Phases of the endodontic treatment

1.Diagnosis (patient´s history, clinical examination, x-ray).

2.Consideration

3.Local anaesthesia

4. Removal of old fillings and caries, restoration of the tooth if necessary

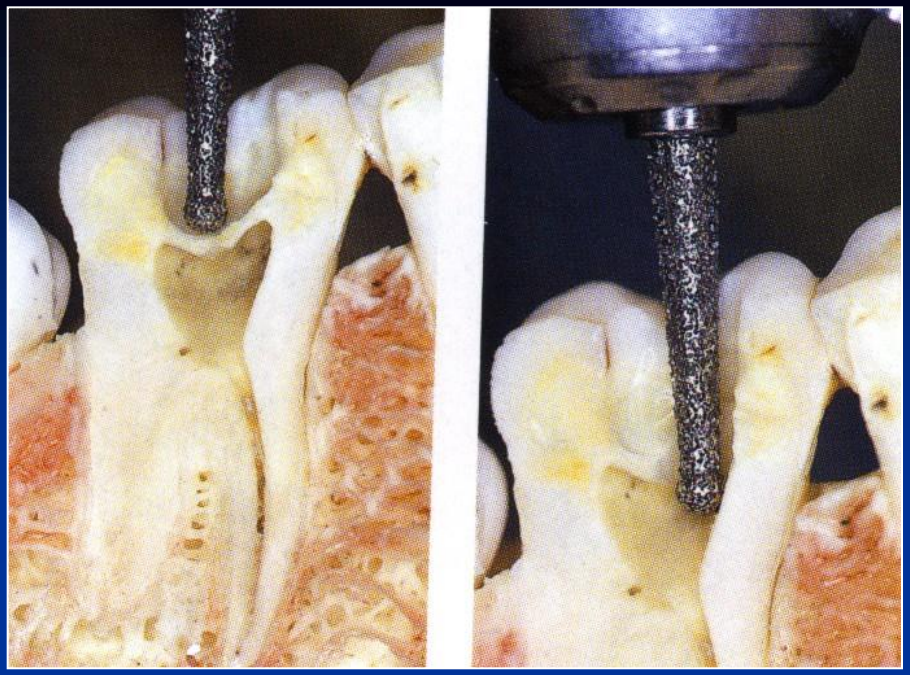
5. Dry operating field

6. Access to the pulp chamber

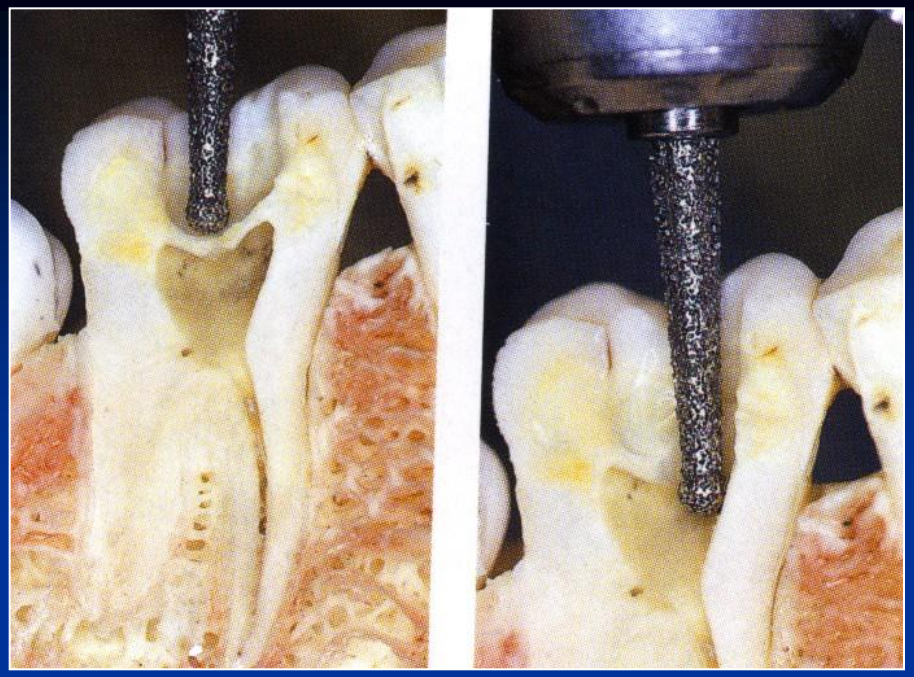
Phases of the endodontic treatment

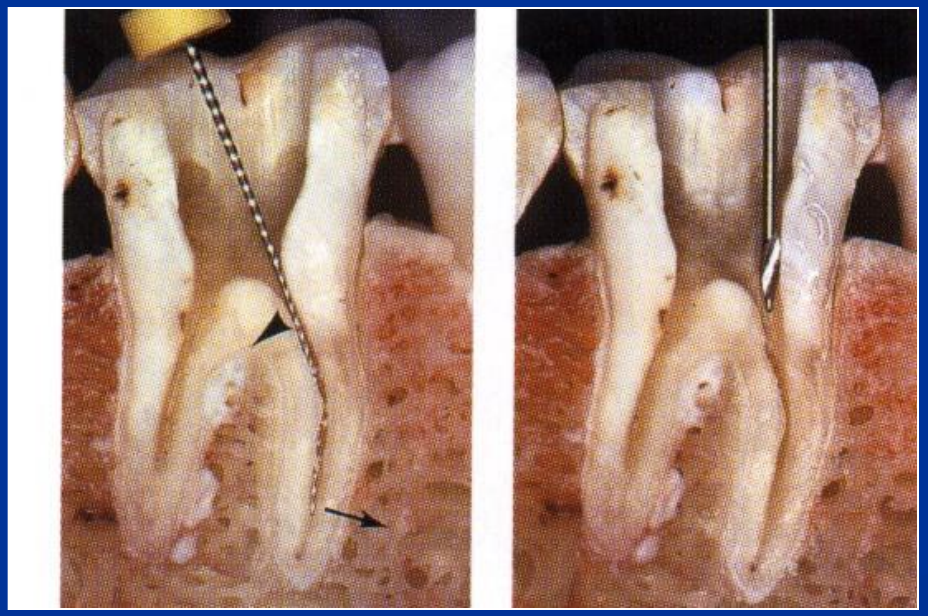
7. Opening of the root canals (coronal flaring)
8. Root canal shaping and cleaning (irrigation)
9. Root canal filling
10. X- ray
11. Restoration

Access



Access





Access – opening of the pulp chamber

Dia trepan

Dia balls

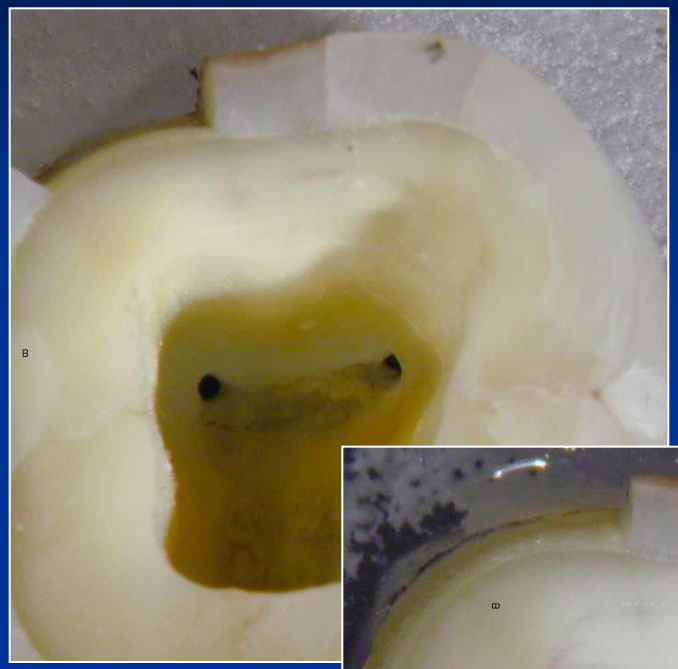
Round Burs

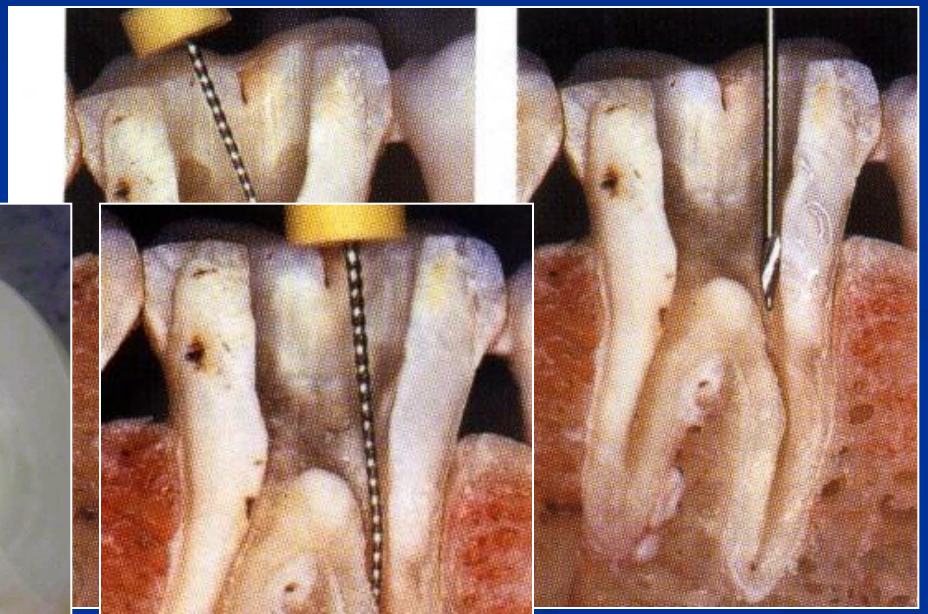
Preparation of the endodontic cavity –facilitating form

Dia trepan

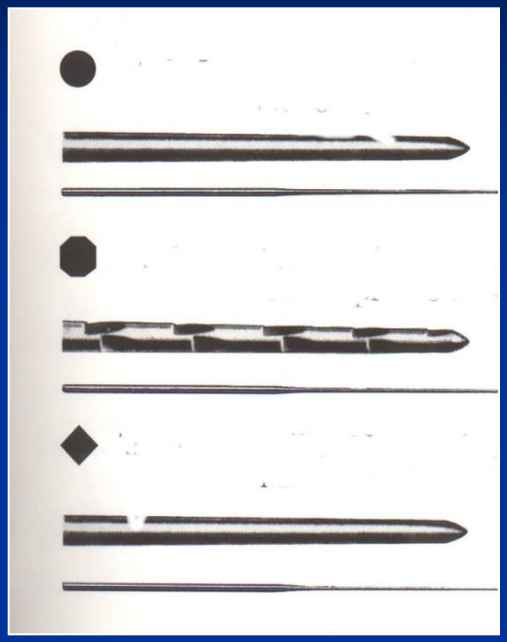
Instruments with safe ended tips),
Acc. to Batt

Fissure burs

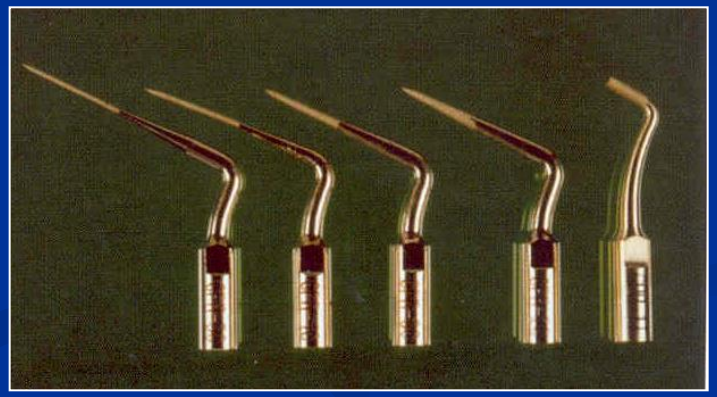




Root canal access



Endodontic probes
Microopeners

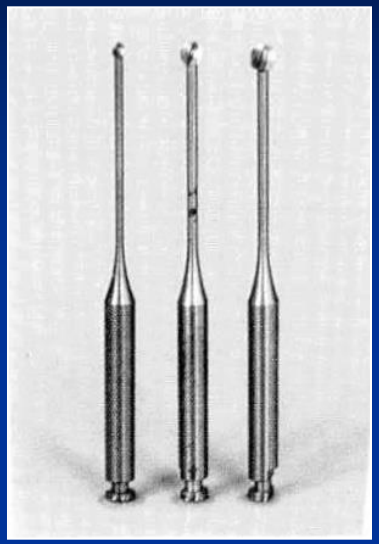


Ultrasound

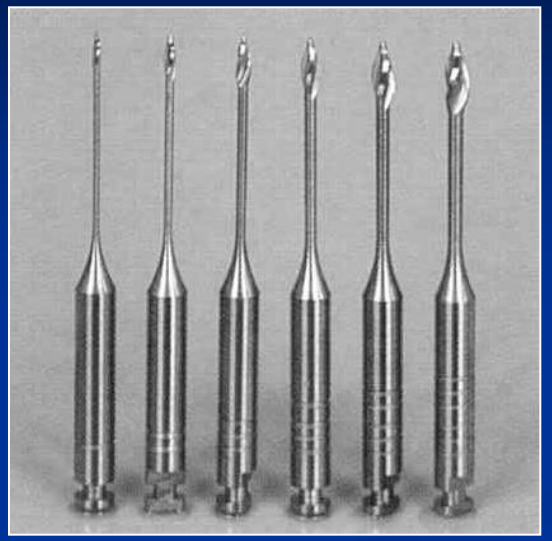
Dye

Opening of the root canal orifices

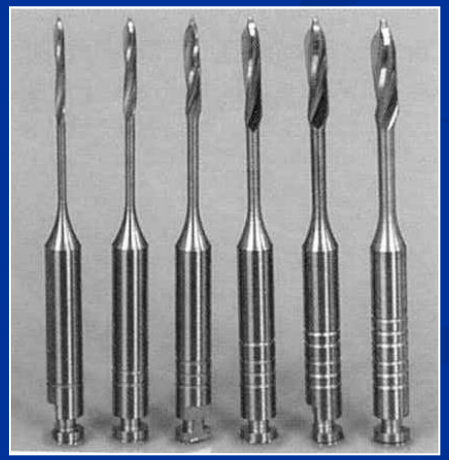
Round burs



Miller´s burs



Gates Glidden´s burs

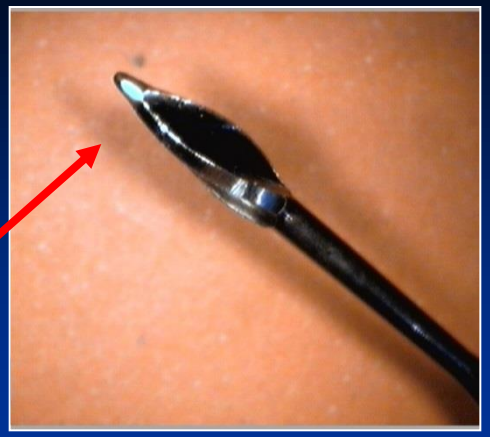


Peeso – Largo burs

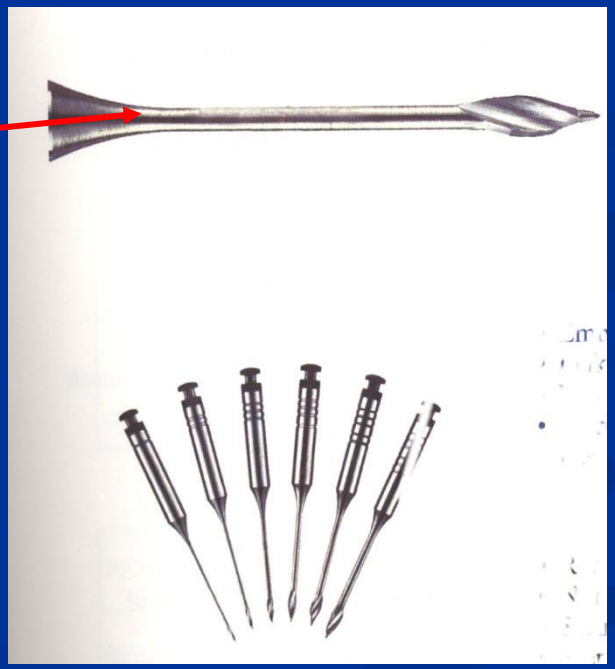
Gates - Glidden

Peeso-Largo

Gates – Glidden:

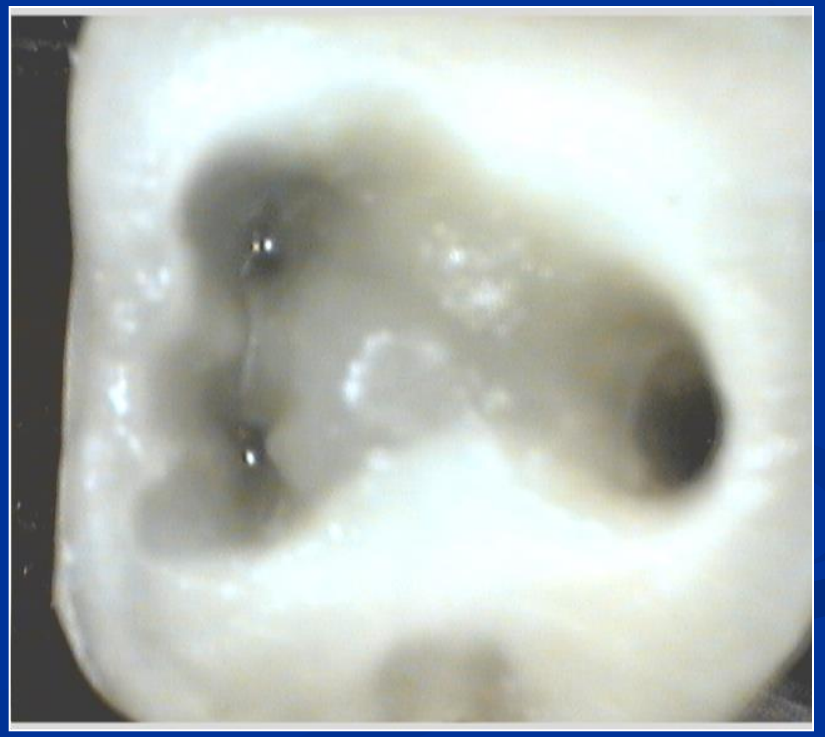


Point of breakage



Bad endodontic cavity

Good endodontic cavity



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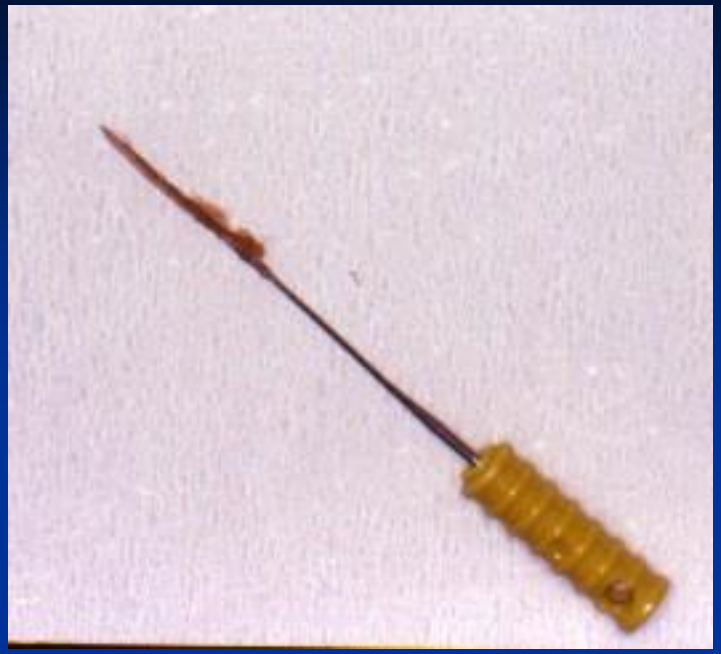
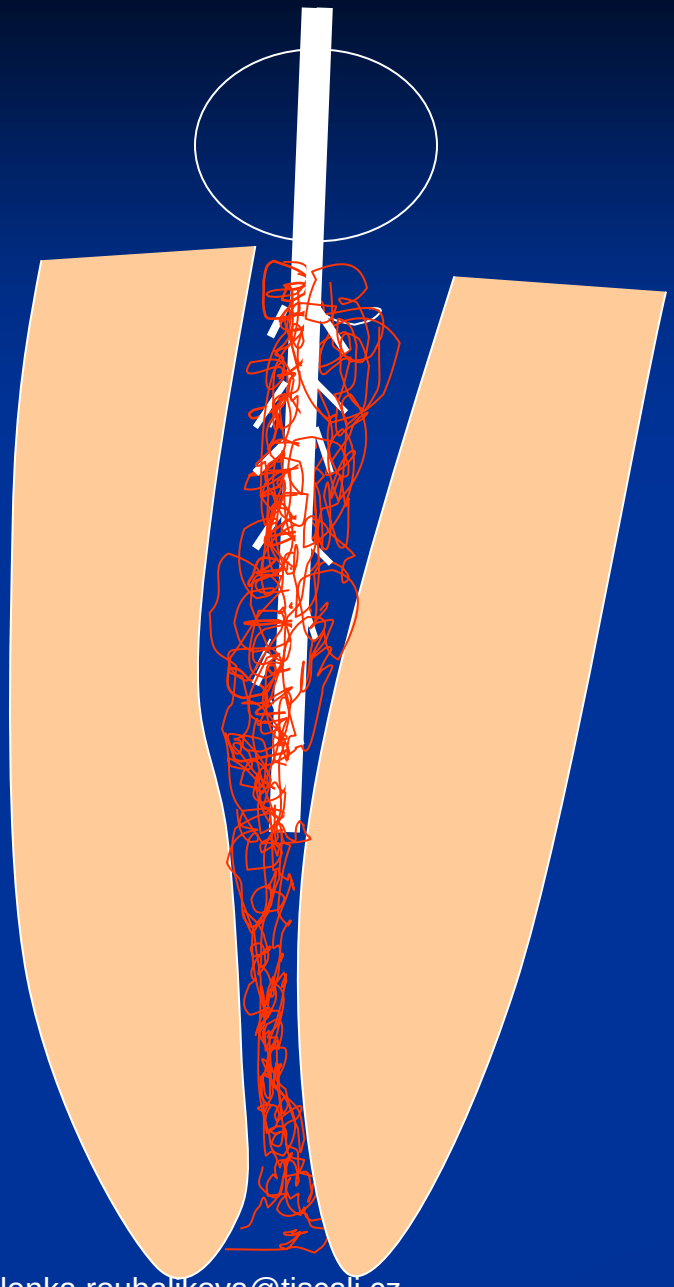


Extraction of the content of the root canal - exstirpation

Pulpextraktor – made of soft wire



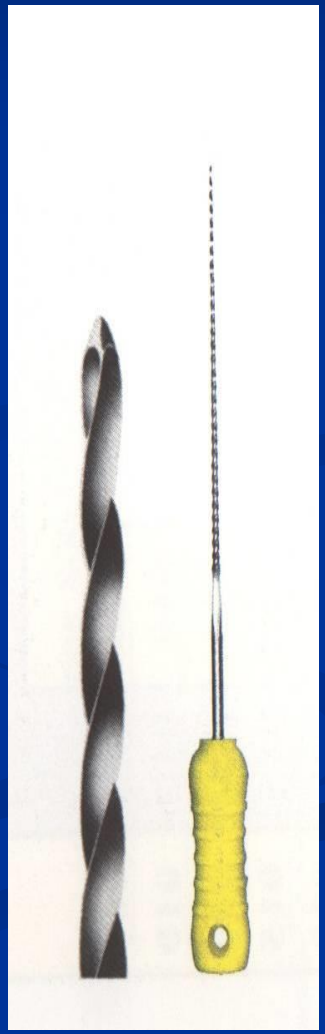
- **Rotation and exstirpation!**

Canal shaping - instruments

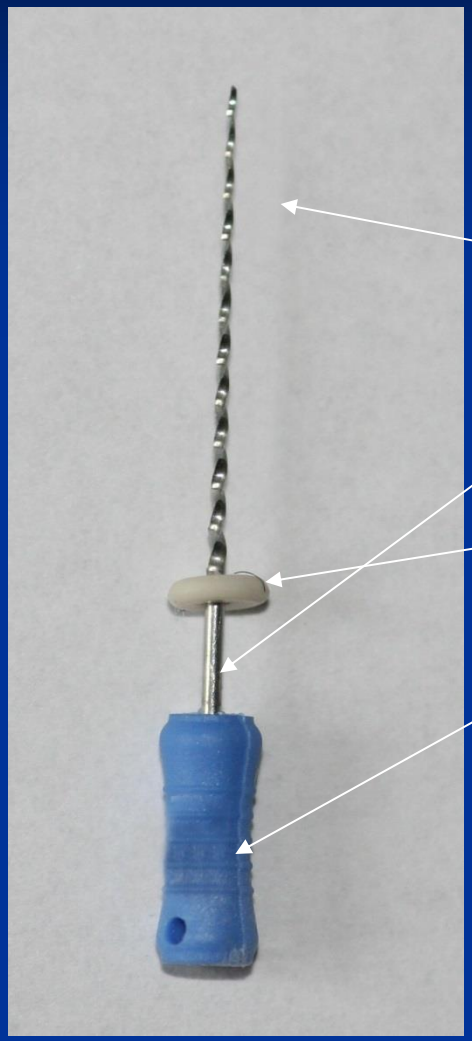
- Reamers
- Files

Reamer

- **K -reamer**



Reamer



Working –cutting part

Shank

Stopper

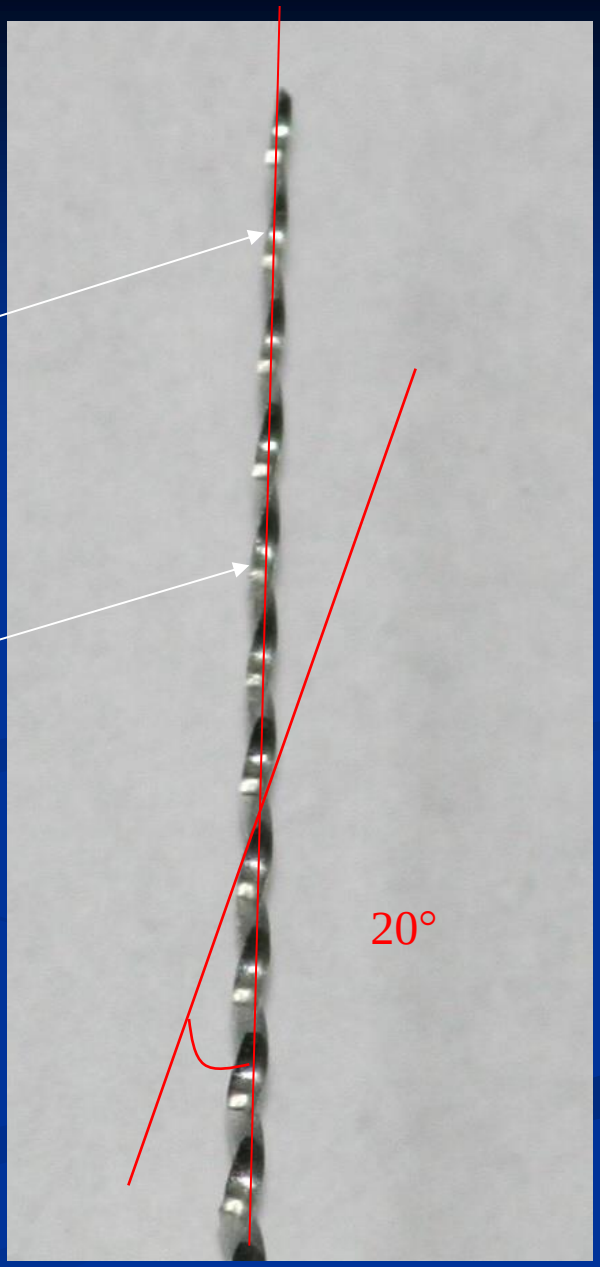
Grip

Reamer

Cuting edges

Space for chips

Clockwise rotation



Files

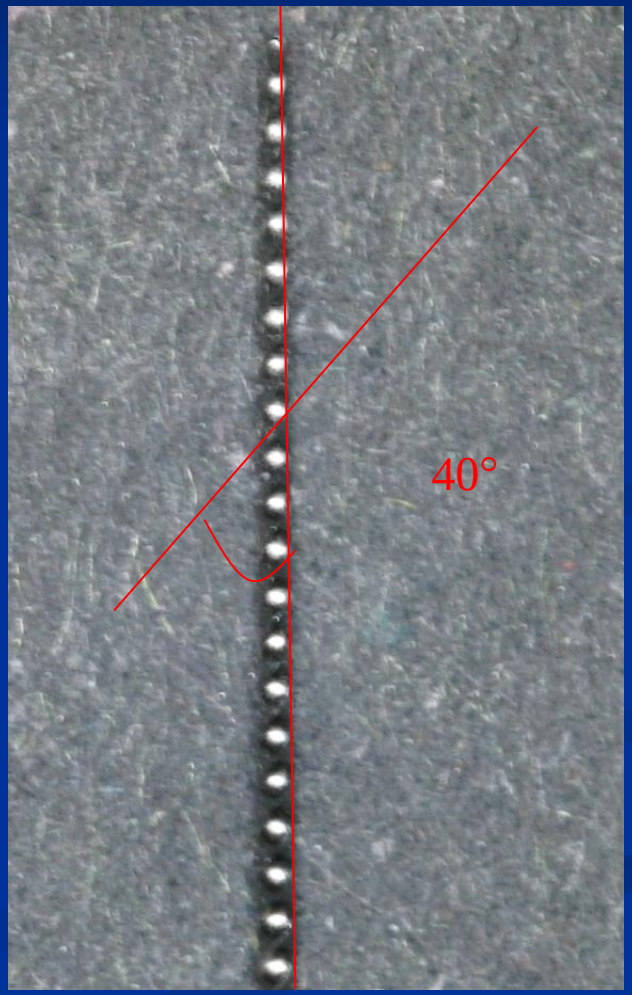
1. K-file
2. K-flexofile, flexicut, flex-R - file
3. K-flex
4. H-file, S-file

K file

K-file

Filing and (or) rotation

Straight canals 45° - 90°)



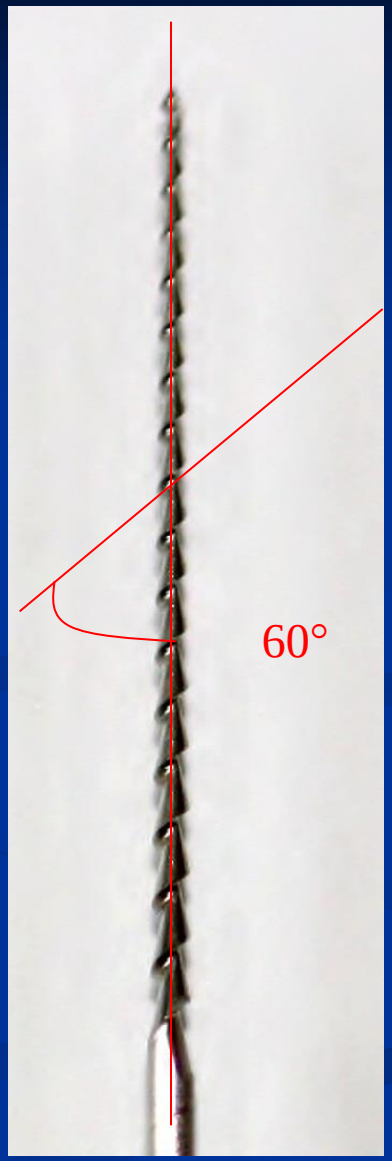
K-file x reamer

H-file

= Hedström file

H- file

Filing only!!!!

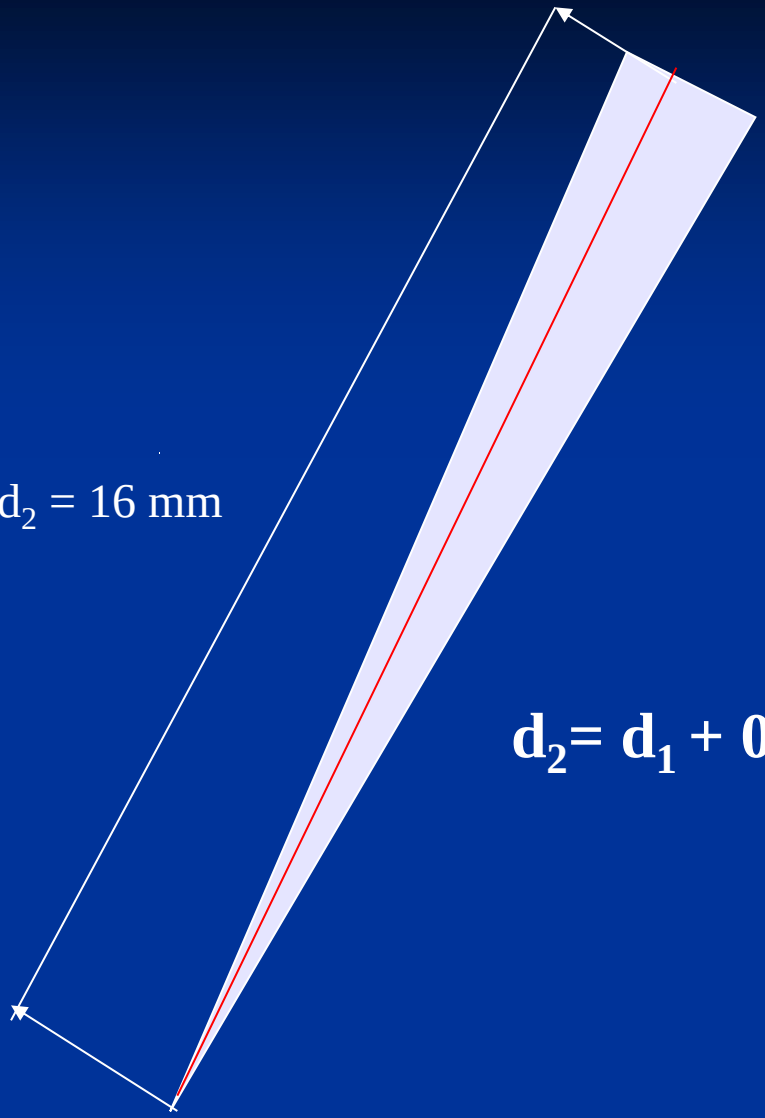


ISO norma

- Diameter
- Length of the cutting part
- Taper

06 pink
08 gray
10 purple
15 white
20 yellow
25 red
30 blue
35 green
40 black

45 white
50 yellow
55 red
60 blue
70 green
80 black



d_2

Taper 2%

$d_1 - d_2 = 16$ mm

$d_2 = d_1 + 0{,}32$

d_1

0,02 mm na 1mm

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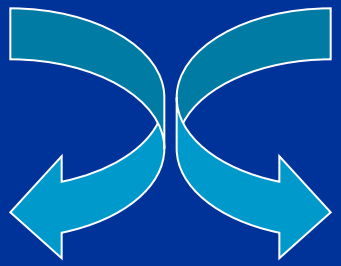
Hand instruments

- Made of stainless steel
- Taper is 2% (higher taper is for NiTi instruments – these are for power driven endodontics).

Instrumentation

- Reaming action
- (45°clockwise and contraclockwise)



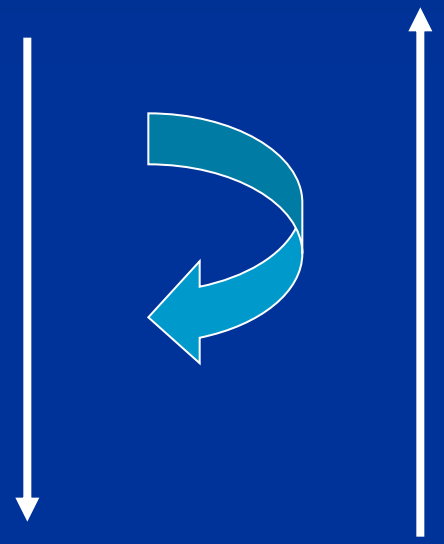
K – reamer

or

K- file

Instrumentation

- Rotation 45° slight pressure and pull motion

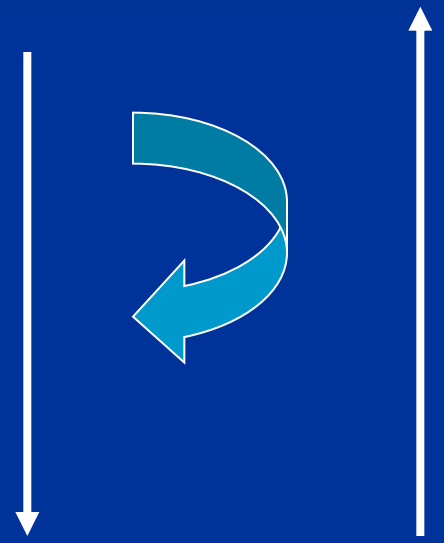


K – reamer

K- file

Instrumentation

- Filing – push and pull motion. The instrument is in action during pull motion



H- file

K – file

Circumferential filing

- H- file

The instrument is inserted into the root canal

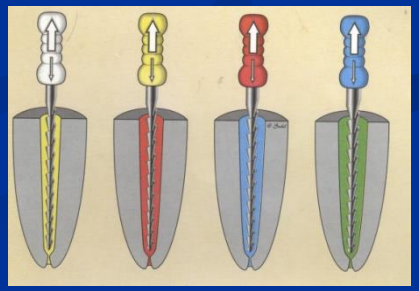
The working length is reached

The instrument is pulled out- action

Afterwards the instrument is rotated

without any action in order to be in contact with the root canal wall

Pull motion is applied again .



Circumferential filing

- The purpose – root canal shaping around the root canal with respect to its natural shape, mostly oval.

Balanced force technique

- K file

The instrument is inserted into the root canal – the size of the instrument one size bigger than the instrument that can be inserted on complete working length.

Rotate with this instrument clockwise 90 – 180 °

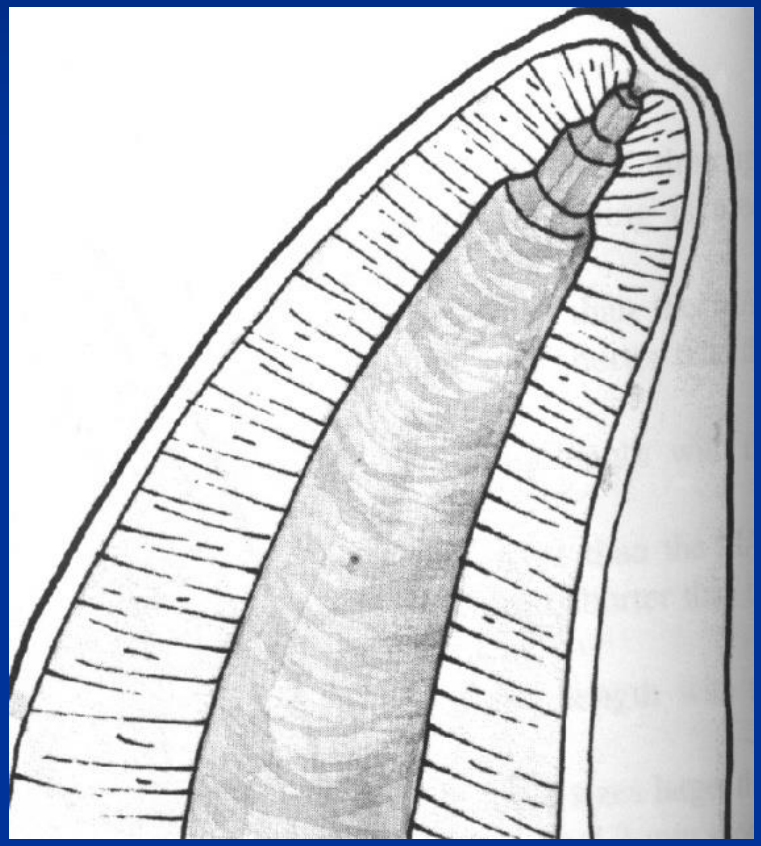
Follow with slight pressure forward and rotate contraclockwise till 270°

Pull the instrument out of the root canal rotating clockwise again.

Step back method

- We use endodontic instruments of increasing size during root canal shaping.
- The rigidity of instruments increases with the size. It can cause ledge in root canal wall and difficulties with reaching the working length.
- Therefore we reduce working length of instruments for 1mm. This we do from the 4th instrument we use. See next slide.

This is step back



Example: the apical size
at the beginning is ISO 15
20working lenghth
25 working lenghth
30 working length
35 1 mm less
40 2 mm less
45 3 mm less

Step back

- Prevent

- intracanal complications –ledge especially when the root canal is curved.
- extrusion of the filling material