

## List of materials

All workshops take place at regular dental treatment units  
Participants must provide workwear/gown

Please check the material requirements for your specific workshop and bring your own materials/instruments/equipment that are not provided. In general, instead of the specified instruments, similar tools available in the own practice or clinic can also be used.

To be on the safe side, you can also bring your own contra-angle handpieces and basic equipment, because sometimes it is best to work with the own set of instruments.

Even with numerous sponsors, it is impossible to provide all required instruments.

### **Instruments presumable provided by ACTA:**

Scissors  
Cleanstand  
Locking tweezers  
Normal tweezers  
Plugger size # 4/5  
Plugger size # 2/3  
Heidemann "normal"  
Ash 49  
Straight endo probe  
Sickel probe  
Mouth mirror  
Spatula

Devices:

Endodontic motors  
green dental contra-angle handpiece  
red dental contra-angle handpiece  
air-driven handpiece  
Polymerization light  
Acteon ultrasonic handpiece  
**- please note, no tips will be provided. Participants must use their own tips according to the requirements of the specific workshops (e.g.: Endo chuck file holder with satelec connection)**

Gloves  
Masks



### **1.2/2.2/3.2 Andreas Braun, M.Sc. Catia Patricio Manilha, M.Sc./Amsterdam (NLD) → Retreatment of root canal treated teeth**

The workshop leaders provides all instruments and the teeth to be retreated.

Nonetheless, please collect extracted teeth and perform a root canal treatment according to your own procedure in daily practice. The teeth should have a post endodontic restoration/filling to have a more realistic scenario.

### **1.3 Dr. Carsten und Dr. David Appel → Perforation management – Options, limits, alternatives**

#### **MATERIALS:**

- Master-microscope with video for demonstration (provided)
- Microscope workplace for each participant (provided)
- If possible: IO X-ray to check MTA closures (X-ray is available)
- Ultrasound device (Acteon thread) at the workplace for each participant with ZEG tip → tip must be provided by participant
- Tray / place mat
- Gloves
- Paper towels/cloths
- Cotton wool pellets and foam pellets
- Paper cup filled with water
- Disposable syringes for rinsing
- Scissors
- Large mixing blocks, mixing spatula, tweezers
- ET20 (1x for speaker is enough)
- Plugger (brand still unclear) (provided by ACTA)
- One endo motor per participant or 2 (from ZARC)
- Zarc Blueshaper Z1-Z7
- Measuring block for participants
- Paperpoints ZARC Z1 -Z7 (provided by ZARC)
- ProTaper Ultimate FX and FXL
- MTA pro Root
- Ultradent Navi Tips (provided by lecturer)
- MAP System 1 per participant (provided by American Dental Systems; ADS)
- Total Fill fast set Putty (provided by ADS)

ZARC instruments are sponsored by ZARC

#### **Preparation by the participant:**

3 molars, trephined and prepared to size 40.05 or larger (e.g. ProTaper F5 or ZARC Blueshaper Z7). Each molar should have a perforation in the pulpal floor (drill through with a diamond)  
3 root tips should be resected to create an open apex. Preferably straight roots. (An anterior tooth is also possible here)  
The teeth should be embedded in silicone (see photo)



#### 1.4 PD Dr. Ralf Krug - "Effektive repositioning and splinting of traumatized teeth"

- Magnifying glasses with light
- contra-angle handpieces red & blue or green
- hand instruments/basic instruments
- composite instruments
- own composite

#### 1.5 Prof Dr. Dammaschke/ Miguel S. Marques - vital pulp therapy

- Gown, face mask, gloves
- contra-angle handpieces red & blue or green
- Hand instruments/ basic instruments (mirror, probe, tweezers)
- Small, fine round forceps
- Plugger medium and small
- Heidemann "normal"
- Heidemann "small"
- Rounded and flat plugger

Teeth are in production at Trainy-Dent, participant must cover costs

#### 1.6 Aukje Bouwman/Siers Machteld/Joerd van de Meer (Nijmegen) – Techniques and strategies for succesful negociation of calcified canals.

Root canal obliteration is quite common in cases of chronic irritation of the pulp. Often, the tooth remains vital and further treatment is not necessary. However, sometimes the pulp becomes necrotic and apical periodontitis develops. When root canal treatment is necessary, it can be difficult to localize the root canal entrance and negotiate the root canal. During this workshop, we will emphasize different ways to recognize the position of the original root canal. Using prepared CBCT images of an upper jaw with an incisor containing an obliterated root canal, the participants will be trained to design a printable guide with free software on their **own laptop**.

→ **The own laptop is needed!!!**

#### 2.3/ 3.3 Dr. Tom Schloss (M. Sc) - Endodontic microsurgery

Workwear, basic equipment

All other instruments provided by WS-leader and ADS

- Ultrasonic instruments needed (Endo-Chuck, .

## **2.4/ 3.4 Dr. Jan Behring - treatment of severely compromised teeth**

- Extracted teeth 3-4 teeth (preferably 2 molars and 1 premolar)
- Deep approximal defects (occlusal-distal or mesial-occlusal- distal) prepared
- Plastered/embedded side by side as a quadrant; alternatively, Frasaco model with the above-mentioned defects (see in added figures)

Rotating instruments: flame red; lance red pointed (Komet Dental 8889M)

- Mandrel
- Soflex polishing disks small
- Hand instruments/ basic instruments (mirror, probe, tweezers)
- Spherical composit plugger/instrument medium and small
- Heidemann "normal"
- Heidemann "small" (Deppeler)
- Scaler
- Scalpel blade holder
- Scalpel blade 12D
- Polishing strips
- Wooden wedges
- Red and green contra-angle handpiece
- Magnifying glasses

Note: instead of the specified instruments, similar tools available in the practice or clinic can also be used.



Figure: Occlusal view of the prepared teeth (Image: Behring/Cujé)

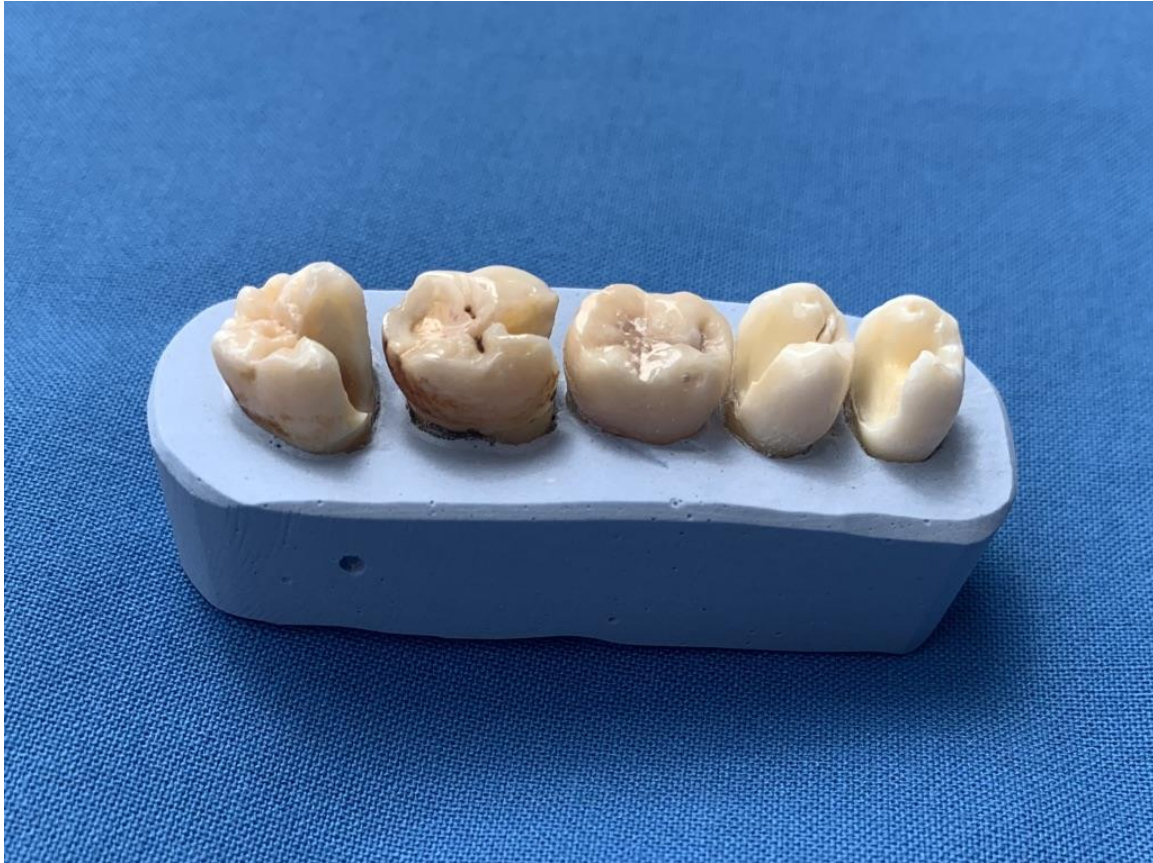


Figure: Oblique lateral view of the prepared, deeply destroyed teeth (Image: Behring/Cujé)

## 2.5/ 3.5 Hugo Souza Diaz

Workshop: Removal of fractured endodontic instruments

Materials to be provided by the participant:

- contra-angle handpieces red & blue or green
- Gown, face mask, gloves
- Dental probe, tweezers
- Small, fine round forceps
- Interim stand to place endodontic instruments safely
- MicroOpener 10.04 and 15. 04
- 1 set of Mounce drills or Endo Tracers (Komet) (assorted)
- 2x irrigation syringes 10ml with Luer-Lock connection and blunt irrigation cannula - several blunt cannulas as long as possible (from G27 upwards, useful up to G20, for sleeve technique)
- purely chemically curing composite (e.g. Core Paste, white)
- paper tips for drying ISO 25 and 40 in 4% taper
- 3x Gates Glidden drills sizes 1-4 each in short and medium length
- Package of K-files ISO 008, 010, 015 length 25 mm
- blue and possibly red contra-angle handpiece, preferably without light
- EndoChuck (file holder) with ~ 120° (not 90°) angle (attachment of VDW/Satelec/Aceton/NSK)
- US devices
- Ultrasonic attachments for EndoChuck (for U-Files, NSK, ISO 15-25-35)
- Extracted teeth: 1x upper molar; 1x lower molar; 1x premolar; 1x incisor → no wisdom teeth or teeth with incomplete root growth

Teeth with broken instruments:

- please, prepare the teeth according to the instructions below or
- order teeth from the 3D printer (the material, not the colour, is amazingly realistic): [www.trainy-dent.com/shop](http://www.trainy-dent.com/shop) - costs currently 20.50€ plus shipping

The lecturer prefers the prefabricated teeth with the broken instruments to give all participants a chance to be successful. The procedure is more reliable in the “trainy-dent-teeth”.

### **Preparing the teeth with broken instruments:**

It should be possible to place the teeth (individually or together) safely on the workstation in silicone blocks. Ideally, they can be reversibly removed from the silicone block. Moist storage (NaCl (not NaOCl) or CHX)

Primary endodontic access cavity ready prepared with root canal entrances exposed. Rather not a correct secondary access cavity.

Then pre-instrument the root canals to approx. ISO 15-20

Pre-prepare used root canal instruments (steel and NiTi) in sizes 15-25 with a predetermined breaking point of 2, 3 or 8 mm by circular grinding with a diamond cutting disc and then actively screw them into the prepared root canals of the extracted teeth by hand until the instruments break off. The fragments should not be graspable at the root canal entrance! It is advisable to prepare fragments of different lengths and to fracture them at different heights. Take an orthoradial and possibly an eccentric X-ray.

### **2.6 Prof. Dr. S. Bürklein/ Dr. Ralf Schlichting → „Laser in Endodontics“ – efficacy, effectiveness & efficiency. What’s about the hype?**

Laser and other irrigation/ activation devices and the simulated transparent teeth with complex root canal anatomy will be provided.

Sonic agitation/activation (EndoActivator, EDDY) – provided by DentsplySirona/lecturer

### **3.6 Prof. Dr Asgeir Sigurdsson/New York (USA) → Minimally invasive endodontics (MIE)/access cavity preparation**

- contra-angle handpieces red & blue or green
- Gown, face mask, gloves
- Dental probe, tweezers
- Small, fine round forceps
- diamond access burs
- Interim stand to place endodontic instruments safely
- MicroOpener 10.04 and 15. 04
- 1 set of Mounce drills or Endo Tracers (assorted)
- EndoChuck (file holder) (attachment of VDW/Satelec/Aceton/NSK)
- Ultrasonic attachments for EndoChuck (for U-Files, NSK, ISO 15-25-35)

**ProTaper Ultimate** assortment (DentsplySirona)

Extracted teeth (mandibular and maxillary molar, premolar, incisor) → participant