

Date: 07/7/20

Pg: ①

Saturday.

NAME: ADIL ZAHoor BANGASH

ID : 14236

PROGRAMME: BS (DENTAL  
TECHNOLOGY)

SEMI SEMESTER: 6<sup>th</sup>

ASSIGNMENT: TOOTH PREPARATION  
FOR PORCELAIN JACKET  
CROWN

SUBJECT: OPERATIVE DENTISTRY.

SUBMITTED TO: STR USMAN

## TOOTH PREPARATION FOR PORCELAIN JACKET CROWN:-

A jacket crown is a full porcelain ceramic covered crown which is used to protect the entire surface of a tooth. Crowns are fitted over the remaining part of the tooth to make it strong and give it the shape and contour of a natural tooth.

Porcelain fused to metal crowns are often used to restore teeth that are severely damaged or decayed. A PFM crown is a cap that is cemented over a natural tooth in order to protect it from damage or further decay. A porcelain fused to metal bridge is used to restore missing teeth.

All- porcelain crowns have the best cosmetic appeal, but are less durable and the most expensive. They may be



a good option for those patients who want to restore their front teeth. Porcelain - fused to metal and Zirconia crowns are a good choice for molar's restoration.

The most esthetically pleasing fixed restoration, because there is no metal understructure to block light transmission. It can resemble natural tooth in term of colour and translucency, than any other restoration.

Since it is made entirely from ceramic substance, it is the weakest type of crown restoration (more susceptible to fracture) and it is least conservative type of crowns. Most of the time it used as single restoration on upper or lower incisors.

## INDICATIONS:-

- High esthetic Requirements
- Considerable proximal caries
- Endodontically treated teeth with post & core.
- Incisal edge reasonably intact.
- Favorable distribution of occlusal load.

## CONTRAINDICATIONS:-

- When ~~s~~ superior strength is required
- Thin teeth facio-lingually
- Unfavorable distribution of occlusal load.
- Insufficient coronal tooth structure for support (very short teeth).
- Edge to edge occlusion.
- Bruxism.

## ADVANTAGES:-

- Superior esthetic
- Good tissue response even with subgingival margins (biocompatible)
- High retention since it can be etched and bonded.



⑤

## DISADVANTAGES:-

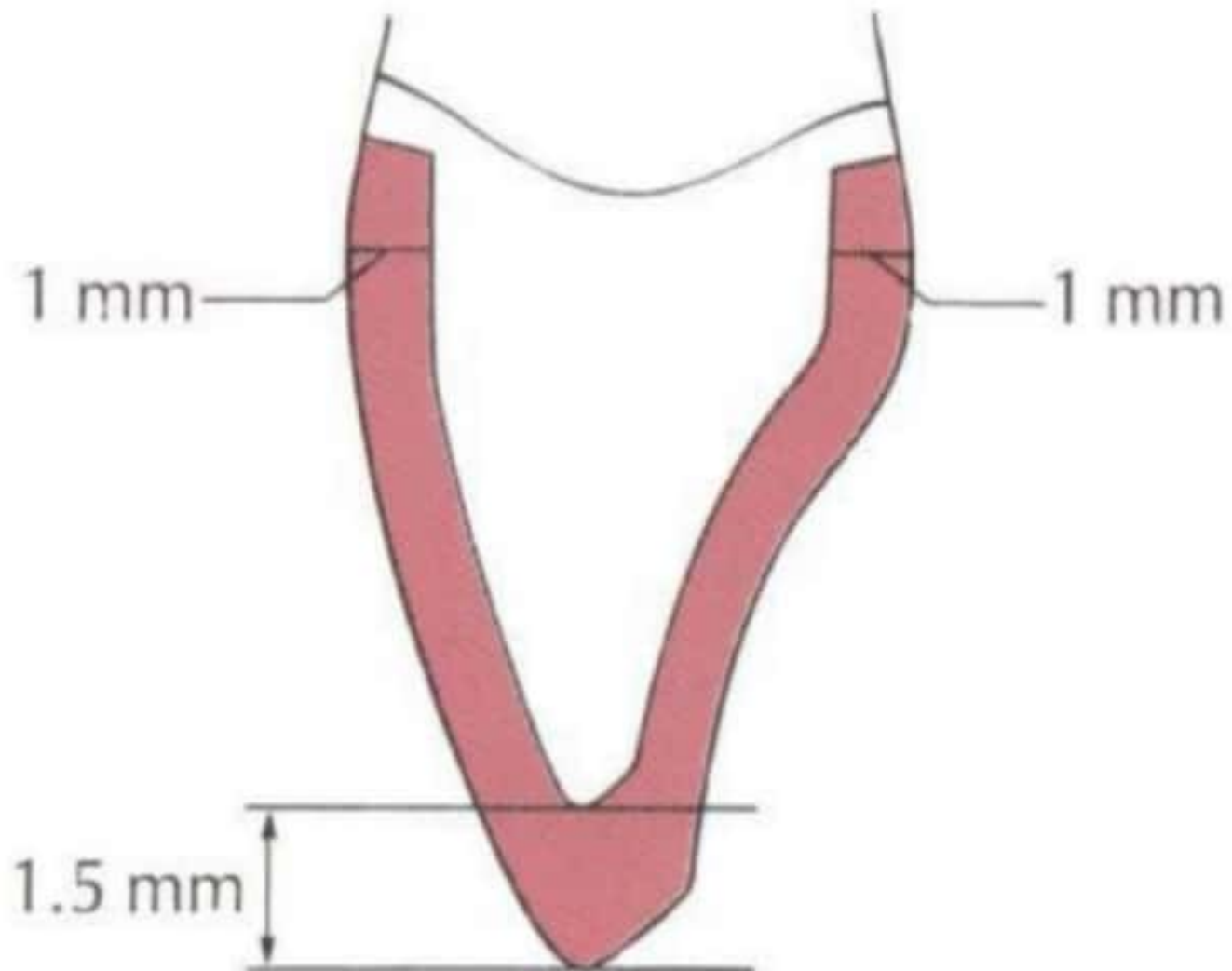
- Reduced strength compared to metal crowns
- Proper preparation is extremely critical.
- Among the least conservative preparations.
- Brittle nature of the material
- Recommended as single restoration only.

## TOOTH PREPARATION PORCELAIN JACKET CROWN:-

Recommended dimensions.

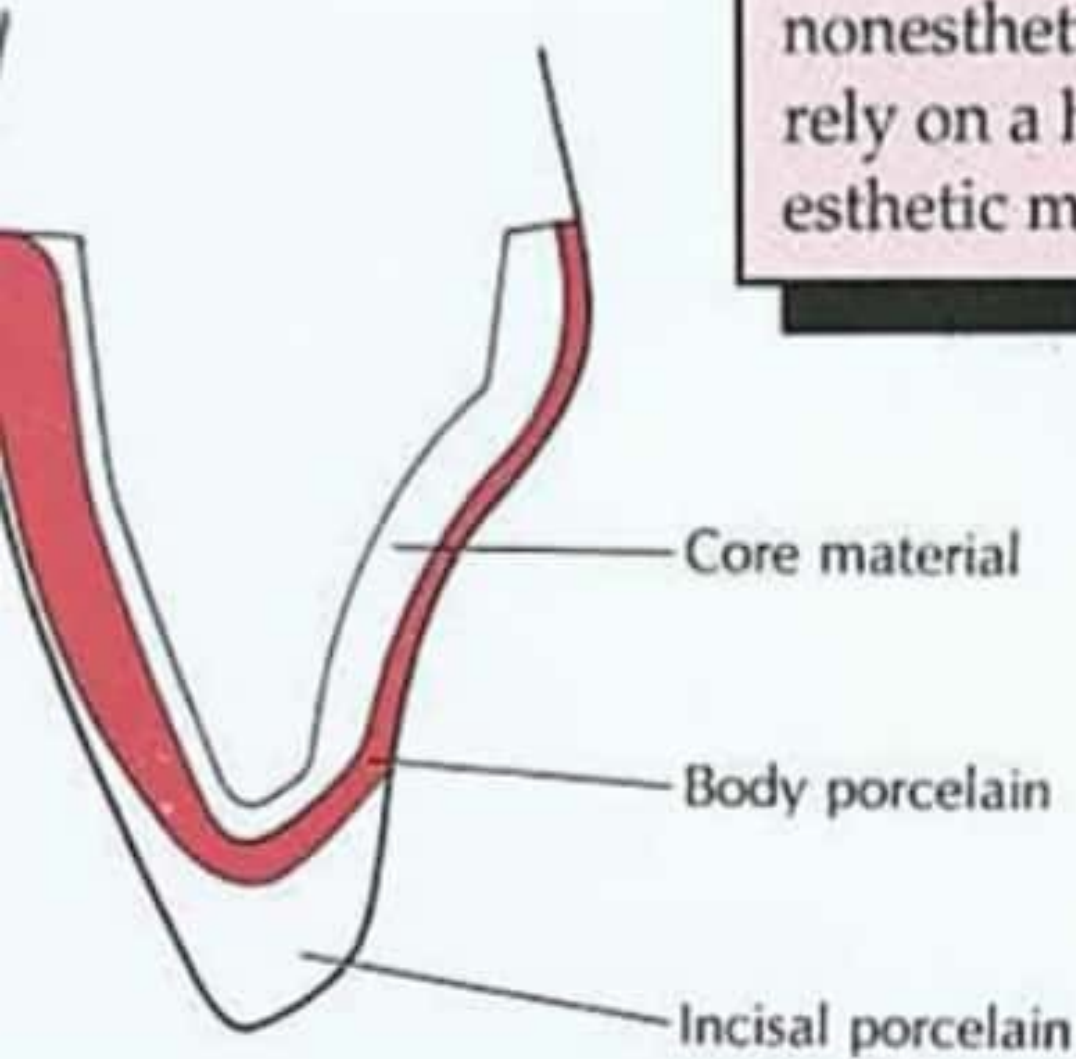
# Tooth Preparation (PJC)

## Recommended dimensions



Recommended reduction for the  
all-ceramic crown

Some all-ceramic systems rely on a high-strength nonesthetic core; some rely on a high-strength esthetic material.





## PREPARATION REQUIREMENTS:-

- 1- A shoulder of uniform width (1.5mm) is used as gingival FL to provide a flat seat to resist the force directed from incisal.
- 2- Incisal edge should be flat and prepared with slight inclination lingually.
- 3- All sharp angles of preparation should be slightly rounded to reduce the danger of stress concentration and fracture.
- 4- It should be avoided on teeth with edge to edge occlusal relation.

## STEPS IN PREPARATION:-

### A. INCISAL REDUCTION:-

The aim of this step is to complete reduction of incisal edge that should provide 1.5-2mm of clearance for porcelain in all masticatory movements, this step is extremely important to get cosmetically pleasing restoration with adequate strength.



• Flat end taper diamond bus is used, placed parallel to the incisal inclination (for post-teeth, 2mm occlusal clearance is needed for all cusps).

• DOG, 1.3mm in depth are made on the incisal edge using a flat tapered burs (parallel to the incisal inclination of the prepared incisal edge).

• Any tooth structure D.O.G should be removed using the same bus at the same angle (1.5mm).

• Check in centric & eccentric occlusal relations.

## **B. LABIAL (FACIAL) REDUCTION:-**

### **TWO PLANES REDUCTION:-**

Whenever needed, reduction should be done in 2 planes corresponding to the geometric planes of the surface: incisal plane and gingival plane.

## ANCISAL PLAN:-

- Three DOG (1mm) are placed, these grooves should be parallel to the inclination of this area.
- Any tooth structure between DOG, were then removed following the contours of the tooth. (keep the bus at the same angle).

## GINGIVAL PLAN:

- DOG (1mm) are placed in gingival part of lingual surface parallel to the long axis of the mouth tooth.
- Any tooth structure between D.O.G. should be removed using flat-end tapered fissure bus to create shoulder F.L.

## C-LINGUAL REDUCTION:-

As for PFM but with deeper reduction (1mm):

## O-CINGULUM & AREA REDUCTION:-

- D.O.G. of 0.8mm placed in the center
- Small wheel or pear shaped diamond bus is used to reduce this area



(11)

## ~~B-LINGUAL AXIAL R~~

## B-LINGUAL AXIAL REDUCTION:-

- D.O.G of 0.8mm placed parallel to the long axis of the tooth.
- Flat-end T.F.B is used to reduce this area using the same angle to create shoulder (F-L)

## TYPES OF FINISHING LINES USED FOR PORCELAIN JACKET (CROWN).

Shoulder all around has been advocated as gingival finishing line to be use with this crown. The depth and contour of shoulder is established with the tip of flat end tapered fissure bur. Sharp angles should be rounded to avoid creation of point of stress concentration.