CORE BUILD-UPS AND POST RESTORATIONS

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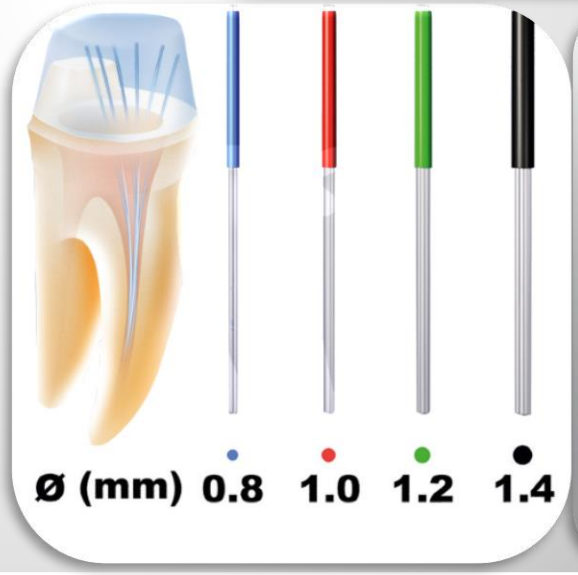
egyetemi adjunktus

Helyreállító Fogászati és Endodonciai Klinika

SEMMELWEIS
EGYETEM 1769

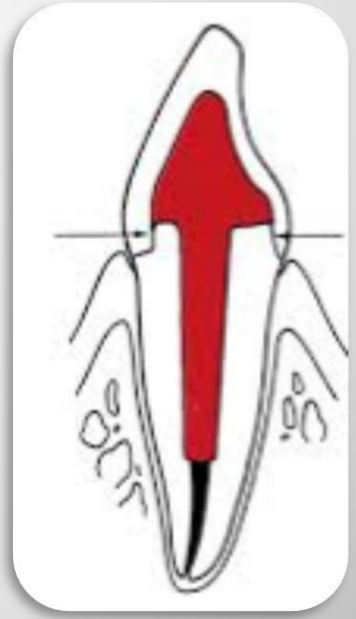
Post restorations



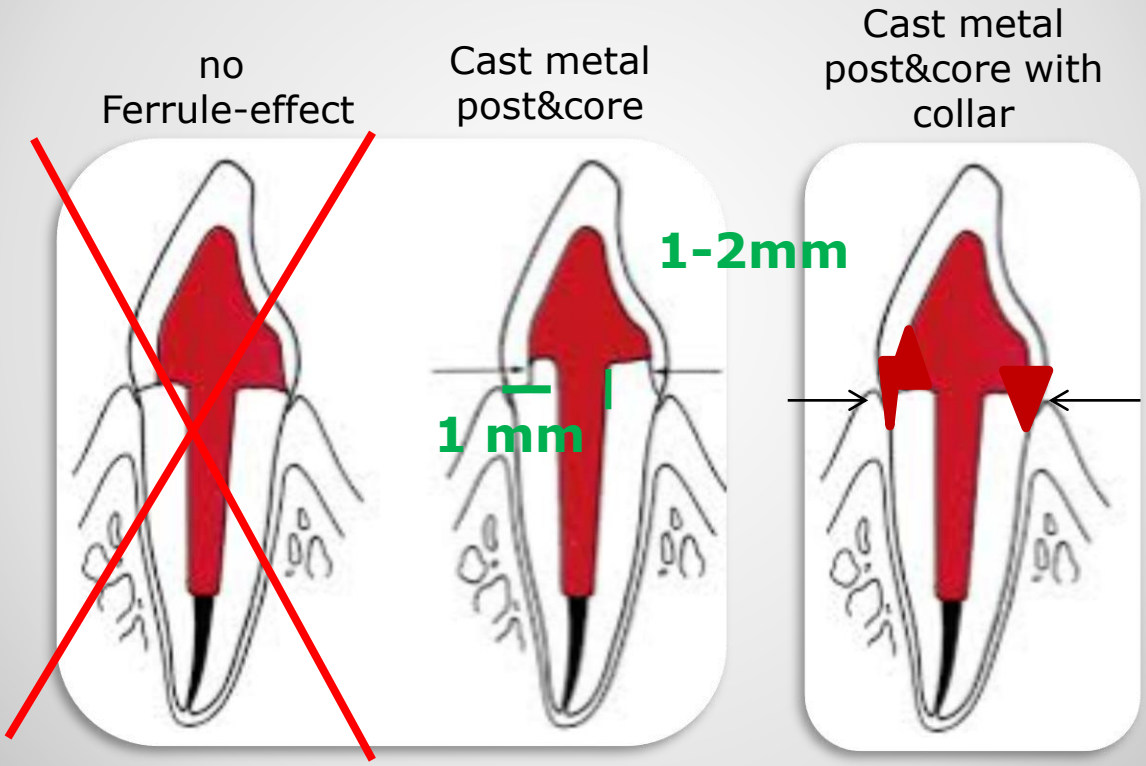
Post restorations

Def: restoration increasing the retention surface of a core build-up extending into the root canal space

It does NOT strengthen the <u>tooth</u>, it weakens it

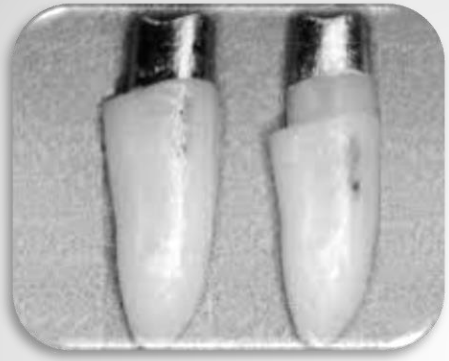


Ferrule-effect



No Ferrule-effect!

Indication of post restorations



Maggio JJ. When to place a post and how: a scientific approach to a clinical question. https://ubdentalalumni.org/site/files/Maggio%20handout.pdf

https://analiticaderetail.com/cast-post-and-core-k.html

- Extensive loss of clinical crown after preparation for crown restoration
- Height of the core is less than 3-4 mm
- Enhances retention of core build-up
- Ferrule-effect can be achieved: remaining dentin
  - 1-2 mm high
  - 1 mm wide

Indication of post restorations

https://analiticaderetail.com/cast-post-and-core-k.html

Types of posts

- ~~Prefabricated metal posts~~
- Stiff individual post&cores
  - metal (Au, Co-Cr, Ag-Pa, Ti)
  - zirconium
  - ceramic
- Elastic posts
  - Individual glass fiber posts
  - Prefabricated glass fiber posts

long, paralell glass fibers

Stiff individual post&core

post&core is one unit

cast metal post&core

zirconum/ceramic post&core

elasticity:	less than dentin	less than dentin
shade:	not esthetic	esthetic
relationship to rc:	fills out prepared space	fills out prepared space
cementation:	cement e.g. GIC	resin cement
retention:	friction	microretention + friction
cement thickness	thin	thin

Elastic posts

Glass fibers in composite matrix

post&core is NOT one unit

Prefabricated glass fiber post

Individual glass fiber post

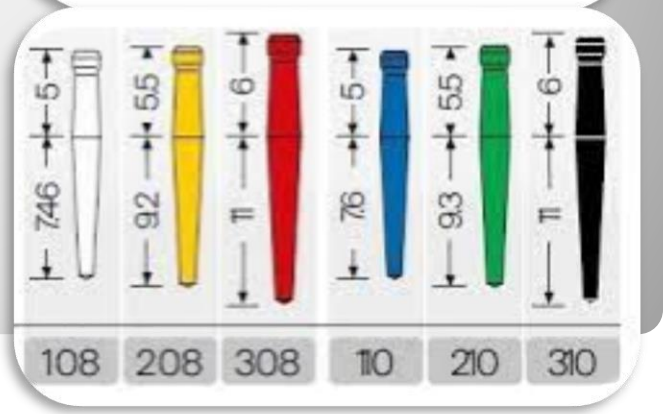
elasticity:	similar to dentin	similar to dentin
shade:	esthetic	esthetic
relationship to rc:	does not fill out prepared space	fills out prepared space
cementation:	resin cement	resin cement
retention:	microretention	microretention + friction
cement thickness	thick	thin

Making cast metal post&core

Penetration drill:
for removing guttapercha

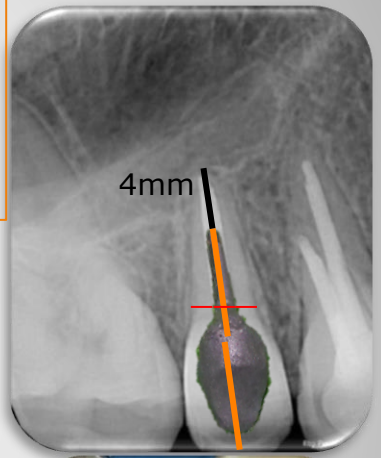
Calibration drill:
for final preparation

Burn-out plastic post:
For taking impression



Making cast metal post&core

Length: maximum 4mm from apex (4mm guttapercha)
because delta apicale is present in apical 3mm of rc, we would like to seal this w/ guttapercha
minimum length of clinical crown
Diameter: maximum 1/3 of root diameter



- Tooth preparation for crown
- Preparation of post space in root canal
- Occlusal divergance, oval access cavity
- Removing remaining guttapercha from wall
  w/ calibration drill, H-file
- Taking impressions:
  - Precisional-situational impression
  - Antagonistic impression
  - Bite registration
- Temporary restoration
  temporary filling or temporary post-crown

Kép két fúró!
Prep fog koronához
lenyomat

Cementation of cast metal post&core

- Relative isolation of tooth
- Washing (DW) and drying (paper point) root canal
- Cleaning post w/ alcohol
- Cementation: GIC, polycarboxilate cement
- Removing excess cement
- Tooth preparation for crown
- Taking impression for crown
- Preparaing temporary crown
- Cementation of final crown restoration





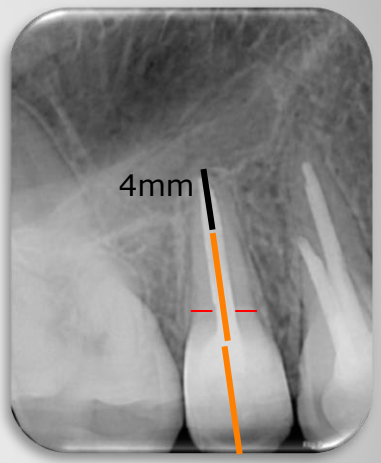
Making cast metal post&core

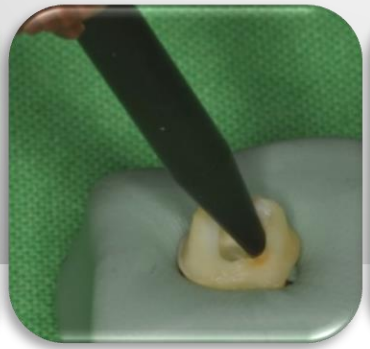
Glass fiber posts

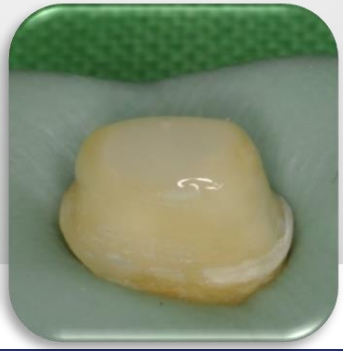
glass fiber post=adhesive post=elastic post

Core build-up with glass fiber posts

- Absolute isolation
- Preparing post space
- Removing guttapercha from wall
- Post try-in, cutting to length HX
- Cementation: dual-cure resin cement
- Removing excess cement
- Core build-up by composite
- Preparation for crown
- Taking impression for crown
- Preparing temporary crown
- Cementation of final crown







Cementation of fiber posts

classic adhesives
universal adhesives

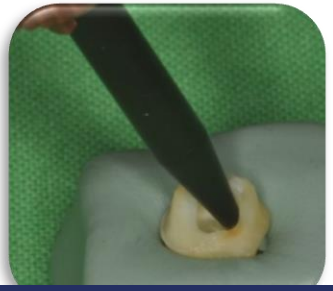
- Etch&rinse technique
  - etch-wash-adhesive-cement
- Self-etch technique
  - adhesive-cement
- Self-adhesive resin cement
  - cement

W/ etch&rinse technique
2 step

Root canal:
isolation
etching w/ orto-phosphoric acid
adhesive
(activator)

Post:
measure length
try-in
cut to lentgh
clean w/ alcohol

placing dual-cure resin cement into rc
post placement
polymerisation
core build-up

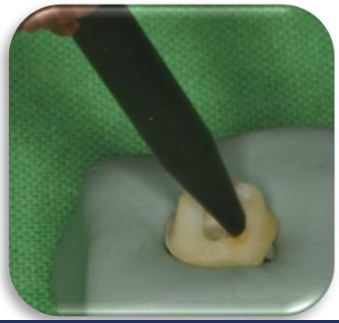


W/ self-etch technique
1 step

Root canal:
isolation
adhesive
(activator)

Post:
measure length
try-in
cut to lentgh
clean w/ alcohol

placing dual-cure resin cement into rc
post placement
polymerisation
core build-up



Adhesive cementation

IMPORTANT!!!

When using universal adhesives

With etch&rinse and self-etch technique

Same brand adhesive + resin cement matching

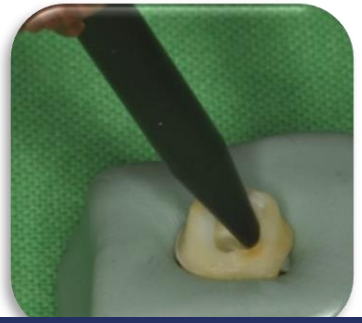
Makes it possible to exclude activator (according to manufacturer's instructions)

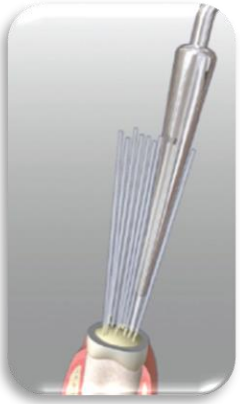
W/ self-adhesive cement

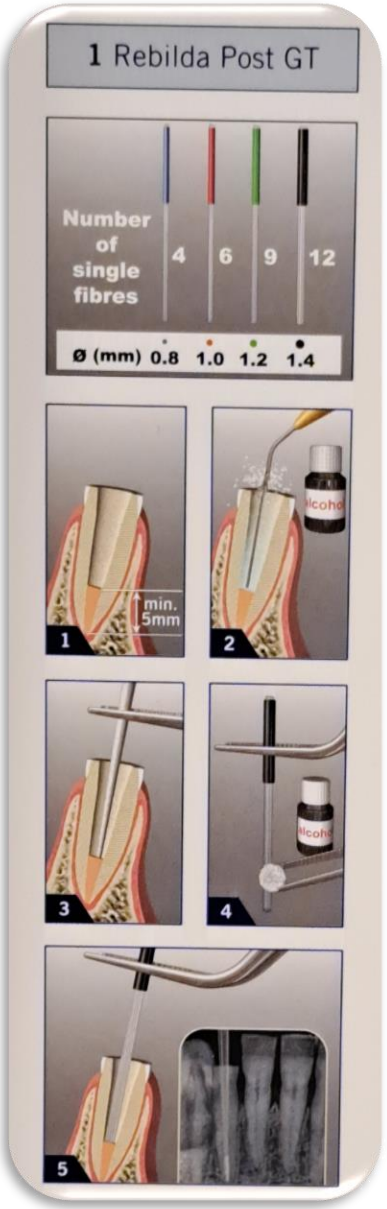
Root canal:
isolation

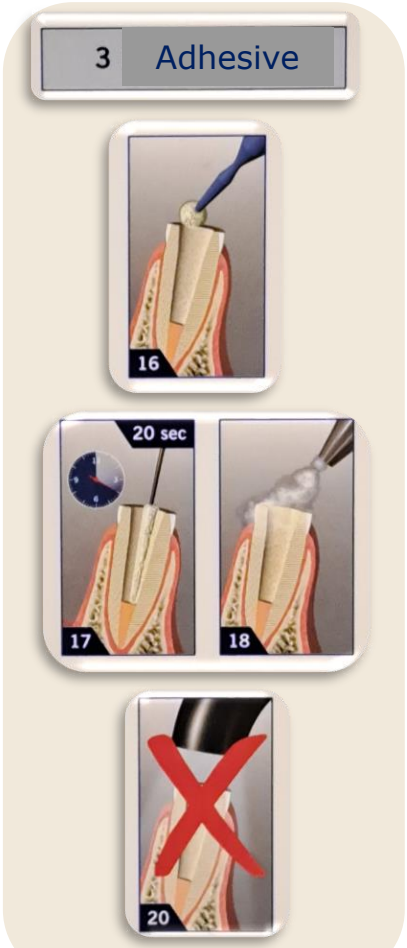
Post:
measure length
try-in
cut to lentgh
clean w/ alcohol

placing dual-cure resin cement into rc
post placement
polymerisation
core build-up

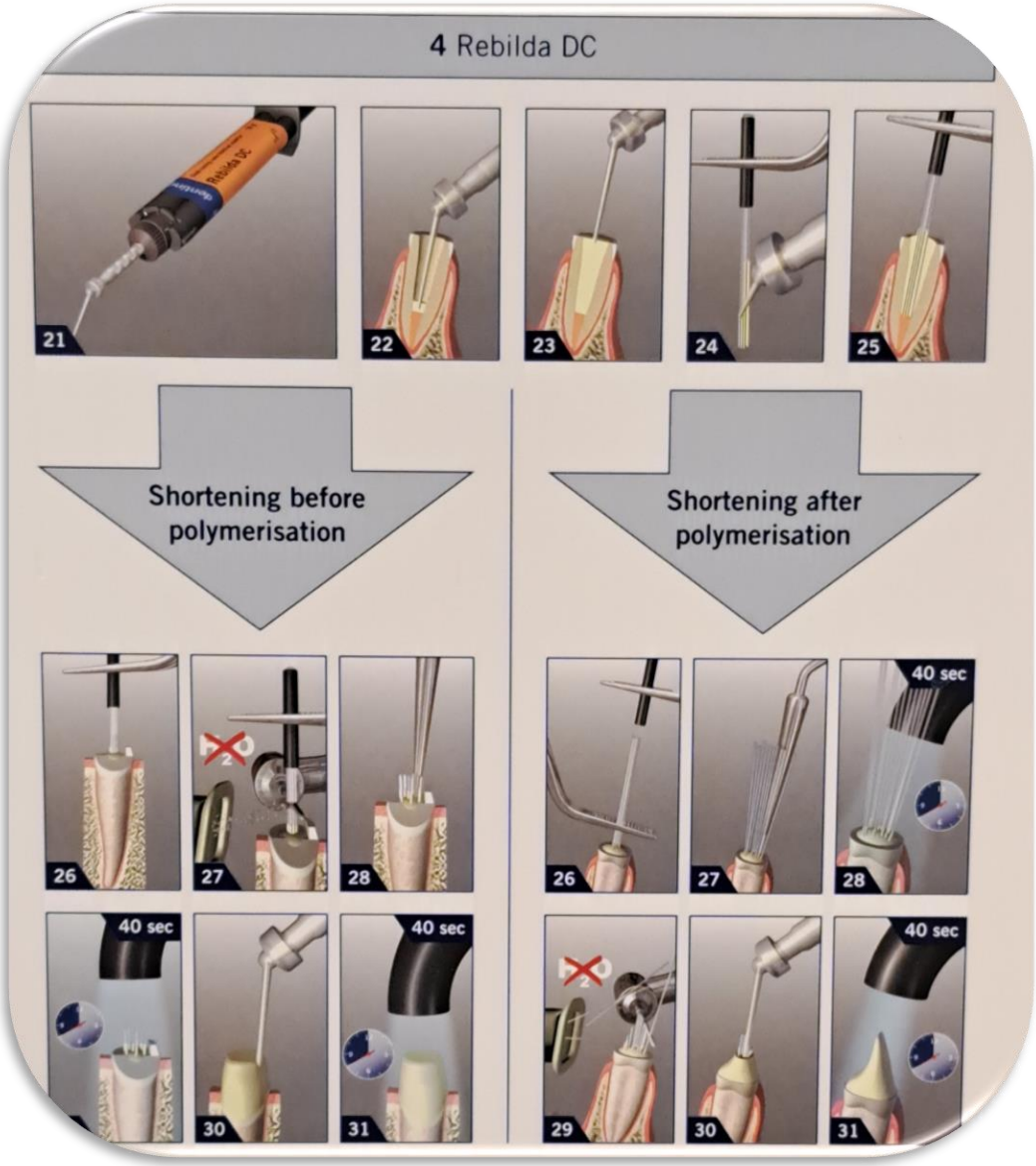








Ceramic Bond *VOCO GmbH*
- silane
- metachrylate phosphoric acid esther


4 Rebilda DC
21
22
23
24
25
Shortening before polymerisation
Shortening after polymerisation
26
27
28
40 sec
26
27
28
40 sec
30
31
40 sec
29
30
31

Thank you for your attention!

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