressions are good because one is also compressing the lungs which act as a bellows. As soon as the AED arrives...

AUTOMATED EXTERNAL DEFIBRILLATION

This utility is based on the fact that most cases are VF so the treatment is defibrillation.

Not all cases however of cardiac arrest are VF. Some cases could be systole where the heart stops.

The machine is automated in both diagnosis and function. It has a built in ECG and will decide as to whether to give a shock and how much.

There are some AEDs with a manual override, and most are semi automated.

Follow the instructions of the AED:

1. Attach the pads (single use have an expiry date). These are not side specific. One is placed on the upper part of the right chest and the other on the lower part of the left trunk. These are pre gelled. Both are adhesive and conductive.

2. Stand clear. Don't touch patient, as may pick up impulses from another person. The machine will charge up (sound).A button will flash and this means it is active and it now will give a shock if the flashing button is pressed

The shock may be as high as 360 joules and this is considerable and may possibly kill.

One has to continue as directed by voice/visual prompts. Place the victim in the recovery position. knee further away from you up so you can use as a lever. Use patients arm to keep his neck extended.

CHOKING

If an obstruction is mild one encourages the victim to cough.
If the obstruction is severe the most effective way is to pull the patient up,give 5 back blows and if unsuccessful give 5 abdominal thrusts. Failing this help the patient to the ground, face up.

With children BLS if unresponsive get helper to call 122 ,then – first 5 rescue breaths, 30 chest compressions and 2 rescue breaths. If alone call 112 after 1 minute.

In children it is usually a respiratory arrest.eg due to asthma. Both the heart and the brain are completely depleted of oxygen and filled with carbon dioxide.

In a child the compressions must be at least one third of the depth of the chest.

- Over 8 years – use adult AED.
- Age 1-8 years use paediatric pads/ settings if available.
- Age less than one year – use only operator labelled by manufacturer for safe use.

DROWNING

The same algorithm as in children is used as this is respiratory failure. AED can be used(on dry land or on rescue boat) if the victims' chest is dried.

- Call 112
- 5 rescue breaths
- 30 chest compressions
- 2 rescue breaths

If one is alone then call 112 after one minute. (With cardiac arrest one notable feature is profuse sweating).

FACEMASK

This is a personal protection device. It protects you from body fluids and includes the nose and mouth.There is a one way valve.

FACESHIELD

A small plastic you can keep in your wallet.

BAG VALVE MASK VENTILATION

This is for single operator or two working together. If alone one has to tilt the head back and bring chin forwards whilst also using the other hand to hold the bag. The bag comes with its own face mask.

OXYGEN CYLINDER

You can regulate the flow of oxygen so set to maximum flow of about 10/15 litres/minute on the nose and mouth. Although you are using 100% oxygen the patient is exhaling and inhaling the same air so there is effectively 50% oxygen.

Our intake of air is faster than exhalation so there is a mismatch There is a another type of mask for oxygen.

It has a reservoir whose function is to compensate for the seesaw breathing. It fills up with 100% oxygen. The reservoir bag boosts delivery of oxygen up to 70%.This is not to be confused with a self inflating bag and mask.

EMERGENCY DRUGS TO BE KEPT IN THE CLINIC

GLUCAGON-IM 1MG WITH 1ML DILUENT use in hypoglycemia.

Salbutamol inhaler-100micrograms – use at onset of an asthma attack

Hydrocortisone Sodium succinate 100mg with 2ml diluents

USE

a. IV/IM injection during status epilepticus
b. anaphylaxis -2 nd line drug
c. adrenal crisis

Administer IM or IV.

GLUCOSE oragel single use sachets – use on a conscious diabetic.
Admin orally.

Three ADRENALINE INJECTIONS 1mg in 10mls. 1:10000 prefilled syringe. Use in anaphylaxis. Admin.

IM VERY SLOWLY

Adrenaline injection 1mg in 1ml ampoules 1:1000 injection . Use in anaphylaxis .Administer IM very slowly.
Aspirin 300mg tablets pack of 16

Glyceryl Trinitrate 0.4mg spray for angina.

Midazolam injection 10mg in 5ml ampoules. Use in status epilepticus. Administer IM very slowly.

Chlorphenamine injection.10mg in 1 ml ampoules. Use in anaphylaxis as a second line drug

Administer IM
The best muscle to use is the deltoid. If one is using benzodiazepines for conscious sedation one should stock three Flumozenil 100mg/ml in 5ml ampoules for use in REVERSAL of the sedative effects of benzodiazepines.

Administer IV
Other items are a pocket mask, oxygen cylinder, aspirator, a self inflating resuscitation bag.AED, Pulse oximeter (if you carry out sedation).

VASOVAGAL SYNCOPE

Causes: fear , fasting, heat, fatigue, pain, postural hypotension and after an injection.

Symptoms: dizzy, slow pulse, low bp, pallor and sweating, nausea and vomiting and loss of consciousness.

Treatment: lay patient flat with feet up. Place cold cloth on head to stimulate the cutaneous reflex. Loosen tight clothing, check signs of life. In absence of signs of life or normal breathing start

CPR

ANGINA PECTORIS (not a heart attack). This is a condition that is due to ischaemic heart disease.

Causes: pre-existing condition exacerbated by brief exercise (eg. Climbing stairs)

Symptoms: chest pain, shortness of breath, fast or slow heart rate, an increase in respiratory rate, a low bp, confusion, poor peripheral perfusion.

To check for peripheral perfusion do the capillary refill test-press capillary to block blood – it should refill within one second.

Treatment: Glyceryl Trinitrate sublingual tablet or spray. If patient does not recover suspect MI.

MYCOCARDIAL INFARCTION

The heart muscle is deprived of oxygen. You can have a MI in the absence of angina and you can also have a MI without a full blown cardiac arrest.

MI: crushing pain in the centre and across the chest. This may radiate to the shoulders and jaw. Skin pale and clammy, pulse weak and low bp, shortness of breath.no or partial response to glyceryl trinitrate.

If there is a silent MI this occurs mostly in diabetics.

Treatment: if breathless place in the sitting position. If feels faint lay flat. Maintain the airwayincrease flow of oxygen call 112.Give sublingual TG.

Reassure. Give aspirin 300mg. If unresponsive , check signs of life and start CPR.You can also give nitrous oxide but this replaces oxygen.

SUDDEN CARDIAC ARREST

Cause MI, anaphylactic shock, hypertension, hypoxia.

Continues on page 38.

MEDICAL EMERGENCIES

A DENTAL ASSOCIATION OF MALTA COURSE

Continues from page 37.

Crushing pain/loss consciousness, no circulation or pulse. Start BLS.

STROKE
Rupture or thrombosis of cerebral blood vessel. Sudden onset, may lose consciousness, possibly vomits. RX. BLS, recovery position, oxygen, hospital.

CHOKING
Inhalation of a foreign body. Coughing/spitting Blow on back/ abdominal thrust.

ASTHMA
A pre-existing condition that may be triggered by anxiety, infection, exercise or exposure to an antigen. Moderate gasping, wheezing, coughing. Respiratory rate is less than 25 breaths/minute. Heart rate less than 110 beats per minute.

Acute to severe-inability to complete a sentence in one breath. If unmanaged this can be life threatening. A silent chest, cyanosis or feeble respiration with less than 8 breaths per minute, hypotension, exhaustion, confusion.

Give puffs of bronchodilator/repeat/ give high flow of oxygen. If this does not work call 112.Give steroid IM hydrocortisone sodium succinate 100-200mg IM.Give a high flow of oxygen .give puffs of bronchodilator . Start Basic Life support.

ANAPHYLACTIC SHOCK
Urticaria, rhinitis, conjunctivitis. Abdominal pain,Vomiting,diarrhoea. Laryngeal oedema and bronchospasm. Stridor and wheezing. Respiratory arrest leading to cardiac arrest. Vasodilatation

leading to hypovolaemia leading to low bp and collapse.

Lay patient flat. Give high flow oxygen.

IM adrenaline
The adrenaline must be given asap so that the little circulation there is will circulate the adrenaline. If it is less severe – give salbutamol inhaler.

Give chlorphenamine injection IM. Give hydrocortisone sodium succinate IV If unresponsive BLS.

HYPOGLYCAEMIA
Excess of insulin due to low blood sugar, stress, fever. Patient will be shaky, trembling, headache, aggressive, confused, loss of consciousness.

Measure blood glucose level.

Early stages: if there is an intact gag reflex give oral glucose and repeat after 10-15 minutes.

If more severe: use buccal glucose gel. Use GlucagonIM Recheck blood glucose. This has to have risen to at least 5mmol/litre or more. If this falls to less than 3mmol/litre the patient can die.

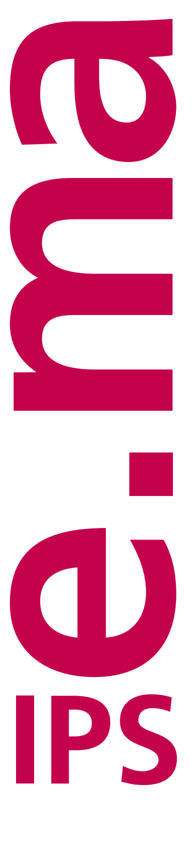
If unconscious check breathing and circulation and start CPR in the absence of signs of life.

EPILEPTIC FIT
Causes: missed medication,sleep deprivation,menstrual cycle, nutritional deficiencies,drug abuse, stress, alcohol.

Brief warning or aura. Sudden loss consciousness. Rigid-fall-cry.

Seizure- few minutes. After the patient will feel floppy,confused.

If seizure is prolonged-status epilepticus – give midazolam slow IM injection. (as it is difficult to find a vein during epilepsy).



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