

2016 'Hands-on' Anterior Tooth Preparation Course

4th November 2016

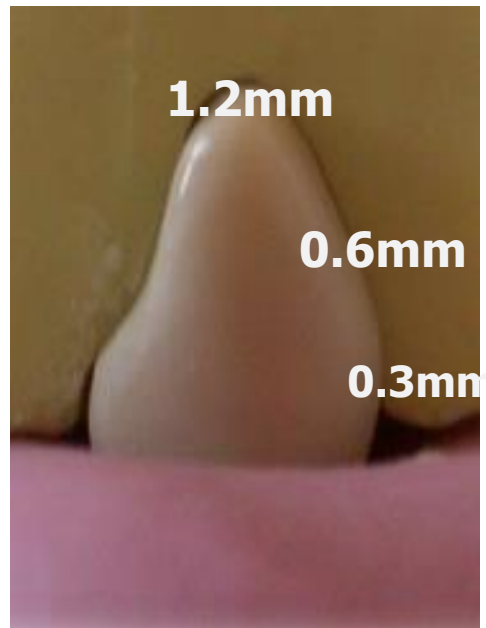
Anterior Tooth Preparation Course – Dental Simulation Centre



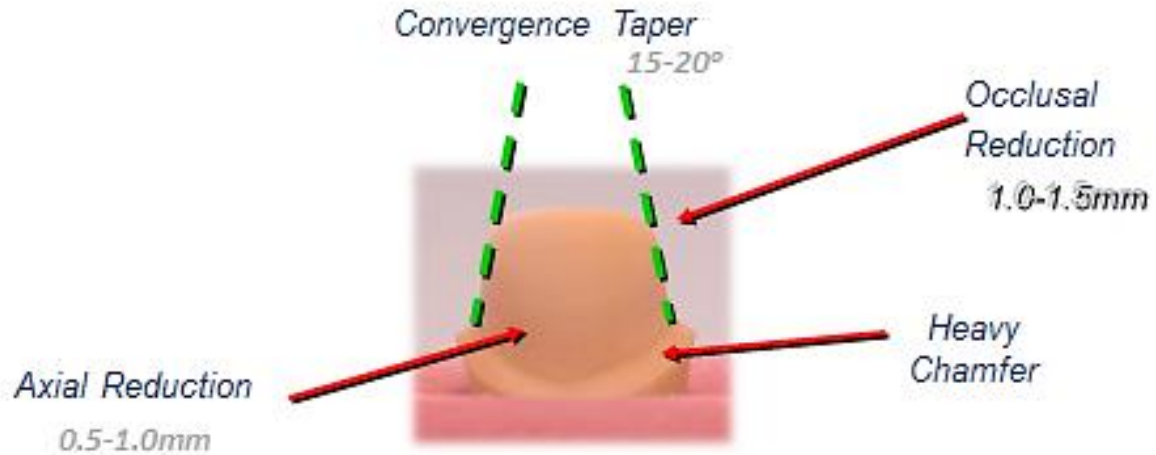
Task 2a – Ceramic Veneer

Ceramic Labio-Incisal Veneer

- Margin – 0.3mm – supra-gingival
- Labial reduction 0.6mm
- Incisal reduction 1-1.2mm
- Maintain ID contacts
- Supra-gingival margin
- Do not worry about vertical undercuts
- Two plane labial reduction



Task 2b - DRBCC



Dentine Resin Bonded Ceramic Crown

Resin (Dentine) Bonded
Crown Preparation – can
easily convert a labial
ceramic veneer
preparation into a
DRBCC preparation



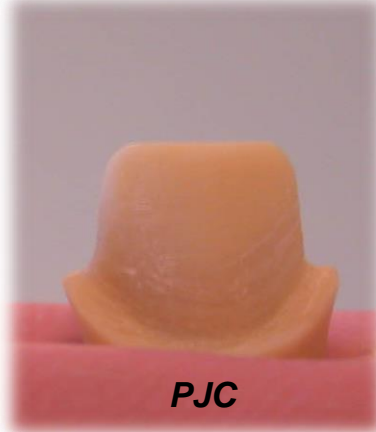
Tooth Destruction



**INDIRECT
COMPOSITE**



DBC



PJC



*Aesthetic restorations
looking good comes at a
biological price*



DBC prep = 63% off tooth

PFM prep = 72% off tooth

PFM prep 20% > FGC prep

PFM prep x5 > Porcelain veneer

**(feathered) x3 > Porcelain veneer
(butt joint)**

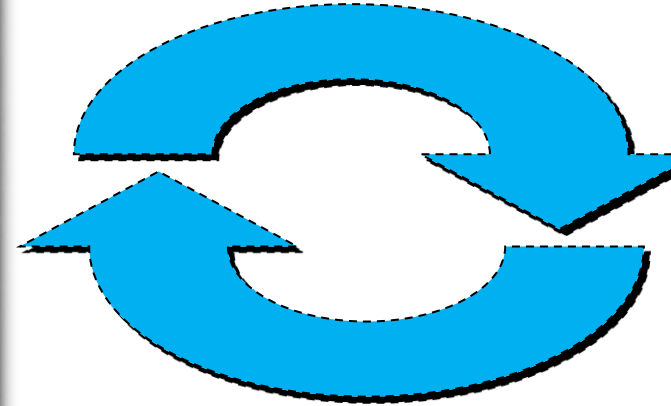


Edelhoff & Sorensen (2002). Tooth structure removal associated with various preparation designs for anterior teeth. J Prosthet Dent; 87: 503-9

Edelhoff & Sorensen (2002). Tooth structure removal associated with various preparation designs for posterior teeth. Int J Periodontics Restorative Dent; 22: 241-249

Dentine Resin-Bonded Ceramic Crown Preparation

360° Heavy Veneer Preparation – but no undercuts can be allowed

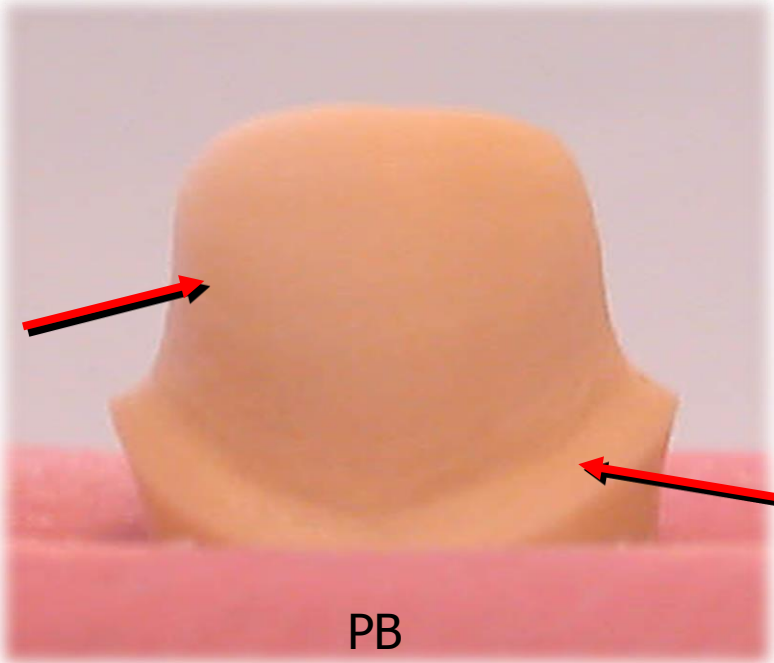




DRBCC Preparation

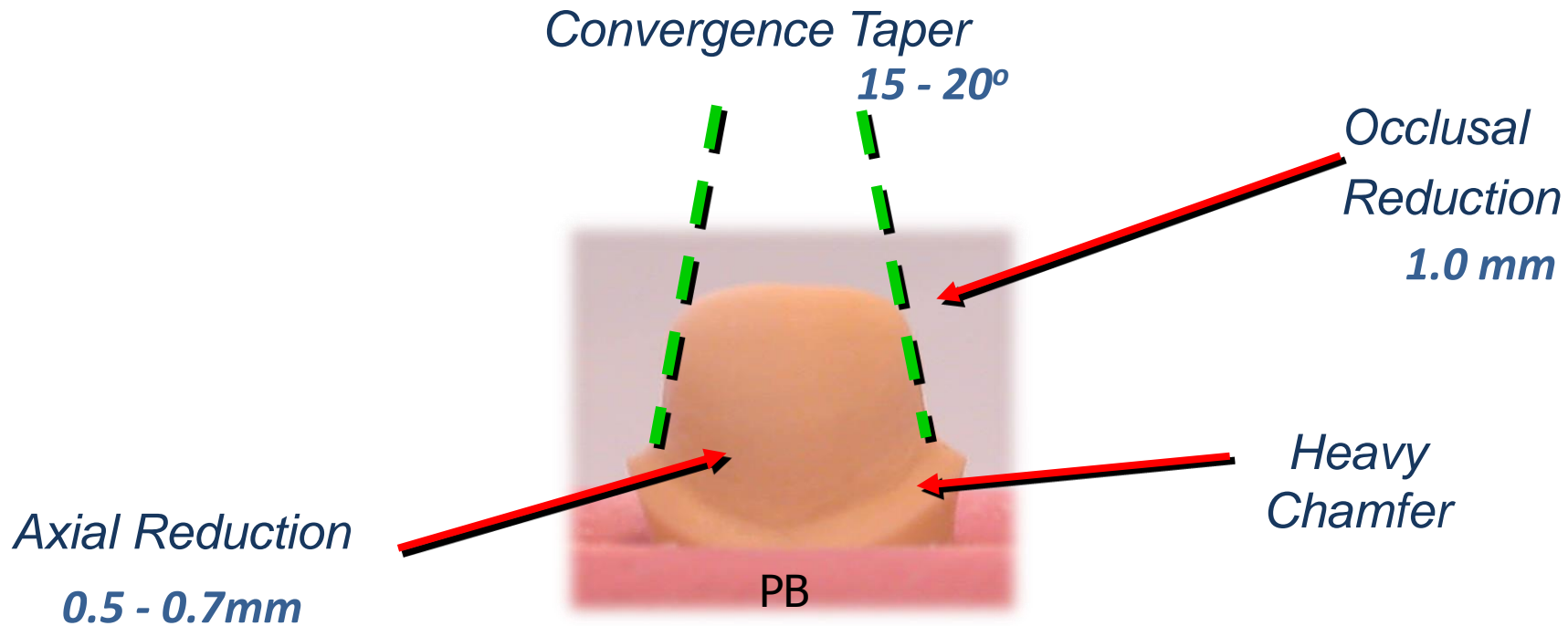
- **Margin (supra-gingival): 0.5 - 0.7mm**
consistent circumferential depth
- **3D tooth reduction of 0.5 - 0.7mm** in all dimensions
- **1mm** inter-occlusal space palatal clearance with **rugby ball burs**
- **Taper of all walls: 8 - 10°**

Rounded Contours



No Undercuts

PB

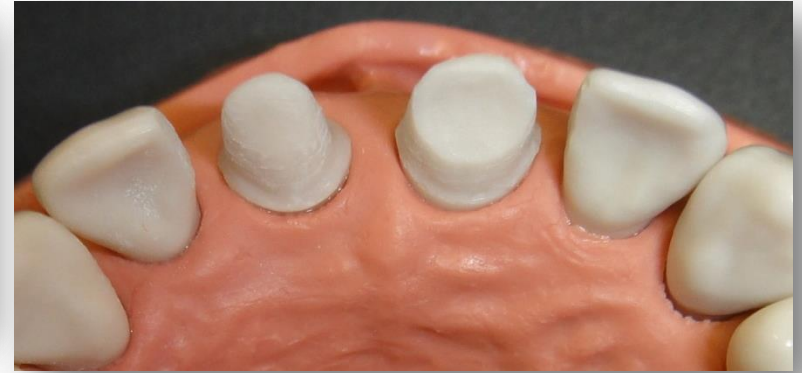


Dentine Resin Bonded Ceramic Crown

DRBCC Preparation

- ‘Ceramic-Veneer’ concept around the whole tooth
- Adhere hopefully to a good amount of enamel (as well as dentine)
- Can use with one or two stage Dahl
- Need **significant convergence taper** as neo-parallel will threaten # of crown on seating / cementing
- Most feel less tooth tissue removed – however you will be surprised!

Note the difference - in my view it is much more destructive palatally than a PFM



Burke (2007)

– DBC 6% failure at mean of 3.9 years –

| | |
|-------------------------------------|--|
| Journal content | Practice |
| → Journal home | <i>British Dental Journal</i> 202 , 269 - 273 (2007) Published online: 10 March 2007 doi:10.1038/bdj.2007.176 |
| → Advance online publication | Subject Category: <u>Restorative dentistry</u> |
| → Current issue | Four year performance of dentine-bonded all-ceramic crowns |
| → Archive | F. J. T. Burke ¹ |
| Journal information | <ul style="list-style-type: none">• 48 denture-bonded crowns evaluated at four years.• 6% failure, one crown failing due to fracture, two because of cracks.• Nil incidence of pulp problems, minimal incidence of debonding.• Denture bonded crowns may be considered suitable for a variety of incidence on anterior teeth. |
| → Author guidelines | Aim This paper reports a prospective evaluation of 59 dentine-bonded crowns placed in a dental school environment for patients, a majority of whom were suffering from tooth substance loss. |
| → Online submission | Results Forty-eight crowns (83%) were available for examination, with their mean age since placement being 3.9 years. The mean age of the patients in whom the crowns were placed was 37.5 years. Three crowns had failed due to porcelain fractures, an overall failure rate of 6%. Two of the failures were minimal cracks of which the patient was unaware, and one, in an upper premolar tooth, because of crown fracture. No secondary caries was noted, incidence of pulp symptoms or pulp death was nil, and margins were rated as 'excellent' in 42 crowns (86%). |
| → For referees | Conclusion The dentine bonded crowns assessed in this study showed excellent retention and low incidence of fracture at four years. This technique would appear to be suitable for a variety of clinical indications, including treatment of tooth substance loss, although the results presented in this study are relatively short term in relation to the anticipated life of restorations. |
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Indications for All-Ceramic-Crowns

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Practice

British Dental Journal **205**, 251 - 255 (2008)
Published online: 13 September 2008 | doi:10.1038/sj.bdj.2008.735

Subject Categories: [Dental materials](#) | [Restorative dentistry](#)

The anterior all-ceramic crown: a rationale for the choice of ceramic and cement

B. Mizrahi¹

- The two main families of all-ceramic crowns are high strength Al or Zr based and glass based ceramics.
- The indications and techniques for their use differ.
- The decision making process should be scientifically based.
- The cementation technique is specific for each type of all-ceramic crown and cement used.

The full coverage, all-ceramic restoration of an anterior tooth is a challenging clinical situation for which a variety of all-ceramic systems and cements are available. The decision making process involves the consideration of a number of factors such as underlying substrate colour, tooth preparation geometry, margin location and cementation system. This article discusses the rationale behind these factors and presents a logical and scientific based sequence for the decision making process. A clinical case is presented to demonstrate the requirements and materials necessary for the optimal resin bonded anterior crown.

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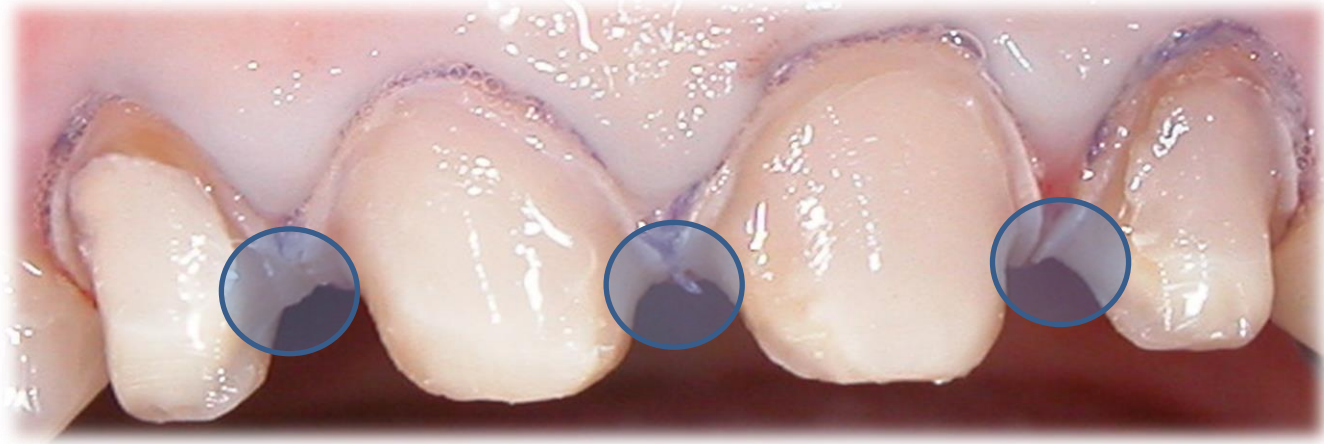
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[Abstract](#)

Can use RB Ceramic 'Hats' or Crowns – manage what is in front of you



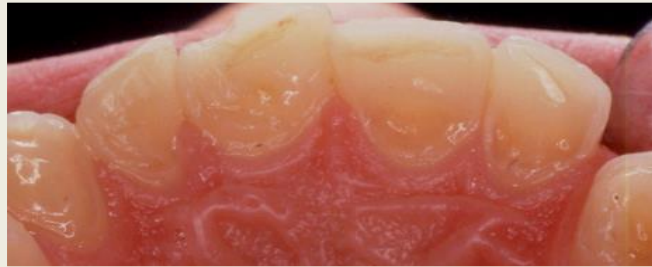
Common error in C&B preparation



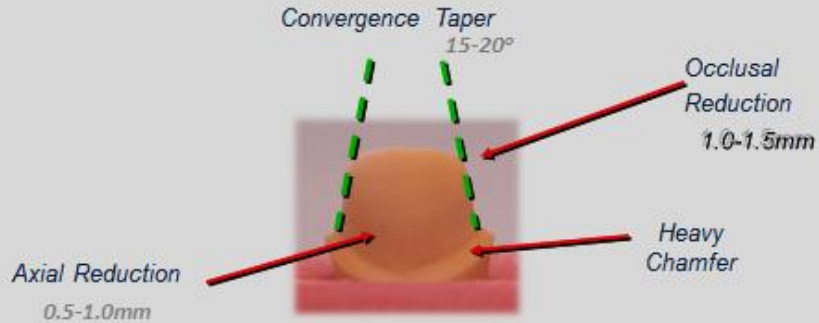
*Still need to use conventional sense –
e.g. good separation of ID margins but keep enamel peripherally if possible*

Indirect Palatal Veneers

- Can use DRBC Veneers – where aesthetics important



Now go and give it a go please



Dentine Resin Bonded Ceramic Crown

Total Score for DBC Preparation = 15

Reflective learning comments:

Things I need to improve on:

Things I did well: