



Microscope in Endodontics

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*„ You can only treat, what you can see, you can only see,
what you know... ”*

Prof. Syngcuk, Kim, DDS

- Few visual information
- X-Ray and tactile sensory

- Carr 1992, Velvart 1996 – Microscope in Endodontics
- Del Fabbro et al. 2009 – Article

Naked Eye	200 mikron
10X magnification	20 mikron
15X magnification	15 mikron
20X magnification	10 mikron
24X magnification	6 mikron

Instruments

- Loupes
 - Magnifying glass
 - Complex loupe
 - Surgical telescope
- Microscope

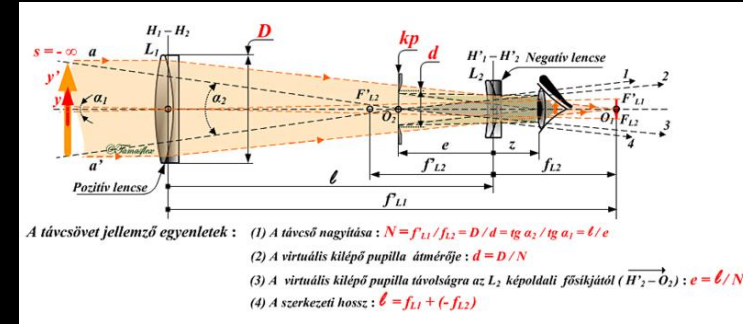
Magnifying Glass

- Inexpensive, light
- Low magnification



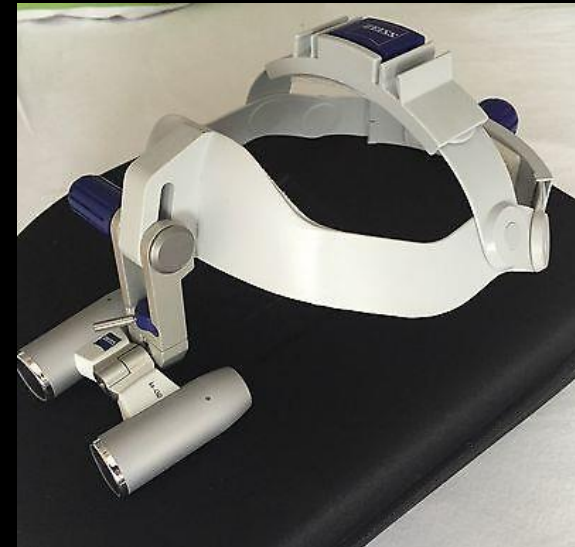
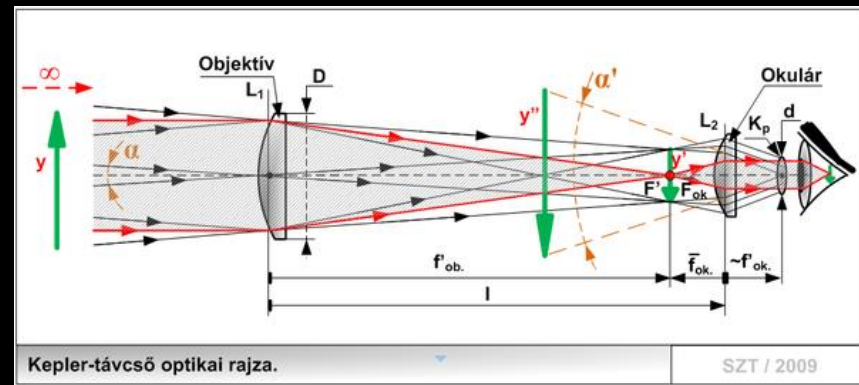
Complex Loupe

- Galilei system
- Objektív – tárgy (converging)
- Okular – szem (diverging)
- 2-4,5X
- Small FOV
- Light



Surgical telescope

- Kepler rendszerű teleszkóp
- Objektív – patient (converging)
- Ocular – eye (converging)
- Prism – inverted picture
- Higher magnification
- Bigger FOV



Microscope

- The best optical ability
- 6-30X magnification
- Stereo
- Best lighting
 - Coaxial, no shadow
- High light intensity



- Stand/Mount
- Microscope body
- Lighting



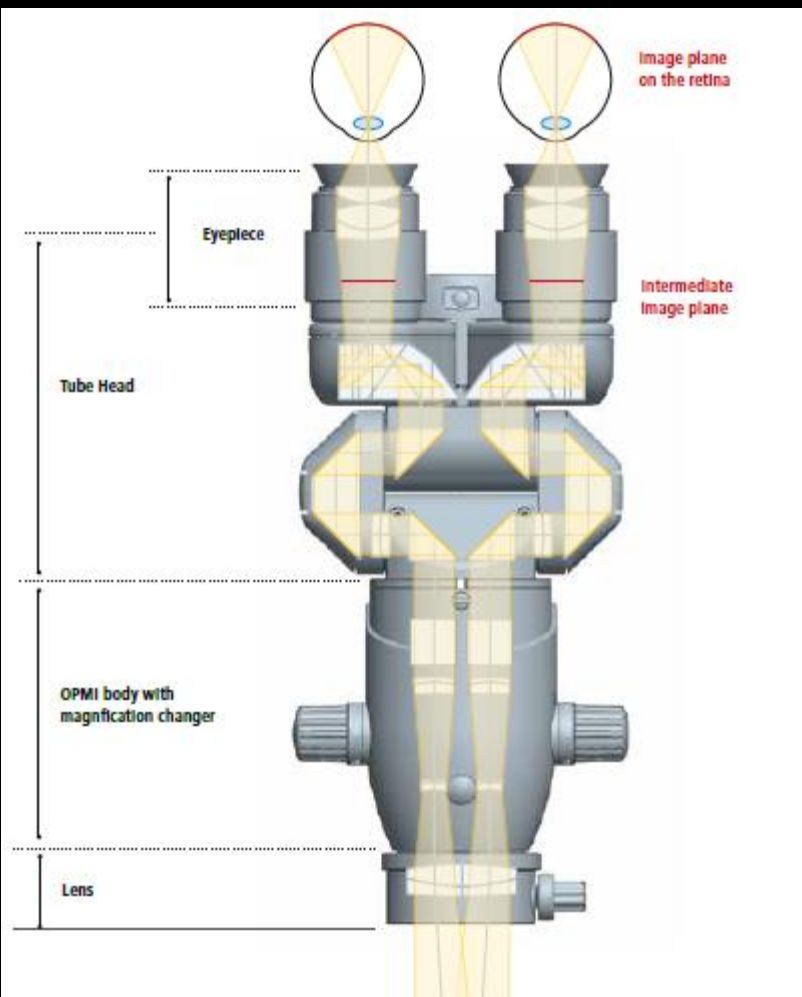
Stand/Mount

- Mobile/Movable floor stand
- Fixed/Wall/Ceiling mount

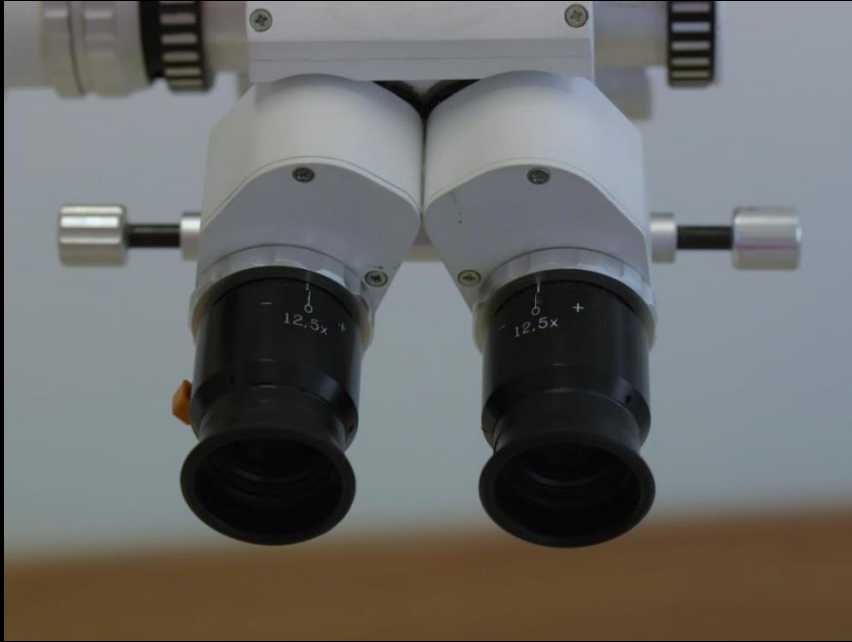


Microscope Body

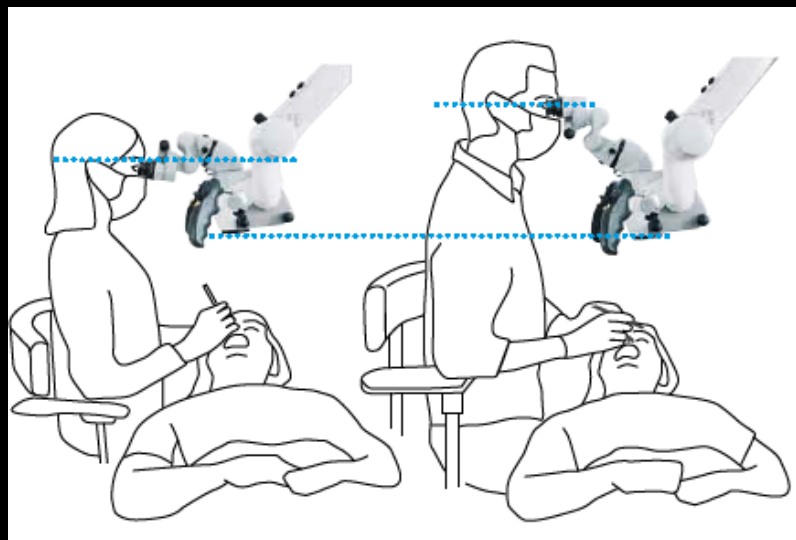




Binocular









Magnification



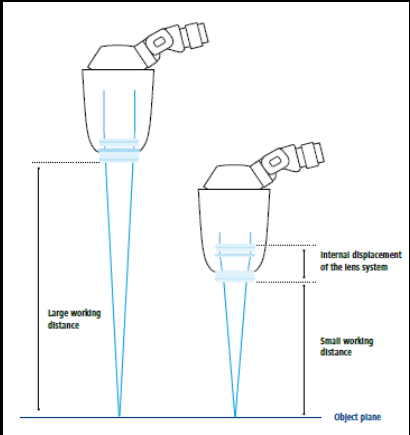
Objectiv





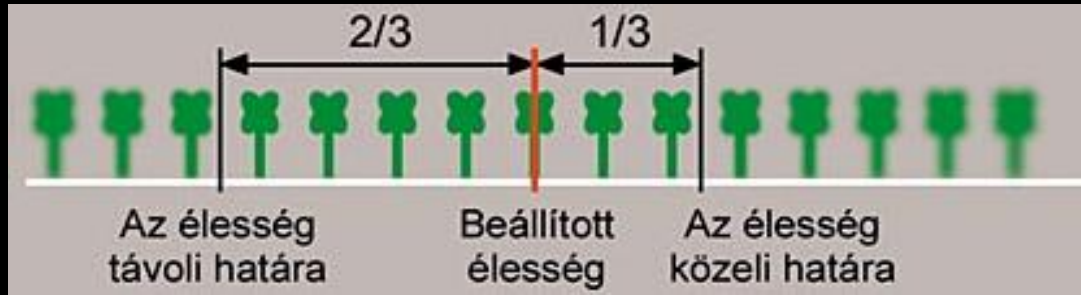
Working length/distance



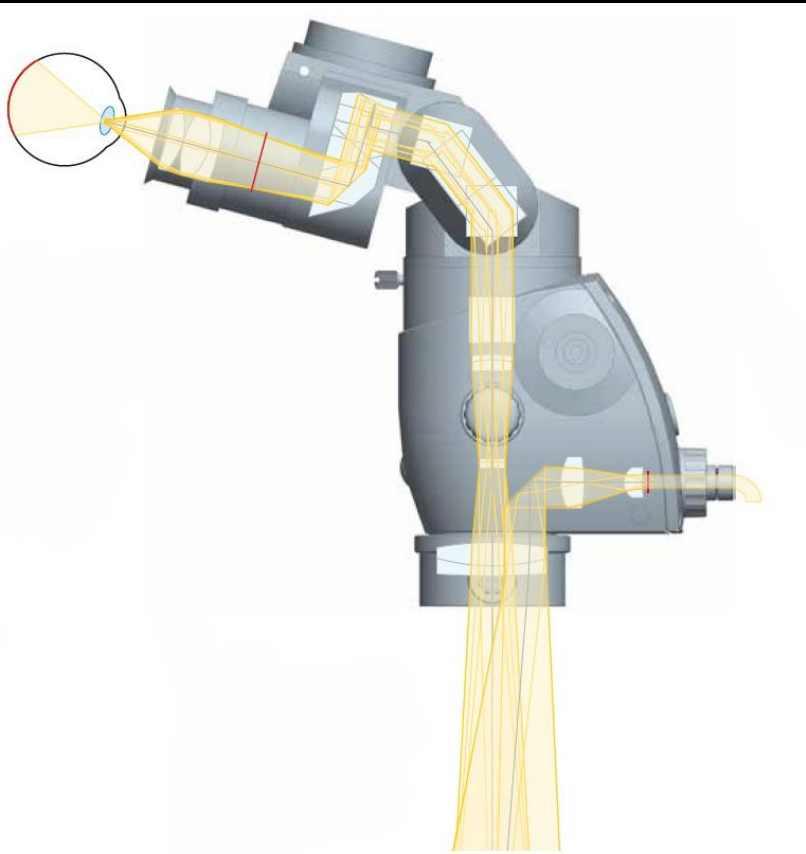


Diaphragm

Depth of Field



Lighting



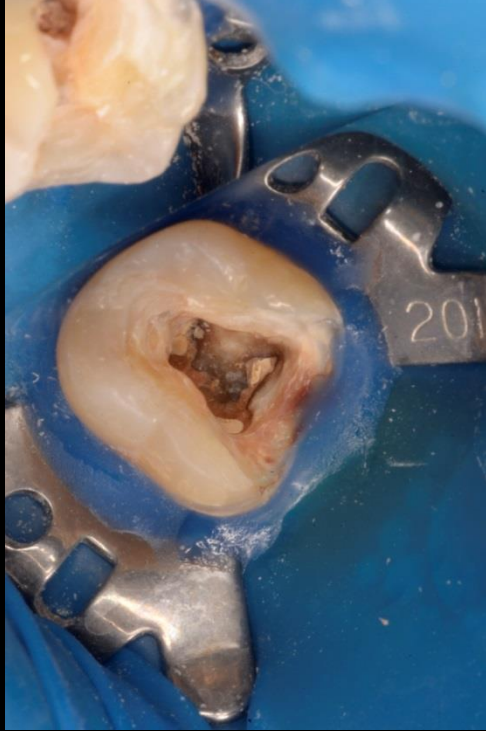
Halogén



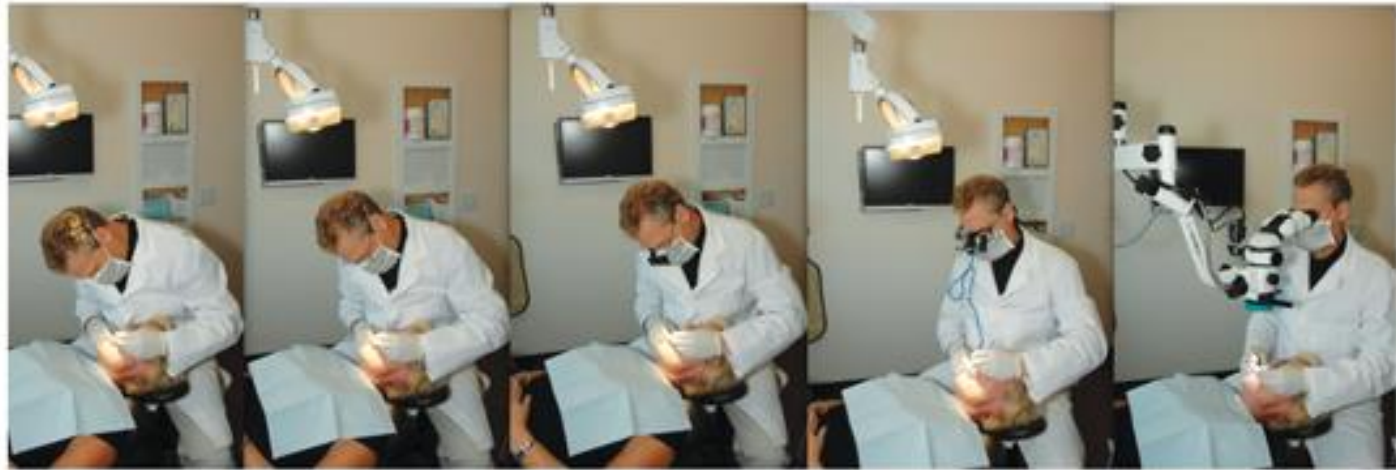
LED



Xenon



Magnification Continuum



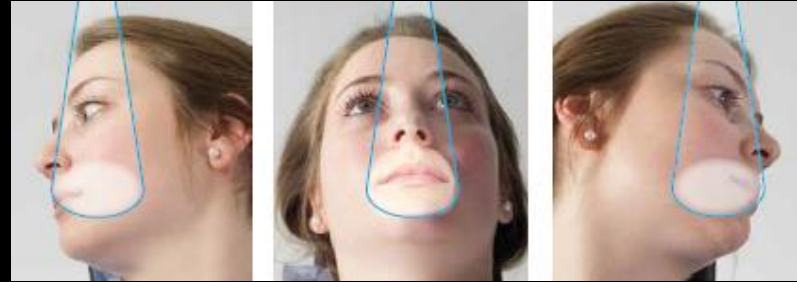
Naked Eye

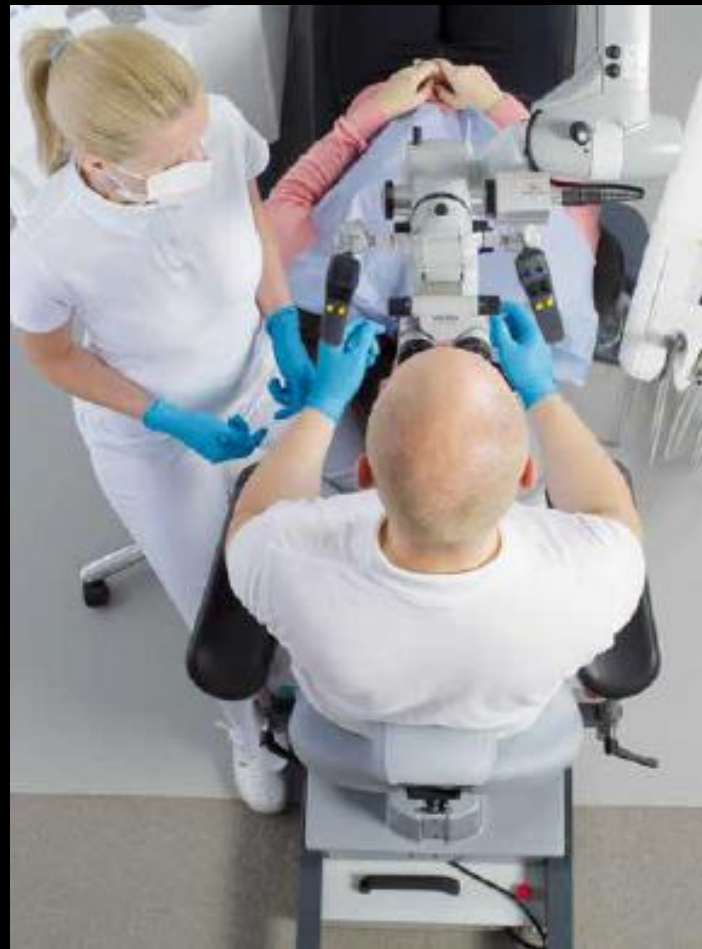
**Reading
Glasses**

**2.5x
Loupes**

**4.8x Loupes
With Headlight**

**Operating
Microscope**





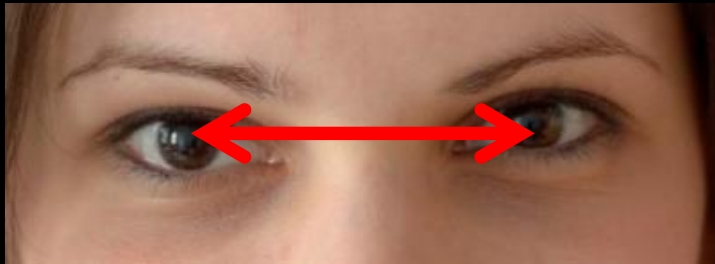
Set Up

- Dentist position (szék/elhelyezkedés)
- Patient position
- Initial set up
 - Lowest magnification
 - Working length
 - Microscope body moving
- Binocular
 - Interpupillary distance
 - Eyecups
 - Dioptré setting
- A munkánkhoz megfelelő nagyítás választása

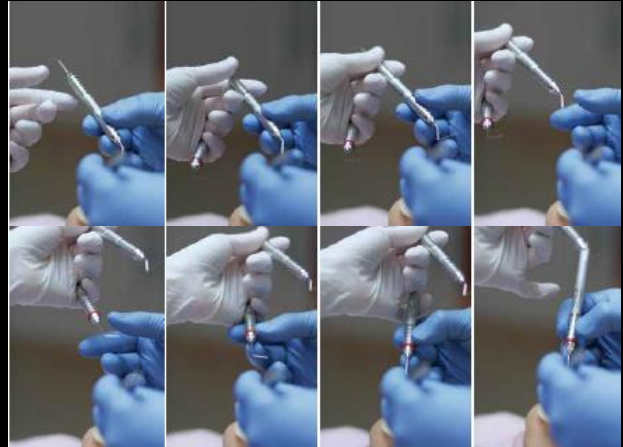
Kezdeti beállítások



Az okulár beállítása



Assistant



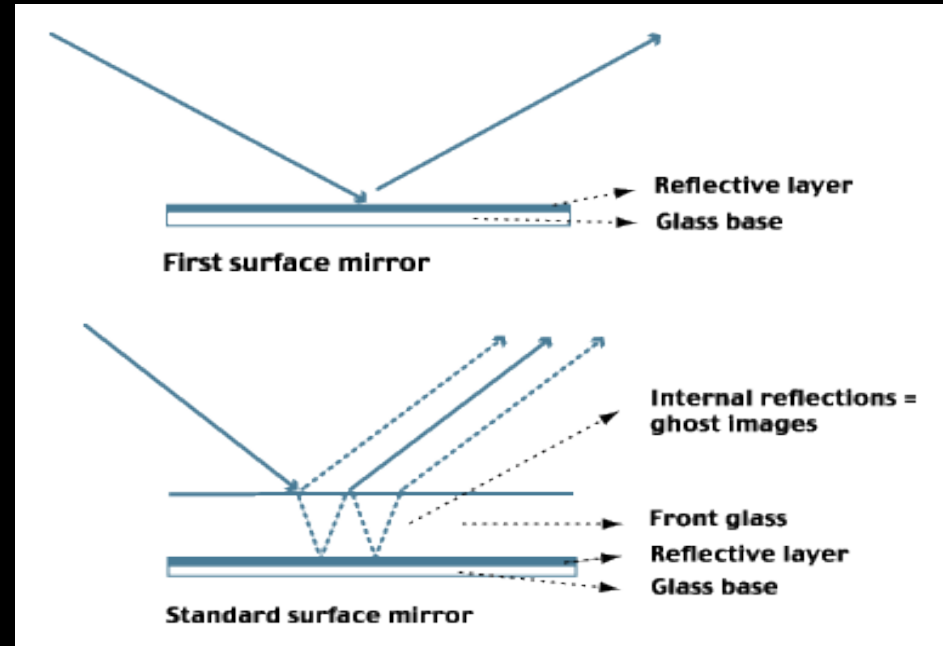


Accessories

- Mirror – front coated
- Micromirror
- Micro-opener/MK File
- US tips
- Long shank burs

Mirror

- Standard
- Rhodium (75%)
- HR Mirror (99,9%)





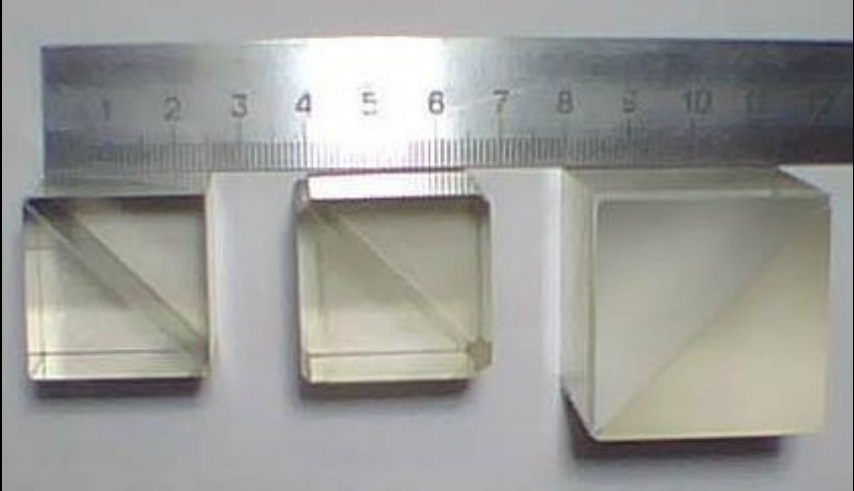
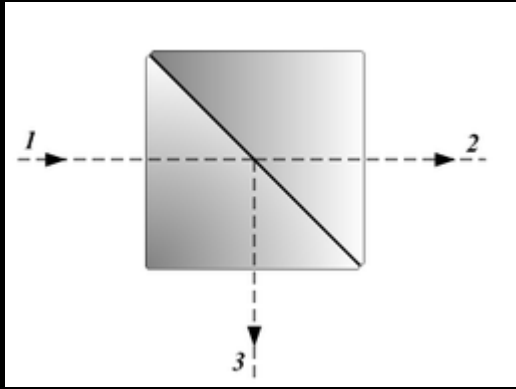
Micro Opener/MK File





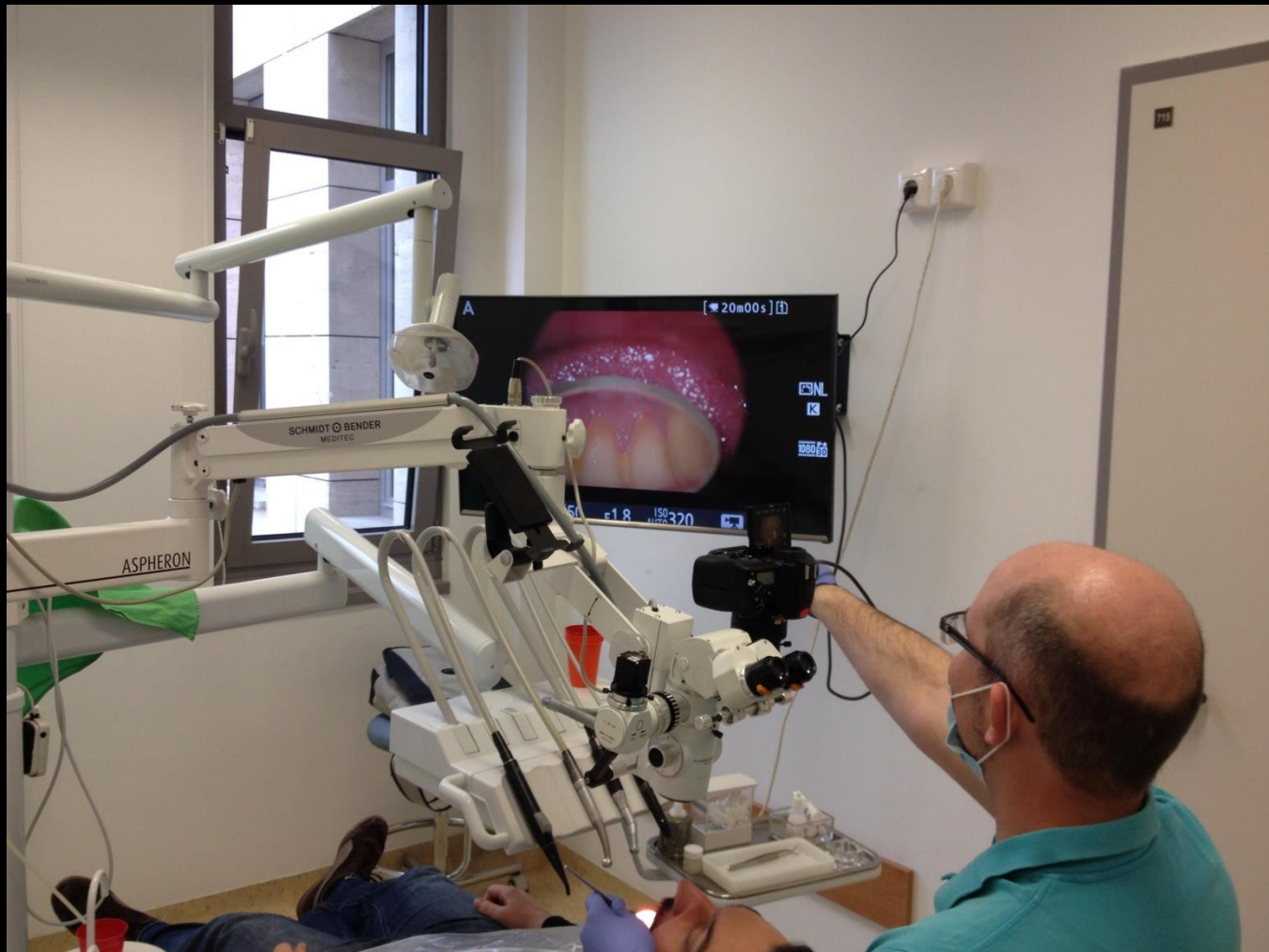
Documentation

- Photo/Video
- Beam splitter



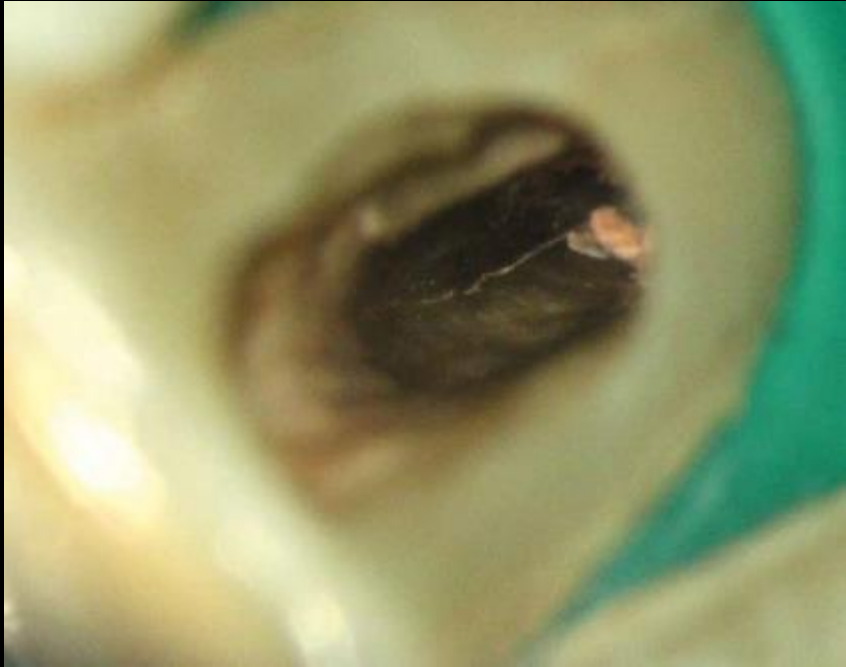






Endodontic procedures

- Diagnostic
- Access cavity preparation
- Orthograd procedures
- Root canal fillings
- Perforation closure
- Endodontic microsurgery



Thank you for your attention!

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