



INDIRECT ESTHETIC INLAY AND ONLAY OF POSTERIOR TEETH




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Indirect Posterior Tooth-Colored Restorations

- **Introduction**
- **Indications**
- **Contraindications**
- **Advantages**
- **Disadvantages**
- **Clinical step of making in direct inlay and onlay**
- **COMPOSIT INLAYS AND ONLAYS**
- **CAD/CAM CERAMIC INLAYS AND ONLAYS**




- **Introduction:**

- The need for amalgam alternatives and the growing demand for more esthetic restorations has led to increased popularity of resin composite restoration in posterior teeth.
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◆ **Indications :**

- ❖ 1. Replacement of large defects or previous restorations (amalgam restorations).
 - ❖ 2. Direct resin composite restoration in premolar and molar area.
 - ❖ 3. Esthetic indirect tooth colored restorations located in areas of esthetic importance for the patient.
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◆ **CONTRAINDICATIONS :**

- ❖ 1. Heavy occlusal forces
 - ❖ 2. Inability to maintain dry operative field
 - ❖ 3. Deep subgingival preparation
 - ❖ 4. poor oral hygiene
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Advantages

- Esthetics
- Conservative of tooth structure removal (less extension)
- Insulative, having low thermal conductivity
- Repairable

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- Disadvantages :
 - Increased cost and time
 - Technique sensitivity
 - Brittleness of ceramics
 - Wear of opposing dentition and restorations
 - Resin-to-resin bonding difficulties
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TYPES OF INDIRECT POSTERIOR RESTORATIONS

- INLAYS AND ONLAYS
- CROWNS
- BRIDGES

ONLAYS



**INDIRECT
RESTORATION**

**Cast
metals**


- **High Gold alloys**
- **Low Gold alloys**
- **Palladium Silver alloys**
- **Base Metal Alloys**

**Tooth
coloured**

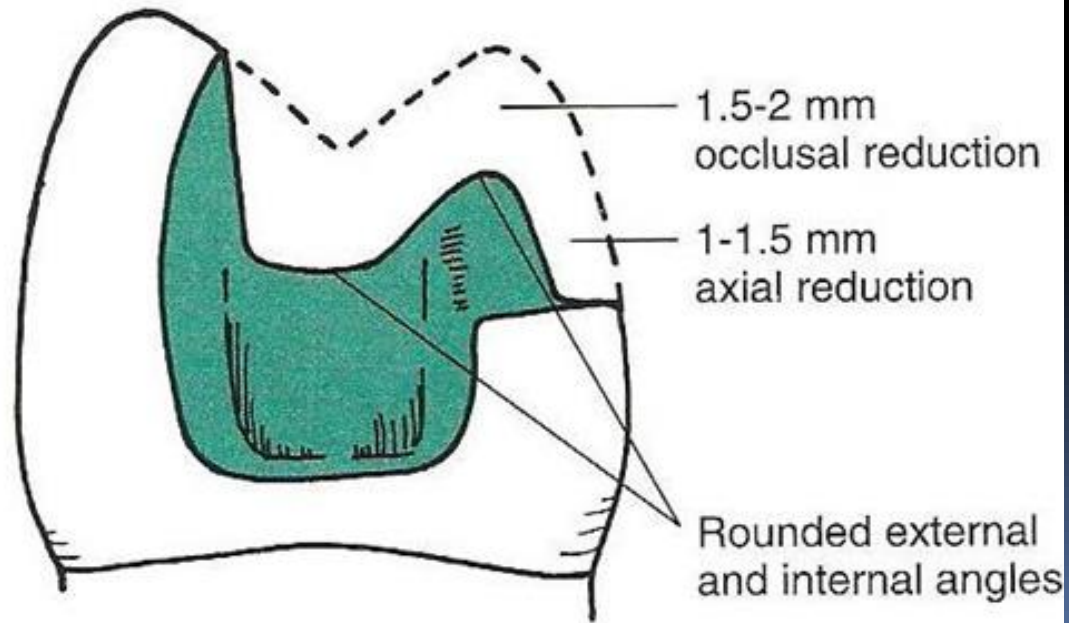
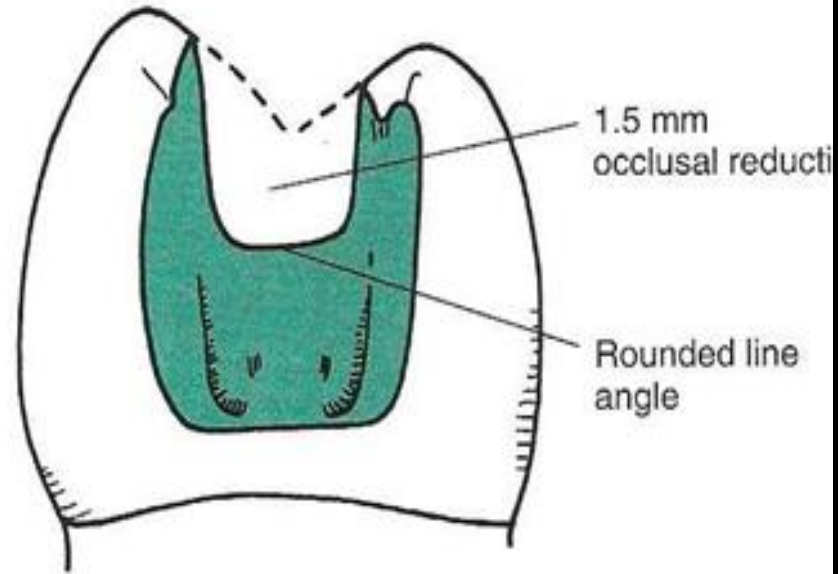
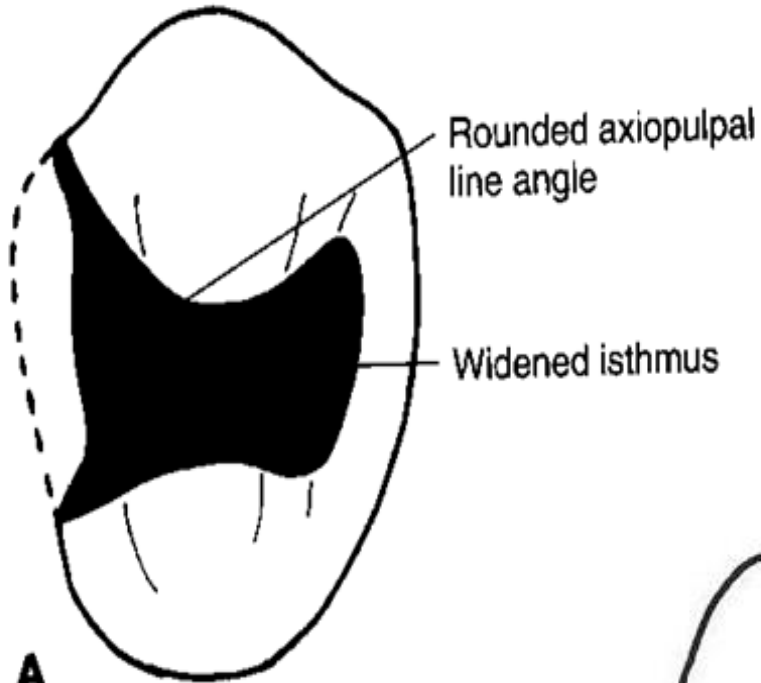
- **Porcelain**
- **composite**



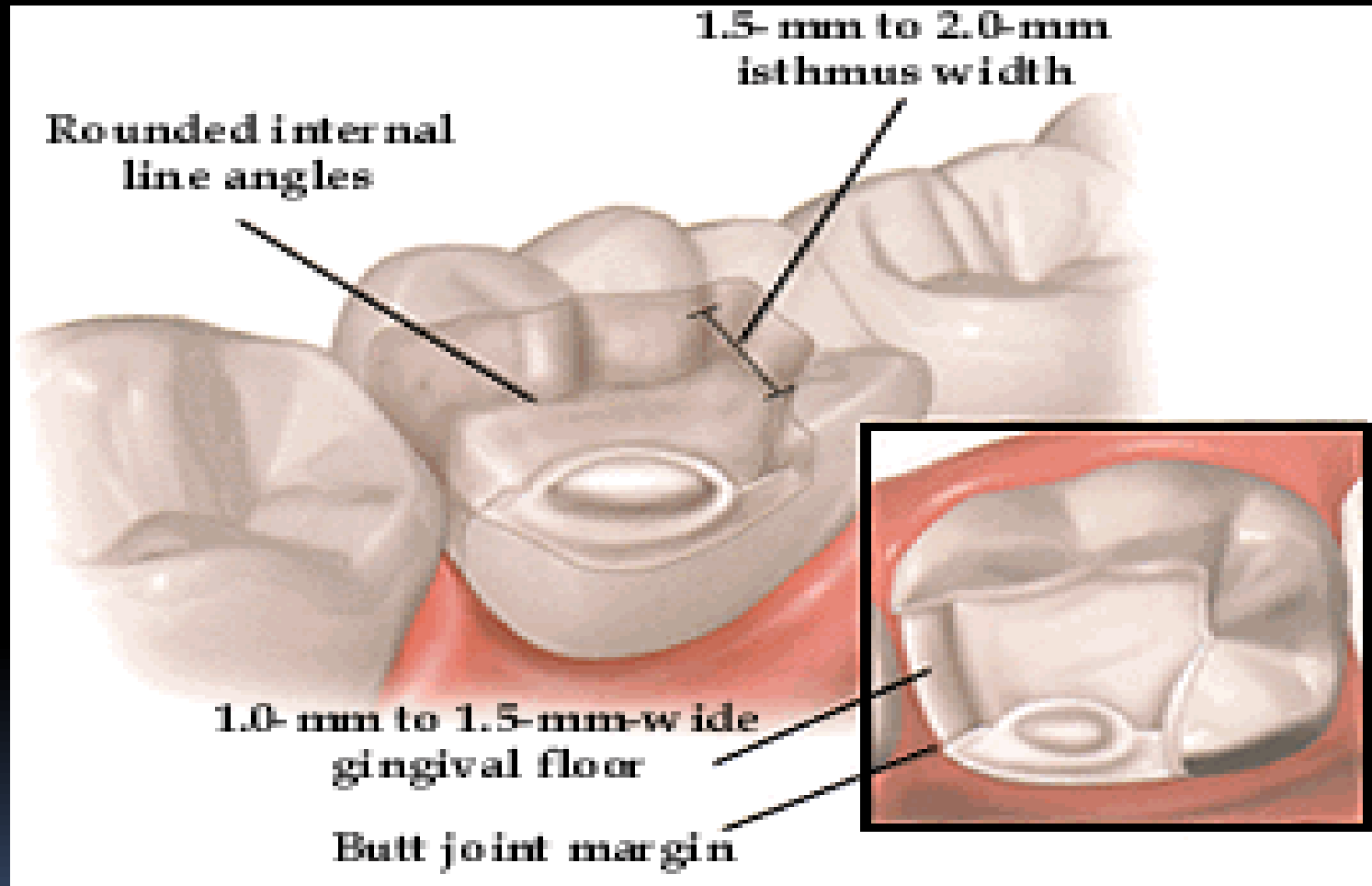
■ The steps of making indirect esthetic inlay and onlay

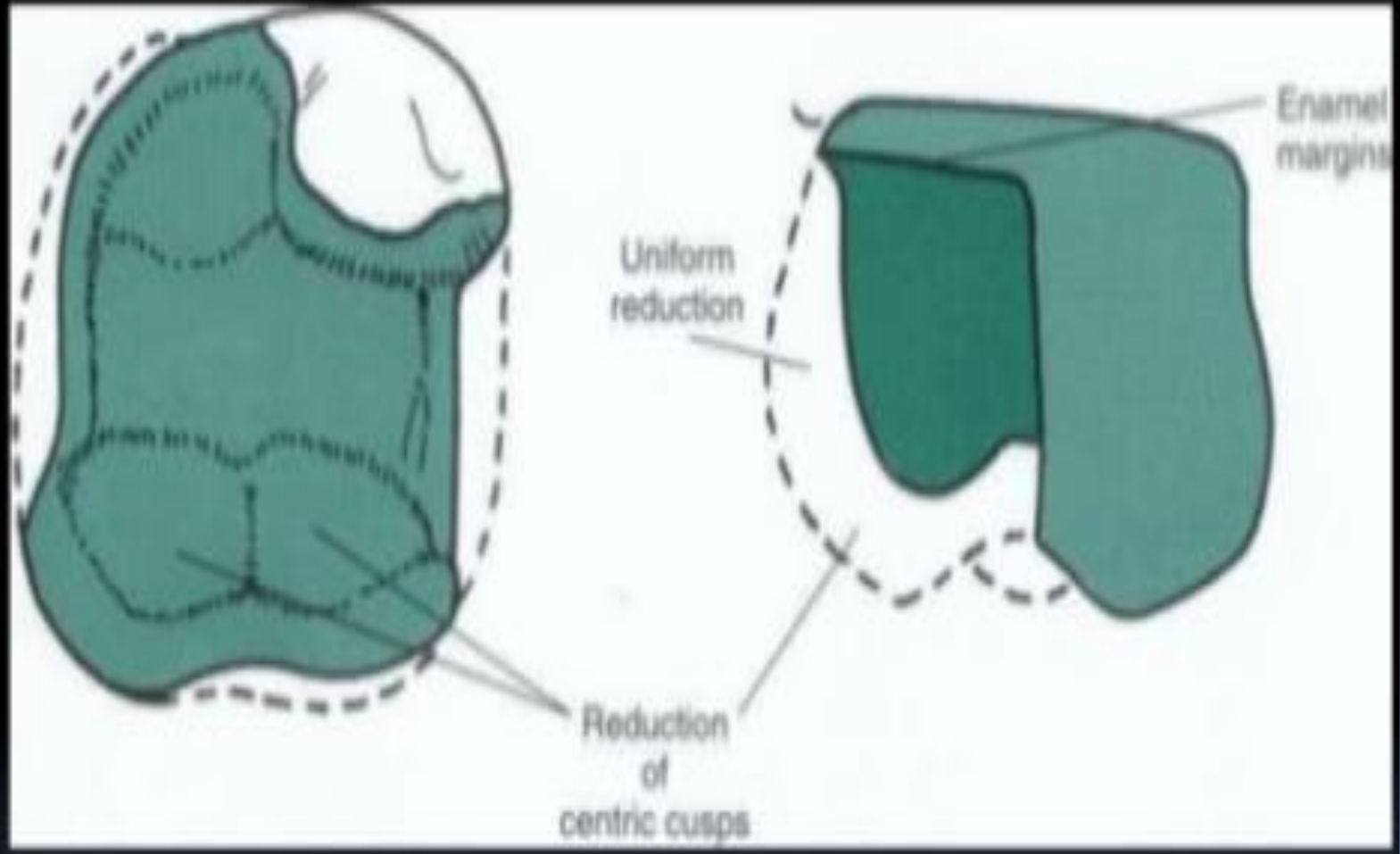
- 1. Shade selection, Preparation
 - 2. Impression, Temporary filling
 - 3. Try-in
 - 4. Cementation
 - 5. Finishing, polishing
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Preparation



preparation





Impression



Temporary Restorations

- provisional restoration is necessary when using indirect systems that require two appointments.
- It protects the pulp-dentin complex in vital teeth, maintains the position of the prepared tooth in the arch, and protects the soft tissues adjacent to prepared areas
- eugenol-based temporary cements. However, eugenol is believed to interfere with resin polymerization >> reduce adhesion of the permanent composite cement to the tooth structure
- Polycarboxylated is temporary luting cement of choice

Try in and cementation


- The try-in and cementation of tooth-coloured inlays / onlays are more demanding than that for cast metal restorations because of:
 - The relatively fragile nature of the ceramic or composite material,
 - The requirement of near-perfect moisture control, and
 - The use of composite cements.
- The ceramic or composite inlay is relatively fragile until it is bonded in place with composite cement. Very little pressure should be applied to the restoration during try-in. Because of this fragility, occlusal evaluation and adjustment are delayed until after cementation.






Cementation

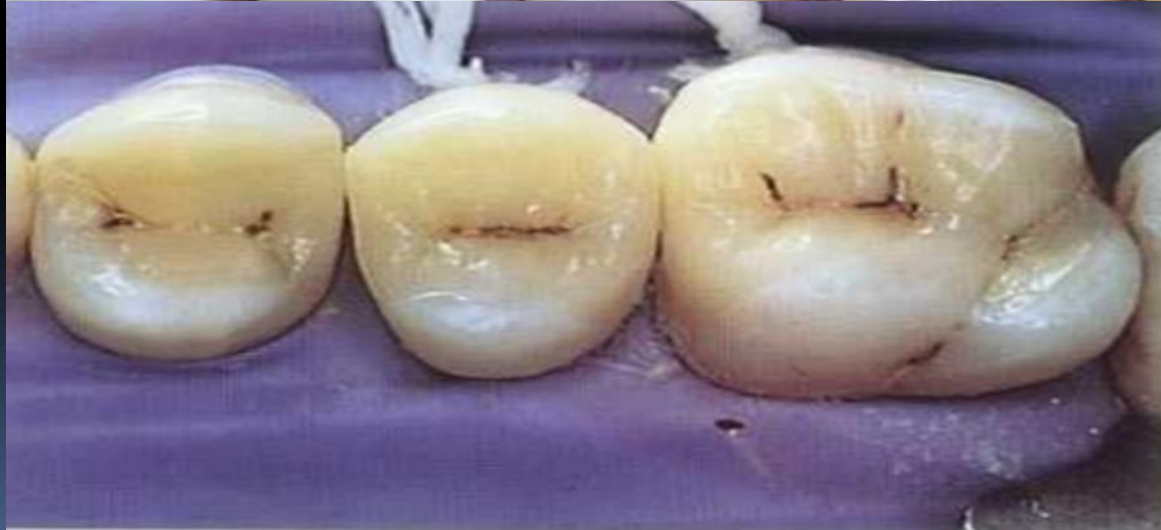
- **Isolation:** rubber dam, plastic matrix
- strip, wedges, dental floss;
- - **Preparation of inlay:**
- depends on : ceramic or composit
- - **Preparation of tooth:**
- depends on the specific luting system


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- Finishing & polishing:
 - Finish all margins with 12-fluted carbide burs or microfine diamonds, finishing disks, and/or composite polishing points.
 - Remove the rubber dam and adjust the occlusion with articulating paper and a microfine diamond.
 - Complete polishing with rubber porcelain polishing points.



Indirect composit inalay and onlay


- (Indirect Chairside Inlays)
 - This method is best suited to the restoration of large intracoronal cavities (Class I and II).
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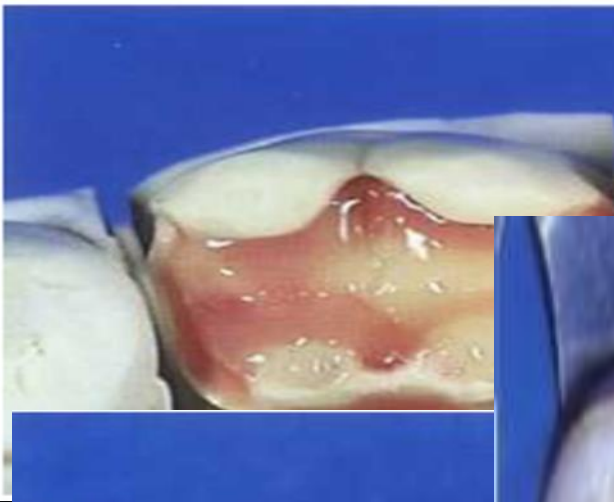




.Indirect Inlays(Lab-Made Composite Inlays)

The main advantage of the indirect technique is the provision ■
of restorations with optimal occlusal anatomy, the restoration
having been formed with reference to the opposing arch.





Advantages Over Direct Resin Composite Restorations

- 1. polymerization shrinkage should be less of a problem with direct resin inlays
- 2. less microleakage
- 3. greater strength and hardness and to result in less postoperative sensitivity than direct resin composite restorations.

CAD/CAM CERAMIC RESTORATION



CAD/CAM CERAMIC RESTORATION

◆ Computer Aided Design / Computer Assisted Manufacturing

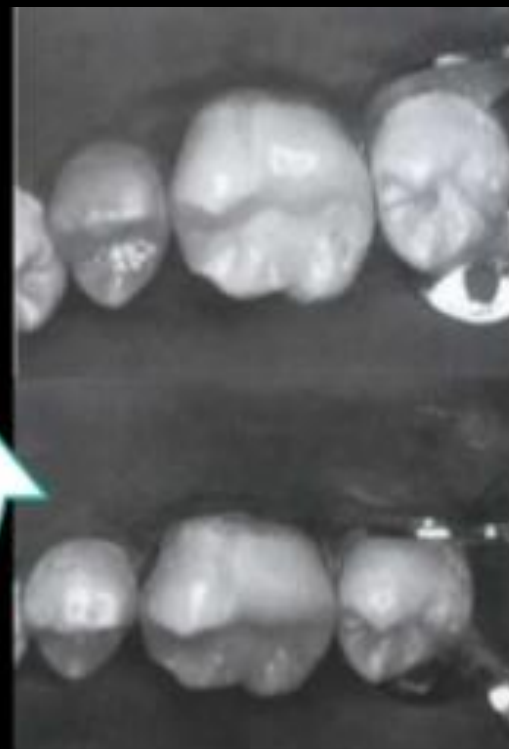
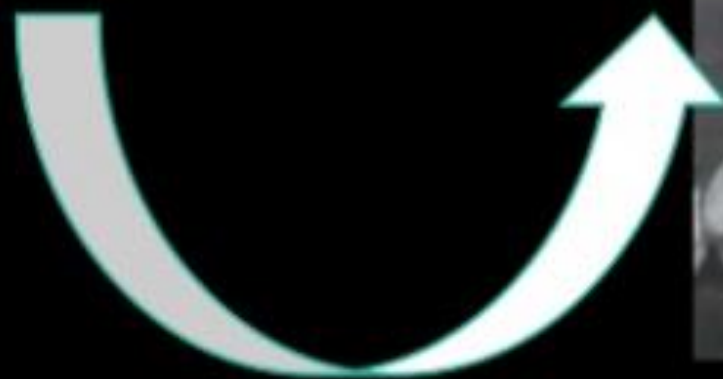
◆ Procedure:

- An optical impression of the prepared tooth is taken using camera
- Next, the specific software takes the digital picture and converts it into 3D virtual model on the computer screen.
- A ceramic block that matches the tooth shade is placed in the milling machine.
- An all-ceramic tooth colored restoration is finished and ready to bond in place.

Scanning

CAD
Designing

CAM
Machining



THANK YOU