

PROSEDUR PEMASANGAN GTC

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PENCETAKAN MODEL KERJA



- Tantangan : kelembaban → saliva, perdarahan
- Margin subgingival → tissue displacement

- Kontrol saliva → cotton roll
- Kontrol saliva sulit → medikasi antisialagogik → efek samping mulut kering
- Tissue displacement : mekanis, kimiawi, pembedahan
- Mekanis : cord
- Kimiawi : aluminum sulfate, epinephrine
- Pembedahan : kuretase, eksisi, electrosurgery

CORD



A



B



C



D,E



MEKANIS

PASTE



No dedicated dispenser needed:
3M™ ESPE™ Astringent Retraction Paste
fits with most composite dispensers.

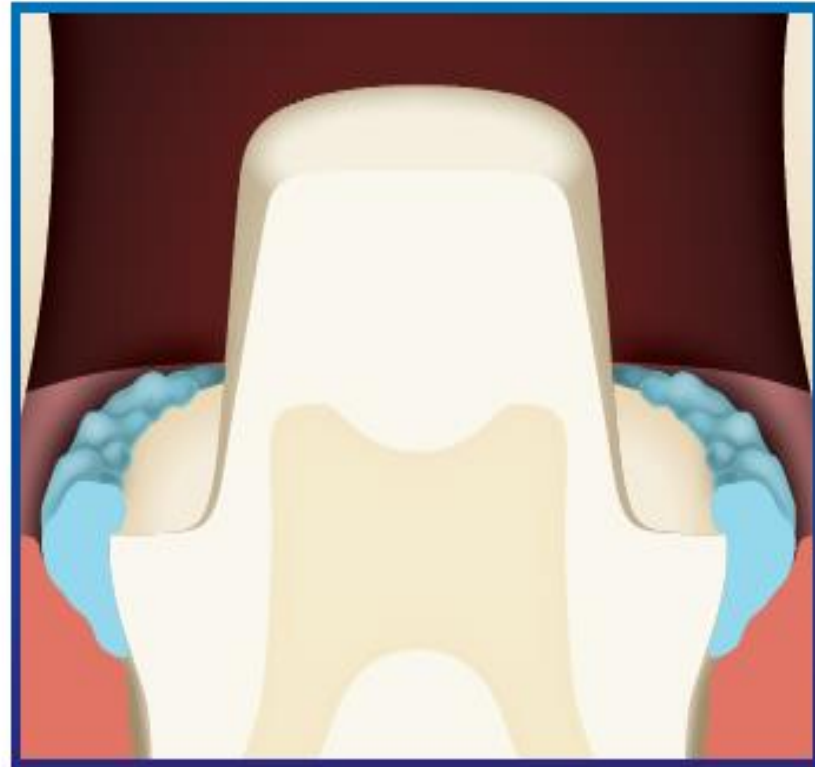
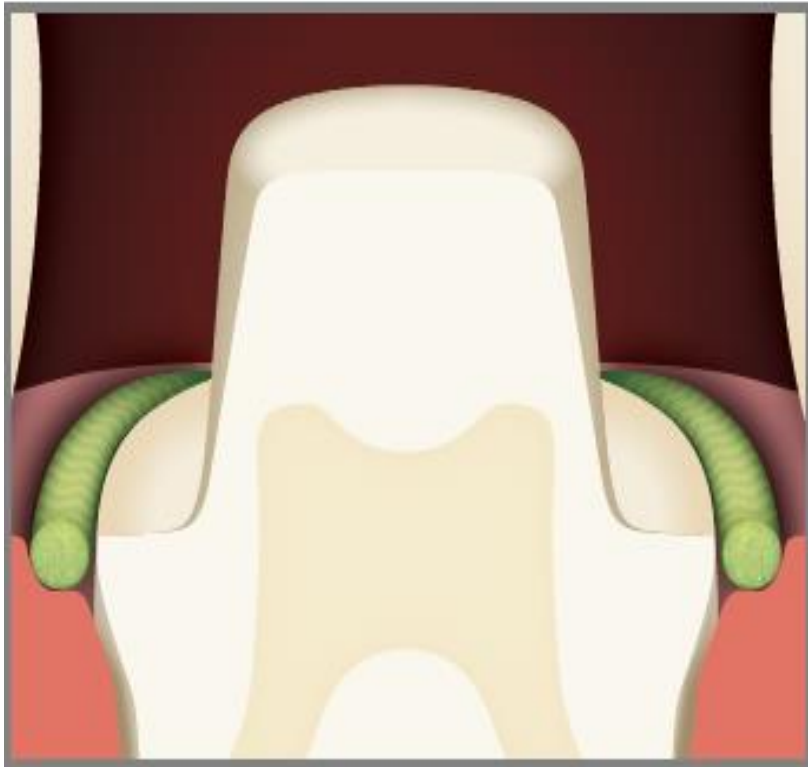


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PASTE



CORD VS PASTE ??

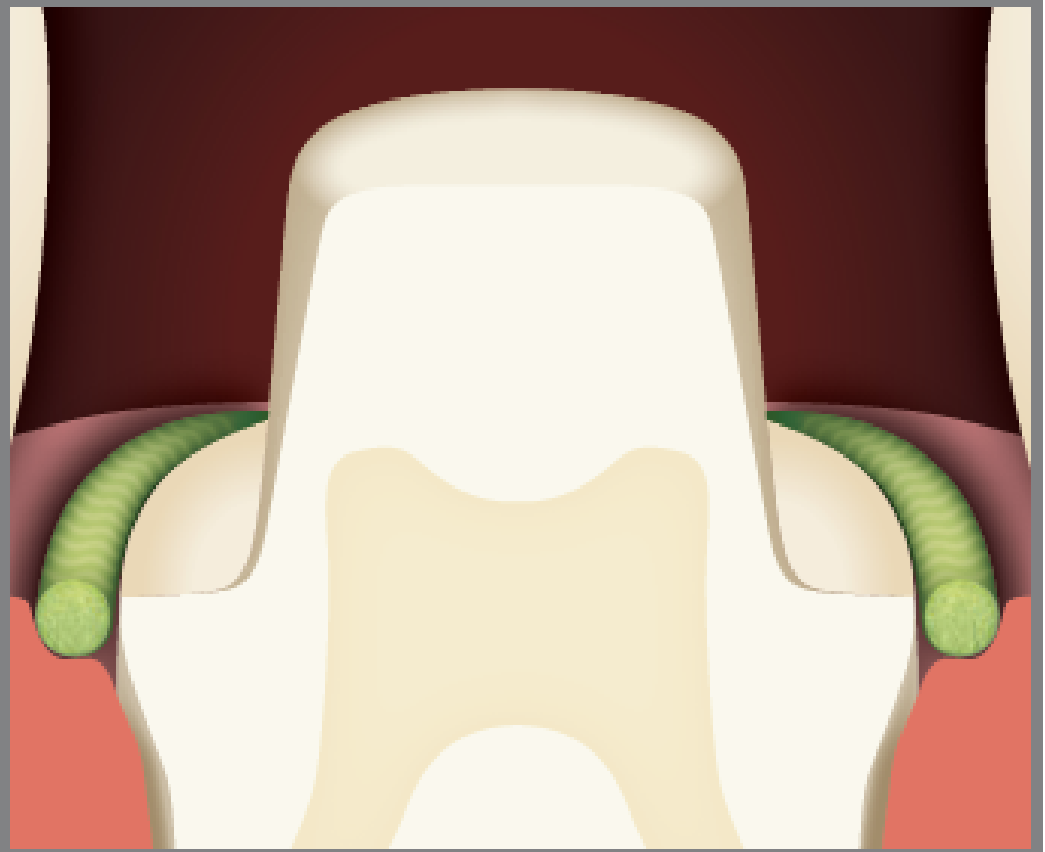




CORD

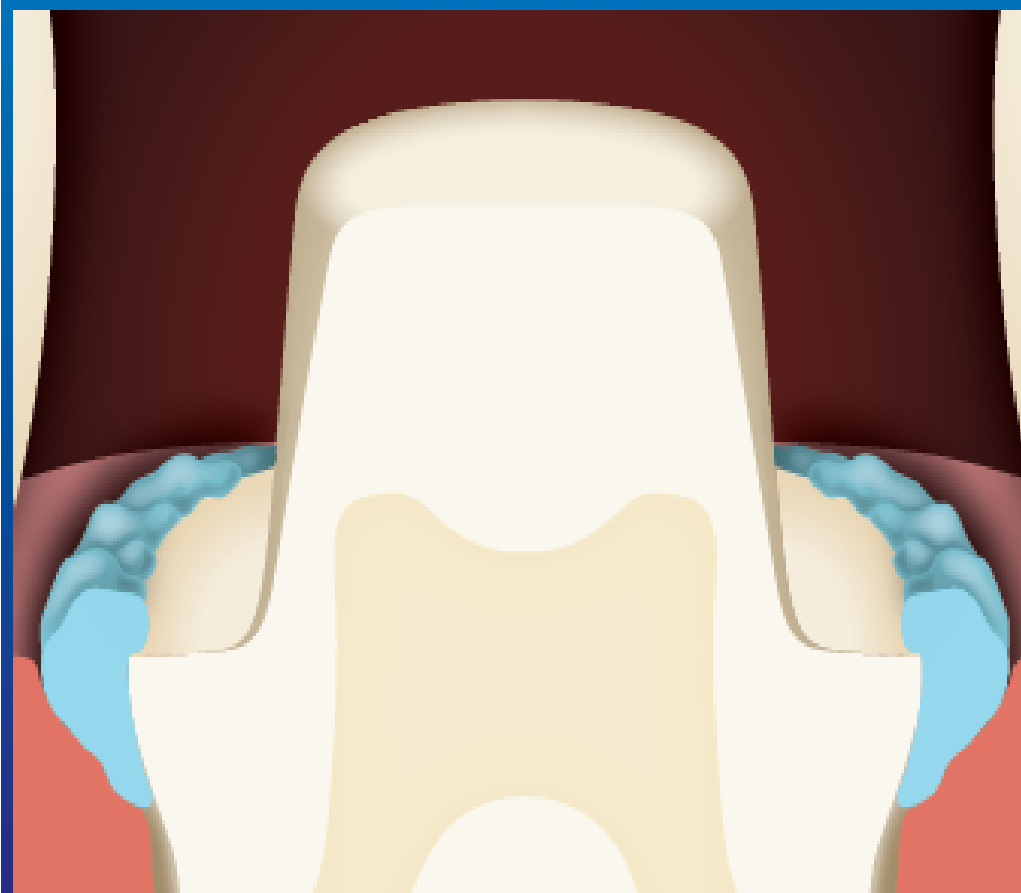
must be cut to size
for each procedure

- Difficult to accurately place
- Hemostasis achieved via pressure; usually requires cord soaked in hemostatic agent
- Risk of gingival inflammation and trauma; higher risk of hemorrhage
- Painful for patients
- Excellent retraction



CAPSULE

retraction paste application
for 1–3 teeth



- **EASY** access to tight interproximal areas
- **LONG** lasting hemostasis achieved from 15% aluminum chloride paste
- **GENTLE** on tissue with less risk of tissue trauma and hemorrhaging
- **BETTER** patient comfort
- **EFFECTIVE** retraction

Step by step to a clean and dry working field

1



The 3M ESPE Astringent Retraction Paste capsule fits most composite dispensers. Extrude a small amount of paste and discard.

2



Insert retraction capsule tip into the sulcus. The tissue is mechanically retracted.

3



Slowly and steadily, inject astringent retraction paste into sulcus. Completely fill the sulcus.

4



OPTIONAL: PROCEDURE WITH CORDS

For greater gingival deflection, the astringent retraction paste can be used in combination with retraction cords.

5



Leave astringent retraction paste on for a minimum of 2 minutes.

6



Completely remove astringent retraction paste with air-water spray and suction.



□ BAHAN CETAK :

- a. Hidrokoloid reversibel
- b. Polisulfide
- c. Polyeter
- d. Silikon kondensasi
- e. Silikon tambahan (poly vinyl siloxane)

Table 14-3 AVAILABLE ELASTIC IMPRESSION MATERIALS

	Advantages	Disadvantages	Recommended uses	Precautions
Irreversible hydrocolloid	Rapid set Straightforward technique	Poor accuracy and surface detail	Diagnostic casts Not suitable for definitive casts	Pour immediately
Reversible hydrocolloid	Low cost Hydrophilic Long working time Low material cost No custom tray required	Low tear resistance Low stability Equipment needed	Multiple preparations Problems with moisture	Pour immediately Use only with stone
Polysulfide polymer	High tear strength Easier to pour than other elastomers	Messy Unpleasant odor Long setting time Stability only fair	Most impressions	Pour within 1 hr; allow 10 min to set
Condensation silicone	Pleasant to use Short setting time	Hydrophobic Poor wetting Low stability	Most impressions	Pour immediately Care to avoid bubbles when pouring
Addition silicone	Dimensional stability Pleasant to use Short setting time Automix available	Hydrophobic Poor wetting Some materials release H ₂ Hydrophilic formulations imbibe moisture	Most impressions	Delay pour of some materials Care to avoid bubbles when pouring
Polyether	Dimensional stability Accuracy Short setting time Automix available	Set material very stiff Imbibition Short working time	Most impressions	Care not to break teeth when separating cast

BAHAN CETAK

TIPE BAHAN	FULL DENTURE	PARTIAL DENTURE	INLAY, CROWN, BRIDGE	STUDY MODEL
HIDROKOLOID REVERSIBEL (AGAR)	NOT USED	YES	YES	NO
HIDROKOLOID IRREVERSIBEL (ALGINATE)	PRELIMINARY	YES	NO	YES
POLYSULFIDE	FINAL	YES	YES	NO *
POLYETHER	FINAL	YES	YES	NO *
CONDENSATION SILICONE	FINAL	YES	YES	NO *
ADDITION SILICONE	FINAL	YES	YES	NO *

GLADWIN AND BAGBY, 2009

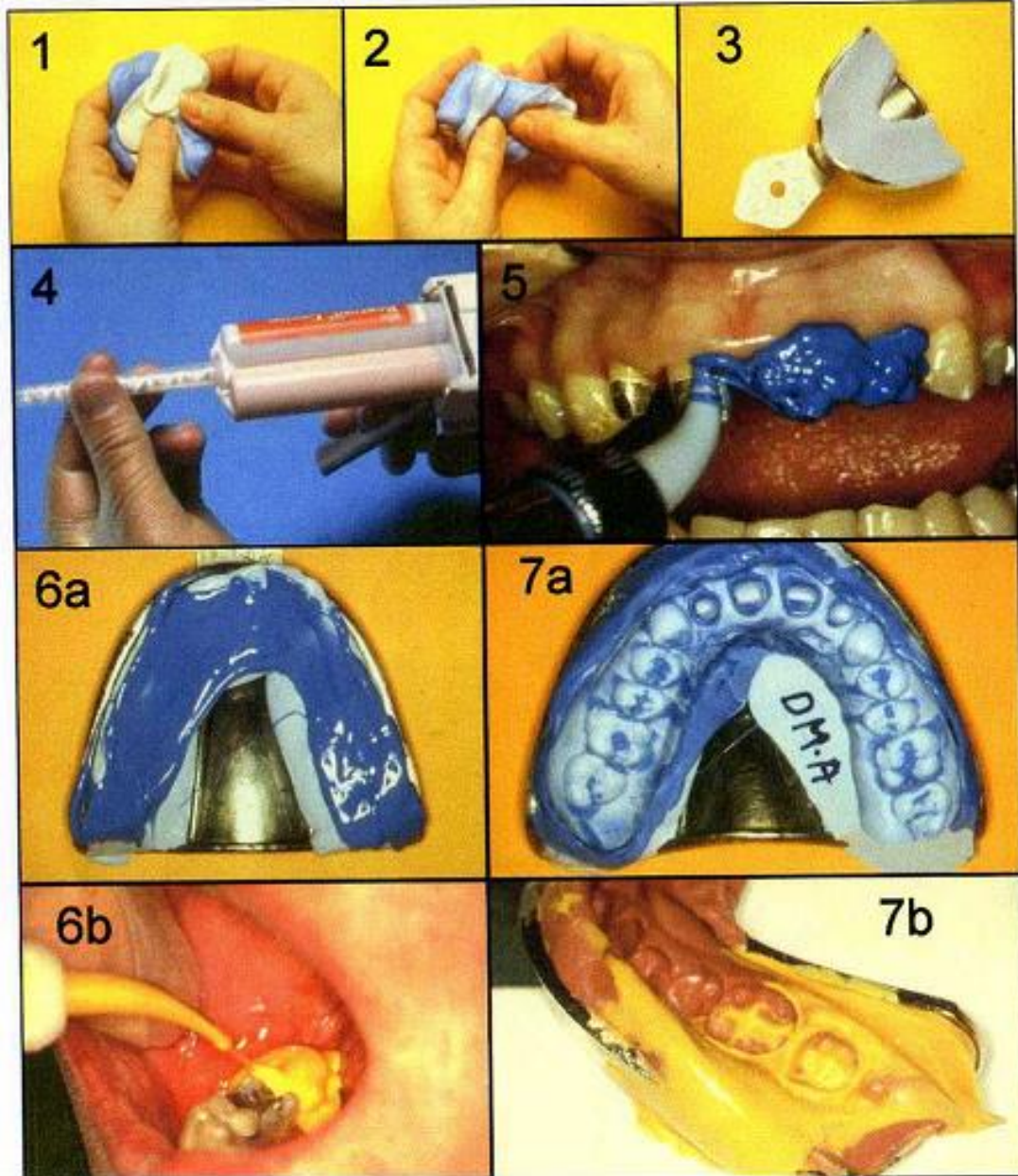
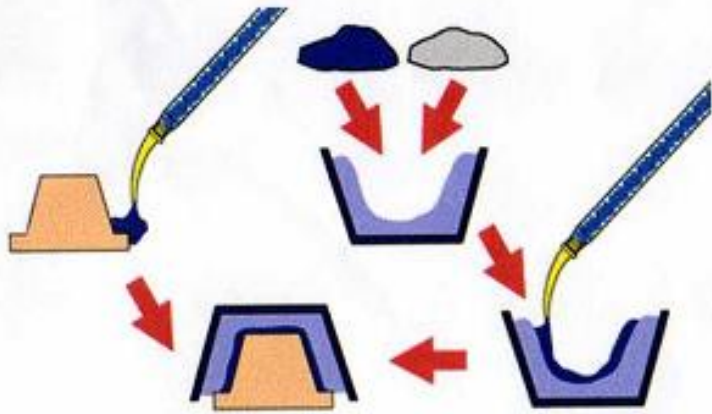
PHYSICAL AND MECHANICAL PROPERTIES

PROPERTY	ADDITION SILICONE	POLYETHER	CONDENSATION SILICONE	POLYSULFIDE
WORKING TIME	Short - moderate	short	short	Moderate - long
SETTING TIME	Short - moderate	short	Short- moderate	Moderate - long
SHRINKAGE ON SETTING	Very low	low	Moderate - high	high
ELASTIC RECOVERY	Very high	high	high	Moderate
FLEXIBILITY	Low - moderate	Low - moderate	moderate	High
TEAR STRENGTH	Low moderate	moderate	moderate	high

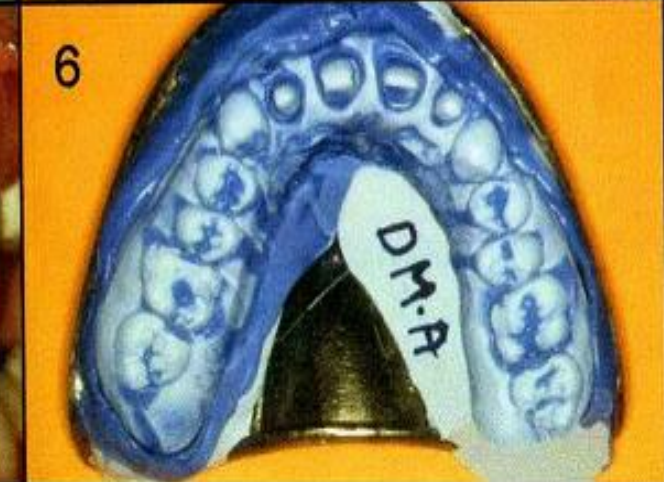
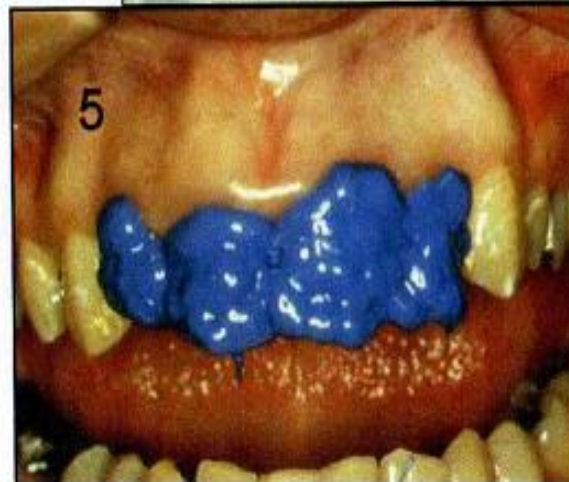
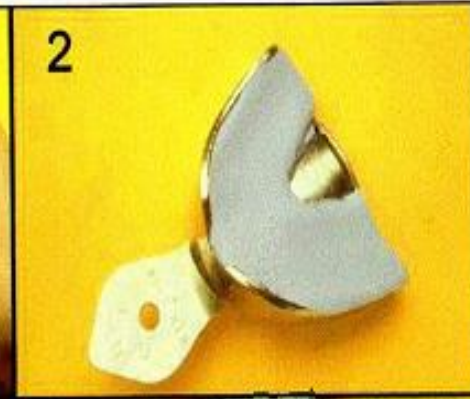
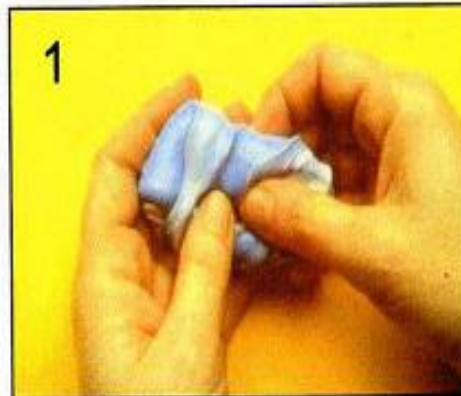
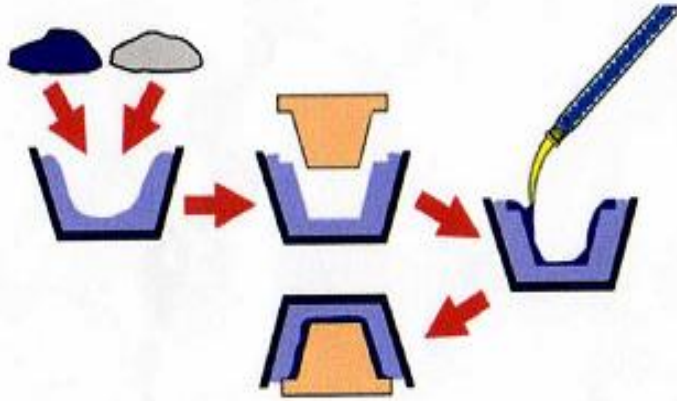
□ TAHAPAN PENCETAKAN :

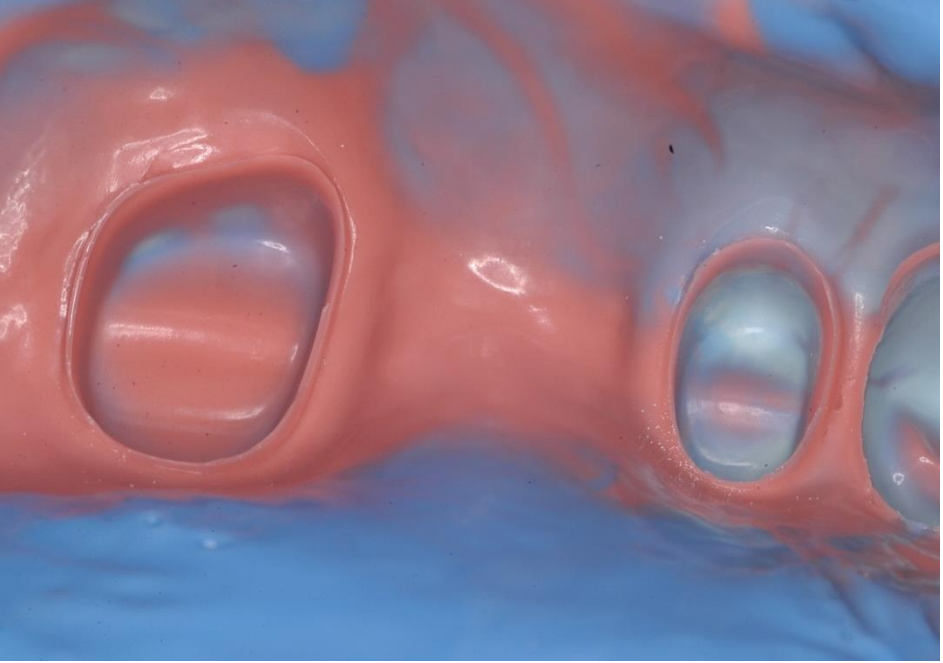
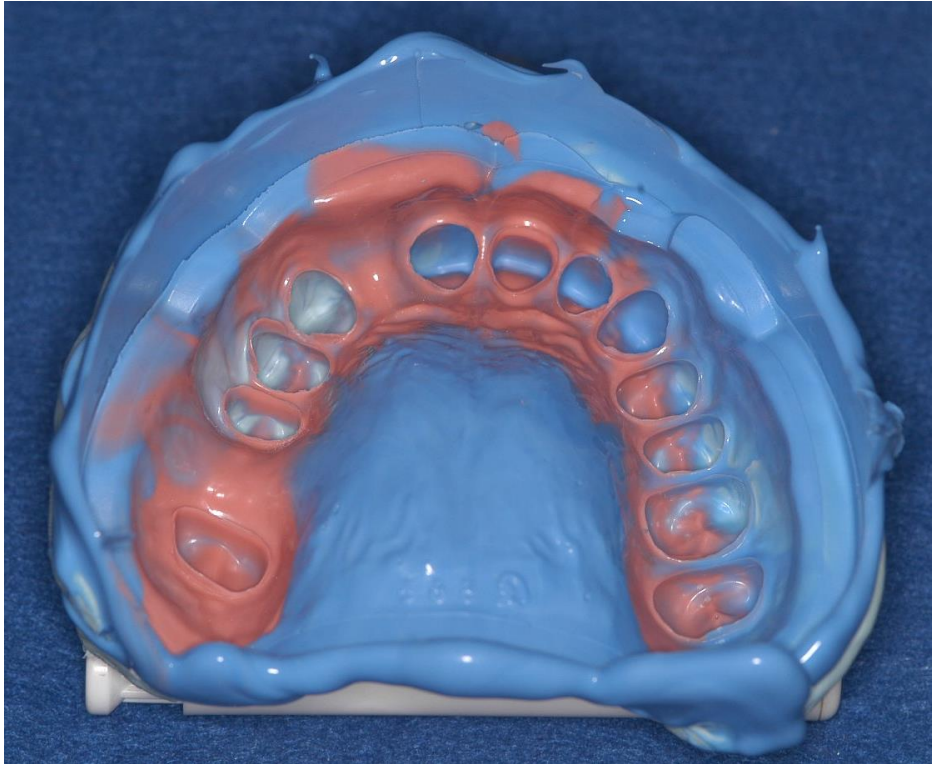
1. Try in sendok cetak di dalam mulut
2. Isolasi gigi dan tissue displacement (cord)
3. Manipulasi bahan cetak
4. Cord dilepaskan, area pencetakan dikeringkan dengan semprotan udara
5. Masukkan sendok cetak + bahan cetak ke dalam mulut, tunggu sampai mengeras
6. Lepaskan, lalu evaluasi hasil

PUTTY-WASH ONE STAGE



PUTTY – WASH TWO STAGE

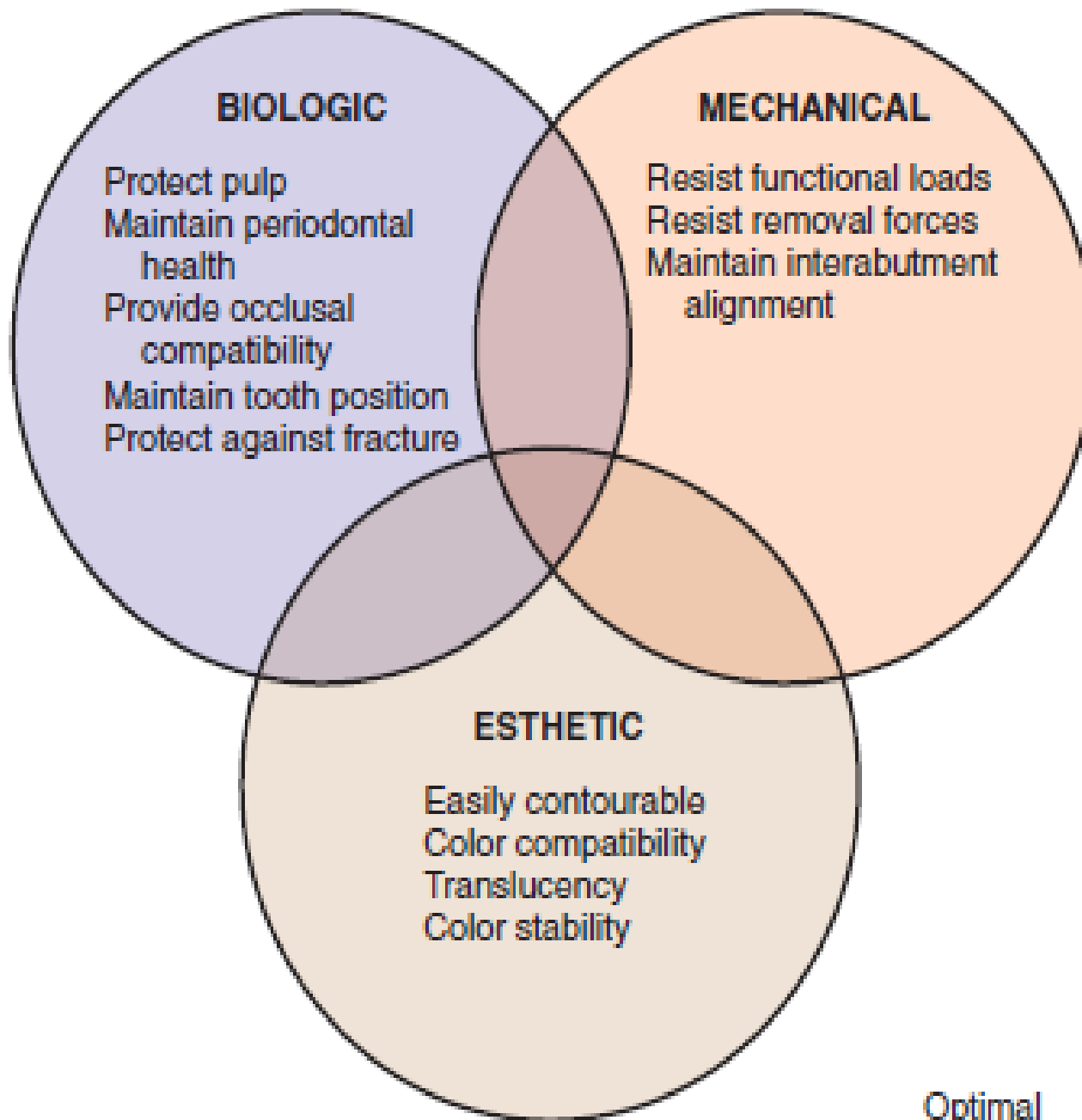





MAHKOTA SEMENTARA (INTERIM)

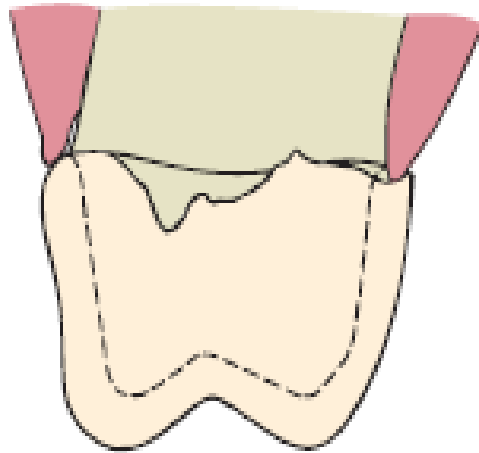
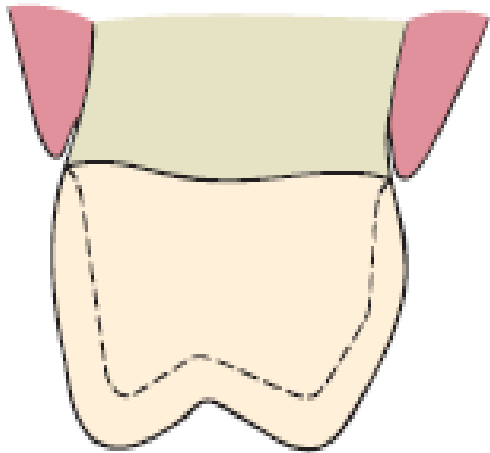
□ FUNGSI :

- a. Melindungi pulpa
- b. Mencegah perubahan posisi gigi
- c. Menjaga hubungan oklusi
- d. Mempertahankan fungsi
- e. Menjaga estetika

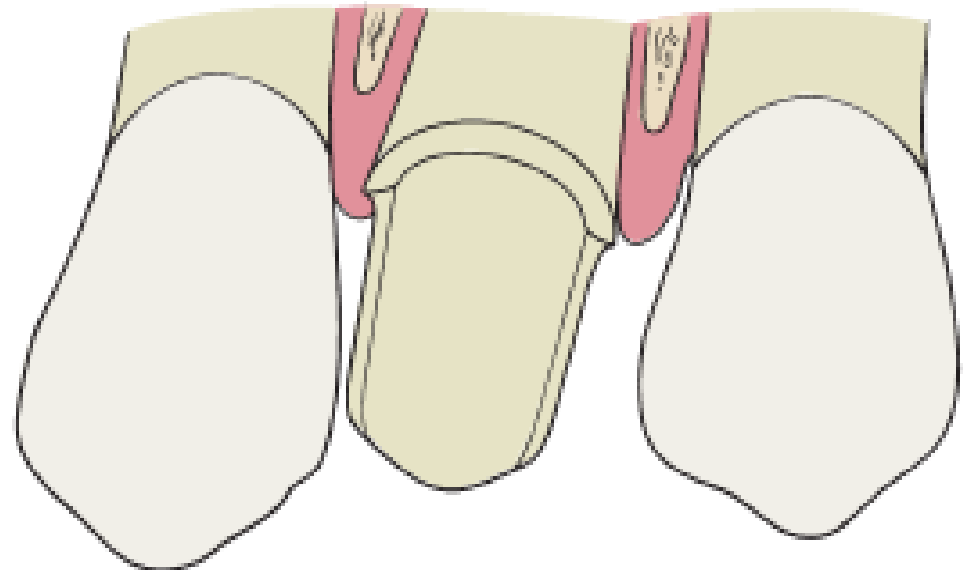


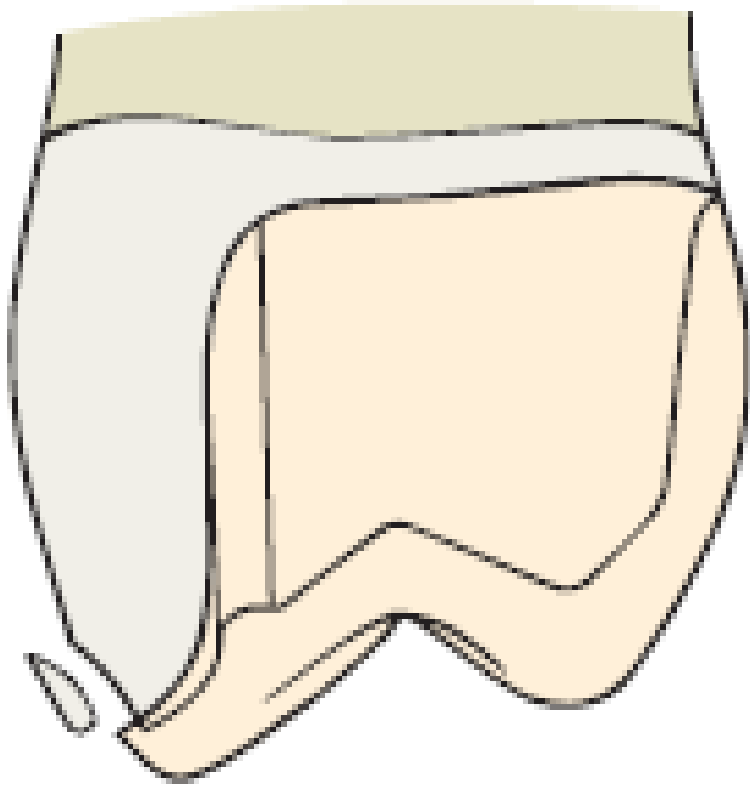
 Optimal interim restoration

Rough margins around interim restorations will jeopardize subsequent procedures.

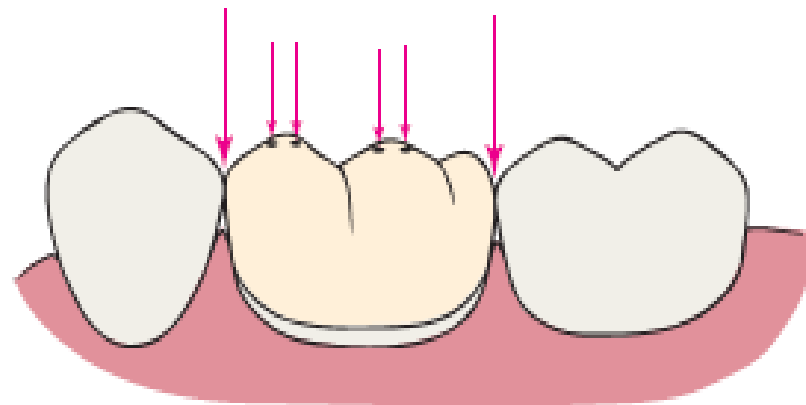


**TANPA MAHKOTA SEMENTARA
PASCA PREPARASI**

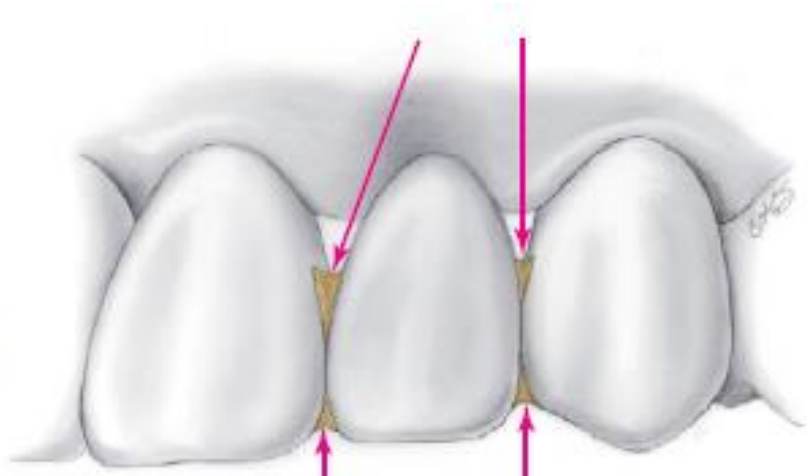




If an interim restoration does not ensure positional stability, tooth movement can occur, and additional treatment will be necessary.



A

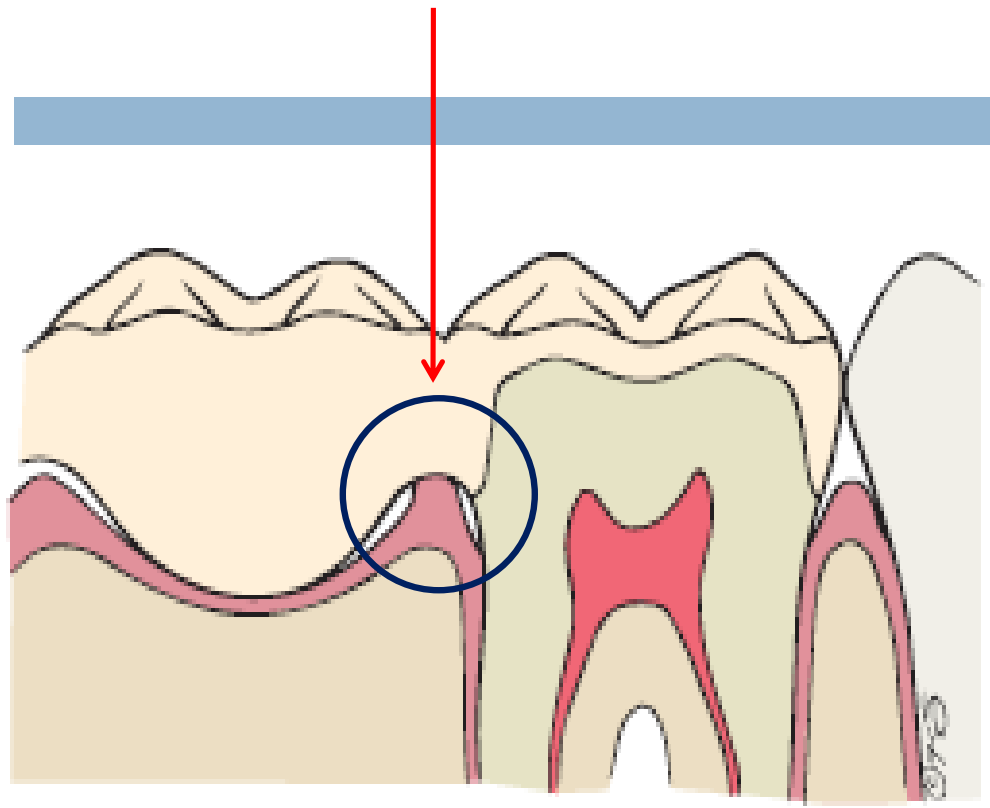


Areas of overcontouring to improve strength

B



Areas of overcontouring





□ TEKNIK PEMBUATAN INTERIM :


1. Direct custom
2. Indirect custom
3. Preformed (polycarbonate, cellulose acetate, aluminum, tin silver)

□ MATERIAL MAHKOTA INTERIM :

- a. Manipulasi mudah : working time cukup, setting time cepat
- b. Biokompatibel : nontoksik, nonalergik, noneksotermik
- c. Dimensi stabil
- d. Mudah dibentuk dan dipoles
- e. Cukup kuat
- f. Mudah diterima pasien : tidak bau, tidak iritatif


□ PROSEDUR KERJA INDIRECT CUSTOM :

- a. **Sebelum preparasi** : cetak gigi pasien, lalu isi dengan stone → model kerja I
- b. **Setelah preparasi selesai** : cetak gigi pasien, lalu isi dengan stone → **model kerja II**
- c. cetak model kerja I dg putty atau hidrokoloid irreversibel → **cetakan interim**
- d. Ulaskan separating medium pada **model kerja II**
- e. Aduk akrilik SC, lalu tuang pada cetakan interim

- 
- e. Masukkan cetakan interim ke dalam model kerja II
 - f. Tunggu setting → cek kontrol
 - g. Dilepas dari model kerja II
 - h. Finishing dan polishing


□ KEUNTUNGAN INDIRECT CUSTOM TECHNIQUE :

- a. Tidak ada kontak antara monomer dan gigi atau gingiva → kerusakan jaringan, reaksi alergi
- b. Mencegah paparan panas saat polimerisasi pada gisi → injury pulpa
- c. Adaptasi tepi lebih baik
- d. Pasien lebih nyaman

- 
- g. Mudah diperbaiki atau ditambahkan
 - h. Kompatibel dengan bahan sementasi
 - i. Estetika cukup baik : translusen, warna stabil

□ PROSEDUR KERJA DIRECT CUSTOM :

- a. **Sebelum preparasi** : cetak gigi pasien, lalu isi dengan stone → model kerja I
- b. **Setelah preparasi selesai** : cetak model kerja I dg putty atau hidrokoloid irreversibel → **cetakan interim**
- c. Ulaskan separating medium pada **gigi pasien** dan jaringan sekitarnya, lalu isolasi dan keringkan
- d. Aduk akrilik SC, lalu tuang pada cetakan interim

- 
- e. Masukkan cetakan interim **ke dalam mulut pasien**
 - f. Tunggu setting → cek kontrol
 - g. Dilepas dari mulut pasien
 - h. Finishing dan polishing

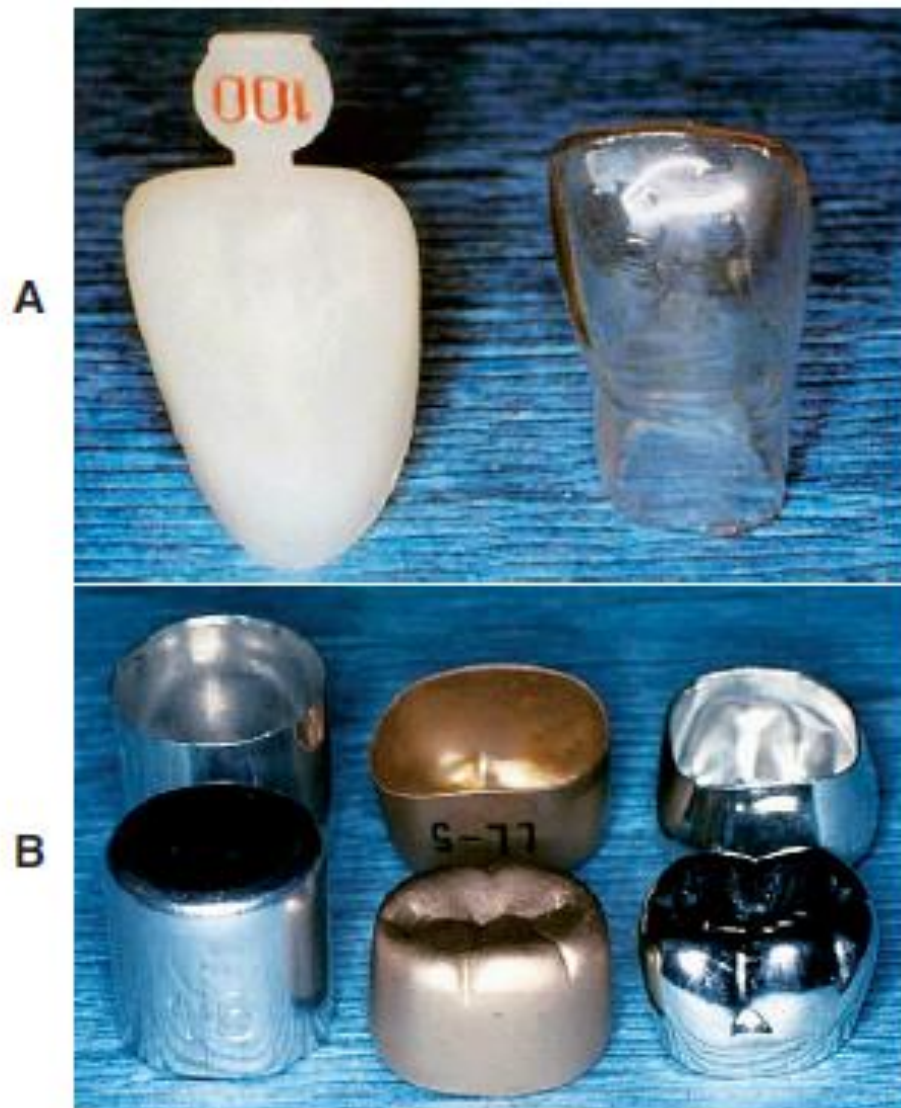



Fig. 15-16

A, Preformed anterior crown forms: polycarbonate (left) and cellulose acetate (right). B, Preformed posterior crown forms: aluminum shell (left), aluminum anatomic (center), and tin-silver anatomic (right).


□ PROSEDUR KERJA PREFORMED :

- a. **Ukur ruang** mesiodistal dan ketinggian serviko-oklusal pada gigi
- b. **Cari** preformed crown dengan **ukuran yang sesuai**
- c. **Try in** preformed crown pada gigi
- d. Ulaskan **separating medium pada gigi** dan jaringan sekitarnya
- e. **Aduk akrilik SC**, lalu tuang pada preformed crown

- 
- f. Masukkan preformed crown pada gigi, bersihkan sisa2 akrilik
 - g. Saat rubbery stage, lepas preformed crown dari gigi
 - h. Tunggu sampai setting sempurna
 - i. Finishing dan polishing

□ PROSEDUR KERJA INDIRECT CUSTOM BRIDGE :

- a. **Sebelum preparasi** : cetak gigi pasien, lalu isi dengan stone
- b. **Buat pontik** menggunakan anasir gigi atau malam merah, pasang di sadel area → model kerja I
- c. Setelah preparasi selesai : cetak gigi pasien, isi dengan stone → model kerja II
- d. cetak model kerja I dg putty atau hidrokoloid irreversibel → cetakan interim
- e. Ulaskan separating medium pada model kerja II

- 
- e. Aduk akrilik SC, lalu tuang pada cetakan interim
 - f. Masukkan sendok cetak ke dalam model kerja II
 - g. Tunggu setting → cek kontrol
 - h. Dilepas dari model kerja II
 - i. Finishing dan polishing

SEMENTASI MAHKOTA SEMENTARA :

- Zinc oxide eugenol (ZOE) → cukup baik
- Zinc phosphate, zinc polycarboxylate, GIC → tidak baik → terlalu kuat, sulit dilepas

SEMENTASI

- Pemilihan bahan sementasi tergantung pada bahan restorasi yang akan disementasi
- Bahan sementasi / luting agent :
 - a. Waktu kerja panjang, setting time pendek
 - b. Menempel pada gigi dan restorasi
 - c. Tidak mengiritasi pulpa
 - d. Mudah dibersihkan (ekses)
 - e. Dapat dibuat tipis
 - f. Viskositas rendah

Property	Ideal material	Zinc phosphate	Poly-carboxylate	Glass ionomer	Resin ionomer	Composite resin	Adhesive resin
Film thickness (μm)*	Low	≤ 25	< 25	< 25	> 25	> 25	> 25
Working time (min)	Long	1.5-5	1.75-2.5	2.3-5	2-4	3-10	0.5-5
Setting time (min)	Short	5-14	6-9	6-9	2	3-7	1-15
Compressive strength (MPa) (see Fig. 31-4)	High	62-101	67-91	122-162	40-141	194-200	179-255
Elastic modulus (GPa) [†]	Dentin = 13.7 Enamel = 84-130 [‡]	13.2	Not tested	11.2	Not tested	17	4.5-9.8
Pulp irritation	Low	Moderate	Low	High	High	High	High
Solubility	Very low	High	High	Low	Very low	High to very high	Very low to low
Microleakage (see Fig. 31-8)	Very low	High	High to very high	Low to very low	Very low	High to very high	Very low to low
Removal of excess	Easy	Easy	Medium	Medium	Medium	Medium	Difficult
Retention (see Fig.	High	Moderate	Low/moderate	Moderate to high	High [§]	Moderate	High

Table 31-2 INDICATIONS AND CONTRAINDICATIONS FOR LUTING AGENT TYPES

Restoration	Indication	Contraindication
Cast crown, metal-ceramic crown, partial FDP	1, 2, 3, 4, 5, 6, 7	—
Crown or partial FDP with poor retention	1	2, 3, 4, 5, 6, 7
MCC with porcelain margin	1, 2, 3, 4, 5, 6, 7	—
Casting on patient with history of post-treatment sensitivity	Consider 4 or 7	2
Pressed, high-leucite, ceramic crown	1, 2	3, 4, 5, 6, 7
Slip-cast alumina crown	1, 2, 3, 4, 6, 7	5
Ceramic inlay	1, 2	3, 4, 5, 6, 7
Ceramic veneer	1, 2	3, 4, 5, 6, 7
Resin-retained partial FDP	1, 2	3, 4, 5, 6, 7
Cast post-and-core	1, 2, 3, 5, 6	4, 7

KEY:

Luting agent type	Chief advantages	Chief concerns	Precautions
1. Adhesive resin	Adhesive, low solubility	Film thickness, history of use	Moisture control
2. Composite resin	Low solubility	Film thickness, irritation	Use bonding resin, moisture control
3. Glass ionomer	Translucency	Solubility, leakage	Avoid early moisture exposure
4. Reinforced ZOE	Biocompatible	Low strength	Only for very retentive restorations
5. Resin ionomer	Low solubility, low microleakage	Water sorption, history of use	Avoid with ceramic restorations
6. Zinc phosphate	History of use	Solubility, leakage	Use for “traditional” cast restorations
7. Zinc polycarboxylate	Biocompatible	Low strength, solubility	Do not reduce powder/liquid ratio

□ PROSEDUR KERJA SEMENTASI :

- a. Bersihkan area gigi yang akan disementasi dari sisa bahan sementasi mahkota sementara, isolasi area kerja
- b. Try in mahkota → cek arah masuk, ketepatan margin, stabilitas restorasi
- c. Bersihkan restorasi dengan semprotan udara atau steam cleaner
- d. Aduk bahan sementasi sesuai petunjuk pabrik



e. Masukkan restorasi pada gigi dengan tekanan konstan → oklusi

f. Bersihkan sisa-sisa bahan sementasi yang keluar

g. Tunggu sampai setting → cek kontrol sementasi

A



B,C

D



E

F



G,H

PERAWATAN POST INSERSI

- Tujuan :
 - a. Kontrol oral higiene
 - b. Evaluasi habit pasien → plak kontrol → dental floss
 - c. Identifikasi penyakit → karies, periodontal disease
 - d. Corrective treatment → mencegah kerusakan permanen



Fig. 32-3

The patient should be instructed in the use of floss to clean partial fixed dental prostheses.



Fig. 32-4

Postcementation monitoring of plaque control is necessary

- Ada 3 macam, yaitu perawatan pasca sementasi, perawatan periodik, perawatan kedaruratan
- Perawatan pasca sementasi :
 - a. Dilakukan 1 minggu – 10 hari pasca insersi
 - b. Cek oklusi → occlusal adjustment
 - c. Cek area margin → sulkus terbebas dr sisa sementasi
 - d. Cek habit pasien

□ Perawatan periodik :

- a. Dilakukan tiap 6 bulan sekali
- b. Cek jaringan lunak → deteksi dini oral cancer
- c. Cek plak kontrol index → dibandingkan dengan kunjungan sebelumnya
- d. Cek diet history → perubahan pola makan, merokok
- e. Cek saliva
- f. Cek penyakit : caries, periodontal disease, occlusal dysfunction

□ Perawatan kedaruratan :

- a. Nyeri → gigi vital : iritasi pulpa, pada gigi non vital : fraktur akar
- b. Kehilangan abutmen → pelepasan sisa protesa dengan crown remover, atau pembelahan mahkota
- c. Fraktur konektor
- d. Fraktur porcelain → reparasi dengan komposit menggunakan silane coupling agent



CROWN REMOVER

A



B



C



D



E



F




G



H





TERIMA KASIH