

# 20TH ESE BIENNIAL CONGRESS

ESEBIENNIALCONGRESS.COM

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E. S. S. S.

## Explore Your Endo Guide at - ese-

### Lectures

« Automatic and all-in-one concepts for safe and efficient root canal preparation today and tomorrow »

Thursday, September 8th 11.00-11.45 | Prof. Pedullà





« Actual perspective on retreatability of bioceramic root canal sealing material »

Friday, September 9th 14.30-15.15 | Prof. Ortolani

**Free Workshops** 

Thursday, Sept 8th 14.30-16.00 / Prof. Pedullà **HyFlex EDM** 

Friday, Sept 9th 09.00-10.30 / Prof. Pedullà **HyFlex EDM** 

Thursday, Sept 8th 16.30-18.00 / Prof. Ortolani **MicroMega One RECI** 

Friday, Sept 9th 11.00-12.30 / Prof. Ortolani **MicroMega One RECI** 

(1), 3 HyFlex EDM: How to carry out safe and non-subjective endodontic shaping procedures
 (2), (4) MM One RECI: Optimize your clinical procedures with the new reciprocating system

Come try our full-motion racing simulator and much more on our **Booth #06 - Hall C** 



Scan here to get all the details of the COLTENE events at the ESE 2022.

## **COLTENE**





| WELC  | OME LETTER  | 05       |
|-------|---|----------|
| соми  | NITTEES   | 06       |
| LOCAL | _ INFORMATION   | 07       |
| CONGI | RESS GENERAL INFORMATION  | 10       |
| SOCIA | L PROGRAMME<br>MEETINGS & FUNCTIONS (invitation only)   | 13<br>16 |
| CONGI | RESS VENUE FLOORPLAN  | 17       |
| TIMET | ABLE  | 23       |
|       | PRE-CONGRESS COURSES TIMETABLE<br>CONGRESS TIMETABLE  | 23<br>24 |
| PRE-C | ONGRESS COURSES   | 30       |
|       | Wednesday, September 7 <sup>th</sup>  | 30       |
|       | Pre-Congress Course 1 – An interactive day on education in endodontics  | 30       |
|       | <b>Pre-Congress Course 2</b> – CBCT for the diagnosis and management of complex endodontic problems   | 33       |
|       | <b>Pre-Congress Course 3</b> – Systematic reviews and meta-analyses:<br>a practical workshop  | 34       |
|       | <b>Pre-Congress Course 4</b> – Morphometric analysis of the root canal system using micro-CT: a practical approach on how to perform measurements | 36       |
|       | <b>Pre-Congress Course 5</b> – Case-based interactive course: Endodontic management in the traumatized permanent dentition                        | 37       |
|       | Pre-Congress Course 6 – Current advances in characterization and clinical management of complex canal morphology                                  | 38       |
|       | <b>Pre-Congress Course 7</b> – The tooth "implant": Applications and outcomes of intentional replantation and autogenous transplantation          | 40       |
|       | <b>Pre-Congress Course FKG 1</b> – Enhanced expandable NiTi technology for anatomical cleaning and shaping on treatment and retreatment cases     | 41       |
|       |   |          |



| <b>Pre-Congress Course FKG 2</b> – Enhanced expandable NiTi technology for anatomical cleaning and shaping on treatment and retreatment cases | 41  |
|---|-----|
| Pre-Congress Course Eighteeth – Broken File Dilemma   | 42  |
| <b>Pre-Congress Course Mani</b> – Management of curved root canals<br>– Pave your way to go!  | 43  |
| PROGRAMME   | 44  |
| Thursday, September 8 <sup>th</sup>   | 44  |
| Həll 1  | 44  |
| Hall 2  | 49  |
| Hall 3  | 55  |
| Həll 4  | 61  |
| Həll 5  | 69  |
| Hall 6  | 72  |
| Friday, September 9 <sup>th</sup>   | 74  |
| Həll 1  | 74  |
| Həll 2  | 80  |
| Həll 3  | 85  |
| Həll 4  | 90  |
| Həll 5  | 96  |
| Hall 6  | 98  |
| Saturday, September 10 <sup>th</sup>  | 100 |
| Həll 1  | 100 |
| Həll 2  | 105 |
| Hall 3  | 109 |
| Hall 4  | 114 |
| Hall 5  | 116 |
| Hall 6  | 118 |
| Həll 7  | 120 |
| ACKNOWLEDGEMENTS  | 121 |
| EXHIBITORS  | 127 |
| EXHIBITION FLOORPLAN  | 128 |





## WELCOME LETTER

A warm welcome to Budapest and our long-awaited Biennial Congress – Knowledge into Skill! We trust that you will relish the opportunity to meet again in person, to network freely with friends and colleagues, draw richly on our exciting scientific programme and enjoy the delights of this magnificent, historic city!

By way of orientation, the congress features multiple strands of activity, with pre-congress courses and workshops running on Wednesday 7th. The main body of the Congress extends from Thursday 8th to Saturday 10th, with a world-class programme of lectures by internationally renowned speakers in Halls 1 and 2. For those seeking deeper coverage and discussion, Hall 3 offers a series of topical symposia, featuring leading authorities in a range of subject areas. Hall 4 provides a forum for our Corporate Partners and Sponsors to share the latest in diagnostics and therapy, while Hall 5 hosts our prize competitions and a full programme of oral presentations on freely chosen topics. In parallel with this, we present a large and diverse array of research posters, clinical posters, clinical videos and general endodontic posters... a veritable feast of learning!

We trust that the newly refurbished HungExpo Conference Centre will provide a comfortable and spacious environment for our meeting, with its inviting roof-top terrace and expansive exhibition space. The ESE Congress would not be possible without the generous support of our Corporate Partners, Sponsors and Exhibitors, and we offer them our heart-felt thanks. The scientific programme contains dedicated time for delegates to mingle and interact with the most extensive trade exhibition in ESE history, so please make it your business to visit the exhibition area and support those who support us. New for Budapest 2022 is an ESE stand where you can meet members of the Executive Board and administrative team and find out more about the Society.

Our social programme features an Opening Ceremony and Welcome Reception on Wednesday 7th, an ESE Reception aboard the Danube cruiser 'Europa' on Thursday 8th and a splendid Gala Dinner at the Museum of Fine Arts on Friday 9th.

We are confident that ESE Budapest 2022 will be memorable and enjoyable as we re-connect, turn knowledge into skill and immerse ourselves in the culture and architecture of one of Europe's finest cities.

With every personal good wish for a happy and beneficial Congress,



John Whitworth ESE President, on behalf of the ESE and the Hungarian Society of Endodontology





### **ESE Executive Board**

President: John Whitworth President Elect: Hal Duncan Treasurer: Vittorio Franco Chair Education and Scholarship Committee: Fadi Jarad Chair Research Committee: Kerstin Galler Chair Clinical Practice Committee: Gianluca Gambarini Chair Membership Committee: Dan Rechenberg Chair, Benefits of Endodontics Committee: Lise-Lotte Kirkevang COO: Diddel Francissen Administrator: Monika Lang

### Local Organising Committee

**Congress Hosts:** Hungarian Society of Endodontology **Committee Members:** John Whitworth (ESE President) Hal Duncan (ESE President-Elect) Gianluca Gambarini (ESE Clinical Practice Chair) Kerstin Galler (ESE Research Chair) Vittorio Franco (ESE Treasurer) Mónica Freire (AIM Group International) Peter Komora (Hungarian Society of Endodontology)

### **Professional Congress Organiser:**



AIM Group International Lisbon Office Avenida Conde de Valbom, 6 – 5th Floor, 1050-068 Lisbon, Portugal Phone: +351 21 324 50 40 E-mail: esebudapest2022@aimgroup.eu



## LOCAL INFORMATION

### **About Budapest**

Budapest is made up of two separate areas, Buda and Pest, with the Danube flowing between them, along a stretch of 28 kilometres. **Buda** is built on a hill, on the Western bank of the river and forms the historical part of the city. **Pest** stands on a plain and is more business-oriented, with shops and boulevards. You can walk between the two very different areas using the many magnificent **bridges**. The city consists of **23 districts**.

### Language

Official Languages: The official language of Hungarian is spoken by 98% of the population. Minority languages have become more prominent in recent years, and they include German, Croatian, Romani, Slovak, Romanian, Serbian and Slovene. English is widely spoken in the specific areas that matter most to tourists – the cosmopolitan areas of Budapest. German is also spoken by around 10% of the population.

### Local Time

Budapest is in the Central European Time Zone (CET).

### Currency

The Hungarian forint is the official currency of Hungary.

There are numerous banks and ATM's in the city center, but the further away you are from the shopping areas, the more difficult it is to find a cash machine.

### Tipping

In Hungary, tipping is expected for different services. This is especially true in the tourist--frequented parts of Budapest. But you don't need to tip all the time.

### Smoking

Smoking is not permitted inside trains, trams, buses and other forms of public transport. People are allowed to smoke outside. Smoking is not permitted inside the conference building.

#### **Emergency contacts:**

General emergency service phone number: 112 Police: 107 Ambulance: 104 Fire Service: 105



### **Shopping and Business Hours**

Most stores in Hungary are open from 10 am to 6 pm Monday to Friday, and from 10 am to 1 or 2 pm on Saturdays. Most stores are closed on Sundays, except for large malls and popular tourist destinations.

Banks are open Monday to Friday, but on Fridays they close earlier than usual. Banks at malls have the longest opening hours.

### VAT – Value Added Tax

Value Added Tax and similar taxes are charged on most goods and services in Hungary. VAT in Hungary is currently 27%. VAT is included in all Congress fees. As a participant in the ESE Budapest 2022 Congress you may have the possibility – under certain conditions – to recover the VAT paid on certain types of expenses incurred. This may apply to both non-European business travellers visiting Europe and to European business travellers to other EU countries. For further information, please contact Customs and Excise on departure at the airport.





### Electricity

220 Volts/50Hz AC is used in Hungary. Electric appliances have standard European plug with two round shape metal poles.

### Telephone

The telephone prefix for calling Hungary from other countries is: +36.

### **Climate in Budapest**

The average temperature in September is around 17°C (63°F), with highs of 22°C (72°C) and lows of 12°C (54°F).

### **Visa Information**

Delegates travelling to Budapest from outside the EU must ensure that they have the proper documentation before departure. Visa letters are available through the Congress Secretariat.





### Come visit us at Booth 7

vdw-dental.com



## **CONGRESS GENERAL INFORMATION**

### **CONGRESS VENUE**

The 20<sup>th</sup> Biennial Congress of the European Society of Endodontology is taking place at the HUNGEXPO Budapest Congress and Exhibition Center.

### Address

Budapest, Albertirsai út 10, 1101 Hungary

**Congress Secretariat Opening Hours** 

### Language

The official language of the Congress is English. No simultaneous translation will be provided.

| Wednesday | 07 September | 08:00 - 20:00 |  |  |  |
|-----------|--------------|---------------|--|--|--|
| Thursday  | 08 September | 08:00 - 18:00 |  |  |  |
| Friday    | 09 September | 08:00 - 18:00 |  |  |  |
| Saturday  | 10 September | 08:00 - 16:00 |  |  |  |

### **Speakers Preview Room**

#### Room G3 - Mezzanine floor

All speakers are requested to upload their presentations at the speakers Ready Room located on the Mezzanine floor in room G3 on the eve of their talk. A technician will be available at all times for support.

### Cloakroom

#### Room F6 - Ground Floor

A cloakroom is available next to the Congress Secretariat area (Room F6). Delegates must not leave their personal belongings at the venue after the closing time.

| Wednesday | 07 September | 08:00 - 20:00 |
|-----------|--------------|---------------|
| Thursday  | 08 September | 08:00 - 18:00 |
| Fridəy    | 09 September | 08:00 - 18:00 |
| Səturdəy  | 10 September | 08:00 - 16:00 |

### **Cloakroom Opening Hours**



### **Exhibition Opening Hours**

| Wednesday | 07 September | 19:00 – 21:00 |
|-----------|--------------|---------------|
| Thursday  | 08 September | 09:00 - 18:00 |
| Fridəy    | 09 September | 09:00 - 18:00 |
| Saturday  | 10 September | 09:00 - 15:00 |

### Congress Name Badge

Participants must wear their badges at all times.

### **ESE 2022 APP**

Download the **ESE BUDAPEST** app on your smartphone or portable devices from the App store or Google play to access the congress programme and other congress information.



### WI-FI

Dedicated Wi-Fi is available for all congress participants throughout the congress venue: Network: **ESEBUDAPEST** Password: **ESEBUDAPEST** 

### No smoking

Smoking is strictly forbidden in the congress venue.

### **Mobile Phones**

Delegates must keep their phone in the off or silent mode when attending lectures.

### Photography and Video Recording

Delegates must not take photographs or make video recordings of lectures. An official photographer will record both congress activities at HungExpo and social functions on behalf of the ESE. These pictures may be used by the ESE to promote future activities. If you do not authorize the capture of your images, please advise the Secretariat onsite and inform the photographer at the time.



### Refreshments

Complimentary coffees/refreshments will be available for participants in the breaks between the sessions (please check the congress timetable for the coffee break times).

### Meals

Lunch will be available for all delegates in the Trade Exhibition area with seating and tables provided throughout the venue.

### Insurance

The congress organizers cannot accept liability for personal injuries sustained or for loss or damage to property belonging to congress participants, either during or as a result of the congress. Please ensure you have a valid personal insurance.

DR. BOGDAN MOLDOVEANU

## NOT JUST WHITE LINES!

DRODEK/^®

Many rotary systems appear every year. So, how do the various systems differ? How does one decide which to use?

<mark>10/09</mark> 9:50-10:35

**1 BLISTER FREE!** 

DR. ANDREA BALOCCO



## SOCIAL PROGRAMME

### Wednesday, 7<sup>th</sup> September

### **Opening Ceremony and Welcome Reception**

The **Opening Ceremony** will take place at 18:30 on Wednesday, **7<sup>th</sup> September 2022** in Hall 1 of the HUNGEXPO. Please arrive at the HUNGEXPO early to allow sufficient time for registration and to collect your participant badge that is essential for your entry to the building. Music will be provided by the Vox Mirabilis Chamber Choir.

The **Welcome Reception** will take place after the Opening Ceremony in the Exhibition Hall of the HUNGEXPO from approximately 19:00 to 21:00. Entrance is subject to registration and display of the congress badge. The reception is free for participants. Accompanying persons can attend if they are registered and have paid the appropriate fee.

Food and beverages: complimentary drinks and finger food

### Thursday, 8<sup>th</sup> September **ESE Reception**

Venue: Europa Boat

**Date/time:** Thursday 8<sup>th</sup> September 2022 from 19:30 - 22:30 (Boat departs at 19:45 the latest)

Food and beverages: Complimentary drinks (for a specific period) and finger food

Entertainment: Traditional Hungarian folk dance & DJ

Cost: Onsite Fee €88,90 local vat included – subject to availability

Address: Akademia 2. Dock

Meeting Point: Parking of the Hungarian Academy of Sciences - 1051. Budapest, Széchenyi Square 9

### How to get to the Europa Boat:

If you are using public transportation please take one of the following options: Bus: 105,178 – stop at the square

9,15,115 – stop nearby in walking distance Metro: nearest stop Kossuth Lajos Tér (800m) – M2 Red line Tram: 2, 2B, 2M

**Please note:** participants will need to find their own way there and back as transport is not provided.





### Friday, 9<sup>th</sup> September **Congress Dinner**

**Venue:** Museum of Fine Arts **Date/time:** Friday 9th September 2022 from 19:30 – 22:30

**Food and beverages:** Complimentary drinks (for a specific period) and seated dinner **Entertainment:** Classical music

Congress Dinner is fully booked – for those that have purchased a ticket please make sure to pick up your dinner invitation at the Social Programme Desk at Hungexpo.

### Address:

1146 Budapest, Dózsa György út 41 How to get to the Museum of Fine Arts:

Bus: 105, 979 (night bus) Metro: Hősök tere (Heroes' Square) – M1 yellow line



### Children (under 18 years old)

Delegates must be aware that the social events at the ESE congress are likely to be very crowded and will involve the availability of alcoholic drinks. In addition, the Welcome Reception will be held in the Trade Exhibition area where a considerable amount of valuable equipment will be on display. Delegates with children should take account of these circumstances should they wish to bring children to the social events on Wednesday and Thursday.



As a result, the ESE has developed the following policy for children:

- Children between 12 and 18 years may attend the Welcome Reception on Thursday, ESE Reception on Thursday and Gala Dinner BUT are required to be registered as accompanying persons and pay the appropriate fee.
- Children under the age of 12 years may attend the Welcome Reception on Wednesday and the ESE Reception on Thursday on the understanding that the venues will be crowded.

**Please note:** tickets purchased for the ESE Reception and the Congress Dinner cannot be returned once purchased; however, you can pass them on to friends if you cannot attend. Also, if tickets were not purchased during online registration, they will only be available onsite from the onsite registration desk (subject to availability).





### **MEETINGS & FUNCTIONS** (invitation only)

**ESE General Assembly** Wednesday, 7<sup>th</sup> September, from 10:00 to 18:00 – Room F1, Ground Floor

**ESE Individual Members Lunch** Thursday, 8<sup>th</sup> September, from 12:30 to 13:30 – Foyer, First Floor

**ESE Registered Postgraduate Students Lunch** Friday, 9<sup>th</sup> September, from 12:30 to 13:30 – Foyer, First Floor

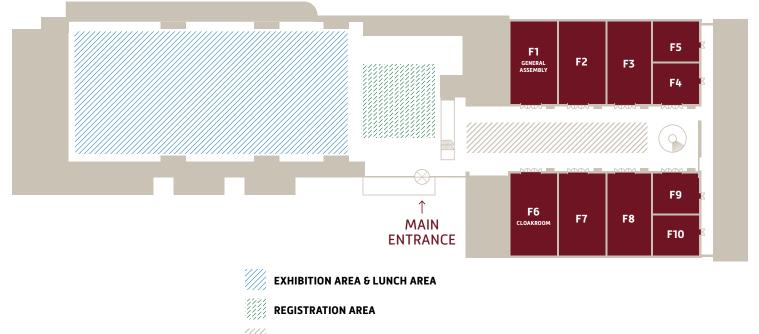




## **CONGRESS VENUE FLOORPLAN**

### WEDNESDAY

## OHALL C / Ground Floor



GENERAL ENDODONTICS POSTER AREA

### ROOM F1 / GENERAL ASSEMBLY

**ROOM F2 / PRE-CONGRESS COURSE 1** - An interactive day on education in Edodontics

**ROOM F3 / PRE-CONGRESS COURSE 3** - CBCT for the diagnosis and management

of complex endodontic problems

**ROOM F4 / PRE-CONGRESS COURSE 5** - Case-based interactive course: Endodontic management in the traumatized permanent dentition

**ROOM F5 /** PRE-CONGRESS COURSE 6 - Current advances in characterization and clinical management of complex canal morphology

#### ROOM F6 / CLOAKROOM

ROOM F7 / PRE-CONGRESS COURSE 3

- Systematic reviews and meta-analyses: a pratical workshop

**ROOM F8 / PRE-CONGRESS COURSE 4** - Morphometric analysis of the root canal system using micro- CT: a practical approach on how to perform measurements

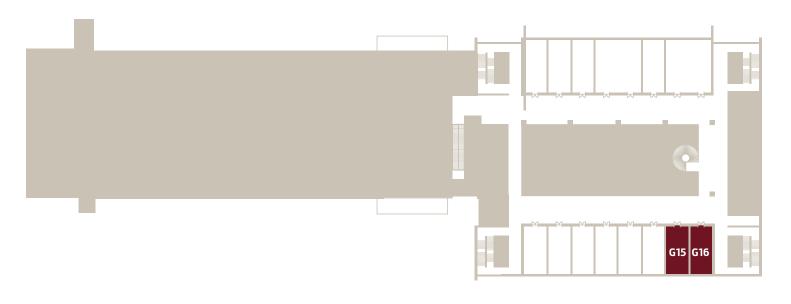
**ROOM F9 / PRE-CONGRESS COURSE 7** - The tooth "implant": Applications and outcomes of intentional replantation and autogeneous transplantation

**ROOM F10 / PRE-CONGRESS COURSE FKG** -Enhanced expandable NiTi technology for anatomical cleaning and shaping on treatment and retreatment cases



### WEDNESDAY

## OHALL C / Mezzanine Floor



**ROOM G15 / PRE-CONGRESS COURSE EIGHTEETH:** Broken File Dilemma

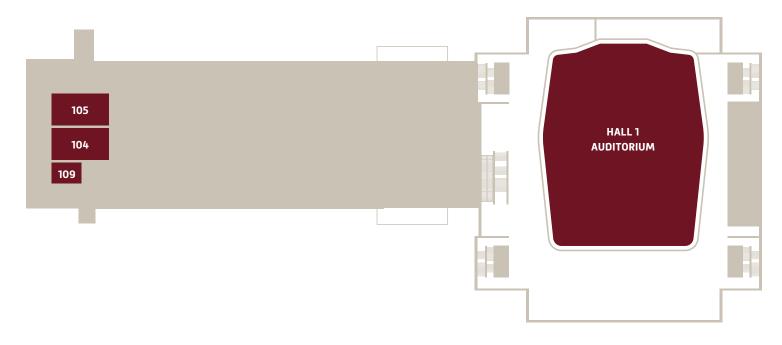
ROOM G16 / PRE-CONGRESS COURSE MANI: Management of curved root canals - Pave your way to go!

18 🎞



### WEDNESDAY



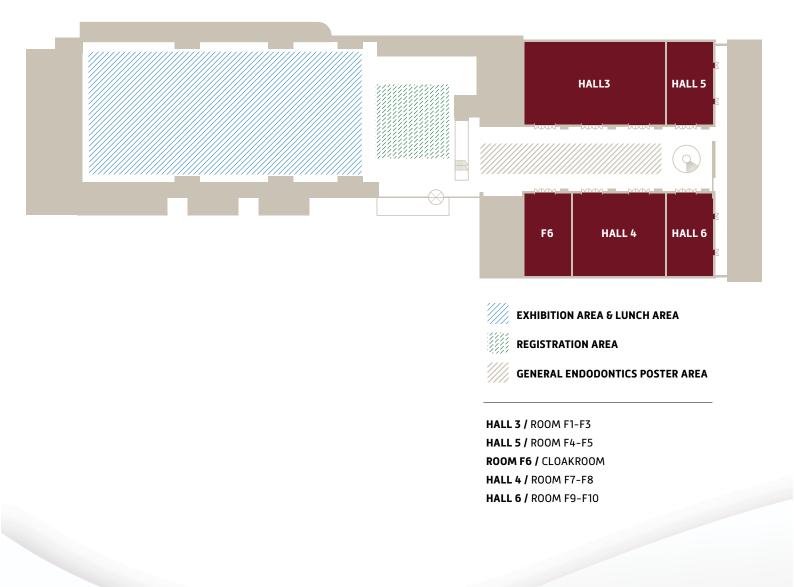


HALL 1 / OPENING CEREMONY ROOM 104 / GOLD SPONSOR ROOM (DENTSPLY) ROOM 105 / GOLD SPONSOR ROOM (VDW) ROOM 109 / QUIET ROOM



### THURSDAY | FRIDAY | SATURDAY |

## OHALL C / Ground Floor

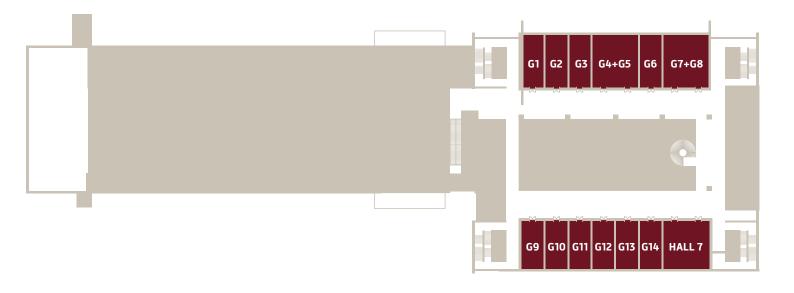






### THURSDAY | FRIDAY | SATURDAY |

## **HALL C** / Mezzanine Floor



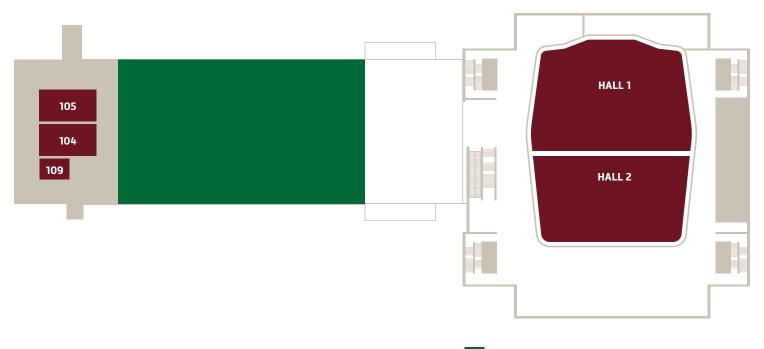
ROOM G1 / EXECUTIVE BOARD ROOM G2 / PLATINUM SPONSOR ROOM (WOODPECKER) ROOM G3 / SPEAKERS PREVIEW ROOM ROOM G4+G5 / SPEAKERS LOUNGE (INVITED SPEAKERS ONLY ON THE MAIN PROGRAMME) ROOM G6/ PLATINUM SPONSOR ROOM (COLTENE) ROOM G9 - G13 / ORIGINAL SCIENTIFIC POSTERS ROOMS ROOM G14 / CLINICAL POSTERS ROOM HALL 7 / ROOM G15-G16





### THURSDAY | FRIDAY | SATURDAY |

## OHALL C / First Floor



#### **ROOF TERRACE**

HALL 1 / AUDITORIUM HALL 2 / AUDITORIUM ROOM 104 / GOLD SPONSOR ROOM (DENTSPLY) ROOM 105 / GOLD SPONSOR ROOM (VDW) ROOM 109 / QUIET ROOM



### **TIMETABLE** PRE CONGRESS COURSES

### Wednesday, 7<sup>th</sup> September

| $\bigcirc$ | ROOM F2  | ROOM F3   | ROOM F7  | ROOM F8  | ROOM F5   |
|------------|--|---|--|--|---|
| 0          | 09:00 - 17:30  | 14:00 - 17:00   | 09:00 - 17:30  | 14:00 - 17:00  | 14:00 - 17:00   |
|            | ESE<br>Pre-congress<br>course 1                      | ESE<br>Pre-congress<br>course 2   | ESE<br>Pre-congress<br>course 3                                  | ESE<br>Pre-congress<br>course 4  | ESE<br>Pre-congress<br>course 5   |
|            | An interactive day<br>on Education in<br>Endodontics | CBCT for the diagnosis<br>and management of<br>complex endodontic<br>problems | Systematic reviews<br>and meta-analyses:<br>a practical workshop | Morphometric<br>analysis of the root<br>canal system using<br>micro-CT:<br>a practical approach<br>on how to perform<br>measurements | Case-based interactive<br>pre-congress<br>course: Endodontic<br>management in<br>the traumatized<br>permanent dentition |

| $\bigcirc$ | ROOM F4   | ROOM F9  | ROOM F10  | ROOM F10  | ROOM G15                                   | ROOM G16   |
|------------|---|--|---|---|--|--|
| 0          | 14:00 - 17:00   | 14:00 - 17:00  | 09:00 - 12:00   | 14:00 - 17:00   | 14:00 - 17:00                              | 09:00 - 12:00  |
|            | ESE<br>Pre-congress<br>course 6   | ESE<br>Pre-congress<br>course 7  | Pre-congress<br>course 1<br>FKG   | Pre-congress<br>course 2<br>FKG   | Pre-congress<br>course<br><b>Eighteeth</b> | Pre-congress<br>course<br>Mani                                   |
|            | Current advances<br>in characterization<br>and clinical<br>management of<br>complex canal<br>morphology | The Tooth<br>"Implant":<br>Applications<br>and outcomes<br>of Intentional<br>Replantation<br>and Autogenous<br>Transplantation | Enhanced<br>expandable<br>NiTi technology<br>for anatomical<br>cleaning and<br>shaping on<br>treatment and<br>retreatment cases | Enhanced<br>expandable<br>NiTi technology<br>for anatomical<br>cleaning and<br>shaping on<br>treatment and<br>retreatment cases | Broken File<br>Dilemma                     | Management<br>of curved root<br>canals - Pave<br>your way to go! |

| $\bigcirc$ | Həll 1           | Exhibition Hall   |
|------------|------------------|-------------------|
| 0          | 18:30 - 19:00    | 19:00 - 21:00     |
|            | Opening Ceremony | Welcome Reception |



### TIMETABLE CONGRESS

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### Thursday, 8<sup>th</sup> September

| 0                   | ◎ HALL 1  | ◎ HALL 2   | HALL 3<br>Symposia   | HALL 4<br>Sponsored<br>lectures  | ◎ HALL 5   | ◎ HALL 6                                      |
|---------------------|---|--|--|--|--|---|
| 09:00<br> <br>09:40 |   |  | 09:00 - 12:30 — Symposium:<br>Digital endodontics - the role<br>of CBCT<br>09:00 Problem solving: CBCT<br>in diagnosis and treatment<br>planning<br>Gianluca Gambarini   | 09:00 – 09:45<br>Cerkamed Lecture<br>How to remove a<br>broken file with<br>minimum dentin<br>loss<br>Zaher Altaqi   | ESE Wladimir<br>Adlivankine<br>Research Prize<br>Competition<br>Led by <b>Kerstin</b><br>Galler            | Oral<br>presentations                         |
| 09:45<br> <br>10:30 | <b>Leo Tjäderhane</b><br>Understanding<br>the dentine-<br>pulp complex          | Marco Versiani<br>The skill of<br>translating<br>knowledge of<br>canal anatomy<br>into daily<br>practice | 09:30 Problem solving: CBCT<br>in the orthograde treatment<br>of complex cases<br><b>Mohammad Hammo</b><br>10:00 CBCT and quality  | 09:50 - 10:35<br>Fotona Lecture 1<br>Innovative<br>Endodontics using<br>SWEEPS: science,<br>technology and<br>clinical practice<br>Giovanni Olivi  | Originəl Scientific<br>Research Poster<br>Prize - Oral<br>presentations<br>Led by <b>Kerstin</b><br>Galler | presentations<br>on freely<br>chosen subjects |
| 10:30 -             | 11:00   |  | — COFFEE BREA  | < —  |  |   |
| 11:00<br> <br>11:40 | <b>Ken Hargreaves</b><br>Understanding<br>COVID 19                              | Roula Abiad<br>The skill of<br>managing the<br>'hopeless'<br>traumatised<br>tooth                        | 11:00 Problem solving: the use<br>of CBCT based endodontic<br>guides<br><b>Gergely Benyocs</b><br>11:30 Problem solving:<br>CBCT in surgical endodontics<br><b>Adham Azim</b><br>12:00 Guidelines for a rationale<br>use of CBCT in everyday's<br>practice<br><b>Marc Semper</b> | 11:00 – 11:45<br><b>Coltene Lecture 1</b><br>Automatic and<br>all-in-one concepts<br>for safe and<br>efficient root canal<br>preparation today<br>and tomorrow<br><b>Eugenio Pedullà</b>                               | Original Scientific<br>Research Poster<br>Prize - Oral<br>presentations<br>Led by <b>Kerstin</b><br>Galler | Oral  |
| 11:45<br> <br>12:30 | <b>Ove Peters</b><br>Understanding<br>the challenges<br>of canal<br>preparation | <b>Giuseppe</b><br><b>Cantatore</b><br>The skill of<br>managing dental<br>trauma in the<br>young patient |  | 11:50 – 12:35<br><b>Eighteeth Lecture 1</b><br>Deep Cleaning and<br>3D Obturation in<br>the daily practice:<br>how to increase<br>the therapy quality<br>working with<br>ergonomic devices<br><b>Filippo Cardinali</b> | Education Prize<br>Competition<br>Led by <b>Fadi Jarad</b>   | presentations<br>on freely<br>chosen subjects |
| 12:30 -             | 14.30   |  | — LUNCH —  | _  |  |   |



| 0                   | Ø HALL 1   | ◎ HALL 2   | HALL 3<br>Symposia  | HALL 4<br>Sponsored<br>lectures  | ◎ HALL 5   | ◎ HALL 6                                      |
|---------------------|--|--|---|--|--|---|
| 14:30<br> <br>15:10 | <b>Bodil Lund</b><br>Understanding<br>infections<br>- current<br>and future<br>challenges in<br>dentistry  | <b>Elio Berutti</b><br>The skill of glide<br>pəth prepərətion                          | 14:30 – 18:00 — Symposium:<br>Endodontics and systemic<br>health<br>14:30 The mechanisms behind<br>chronic infection-induced  | 14:30 - 15:15<br>Woodpecker<br>Lecture 1<br>Surgical or<br>non-surgical<br>ENDODONTICS<br>When to choose<br>what<br>Talal Al-Nahlawi   | Clinical Poster<br>Prize – Oral<br>presentations<br>Led by <b>Gianluca<br/>Gambarini</b>       | Orəl  |
| 15:15<br> <br>16:00 | Sadia Niazi<br>Understanding<br>endodontic<br>infection-<br>mediated<br>systemic<br>interactions<br>and their global<br>cardiometabolic<br>risks | <b>Gustavo<br/>De-Deus</b><br>The skill of<br>reciprocating<br>canal<br>preparation    | cardiovascular disease<br><b>Pirkko Pussinen</b><br>15:15 Apical periodontitis and<br>systemic inflammation – the<br>level of evidence?<br><b>Leo Tjäderhane</b>  | 15:20 - 16:05<br>Dentsply Sirona<br>Lecture<br>Update in root<br>canal obturation: is<br>the single cone-<br>bioceramic sealer<br>the new gold<br>standard?<br>Frédéric Bukiet | Clinical Poster<br>Prize – Oral<br>presentations<br>Led by <b>Gianluca</b><br><b>Gambarini</b> | presentations<br>on freely chosen<br>subjects |
| 16:00 -             | 16:30  | •  | — COFFEE BREA   | К —  | 1  |   |
| 16:30<br> <br>17:10 | Antonis<br>Chaniotis<br>Understanding<br>how to<br>negotiate<br>challenging<br>canal systems   | <b>Thomas Clauder</b><br>The skill of<br>repairing<br>perforations                     | <ul> <li>16:30 Endodontic infections<br/>and cardiovascular diseases:<br/>what can we learn from<br/>epidemiology?</li> <li>Jussi Furuholm</li> <li>17:15 Apical periodontitis in<br/>patients with increased risk<br/>for severe infections</li> </ul> | 16:30 - 17:15<br>FKG Dentaire Sàrl<br>Lecture<br>3D Endodontics.<br>Treatment and<br>Retreatment<br>Strategies<br>Spyros Floratos  | Clinicəl Video<br>Prize - Orəl<br>presentətions<br>Led by <b>Giənlucə<br/>Gəmbərini</b>        | Oral  |
| 17:15<br> <br>18:00 | <b>Gianluca</b><br><b>Plotino</b><br>Understanding<br>minimally<br>invasive root<br>canal treatment  | <b>Julian G.</b><br><b>Leprince</b><br>The skill of<br>restoring root<br>filled molars | Jaana Helenius-Hietala  | 17:20 – 18:05<br>Zarc4Endo Lecture<br>Precise Minimal<br>Invasive<br>Endodontics and<br>disinfection finally<br>together: Slim<br>Shaper<br>José Aranguren                     | Clinicəl Video<br>Prize – Orəl<br>presentətions<br>Led by <b>Gianlucə<br/>Gəmbərini</b>        | presentations<br>on freely<br>chosen subjects |



### Friday, 9<sup>th</sup> September

| 0  | ◎ HALL 1  | ◎ HALL 2   | HALL 3<br>Symposia  | HALL 4<br>Sponsored<br>lectures   | ♥ HALL 5                                     | ◎ HALL 6                                     |
|--|---|--|---|---|--|--|
| 08:45<br> <br>09:00                        | Prize<br>Presentations*   |  |   |   |  |  |
| 09:00<br> <br>09:40                        | Ken<br>Hargreaves<br>Understanding<br>the physiology<br>of orofacial<br>pain  | <b>Gilberto Debelian</b><br>The skill of rotary root<br>canal preparation  | 09:00 - 12:30<br>— Symposium:<br>From deep caries to pulp<br>infection treatment:<br>myths and reality  | 09:00 – 09:45<br>DirectEndodontics<br>Lecture<br>Modern Endodontics<br>— Traditional versus<br>Minimally Invasive<br>Charles J Goodis   | Oral<br>presentations<br>on freely           | Oral<br>presentations<br>on freely           |
| 09:45<br> <br>10:30                        | Thuan Dao<br>Understanding<br>the differential<br>diagnosis<br>of pain in<br>orofacial<br>tissues   | Hugo Sousa Dias<br>The skill of managing<br>blocked canals   | 09:00 Management of<br>deep caries: state of the<br>art<br><b>Marisa Maltz</b>  | 09:50 - 10:35<br>Fotona Lecture 2<br>The Light Walking to ESE<br>- Efficiency, Safety and<br>Excellence of the Lasers<br>in Endodontics<br>Damir Šnjarić  | chosen<br>subjects                           | chosen<br>subjects                           |
| 10:30 -                                    | 11.00   |  | 1   |   |  |  |
|  | 11:00   |  | — COFFEE BREAK  | . —   |  |  |
| 11:00<br> <br>11:40                        | Kerstin Galler<br>Understanding<br>regenerative<br>endodontic<br>procedures   | <b>Yoshi Terauchi</b><br>The skill of removing<br>fractured endodontic<br>instruments                                | COFFEE BREAK<br>11:00 Microbiologic status<br>of dentin caries and<br>treatment directives<br>Domenico Ricucci<br>11:45 The outcome of<br>vital pulp and root canal<br>treatment - a different<br>perspective<br>Francesco Mannocci | 11:00 – 11:45<br><b>VDW Lecture</b><br>Reciprocating canal<br>preparation for the<br>management of<br>challenging canals:<br>clinical applications<br>based on scientific<br>evidence<br><b>Ghassan Yared</b>   | Oral<br>presentations<br>on freely<br>chosen | Oral<br>presentations<br>on freely<br>chosen |
| 11:00<br>                                  | <b>Kerstin Galler</b><br>Understanding<br>regenerative<br>endodontic  | The skill of removing fractured endodontic   | 11:00 Microbiologic status<br>of dentin caries and<br>treatment directives<br><b>Domenico Ricucci</b><br>11:45 The outcome of<br>vital pulp and root canal<br>treatment – a different<br>perspective                                | 11:00 – 11:45<br><b>VDW Lecture</b><br>Reciprocating canal<br>preparation for the<br>management of<br>challenging canals:<br>clinical applications<br>based on scientific<br>evidence   | presentations<br>on freely                   | presentations<br>on freely                   |
| 11:00<br> <br>11:40<br>11:45<br>           | Kerstin Galler<br>Understanding<br>regenerative<br>endodontic<br>procedures<br>Christos<br>Boutsioukis<br>Understanding<br>irrigant<br>activation | The skill of removing<br>fractured endodontic<br>instruments<br>Thomas Connert<br>The skill of guided                | 11:00 Microbiologic status<br>of dentin caries and<br>treatment directives<br><b>Domenico Ricucci</b><br>11:45 The outcome of<br>vital pulp and root canal<br>treatment – a different<br>perspective                                | 11:00 – 11:45VDW LectureReciprocating canal<br>preparation for the<br>management of<br>challenging canals:<br>clinical applications<br>based on scientific<br>evidenceGhassan Yared11:50 – 12:35Eighteeth Lecture 2<br>Warm gutta-percha tips<br>& tricks   | presentations<br>on freely<br>chosen         | presentations<br>on freely<br>chosen         |
| 11:00<br> <br>11:40<br>11:45<br> <br>12:30 | Kerstin Galler<br>Understanding<br>regenerative<br>endodontic<br>procedures<br>Christos<br>Boutsioukis<br>Understanding<br>irrigant<br>activation | The skill of removing<br>fractured endodontic<br>instruments<br>Thomas Connert<br>The skill of guided<br>endodontics | 11:00 Microbiologic status<br>of dentin caries and<br>treatment directives<br><b>Domenico Ricucci</b><br>11:45 The outcome of<br>vital pulp and root canal<br>treatment - a different<br>perspective<br><b>Francesco Mannocci</b>   | <ul> <li>11:00 – 11:45</li> <li>VDW Lecture</li> <li>Reciprocating canal preparation for the management of challenging canals: clinical applications based on scientific evidence</li> <li>Ghassan Yared</li> <li>11:50 – 12:35</li> <li>Eighteeth Lecture 2</li> <li>Warm gutta-percha tips &amp; tricks</li> <li>Fabio Gorni</li> </ul> | presentations<br>on freely<br>chosen         | presentations<br>on freely<br>chosen         |

Adlivankine Research, Education, Original Scientific Poster, Clinical Poster and Clinical Video.



| 0                   | Ø HALL 1   | ◎ HALL 2  | HALL 3<br>Symposia  | HALL 4<br>Sponsored<br>lectures   | ◎ HALL 5                                     | ◎ HALL 6                                     |
|---------------------|--|---|---|---|--|--|
| 14:30<br> <br>15:10 | <b>Eugenio<br/>Pedullà</b><br>Understanding<br>root canal<br>filling                     | <b>Stephane Simon</b><br>The skill of managing<br>Endo-Perio lesions  | 14:30 - 18:00<br>— Symposium:<br>Revitalization and<br>regenerative endodontic<br>procedures<br>14:30 Revitalization -<br>Challenges in Disinfection  | 14:30 – 15:15<br>Coltene Lecture 2<br>Actual perspective<br>on retreatability of<br>bioceramic root canal<br>sealing material<br>Sebastian Ortolani | Oral<br>presentations<br>on freely           | Oral<br>presentations<br>on freely           |
| 15:15<br> <br>16:00 | Josette<br>Camilleri<br>Understanding<br>bioceramic<br>sealers                           | Maciej Zarow<br>The skill<br>of placing<br>post-endodontic<br>direct restorations   | Challenges in Disinfection<br>Xenos Petridis<br>15:15 Revitalization –<br>Considerations for Clinical<br>Procedures<br>Nastaran Meschi  | 15:20 – 16:05<br>Woodpecker<br>Lecture 2<br>Canal Blockage ESE<br>Version<br>Antonis Chaniotis<br>Hugo Sousa Dias                                   | chosen<br>subjects                           | chosen<br>subjects                           |
| 16:00 -             | 16:30  |   | — COFFEE BREAK  | —   |  |  |
| 16:30<br> <br>17:10 | <b>Emma Wigsten</b><br>Understanding<br>the Indications<br>for root canal<br>retreatment | 16:30 - 18:00<br>— Symposium:<br>Endodontic outcomes<br>- increasing the<br>treatment longevity<br>16:30 Outcome in<br>Endodontics - Part 1 | <ul> <li>16:30 Outcome after<br/>Revitalization Procedures</li> <li>Nessrin Taha</li> <li>17:15 Biological Bases and<br/>Future Perspectives on<br/>Regenerative Endodontic<br/>Procedures</li> <li>Matthias Widbiller</li> </ul> | 16:30 – 17:15<br><b>Eighteeth Lecture 3</b><br>Management of complex<br>endodontic anatomy<br><b>Mohammad Hammo</b>                                 | Oral<br>presentations<br>on freely<br>chosen | Oral<br>presentations<br>on freely<br>chosen |
| 17:15<br> <br>18:00 | Həl Duncən<br>Understanding<br>vital pulp<br>treatments                                  | Endodontics – Part 1<br>Shanon Patel<br>17:15 Outcome in<br>Endodontics – Part 2<br>Bekir Karabucak   |   | 17:20 – 18:05<br>Bondent Group<br>Lecture 1<br>Flat Side Files the New<br>Trend<br>Nuno Pinto   | subjects                                     | subjects                                     |



### Saturday, 10<sup>th</sup> September

| 0                                       | ◎ HALL 1   | ◎ HALL 2  | HALL 3<br>Symposia  | HALL 4<br>Sponsored<br>lectures  | ◎ HALL 5                           | ⊗ HALL 6                           | ◎ HALL 7                        |  |  |
|---|--|---|---|--|------------------------------------|------------------------------------|---------------------------------|--|--|
| 09:00<br> <br>09:40                     | Hany Ahmed<br>Understanding<br>tooth discolouration  | Peter Komora<br>The skill of<br>orthograde<br>endodontic<br>treatments with<br>microscope   | 09:00 - 12:30<br>— Symposium:<br>Is the pulp<br>overexposed?<br>09:00 Why keep the<br>pulp? Opportunities<br>and challenges from<br>an Endodontist                                    |  | Oral<br>presentations              | Oral<br>presentations              | Oral<br>presentations           |  |  |
| 09:45<br> <br>10:30                     | <b>Aviad Tamse</b><br>Understanding<br>vertical root<br>fractures  | Nicola Grande<br>The skill of<br>single cone<br>canal filling<br>with bioceramic<br>sealers | and Pulp Biologists<br>perspective<br><b>Nikita Ruparel</b><br>09:45 Is exposing<br>the pulp a problem?<br>What should we<br>really do with deep<br>caries<br><b>Matthias Zehnder</b> | 09:50 – 10:35<br><b>Orodeka Lecture</b><br>Not just white<br>lines<br><b>Andrea Balocco</b><br><b>Bogdan</b><br><b>Moldoveanu</b>                | on freely<br>chosen<br>subjects    | on freely<br>chosen<br>subjects    | on freely<br>chosen<br>subjects |  |  |
| 10:30 -                                 | 11:00  |   | — COFFEE B  | REAK —   |                                    |                                    |                                 |  |  |
| 11:00<br> <br>11:40                     | Lise-Lotte<br>Kirkevang<br>Understanding<br>the outcomes<br>of endodontic<br>treatments                                    | Fabio Gorni<br>The skill<br>of warm<br>compaction of<br>gutta-percha                        | 11:00 New Insights<br>into pulpits<br>management: Can<br>we reverse the<br>irreversible?<br>Ikhlas El-Karim   | 11:00 – 11:45<br><b>Bondent Group<br/>Lecture 2</b><br>Minimaly Invasive<br>Endodontics: A<br>Case Dependent<br>Scenario<br><b>Mostafa Anwar</b> | Oral<br>presentations<br>on freely | Oral<br>presentations<br>on freely |                                 |  |  |
| 11:45<br> <br>12:30                     | <b>Paul Abbott</b><br>Understanding<br>the new IADT<br>guidelines for the<br>management of<br>traumatic dental<br>injuries | <b>Charbel Allam</b><br>The skill of<br>endodontic<br>microsurgery                          | 11:45 Should it stay or<br>should it go: Is VPT<br>cost-effective and do<br>dentist believe in it?<br><b>Falk Schwendickie</b>  |  | chosen<br>subjects                 | chosen<br>subjects                 |                                 |  |  |
| 12:30 - 14:30 — LUNCH —                 |  |   |   |  |                                    |                                    |                                 |  |  |
| POSTER PRESENTATIONS / TRADE EXHIBITION |  |   |   |  |                                    |                                    |                                 |  |  |

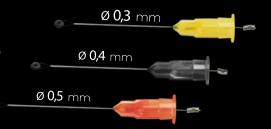


| 0                   | ◎ HALL 1  | ◎ HALL 2   | HALL 3<br>Symposia   | HALL 4<br>Sponsored<br>lectures | ◎ HALL 5   | ◎ HALL 6   | ◎ HALL 7 |
|---------------------|---|--|--|---------------------------------|--|--|----------|
| 14:30<br> <br>15:10 | <b>Anil Kishen</b><br>Understanding<br>nanotechnology in<br>Endodontics | Roeland de<br>Moor<br>The skill of<br>using lasers in<br>endodontics | 14:30 - 16:00<br>— Symposium:<br>Tooth (root)<br>Resorption - from<br>confusion to clarity<br>14:30 Immune<br>pathways of tooth<br>and bone resorption<br>at the cell and<br>molecular levels<br>Shaul Lin<br>15:15 Tooth Resorption<br>- Diagnosis and<br>Management<br>Paul Abbott |                                 | Oral<br>presentations<br>on freely<br>chosen<br>subjects | Oral<br>presentations<br>on freely<br>chosen<br>subjects |          |
| 15:15<br> <br>16:00 | Francesc Abella<br>Understanding<br>tooth<br>autotransplantation        | <b>Mərgə Ree</b><br>The skill of<br>pləcing əpicəl<br>plugs          |  |                                 |  |  |          |





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## **PRE-CONGRESS COURSES**

### **© ROOM F2**

() 09:00-17:30

### ESE Pre-congress course 1 - An interactive day on Education in Endodontics

Led by: Annemarie Baaij & Casper Kruse

### Overview

We all face challenges in Endodontic Education, and deal with them in our own particular ways. During this workshop, we aim to explore the similarities and differences in our schools, share challenges and experiences, and create opportunities to learn and inspire each other. In preparation for this interactive day, we ask participants to reflect on the Education they provide, considering both personal factors and those related to the Universities and clinics they work in. You may ask yourself: What are the challenges you and your team encounter? Is there another side of the coin – do your challenges create strengths and opportunities? What creative solutions could be identified? What has worked well, and what has been less successful? Everyone's thoughts and ideas are important, so please be prepared to share with your colleagues. We may be surprised by the challenges we share and we hope that everyone will take away something useful.

### 09:00

Academic challenge day part one – Get to know each other Annemarie Baaij, Casper Kruse and Fadi Jarad



#### 10:40 — BREAK —

### 11:10

Academic challenge day part two – Sharing Annemarie Baaij, Casper Kruse and Fadi Jarad





#### 12:10 — BREAK —

**13:10** Inspirational talk: Optimal methods of assessment Jale Tanalp and Meric Karapinar-Kazandag



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#### 13:25

Inspirational talk: Calibration of dental educators for the assessment of student competency Jale Tanalp and Meric Karapinar-Kazandag



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13:40 Discussion: Assessment and calibration of assessors

14:20 — BREAK —

**14.40** Inspirational talk: Real teeth versus artificial ones Christian Diegritz



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WEDNESDAY, SEPTEMBER  $7^{
m H}$ 

#### 14:55

Inspirational talk: Simulated clinical training versus treating real patients Annemarie Baaij



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#### 15:10

Discussion: Training in vivo, ex vivo or completely in artificial conditions?

#### 15:50 — BREAK —

#### 16:10

Inspirational talk: Digital endodontic training / digital aids / educational video's Mads Dahl



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### 16:25 Inspirational talk: Peer assisted learning Rifat Özok



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16:40 Discussion: Active learning and online learning

### 17:30 — SESSION ENDS



### **ROOM F3**

① 14:00 - 17:00

### ESE Pre-congress course 2 - CBCT for the diagnosis and management of complex endodontic problems

Led by: Shanon Patel

### Overview

Cone Beam Computed Tomography (CBCT) is an integral part for the diagnosis and management of complex Endodontic problems. The importance of CBCT in Endodontics is reflected by the ESE publishing position statements (2014, 2019) on this topic. The aim of this pre-congress is to:

- Give an update on the latest clinical research on CBCT in Endodontics
- Reveal how CBCT can impact on treatment planning,
- Describe the integration of CBCT into the digital workflow

### 14:00

CBCT for the improving the diagnosis of periapical disease, root resorption & dental trauma *Shanon Patel* 



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### 15:00 CBCT for the management of complex anatomy and surgical endodontics Conor Durack



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### **16:00 Optimisation, interpretation & reporting CBCT scans** *Simon Harvey*



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17:00 — SESSION ENDS

WEDNESDAY, SEPTEMBER  $7^{H}$ 



WEDNESDAY, SEPTEMBER  $7^{
m HH}$ 

### Room F7

() 09:00 - 17:30

### ESE Pre-congress course 3 - Systematic reviews and meta-analyses: a practical workshop

Led by: Venkateshbabu Nagendrababu & Pulikkotil Shaju Jacob

### Overview

Upon completion of the workshop, participants will be able to:

- Plan and carry out a basic systematic review in dentistry
- Conduct meta-analysis with binary and continuous data
- Interpret the results of meta-analysis
- Accurately communicate the results

### Topics covered:

- Need for systematic review/ umbrella review/ meta-analysis/network meta-analysis/ trial sequential analysis
- Protocol of the review development and registration
- Research question
- Literature search
- Study selection
- Quality assessment of randomized clinical trials
- Combining studies with and without meta-analysis
- Heterogeneity
- Conducting a meta-analysis

### Speakers

Pulikkotil Shaju Jacob



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### Venkateshbabu Nagendrababu



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### 09:00 - 09:30

Introduction to systematic review/ umbrella review/ meta-analysis/network meta-analysis/ trial sequential analysis



09:30 - 11:00

Developing a research question, search strategy, literature search process, data extraction. (Including hands on)

11:00 — BREAK —

11:30 - 13:00 Risk of bias assessment (Including hands on)

13:00 — BREAK — 14:00 - 15:30 Part 1: Meta-analysis in Revman software (Including hands on)

15:30 — BREAK —

16:00 - 17:00 Part 2: Meta-analysis in Revman software (Including hands on)

17:00 - 17:30 Closing remarks and Feedback

17:30 — SESSION ENDS



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### **ROOM F8**

**()** 14:00-17:00

### Pre congress-course 4 - Morphometric analysis of the root canal system using micro-CT: a practical approach on how to perform measurements

Led by: Marco Versiani

### Overview

Micro-CT, like conventional tomography, uses X-rays to create cross-sections of a 3D object that later can be used to recreate a virtual model without destroying the original model. A micro-focus X-ray source illuminates the object, and a planar detector collects magnified projection images. Based on hundreds of angular views acquired while the object rotates, a computer synthesizes a stack of virtual cross-section slices through the object. The term 'micro' is used to indicate that the pixel sizes of the cross-sections are in the micrometer range. This non-destructive method allows scrolling through the cross-sections, interpolating sections along different planes, inspect the internal structure, measure 3D morphometric parameters, create realistic visual models, with no sample preparation, no staining, and no thin slicing. Nowadays, micro-CT has been considered the most accurate laboratory tool for researching the root canal anatomy and evaluating the influence of different materials and techniques on the root canal system. This workshop is focused on providing tips and tricks to work with this technology. Basically, it aims to explain how to design an experimental research using a micro-CT system considering not only important variables related to sample selection, but also the main limitations of the method. It will be also demonstrated step-by-step how to create 3D models and how to analyse morphometric parameters including volume, surface area, and geometry, before and after the mechanical preparation of the root canal system.

### Speaker

Marco Versiani



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# **ROOM F5**

🕚 14:00 - 17:00

# Pre-congress course 5 - Case-based interactive pre-congress course: Endodontic management in the traumatized permanent dentition

Led by: Gabriel Krastl

#### Overview

The pulp plays a central role in the management of traumatized teeth and significantly influences their longevity, particularly in severe cases. The endodontic management should aim at avoiding root canal treatment if preservation of the pulp is a realistic scenario but at the same time should be directed towards early endodontic intervention in teeth of high risk of developing infection-related root resorption.

This pre-congress course will offer an interactive case-based approach to discuss the latest guidelines on the endodontic management in the traumatized permanent dentition.

Live answers and insights from the audience through a smartphone voting tool and discussion of the results will make the session interactive and more interesting for the participants.

#### Speakers

Gabriel Krastl



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Kerstin Galler



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#### Marga Ree



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## ROOM F4

🕚 14:00 - 17:00

# Pre-congress course 6 - Current advances in characterization and clinical management of complex canal morphology

Led by: Hany Mohamed Aly Ahmed

#### Overview

Advances in knowledge related to root and canal morphology together with subsequent root canal treatment procedures of complicated anatomical variations is continuously of a special interest to the clinician and researcher. The main purpose of this pre-congress course is to provide participants with up-to-date evidence on the characterization and clinical management of complex root and canal anatomy. The key aims are to:

- Present advances in the characterization of the root and canal morphology using a new system for classifying root canal configurations, accessory canals and anomalies;
- Discuss detection of additional roots and root canals in different tooth types, and how to prevent the occasion of missed canals;
- Engage participants with the current advances in managing complex canal morphology such as C-shaped canals, narrow root canals and canals with different canal curvatures.

#### 14:00 - 14:30

Applications of a new system for classifying the root and canal morphology in clinical practice, research and teaching

Hany Mohamed Aly Ahmed



14:30 - 15:00 Missed canals – How to prevent the occasion? Hany Mohamed Aly Ahmed



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15:00 - 15:20 - COFFEE-BREAK -



#### 15:20 - 16:00

#### Scouting and glide path management of complex canals Gianluca Plotino & Nicola Grande



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#### 16:00 – 16:40 Mechanical and chemical debridement of complex canal morphologies Nicola Grande & Gianluca Plotino



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16:40 - 17:00 Discussion with speakers

17:00 — SESSION ENDS



## ROOM F9

① 14:00 - 17:00

# Pre-congress course 7 – The Tooth "implant": Applications and outcomes of intentional replantation and autogenous transplantation

Led by: Shimon Friedman

#### Overview

When orthograde retreatment and apical microsurgery are considered unfeasible, when they fail to resolve persistent endodontic infection, or when the remaining tooth structure is deemed non-restorable, the tooth is usually extracted and replaced with an implant or another prosthetic device. Alternatively, when clinical conditions permit, the tooth can be extracted, manipulated extra-orally and replanted (Intentional Replantation, Surgical Extrusion), or a non-strategic tooth can be transplanted into the socket of the extracted tooth (Autogenous Transplantation). These seemingly radical but rather simple procedures offer predictably good outcomes when the biologic principles of tooth replantation are respected.

This lecture will discuss the procedures of Intentional Replantation/Transplantation in a contemporary context, as predictable means for retaining otherwise "untreatable" teeth to greatly benefit patients. Strict guidelines for case selection, a step-by-step protocol and a variety of clinical applications will be outlined and illustrated with typical cases. Reported outcomes will also be highlighted for various clinical applications of both procedures.

#### Learning objectives:

Upon completion, the participants will be able to:

- Describe the procedural guidelines and steps for Intentional Replantation, Surgical Extrusion and Autogenous Transplantation aimed to prevent external root resorption and persistent infection.
- Outline the indications for Intentional Replantation and Autogenous Transplantation.

Summarize the long-term outcomes of Intentional Replantation, Surgical Extrusion and Autogenous Transplantation.

#### Speaker

Shimon Friedman



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## **ROOM F10**

**Pre-congress course – FKG:** Enhanced expandable NiTi technology for anatomical cleaning and shaping on treatment and retreatment cases.

**09:00 - 12:00 Session 1** *Spyros Floratos* 



I declare that I have a past or present financial interest/arrangement consulting position, or affiliation with the corporate organization (s) whose product (s) I will discuss in my presentations.

#### Aim

A successful endodontic treatment involves elimination of the bacterial load in a complex root canal system, while maintaining the natural anatomy, strength and survivability of the tooth. The advent of modern NiTi expandable technologies has provided outstanding results in preparing canals anatomically while maintaining the original shape of the canal. At the same time, expandable files obtain a high guttapercha removal capacity and canal cleanliness in retreatment cases. Recently, a safe, easy to implement protocol utilizing enhanced expandable and heat treated files has been introduced. The new approach allows for an efficient, predictable anatomical canal preparation.

#### Learning objectives:

At the end of this practical course, the participants will be able to:

- Understand the challenges of three dimensional shaping and cleaning of complex endodontic anatomy
- Highlight the unique properties and increased efficiency of the newer expandable technology in cleaning all inaccessible areas and completely removing root canal material in retreatment cases
- Familiarize with a safe, predictable and easy to use protocol for anatomical instrumentation of non-surgical treatment and retreatment cases

14:00 - 17:00 Session 2 (Repeat of Session 1) Spyros Floratos



# **© ROOM G15**

#### Pre-congress course – Eighteeth: Broken File Dilemma

**14:00 - 17:00** Waleed Kurdi



I declare that I have a past or present financial interest/arrangement consulting position, or affiliation with the corporate organization(s) whose product(s) I will discuss in my presentation.

Radicular separation of endodontic instruments is the worst nightmare facing every dentist in the modern dentistry.

Instrument separation inside the canal worsens the root canal procedures and make cleaning and shaping the canal more difficult.

Hindering the procedures will affect the outcome and the prognosis of the case.

Separation mode is a complicated phenomenon affected by many factors which I will clarify how to prevent that.

Managing a separated instrument will range from orthograde to surgical option.

Orthograde conservative conventional options including removal or bypassing the fragment will be the specific part of our content.

A decision should be taken either to bypass or to retrieve according to many affecting factors which I will clarify.

The main goal is not only removing the separated fragment but also the tooth integrity should be maintained so bypass is a good option in many situations.

I will clarify when, why and how to bypass a broken file fragment through different protocols and trials.

I will clarify all the available treatment options that clinician can perform in broken file cases. Clinicians should be familiar with all options in facing broken file cases even before referral if needed.



## **© ROOM G16**

#### Pre-congress course – Mani: Management of curved root canals – Pave your way to go!

<mark>09:00 – 12:00</mark> Hany Mohamed Aly Ahmed



I declare that I have a past or present financial interest/arrangement consulting position, or affiliation with the corporate organization(s) whose product(s) I will discuss in my presentation.

This workshop aims to discuss challenges faced by clinicians during the management of curved root canals, and ways to optimize every step of the root canal negotiation and instrumentation procedure to achieve predictable outcomes.

#### **Learning Objectives:**

- Appreciating the difficulty of different types of curved root canals.
- Understanding the importance of access cavity preparation, negotiation, glide path preparation and preflaring for the management of curved root canals.
- Introducing a unique instrumentation protocol using D-Finders, Jizai NiTi Glider and file system for the management of curved root canals.





- NEW GENERATION OF NITI ROTARY FILES

www.mani.co.jp/en/







# **HALL 1**

8 Session chair: Shaul Lin

09:45 - 10:30 Understanding the dentine-pulp complex Leo Tjäderhane



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#### Abstract

Dentine is the largest structural component of human tooth. It provides support to enamel, preventing enamel fractures during occlusal loading, and protects the pulp from microbial and other irritation. As vital tissue, dentine is not only a passive mechanical barrier between the oral environment and the pulp tissue, but in many ways participates in the overall protection of the continuum of the hard and soft tissue often referred as the dentine-pulp complex. Although dentine and pulp tissue are often thought to be similar in all parts of the tooth, different parts of a particular tooth may have significant differences between each other regarding the normal structure and the changes caused or induced by pathological conditions. Also, aging affects the structure and composition of dentine and pulp tissue in a way that may affect its physiological and pathological properties. With age, tubular occlusion by peritubular dentine and collagen cross-linking changes the mechanical behavior of dentine; and reduction of cells and tissue elements may reduce the sensation and defensive capacity of the pulp.

#### Aims

This lecture aims to review the current knowledge of the dentine-pulp complex structure and composition, the age- or disease-related changes in them, and how it may affect the treatment.

#### **Objectives**

The objectives of the lecture are:

- to review dentine-pulp complex basic structure and composition;
- to describe the effect of caries on dentine structure and composition beyond demineralization;
- to describe the effect of aging on dentine-pulp complex;
- to discuss how dentine pathology and aging may affect the choice of the restorative treatment.

10:30 - 11:00 - COFFEE-BREAK -



#### 11:00 - 11:40 Understanding COVID 19 Ken Hargreaves



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#### Abstract

Over many decades, Dentists have dealt with pathogens transmitted by blood and other biological tissues, aerosols and contaminated surfaces. However, the recent COVID-19 pandemic is remarkable in the breadth, depth and persistence of acute infections. Even with introduction of vaccines and anti-virals, Dentists are now confronted with managing patients with post-acute sequelae of COVID-19 ("long COVID"). Here, we will review the pathogenesis of acute COVID as well as symptoms and proposed mechanisms of Long COVID from the perspective of delivering oral health care to our patients while maintaining safe working conditions for our staff and ourselves.

#### 11:45 - 12:30

#### Understanding the challenges of canal preparation Ove Peters



I declare that I have a past or present financial interest/arrangement, consulting position, or affiliation with the corporate organization(s) whose product(s) I will discuss in my presentation.

#### Abstract

The clinical practice of endodontics has dramatically changed over the last two decades, a change that was to a large extent driven by technological advances in canal shaping. For example, progress in design and manufacturing had by 2013 established five generations of NiTi endodontic instruments, established based on their metallurgical, mechanical properties and design features. The progress in technology alone, coupled with detailed knowledge of the hidden anatomy of root canal systems did go a long way towards understanding and ultimately managing, the challenge of root canal preparation.

Of note, there is an ever-present risk of procedural mishaps, small and large, which occasionally affect clinicians more than patients. Irrespective, past and present developments in shaping strategy and materials have significantly enhanced clinicians' ability to instrument even complex anatomies, with a high degree of predictability.

The topic could not be completely addressed without a reference to the end goal of canal preparation. Not only debridement and overall antimicrobial effect, serving the purpose of treating apical periodontitis, but dentine preservation for longevity must be considered.

In summary, this session attempts to present researchers and clinicians with a comprehensive review of present challenges and technological opportunities in the complex area of root canal preparation.



12:30 - 13:30 — LUNCH —

13:30 - 14:30 POSTER PRESENTATIONS / TRADE EXHIBITION

#### 8 Session chair: Catherine Ricci

14:30 – 15:10 Understanding infections – current and future challenges in dentistry Bodil Lund



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#### Abstract

Infectious diseases are likely to be a significant future challenge in health care including odontology. Advances in health care increase the group of patients susceptible to infections. Previous bacteria of minor significance because of low pathogenicity are new and increasing threats in health care due to an elevated number of immunocompromised patients. The features of infections of these patients may be atypical complicating diagnostics and treatment. The hospitals pose an artificial ecological niche making way for potentiating antibiotic resistance and other characteristics of importance for virulence. Ubiquitous organisms develop as pathogens equipped with ability to survive harsh conditions challenging hygiene measure. Development of medical products and technological advancements may pose unexpected sources of infection proliferation. Globalization opens for dissemination of new infectious threats. Because of antibiotic resistance old infections reappears in novel shapes with few or no treatment options.

For the clinician means to prevent, diagnose, assess, and treat infections is likely to be more important than ever.

#### 15:15 - 16:00

Understanding endodontic infection-mediated systemic interactions and their global cardiometabolic risks

Sadia Niazi



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#### Abstract

Apical periodontitis (AP) can contribute to persistent low-grade systemic inflammation which can have adverse impact on general health and quality of life of patient. Studies have attempted to



associate AP with systemic conditions such as diabetes and cardiovascular diseases (CVD), however lack of adequate high-quality evidence implies a weak association between CVDs and AP. The aim of lecture is to discuss, based on the findings of our longitudinal cohort study on

Host-Endodontic Microbiome interactions, the associations between AP, endodontic treatment and systemic health. Based on this scientific evidence, it will be discussed if AP can cause actual rise in the systemic inflammatory burden of CVD risk biomarkers, impacting vascular and systemic health. Utilising next generation sequencing and biomarker profiling, any associations between microbiome and biomarkers will also be discussed.

#### 16:00 - 16:30 - COFFEE-BREAK ---

#### Session chair: Vittorio Franco

16:30 - 17:10

Understanding how to negotiate challenging canal systems Antonis Chaniotis



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#### Abstract

Challenging root canal systems introduce factors that increase the risk of procedural accidents during root canal treatment. Inability to achieve patency to the apical third, asymmetrical dentine removal leading to transportation, perforation and instrument fracture inside the challenging trajectories are some of the procedural problems that might jeopardize the management of intraradicular infection and result in poor treatment outcomes. In fact, curved, constricted, and splitting root canal systems introduce such complexity that total instrumentation concepts and specially designed instruments have been developed to deal with the challenge. This lecture seeks to provide and consolidate the principles necessary for understanding the dynamics of challenging canal systems management and to improve the understanding for future developments in this field.

#### **Learning Objectives:**

- Understand how to identify anatomical complexity
- Understand how to negotiate challenging canal systems



#### 17:15 - 18:00

Understanding minimally invasive root canal treatment Gianluca Plotino



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#### Abstract

Clinical studies demonstrate that long term prognosis of the root filled teeth is influenced by the quality of the restoration as well as by the quality of the root canal treatment itself. The most recent trend in restoration of endodontically treated teeth is following the concept of minimally invasive dentistry, proposing more conservative, less expensive and bio-economic restorations, based mostly on adhesive dentistry and the introduction of new materials and technologies. Following this trend, the access procedures in endodontics and the root canal preparation are changing in a conservative way, sometimes drastically if compared with the traditional concepts of cavity outline opening and coronal straight-line access to reach the apical third. Furthermore, new devices and techniques for cleaning and disinfection have been introduced, which claim a minimal instrumentation to reach treatment's goals.

Endodontic literature appears to be poor on demonstrating how these minimally invasive access and instrumentation procedures can influence the quality and prognosis of root canal treatment. The present lecture will analyze and show the technical procedures of minimally invasive root canal treatment in different clinical situations, underlining their possible advantages. Moreover, the limits of these procedures will be critically analysed to define how much minimally invasive clinicians should be in order to ensure gold standard endodontic treatments.



# **HALL 2**

Session chair: Paul Abbott

#### 9:45 - 10:30

The skill of translating knowledge of canal anatomy into daily practice Marco Versiani



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#### Abstract

The widespread use of 3D imaging systems in Dentistry, such as micro-CT and CBCT, made them extensively available for clinicians and researchers. The main advantage of these technologies is their non-destructive nature, which allows the three-dimensional visualization of the external and internal aspects of teeth and surrounding structures. In the endodontic research, CBCT has been successfully employed as an assessment method in cross-sectional in vivo studies using large populations aiming to address the influence of different demographic factors on the morphology of teeth. On the other hand, micro-CT has gained increasing significance in ex vivo laboratory studies as it can be applied quantitatively as well as qualitatively for accurate assessment not only of the canal anatomy, but also to assess the efficiency of different procedures applied to the root canal system. As a result, a growing number of publications reporting on root and root canal anatomy of different populations and groups of teeth have been published in the last 10 years. However, although this increasing amount of knowledge has become available to the public, it is quite complicated for clinicians to keep updated or to select reliable and useful information from these studies. Therefore, this lecture aims to present a brief overview of the latest achievements in the research field on the influence of different procedures in the root canal system and then focus on how to apply this knowledge into clinical practice.

#### 10:30 - 11:00 - COFFEE-BREAK -

11:00 - 11:40 The skill of managing the 'hopeless' traumatised tooth Roula Abiad



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#### Abstract

Dental traumatic injuries can manifest in many forms, starting from cracked and chipped teeth to luxation injuries and avulsion and maybe combination of both.



Type and number of teeth injured vary according to the type of accident, impact of force, resiliency of the object hitting the tooth, shape of the hitting object and direction of force. If bone is resilient, tooth will be displaced by trauma but if bone is thick and brittle tooth will fracture.

Within this complicated situation, fracture of teeth may take different shapes and levels, some are simply restored and treated within the international guidelines of management of traumatized teeth, others may lie outside any regular classification and their management, other than extraction, depends on the clinician judgement of the case, his skills, team, patient and parents' cooperation and their will to preserve the tooth, and the assessment of subsequent circumstances.

Comprehensive understanding of dental traumatology is a must to increase the survival rate of the affected tooth (or teeth). However, with all advancement in dental equipment, and materials in addition to the indepth knowledge of this science, still, there are cases that may be considered hopeless, and management is considered risky and "waste of time" by some practitioners. Teeth are deemed a matter of life and death for some patients and keeping those teeth in their mouth could be the only option they could afford. Thus, preservation of traumatized teeth must be a priority. This presentation will show the management of the so-called hopeless cases.

#### Aim:

To discuss the role of endodontics after dental traumatic injuries

#### **Objectives:**

- To discuss the aim of preservation of traumatized teeth, how and when?
- To describe the treatment strategies chosen in specific traumatic dental injuries cases.
- To assess the management of preserving hopeless teeth, and weight the risks and benefits.

#### 11:45-12:30

The skill of managing dental trauma in the young patient *Giuseppe Cantatore* 



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#### Abstract

Traumatic injuries often affects young permanent dentition. Some of them (such as coronal fractures) are not severe and can be successfully treated with simple treatments such as direct pulp capping and/or pulpotomies. In other cases, however, such as dental luxations and avulsions the tooth is partially or completely displaced from its alveolar socket, affecting the pulp tissue, periodontal ligament, dental hard tissues, and alveolar bone. In these cases the treatment becomes more complex and the success rates decrease drastically because of the high risk of root resorption (RR), which can be classified into external and internal RR. The external RR, which is more frequent, is classified in descending order of frequency as: 1) Replacement RR (RRR or ankylosis; 51%); 2. Inflammatory RR (IRR; 23.2%); Surface RR (SRR; 13.3%). Although the best therapy for luxated and





avulsed teeth is immediate replantation, it is not always possible in clinical conditions. Consequently, delayed replantation is often required. To arrest or delay the root resorption in cases of delayed remplantation, the use of Calcium Hydroxide has been advised for decades. This effect of CH was first described in 1971 by Andreasen and this observation has since been supported by a number of clinical studies demonstrating that CH is able to arrest 98% of infection-related resorptions in luxated teeth and 90% in avulsed and later replanted teeth. CH has an inductive effect on the deposition of calcified tissues (bone, cement, dentin...) because of its high pH which inhibits enzymatic activities that are essential for bacterial life. Furthermore CH has the ability to reduce tissue bleeding by creating a layer of necrotic tissue and reduces the inflammation of the periodontal tissues. The main drawback of this method has been the weakening effect of CH on the dentin, leading to the risk of cervical root fractures. Today in many clinical situations, Calcium Hydroxide has been replaced by Bioceramic Materials. The first bioceramic introduced was MTA (Mineral Trioxide Aggregate). The mechanism of action of MTA is strictly related to that of calcium hydroxide. MTA hydrates when it comes into contact with water and undergoes two main reactions. In fact, tricalcium silicate and dicalcium silicate react with water to form calcium silicate hydrate and calcium hydroxide. The main advantage of bioceramics over calcium hydroxide is that they constitute a definitive cement, and appear to have less dentin weakening effect. Their main drawback is that inflammation of the periodontal tissues and contamination with blood can alter their properties. For this reason it is suggested, in cases of inflamed tissues and intracanal bleeding, to use bioceramics after reducing inflammation and bleeding with a pure calcium hydroxide medication. During this presentation we will examine a series of clinical cases, even extreme ones, where the combined use of calcium hydroxide and MTA allowed to block or resolve the replacement and/or inflammatory resorption processes.

#### 12:30 - 13:30 — LUNCH —

#### 13:30 - 14:30 POSTER PRESENTATIONS / TRADE EXHIBITION

#### 8 Session chair: Gilberto Debelian

14:30 – 15:10 The skill of glide path preparation Elio Berutti



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#### Abstract

Rotary NiTi instruments have revolutionised endodontics, allowing even the less experienced dentist to create perfectly shaping in harmony with the original anatomy improving the prognosis even of the most complex cases. However, the use of NiTi has one serious drawback, in that it carries a higher risk of the instrument's breaking than does stainless steel. The influence of various





factors on breakage of rotary NiTi instruments has been extensively studied and it has been found that breakage usually depends on torsion and on bending stress.

Bending stress essentially depends on the original canal anatomy. The endodontist can do very little to reduce this type of stress.

Torsion depends on numerous factors however breakage occurs if the canal section is smaller than the tip of the instrument that cannot cut the dentine, and what is known as "taper lock" occurs. This is followed by plastic deformation and instrument breakage.

Numerous studies have evaluated the causes of breakage of NiTi instruments and have concluded that a marked reduction in the breakage rate of rotary instruments can be achieved when their use is preceded by preliminary manual enlargement and the creation of a "glide path", that is a pathway with smooth canal walls along which the NiTi instruments can easily glide to reach the working length. Thus the canal must be enlarged at the foramen to a diameter greater than or at least equal to that of the tip of the first rotary NiTi instrument that will be used at that depth. It is also important to remember that all rotary NiTi instruments available on today's market have non-active tips that are therefore not capable of cutting the dentine effectively.

The glide path are usually done by hand with stainless steel instruments. This is the last manual phase of the entire shaping procedure, and, especially for the general practitioner, the most difficult phase and that in which the most dangerous errors can be made, that can cause the entire treatment to fail (ledges, false paths, dentine plugs). Hand stainless steel instruments involve numerous disadvantages, due to their relative rigidity and their tip that in many cases is aggressive, so that in curved and/or calcified canals they can easily produce ledges or transportation.

In 2008, the first rotary instruments to create the glide path (PatFile Maillefer Switzerland) were introduced to the market. Subsequently, all the most important companies in the world producing NiTi mechanical instruments have included mechanical file to realize the glide path. Now the manual phase is limited only to the canal scouting generally made with a file 08 or 10 then everything is mechanical.

#### Aims:

- to stress about the importance of the glide path;
- to explane the advantages of a rotary glide path;
- to understand when it is possible to create a rotary glide path and when is better to create a manual glide path;
- to explane the combination of manual and rotary technique in difficult cases.



#### 15:15 - 16:00

The skill of reciprocating canal preparation *Gustavo De-Deus* 



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#### Outline

- The drives that lead to the choice of the Shaping system
- 12 years of Reciprocation: Current clinical and scientific status
- Reciprocation-based root canal shaping protocol
- Reciprocation and canal scoutability
- Reciprocation and the MB2 canal
- Root canal retreatment based on the R25 instrument

#### 16:00 - 16:30 - COFFEE-BREAK ---



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#### 8 Session chair: Massimo Giovarruscio

16:30 - 17:10

The skill of repairing perforations Thomas Clauder



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#### Abstract

Root perforations are severe complications and are associated with compromised endodontic treatment outcomes, especially when bacterial infection is allowed to establish. Perforations may occur due to pathological processes or treatment consequences. If a perforation occurs, treatment relies on accurate diagnosis and visualisation. Perforation repair can be challenging and sometimes requires creativity. The aim of the lecture is to provide the background, clinical techniques and outcome of nonsurgical and surgical perforation repair.

#### 17:15 - 18:00

The skill of restoring root filled molars Julian G. Leprince



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#### Abstract

The restoration of endodontically treated teeth must be considered as integral part of the endodontic treatment, since it potentially plays an important role in the long-term success of the procedure, as well as in tooth longevity. In order to maximize the chances of treatment success and tooth survival, the specificities of endodontically treated molars need to be carefully considered, in the context of the advances in adhesion, digital technologies, and biomaterials.

The presentation will first provide context regarding the specificity of endododontically-treated molars based on an original database of 2500 treatments followed prospectively over the last 25 years.

We will then discuss important aspects regarding the restoration of such teeth, notably tooth reinforcement, restoration retention, the need for a ferrule and/or for posts, and the importance of cusp coverage. Based on the available evidence, best-practice recommendations will be suggested, integrating as much as possible both restorative and endodontic objectives. We will particularly focus on tissue preservation, in a patient-centred approach.



# **HALL 3**

**()** 09:00 - 12:30

Symposium – Digital endodontics – The role of CBCT Led by: Gianluca Gambarini

#### 09:00 - 09:30

Problem solving: CBCT in diagnosis and treatment planning Gianluca Gambarini



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#### Abstract

The lecture will show clinical cases where CBCT was needed to make proper diagnosis, treatment plan and treatment, including some clinical hints about the use of previous scans, the differences between an endo treatment alone and a full restoration procedure in terms of benefits of CBCT and decision-making process vs ALARA.

#### 09:30 - 10:00

Problem solving: CBCT in the orthograde treatment of complex cases Mohammad Hammo



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#### Abstract

Success of endodontic treatment depends on the identification of all root canals so that they can be accessed, cleaned, shaped, and obturated.

Clinicians should always be aware of possible root canal configurations and possible additional canals.

Conventional periapical radiographs provide limited information as they give a 2D image of a complex 3D anatomy with risks of geometric distortion and superimposition of dental and anatomical structures.

The introduction of cone-beam computed tomography (CBCT), which gives a 3D image of the tooth and surrounding dentoalveolar structures provides more information for diagnosis and treatment planning before or during root canal treatment and surgical endodontic.



#### 10:00 - 10:30

CBCT and quality assessment of root canal procedures and outcome David Jaramillo



I declare I have financial interest and consulting position with Sonendo, Inc. whose product (The GentleWave System) I will discuss in my presentation. Dr. Jaramillo have no direct access to a grant research money.

#### Abstract

A system using multisonic technology has been recently introduced (GentleWave®) with a support of excellent pulpal debridement characteristics. The technology uses a combination of broad-spectrum acoustic energy, advanced fluid dynamics, and accelerated chemistry to debride and disinfect the root canal system with minimal instrumentation. The mechanism of action allows efficient delivery of energy to all anatomical areas of the root canal system, including difficult to reach areas such as isthmuses, fins, lateral canals, and anastomoses. After root canal obturation its important the use of CBCT to be able to visualize the obturation of these different areas of the complex root canal anatomy.

#### 10:30 - 11:00 - COFFEE-BREAK -

#### 11:00 - 11:30 Problem solving: the use of CBCT based endodontic guides

Gergely Benyocs



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#### Abstract

Static guided endodontic approach has proven to be a safe, clinically feasible method to locate root canals, prevent root perforations and to solve complex cases. However, even with careful and proper planning and printing, there can be some mishaps and complications with clinical usage.

In my presentation, I would like to show clinical examples in this topic, suggesting solutions to avoid them.



11:30 - 12:00

Problem solving: CBCT in surgical endodontics Adham Azim



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#### Abstract

The success rate of endodontic surgery has shown significant improvement over the past two decades. With the implementation of micro-surgical techniques, the procedure became easier and more predictable. Historically, the procedure was considered complex and required advanced skills which made endodontic surgery often a last treatment resort for many clinicians. With the introduction of Cone-beam computed tomography (CBCT), the procedure now became less complex and highly predictability. Assessment of the surgical outcome using CBCT have also assisted in better understanding for the causes of failure as well as the bone remodeling process following surgical intervention. In this presentation, we will discuss the role of CBCT in Endodontic surgery from planning and execution to outcomes' assessment and bone remodeling.

At the end of this presentation participants should be able to:

- 1. Understand the importance of CBCT in treatment planning of endodontic surgery
- 2. Discuss the value of CBCT in assessment of the surgical outcomes
- **3.** Discuss the role of CBCT in understanding the process of bone remodeling following apical surgery

#### 12:00 - 12:30

Guidelines for a rationale use of CBCT in everyday's practice Marc Semper



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#### Abstract

The indication for the use of CBCT in clinical practice is largely determined by guidelines and considerations on radiation protection. In this short lecture, a rational approach for the application of CBCT in daily practice will be presented, which critically reflects the evidence--based approach and traditional risk assessments.

#### Aim:

The participants should be introduced to an indication-oriented and patient-specific approach and an update on the scientific consensus on the potential risks of this imaging modality.



12:30 - 13:30 — LUNCH —

13:30 - 14:30 POSTER PRESENTATIONS / TRADE EXHIBITION

14:30 - 18:00
 Symposium - Endodontics and systemic health
 Led by: Päivi Siukosaari



14:30 - 15:15 The mechanisms behind chronic infection-induced cardiovascular disease Pirkko Pussinen



I declare that I have NO proprietary, financial, or other personal interest of any nature or kind in any product, service, course, and/or company, or in any firm beneficially associated therewith, that will be discussed or considered during the proposed presentation.

#### Abstract

Cardiovascular diseases (CVD) are mainly caused by atherosclerosis, which is a slowly progressive, multifactorial disease described as a disorder of lipid metabolism and chronic inflammation. Both marginal and apical periodontitis are among the dysbiosis-driven infections putatively contributing to systemic inflammatory burden and thereby atherogenesis.

Dysbiosis in the oral cavity give arise to local proinflammatory mediators, which may spread via circulation and promote production of systemic acute-phase reactants and inflammatory mediators. Dysbiotic microbiota may also have a direct role in atherogenesis: whole bacteria, antigens, outer membrane vesicles, and virulence factors spread in the circulation via blood, lymph, and saliva. This results in systemic inflammation, pro-thrombotic state, metabolic alterations, and production of pro-atherogenic antibodies. Dysfunctions of immune responses include molecular mimicry, where systemic or local antibodies crossreact between bacterial and host-derived epitopes. These antibodies promote inflammation and interact within the atheroma advancing cholesterol uptake to the cells of artery wall. One of the mechanisms potentially linking chronic infection / inflammation and CVD is common susceptibility. Thus, periodontitis may be a genetically determined phenotype, which leads to a greater risk of both atherosclerosis and infection.

Considering the high prevalence of marginal and apical periodontitis and the putative proatherogenic inflammatory burden that they cause, the relevance of dental care to public health is extensive. Investigating the role of chronic oral inflammations / infections in CVD is important both for mapping the individual cardiovascular risk factors and in planning of the treatments. Thus, dental professionals do not only treat oral health problems, but also prevent complications in the rest of the body.



#### 15:15 - 16:00

Apical periodontitis and systemic inflammation – the level of evidence? *Leo Tjäderhane* 



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#### Abstract

Local infection may result in low-grade chronic systemic inflammation when the proinflammatory mediators disseminate from the infection site. Among the oral infections associating with an increased risk for various systemic diseases, marginal periodontitis most studied. The role of endodontic infection and apical periodontitis in the induction of systemic inflammation is less studied. Moreover, the possible difference between acute or symptomatic and chronic asymptomatic apical periodontitis is unclear.

#### Aims

The aim is to evaluate what is the evidence of the data available, to investigate if apical periodontitis, acute or chronic, can induce low-grade systemic inflammation.

#### **Objectives**

- to review the evidence of the effect of endodontic infections on systemic proinflammatory mediators
- to discuss the difference between acute and chronic endodontic infections on the level of proinflammatory mediators in circulation

#### 16:00 - 16:30 — COFFEE-BREAK —

#### 16:30 - 17:15

Endodontic infections and cardiovascular diseases: what can we learn from epidemiology? *Jussi Furuholm* 



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#### Abstract

Odds ratio, hazard ratio, risk ratio? Relative risk —is it actual risk to my patient? What is the relation between association and causation —or is there any such relation? Epidemiological data regarding the role of endodontic infections and inflammation in the onset and progression of systemic diseases such as CVDs is often confusing and difficult to interpret into clinical life. The aim is to elucidate the statistics in endodontic epidemiology, and to understand whether data suggests association or causation between endodontics infections and general health.



THURSDAY, SEPTEMBER 8™

#### 17:15 - 18:00

Apical periodontitis in patients with increased risk for severe infections Jaana Helenius-Hietala



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#### Abstract

There is a wide variety of conditions causing more or less severe immunodeficiences, including more than 80 autoimmune diseases, humoral immune deficiencies, cancers, and as a constantly growing group, the drug-induced immunodeficiences. How should we react with acute or chronic apical periodontitis lesions in these patients?

#### Aims

The aim of this lecture is to review and analyze the scientific evidence to find out how apical periodontitis might affect patients at increased risk for severe infections.

#### **Objectives**

- to review in a practical way treatment for apical periodontitis in different patient groups and at different stages of the disease (fe. cancer, chronic kidney disease, patients receiving biologics etc.).
- to review need for antibiotic prophylaxis in patients at increased risk for infections.



# **HALL 4**

#### 09:00 - 09:45 Cerkamed Lecture

How to remove a broken file with minimum dentin loss Zaher Altagi



I declare that I have a past or present financial interest/arrangement, consulting position, or affiliation with the corporate organization(s) whose product(s) I will discuss in my presentation.

When the clinician faces intracanal separated instrument, the most important concern is removal of this obstruction in order to be able to disinfect, shape and seal the root canal system. However, this procedure should be carried out conservatively without losing much dentin from the root, otherwise the tooth survival would be compromised.

This workshop is designed to share the speakers' perspective on management of broken instruments using a predictable and minimally invasive approach.

#### Intended learning outcomes:

- Methods of preventing file fractures during instrumentation
- Available methods for retrieval of broken files from root canals
- Why Loop technique?
- Basics of ultrasonic use during broken file removal.
- Introduction to the grasping tools, with special focus on BTR PEN (loop technique )
- The difference between BTR Pen and other loop devices.
- Why Loop technique?
- The technique for ultrasonic preparation before using BTR pen device.
- The correct setup for BTR pen before the clinical use.
- The correct technique to grasp the broken file with BTR pen.
- When to use BTR pen, indications and limitations.

#### This lecture and speaker are sponsored by Cerkamed



#### 09:50 - 10:35 Fotona Lecture 1

Innovative Endodontics using SWEEPS: science, technology and clinical practice *Giovanni Olivi* 



I declare that I have a past or present financial interest/arrangement, consulting position, or affiliation with the corporate organization(s) whose product(s) I will discuss in my presentation.

#### Abstract

There has been a volcanic eruption of technologies in Endodontics over the past 20 years. The development of NiTi shaping files, the debut of biocompatible materials, the advent of CBCT for improved diagnostics. These minimally invasive technologies promote the maximum preservation of tooth structure, but according to an old aphorism enunciated by Herbert Schilder, for the success of endodontic therapy, "what is removed" is more important than "what is introduced" into the canal system. In this view, laser activated irrigation, and more specifically SWEEPS technology represents a breakthrough method for 3D disinfecting of the root canal system. This unique irrigation method produces fluid cavitation in the root canal system as result of photoacoustic phenomenon generated by erbium YAG laser ultra-short dual pulses energy delivered by the tip kept stationary in the access cavity of the tooth. In this way, the use of EDTA and NaOCI, along the correct protocol, improve the SWEEPS protocol is validated by several in vitro studies, supported by a strong body of published and non-published experiments and data, and confirmed by thousands of clinical trials.

#### **Learning Objectives:**

- to understand the main importance of endodontic irrigation in Endodontics
- to understand the difference among sonic, ultrasonic, multisonic and laser activated irrigation
- to know the main advantages of SWEEPS technology for root canal irrigation
- to be aware of the efficacy and effectiveness of LAI/SWEEPS technique in all the steps of R.C.T.

#### This lecture and speaker are sponsored by Fotona

10:35 - 11:00 - COFFEE-BREAK -



#### 11:00 - 11:45 Coltene Lecture 1

Automatic and all-in-one concepts for safe and efficient root canal preparation today and tomorrow *Eugenio Pedullà* 



I declare that I have a past or present financial interest/arrangement, consulting position, or affiliation with the corporate organization(s) whose product(s) I will discuss in my presentation.

#### Abstract

The primary goal of endodontic therapy is to achieve maximum chemical and mechanical disinfection of the root canal system.

The rapid development of endodontic instruments and materials makes treatment procedures safer, more accurate and more efficient than in the past.

However, even today, chemo-mechanical preparation is performed with different tools and devices that require application of skills (often subjectively) and operating times for their use.

The automatic control of the kinematics and the overlapping of some phases of the endodontic treatment, performing an all-in-one chemo-mechanical preparation, can simplify the preparation of the root canal without reducing the quality and effectiveness of the root canal therapy.

The lesson will discuss the current and future possibilities of reducing the subjectivity in the use of shaping tools and saving operating time by combining different phases of endodontic therapy thanks to new technologies already available today or in the future.

This lecture and speaker are sponsored by Coltene



#### 11:50 - 12:35 Eighteeth Lecture 1

Deep Cleaning and 3D Obturation in the daily practice: how to increase the therapy quality working with ergonomic devices

Filippo Cardinali



I declare that I have a past or present financial interest/arrangement, consulting position, or affiliation with the corporate organization(s) whose product(s) I will discuss in my presentation.

### Abstract

Endodontic treatment is a predictable procedure with high success rates.

The goals to reach during the Cleaning and the Obturation are well know for a long time as well known are the problems we daily face during these 2 stages: the BACTERIA that are to be removed from the canal, and the ENDODONTIC ANATOMY that can be very challenging to clean and completely fill. The persistence of bacteria inside the root canal system can lead to a negative outcome of the therapy, and bacteria can survive in already treated canals, especially if the quality of the obturation is poor. As a matter of fact an high percentage of the endodontic failures are associated with incomplete root canal obturation.

In a clinical setting, the use of devoted devices for the activation of the irrigating solutions and for the Warm Gutta Percha Techniques is really ergonomic, allowing the clinician to carry out high quality cleaning and obturation with less effort and less time.

The activation of irrigating solutions using ultrasonics is a very deeply investigated procedure in the scientific literature: it is really helpful to remove debris from the shaped canal and even to clean secondary anatomies as isthmuses and lateral canals. The availability of wireless devices makes the procedure really ergonomic in the daily practice.

Warm gutta percha techniques are still the golden standard of obturation to properly seal the root canal system in a three dimensional way: the use of dedicated devices for the down-packing and for the back-filling help a lot the clinician easing the execution of the technique.

The aim of the lecture is to share the speaker's experience with Cleaning and Obturation protocols starting from scientific literature, sharing even tips to apply in the daily practice.

#### This lecture and speaker are sponsored by Eighteeth

12:30 - 13:30 — LUNCH —



### 13:30 - 14:30 POSTER PRESENTATIONS / TRADE EXHIBITION

#### 14:30 - 15:15 Guilin Woodpecker Medical Instrument Co.,Ltd. Lecture 1

Surgical or non-surgical ENDODONTICS...When to choose what Talal Al-Nahlawi



I declare that I have a past or present financial interest/arrangement, consulting position, or affiliation with the corporate organization(s) whose product(s) I will discuss in my presentation.

#### Aim

This presentation will focus on decision-making highlighting when the apical surgery will be indicated, and when non-surgical management will be better for the prognosis of the endodontically treated teeth.

#### Learning objectives:

- Analyzing the causes of failure after endodontic treatment, and how to properly choose the treatment plan.
- The potential of non-surgical retreatment to preserve the root canal treated teeth healthy.
- How can endodontic surgery be minimally invasive endodontics sometimes.
- The importance of microscopic magnification in improving the outcome of endodontic surgery.
- The updates in micro apical surgery and the impact on success rate.

#### This lecture and speaker are sponsored by Guilin Woodpecker Medical Instrument Co.,Ltd



#### 15:20 - 16:05 Dentsply Sirona Lecture

Update in root canal obturation: is the single cone-bioceramic sealer the new gold standard? *Frédéric Bukiet* 



I declare that I have a past or present financial interest/arrangement, consulting position, or affiliation with the corporate organization(s) whose product(s) I will discuss in my presentation.

### Abstract

In recent years, bioceramic sealers have been extensively investigated in in vitro / ex vivo studies highlighting their excellent biological and physicochemical properties.

Their specificities, especially their excellent dimensional stability have led to an update of the single cone technique which has regained popularity in the past few years. This approach raises new questions connecting the research and the clinical implications.

The single cone technique needs to be put in perspective with the concept of Minimally Invasive Endodontics. What impact will minimally invasive root canal shaping have on the goals of cleaning / disinfection and obturation of the root canal space? Obturation in more conservative access cavities/root canal preparations could take advantage of the enhanced properties of bioceramic sealers. Therefore, it seems essential to clarify why, when and how to properly apply the single cone / bioceramic obturation. Based on the available knowledge, this presentation aims to discuss the clinical use of bioceramic sealers with hydraulic condensation for obturation of the root canal space. At the end of this presentation, the attendees should be aware of the advantages/limitations of this obturation technique.

#### This lecture and speaker are sponsored by Dentsply Sirona

16:05 - 16:30 - COFFEE BREAK -



#### 16:30 - 17:15 FKG Dentaire Sàrl Lecture

**3D Endodontics. Treatment and Retreatment Strategies** *Spyros Floratos* 



I declare that I have a past or present financial interest/arrangement, consulting position, or affiliation with the corporate organization(s) whose product(s) I will discuss in my presentation.

### Abstract

The ultimate goal of the instrumentation phase of root canal therapy is to develop a sterile canal system before root filling while retaining as much healthy tooth structure as possible. The root canal system is highly complex, making cleaning during root canal treatment challenging. Micro-CT studies demonstrate that by the end of the instrumentation phase, round files touch only 45-55% of the walls of the canals. Many adjunct techniques have been tried to compensate for these shortcomings including: high concentration of NaOCI, EDTA, ultrasonication or by lasers technologies.

Modern NiTi technologies such as expandable files have shown outstanding results in preparing canals anatomically while maintaining the original shape of the canal. At the same time, they obtain a high gutta percha removal capacity and canal cleanliness in retreatment cases. The latest advancement is a predictable simplified protocol for a safe anatomical canal preparation using heat treatment and enhanced expandable technology.

This presentation will explore the biological and clinical aspects of newer generation NiTi rotary files and will demonstrate strategies and techniques for managing treatment and retreatment cases efficiently.

#### Learning objectives:

At conclusion, participants should be able to:

- Recognize the limitations of current, solid core rotary files in reaching inaccessible areas of the canal system
- Understand the technical, biological and clinical aspects of newer generation expandable NiTi rotary files
- Implement safe and efficient instrumentation strategies for three-dimensional shaping and cleaning in treatment and retreatment cases

#### This lecture and speaker are sponsored by FKG Dentaire Sàrl



#### 17:20 - 18:05 Zarc4Endo Lecture

Precise Minimal Invasive Endodontics and disinfection finally together: Slim Shaper José Aranguren



I declare that I have a past or present financial interest/arrangement, consulting position, or affiliation with the corporate organization(s) whose product(s) I will discuss in my presentation.

### Abstract

Endodontics has evolved a lot in the last years, being today much more conservative and less invasive.

The new shaping system Slim Shaper® (Zarc4endoTM, Spain), is capable to prepare canals in a very conservative way without altering the real anatomy of the teeth, being a minimal invasive, resistant and efficient system.

*Slim Shaper*® is capable to finish the shaping with a 25-30-35-40 or 50 3% taper, if needed.

So, now we can shape the canals keeping the original anatomy and providing a good disinfection, being the canal preparation of the future.

In this lecture, the new system of mechanical instrumentation Slim Shaper® (Zarc4endoTM), compared with the rest of the systems in the market will be introduced, analyzing their advantages and disadvantages.

Also real and difficult clinical cases will be shown, discussing on which should be the clinical approach vs the previous techniques and the prognosis introducing this innovative system. This lecture and speaker are sponsored by Zarc4Endo

#### This lecture and speaker are sponsored by Zarc4Endo



# **HALL 5**

#### 09:00 - 09:40

#### **ESE Wladimir Adlivankine Research Prize Competition** Led by: *Kerstin Galler*

**RP01 – Characterisation of a novel bioactive strontium-based endodontic sealant** \* Parekh S, Hill R, Al-Salehi S

#### RP02 - The role of the kynurenine pathway (KP) in irreversible pulpitis

\* Coulter J, De-Paula-Lemos H, Nile C, LoCoco P, Whitworth J, Valentine R, Durham J, Diogenes A, Mellor A, Telezhkin V

# RPO3 – Artificial intelligence based automatic dental root canal segmentation from cone-beam CT images

\* Szabó B, Benyó B, Szabó B, Dobó-Nagy C

#### 09:45 - 10:30

#### **Original Scientific Research Poster Prize – Oral presentations** Led by: *Kerstin Galler*

R019 – Treatment outcome of surgical and non-surgical endodontic retreatment of teeth with apical periodontitis

\*Stueland H, Ørstavik D, Handal T

RO28 – Histopathological and Immunohistochemical Evaluation of the Effect of injectable-Platelet Rich Fibrin on Bioactive Materials Used as Direct Pulp Capping: An Experimental Animal Study

\* Mansour N, Fayyad D

**RO33 – Long-term cryopreservation effect on the stemness of stem cells of apical papilla** \* Digka A, Gounari E, Kouzi-Koliakou K, Lyroudia K

#### 10:30 - 11:00 - COFFEE-BREAK -

#### 11:00 - 11:40

**Original Scientific Research Poster Prize – Oral Presentations** Led by: *Kerstin Galler* 

**R038 – Root-filled teeth in two parallel Danish cohorts. A repeated cohort study** \* *Razdan A, Schropp L, Væth M, Kirkevang L* 

R085 – Characterization of extracellular vesicles derived from stem cell from the apical papilla in a simulated inflammatory context

Tessier S, Aubeux D, Galvani A, Pérez F, Geoffroy V, \* Gaudin A



#### R086 - Involvement of matrix metalloproteinases, their tissue inhibitors and bone resorption modulators in the pathogenesis of apical periodontitis

\*Jakovljevic A, Nikolic N, Beljic-Ivanovic K, Miletic M, Andric M, Milasin J

#### 11:45 - 12:30

#### **ESE Education Prize Competition**

Led by: Fadi Jarad

EP01 – Digital Endodontics: endodontic education in the third dimension \* Rahim N, Patel S, Foschi F, Austin R, Mannocci F

EP02 - Influence of the incorporation of small-group practical seminars to a traditional lecture for the understanding of root canal morphology classification systems \*Pérez-Higueras J, Oteo Zaccagnini B, Gancedo-Caravia L, Arias A

12:30 - 13:30 - LUNCH -

13:30 - 14:30 **POSTER PRESENTATIONS / TRADE EXHIBITION** 

#### 14:30 - 15:10

#### **Clinical Poster Prize - Oral Presentations**

Led by: Gianluca Gambarini

CO1 - Differential diagnosis of maxillary left central incisor presenting with periapical radiolucency – a case report

\*Kasperek D

#### CO2 – Management of hidden curvatures during root canal treatments: the hybrid crystalographic phases approach

\*Zanza A, Seracchiani M, Reda R, D'Angelo M, Testarelli L, Gambarini G

CO3 - Adhesive fragment reattachment via fibre-posts after deep crown-root-fracture \*Schüssler T, Stirnweiß A, Maier E, Galler K

#### 15:15 - 16:00

#### **Clinical Poster Prize - Oral Presentations**

Led by: Gianluca Gambarini

CO4 - Regenerative endodontic treatment through a retreatment of a tooth with external cervical resorption

\*Polyák M, Vasziné Szabó E, Lohinai Z, Komora P

CO5 – A Rare Case Involving Development of Four Different Types of Root Resorptions Following Dental Traumatic Injury \*Lalum E

CO6 - One accident - various dental injuries \*Magni E, Weiger R, Connert T



16:00 - 16:30 - COFFEE-BREAK-

#### 16:30 - 17:10

#### **Clinical Video Prize – Oral Presentations**

Led by: Gianluca Gambarini

**VO1 – Management of a tooth auto-transplantation under an interdisciplinary approach** \*Vega Sanchez P, Vásquez de Sola Fernández M, Teulé Trull M, Abella Sansm F, Doria Jaureguizar G

VO2 – Surgical removal of a separated instrument into periapical area: a case report with two year follow-up

\*Azizi Jawami A, Soo E, Abdullah D, Lishen W

**V03 - Surgical and non-surgical management of mandibular first molar** \*Cho S, Seo S

#### 17:15 - 18:00

#### **Clinical Video Prize - Oral Presentations**

Led by: Gianluca Gambarini

**VO4 – Multidisciplinary management of external cervical resorptions** \*Loufrani J

## V05 - Treatment of a radicular cyst in the anterior maxilla

\*Tocchio C



THURSDAY, SEPTEMBER 8<sup>TH</sup>

# **HALL 6**

#### ① 09:00 - 18:00 Oral presentations on freely chosen subjects

OP01 - Access cavity designs: practicality vs showmanship

\*Nawar N

OPO2 – Digital scanning as an effective tool to clinically assess the accuracy of guided endodontics

\*Torres A, Dierickx M, Coucke W, Pedano M, Lambrechts P, Jacobs R

**OPO3 – Root canal morphology and its implications in endodontic therapy** \*Alani A

**OPO4 – Evaluation of the clinical efficacy of a novel endodontic kinematics** *Pirani C, \*lacono F, La Rosa G, Chaniotis A, Pedullà E* 

OPO5 - Comparative evaluation of novel rotary full-sequenced file system with optimal glide path motion (OGOP90) and different kinematics on apical debris extrusion — An in-vitro study \*Ali A, Arslan H, Büker M

OP86 – Unconscious Racial Bias May Affect Dentists' Clinical Decisions on Tooth Restorability: A Randomized Clinical Trial \*Patel N, Mannocci F, Patel S, Cotti E, Bardini G

10:30 - 11:00 — COFFEE-BREAK—

**OPO6 – A novel approach to canal preparation. In-out technique** *\*Witkowski G* 

**OPO7 – Validation of a new cbct automated method to explore root canal transportation** *J\*Michetti J, Liron F, Pham D, Basarab A, Diemer F, Kouame D* 

**OPO8 – Apical preparation size dilemma: Balanced approach** *\*Waheed Sharawy W* 

OPO9 – Evaluation in vitro of the performance of R Motion file with regard of Apical Debris Extrusion Under Different reciprocating angles

\*Al Omari T, Arıcan B, Atav Ateş A

OP10 - Withdrawn



#### 12:30 - 13:30 — LUNCH —

13:30 - 14:30 POSTER PRESENTATIONS / TRADE EXHIBITION

# **OP11 - A new Algorithmic file model for shaping of curved root canal** *\*Galal M. Ismail A*

OP12 – Future Instrument customization for root canal preparation. (An Innovative algorithmic file model for shaping narrow canals) \*Galal Ismail A, Galal M

OP13 – Arithmetic Crown–Down Instrumentation Technique, a Safe and Reproducible Solution for Shaping Severely Curved Root Canals \*Elkholy M

OP14 – A novel technique to fabricate artificial teeth model with simulated root canal use for pre-clinical endodontic training

\*Jawami A

**OP15 – Endodontic complications performed by undergraduate dental students** *\*Kaya Büyükbayram I, Al-shammari S* 

16:00 - 16:30 — COFFEE-BREAK—

OP16 – Preclinical 3D-printed laboratory simulation of deep caries and the exposed pulp reduced student anxiety and stress, while increasing confidence and knowledge in vital pulp treatment

\*Chevalier V, Dessert M, Fouillen K, Lennon S, Duncan H

**OP17 – Pulp caping in symptomatic under-age patients: a case series** \* Krokidis A

OP18 - Cryotherapy for haemostasis and post-operative pain control following full pulpotomy in permanent mandibular molar teeth with partial irreversible pulpitis \*Logani A, Kumar V, Akhil VS

**OP19 – Intentional Replantation Revisiting: Factors Affecting the Success** *\*Hamed M* 

**OP20 – Intentional Replantation** \*Mustafa R



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# **HALL 1**

#### 08:45 - 09:00

#### Prize presentations:

the winners of the following prizes will be presented with a certificate: ESE Wladimir Adlivankine Research, Education, Original Scientific Poster, Clinical Poster and Clinical Video.

# 8 Session chair: Maria Pigg

#### 09:00 - 09:40

Understanding the physiology of orofacial pain Ken Hargreaves



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#### Abstract

A skilled surgeon knows the detailed anatomy even before the scalpel is lifted. The same is true for diagnosing and treating pain. A skilled clinician uses their knowledge of the physiology of orofacial pain as the foundation for their clinical decisions. Here, we will review the physiology of orofacial pain from the perspective of providing insight into improved diagnosis and treatment of pain.

#### 09:45 - 10:30

Understanding the differential diagnosis of pain in orofacial tissues Thuan Dao



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# Abstract

Although the understanding of the physiology and mechanisms of chronic orofacial pain has vastly improved, the availability of diagnostic tools such as laboratory, radiological and other imaging tests remains limited. As a result, the differential diagnosis of orofacial pain is primarily based on a comprehensive description of the pain and its impact on daily function, followed by pain, medical and dental histories.

This presentation will illustrate with clinical scenarios how information obtained from patients through structured interview will lead the path to diagnosis, while the physical examination mainly confirms or refutes the provisional diagnosis.



#### 10:30 - 11:00 - COFFEE BREAK -

#### **Session chair:** Simon Stone

11:00 - 11:40

Understanding regenerative endodontic procedures Kerstin Galler



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#### Abstract

After the loss of dental pulp, root canal treatment and obturation of the emerging void with a synthetic material is the indicated treatment. However, regenerative approaches have been established for teeth with incomplete root formation and pulp necrosis, and clinical recommendations exist for the procedure of revitalization. Healing of bony tissues and new tissue formation can take place after provocation of bleeding into the root canal, and a continuation of root formation may be observed. Reports in the literature show that the concept of revitalization has been extended to mature teeth and may constitute a future possibility to realize a "biological" root canal filling.

Whereas the terminology of "regenerative endodontic procedures" implies that recreation of the dental pulp in architecture and function is possible, substantial evidence suggests that repair rather than regeneration takes place. Thus, this lecture will not only provide an overview of regenerative endodontics in the clinic, explain the clinical protocol and report on expected outcomes, but also deal with differences between regeneration and repair and discuss the biological bases for different tissue responses in the context of revitalization procedures.

#### 11:45 - 12:30

Understanding irrigant activation Christos Boutsioukis



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#### Abstract

Irrigation is currently considered the principal means of cleaning and disinfection of the root canal system. Due to the series of obstacles that need to be surmounted, conventional syringe irrigation is often supplemented by activation or agitation methods. There is a widespread view that these adjunct irrigation methods can improve the long-term treatment outcome, so the additional effort, time, and costs are justified. However, this is not entirely supported by the available evidence.



This lecture will outline the main challenges for irrigation, discuss the principles of irrigant activation and agitation and whether these can contribute to the goals of root canal treatment, highlight knowledge gaps, and suggest directions for future work. The focus will be on ultrasonic activation and sonic agitation, which are the most popular methods at the moment, whereas other methods will be discussed in brief.

12:30 - 13:30 — LUNCH —

# 13:30 - 14:30 POSTER PRESENTATIONS / TRADE EXHIBITION

# 8 Session chair: Shaul Lin

14:30 - 15:10 Understanding root canal filling Eugenio Pedullà



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#### Abstract

Root canal filling is a fundamental step in endodontic treatment to prevent incidence or no healing of Apical Periodontitis (AP) preventing re-infection of the root canal system after the endodontic procedure.

Endodontic system filling is performed after the chemo-mechanical preparation and therefore obturation quality of root canals is influenced by their final dimension and their cleaning due to the shaping and irrigation procedures respectively.

Minimal invasive endodontics focuses on minimizing structural alterations after endodontic treatment. Thus, root canals shaping enlargement is reduced and requires more attention to the irrigation and obturation procedures, consequently.

Endodontic sealers play a crucial role within different obturation techniques, to fill the gaps, which are not obturated with gutta-percha. Since sealers interact with the dentin and dentin properties are influenced by the irrigating solutions used during root canal treatment, the choice of sealer needs to be compatible with the irrigation protocol. Moreover, obturation material and technique should be compatible with the reduced shaping dimension of the root canal due to minimal invasive approach.

The lecture aims to provide an overview of root canal filling materials and technique emphasizing the influence of irrigants and irrigation protocols on obturation quality with different filling materials in root canals conventionally or minimally shaped.



15:15 – 16:00 Understanding bioceramic sealers Josette Camilleri



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# Abstract

The sealers labelled bioceramic are a set of hydraulic materials that are unique in endodontics. They require water to set and develop their properties in a moist environment. These properties coupled with the interaction with the environment they are used in makes them very unique as they require a specific clinical protocol for their effective use. The current clinical protocols are set up for other sealer chemistries and lateral condensation and warm vertical techniques. The aim of this lecture is to assess the hydraulic cement sealer properties and link these to the clinical use and obturation technique.

16:00 - 16:30 — COFFEE BREAK —

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# Session chair: Dan Rechenberg

16:30 - 17:10

Understanding the Indications for root canal retreatment Emma Wigsten



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### Abstract

Signs of persistent disease is a common feature of root filled teeth. Therefore, at a specialist clinic in endodontics, the treatment panorama is typically dominated by non-surgical and surgical retreatments. Most teeth in need of root canal retreatment have primarily been treated in general practice. It raises questions about why this situation has to be. My lecture will focus on the origin of the indications of retreatment; root canal treatment in general dental practice.

#### 17:15 - 18:00

#### Understanding vital pulp treatments Hal Duncan



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#### Abstract

Concerns over the cost and destructive nature of dental treatment have led the profession to examine novel methodologies that promote minimally-invasive, biologically-based dental restorative solutions. Traditionally, vital pulp treatment has been damned by unpredictable treatment outcomes and gained a reputation for being a temporary solution. Over the last few years, endodontics has been reinvigorated by the advance of regenerative endodontics, which promises increased predictability, while hopefully delivering cost-effective, simple and conservative solutions for our patients. This is tandem with the recent interest in the management of deep caries and the exposed pulp, which has generated considerable debate in operative dentistry and endodontics. Endodontic groups have published consensus statements describing new terminology and management strategies with united concern over current diagnostic terminology for pulpal disease, as well as the need to increase the scope of vital pulp treatments. Recent research has also focused on the importance of antimicrobial lavage on pulp wounds and hydraulic calcium silicate cements as the material of choice, while other practical questions such as is the level of pulp bleeding operative tenderness to percussion a prognostic factor for the success of VPT have been addressed.



The aims of this presentation are to consider:

- What threatens the pulp and is preserving it important?
- Do we have consensus in deep caries management?
- What is the current understanding of pulpal repair processes?
- How do we classify success in vital pulp treatment?
- Are current vital pulp treatments good enough and what affects success?
- How do we solve classification dilemmas in pulpitis?
- What next?

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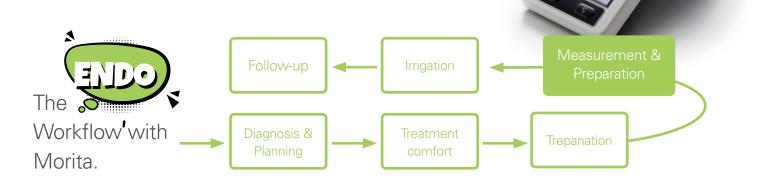
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# **HALL 2**

Session chair: Emmanuel Silva

09:00 – 09:40 The skill of rotary root canal preparation *Gilberto Debelian* 



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# Abstract

One of the most important phases of endodontic therapy is shaping the root canal. This phase removes obstacles so that instruments or solutions have adequate access for the microbial control phase of treatment. Also, the shape allows for optimal root filling. Shaping should be predictable and conservative so as to avoid unnecessary weakening of the tooth.

The seemingly limitless endodontic files and sequences available on the market make the decision as to which to use and when, very difficult for the clinician.

In this presentation I will discuss and compare the different types of NiTi files available on the market, from reciprocating, rotary and the new 3D conforming files, and the application of these files during the scouting, glidepath, and main instrumentation phases before obturation.

# 09:45 -1 0:30

The skill of managing blocked canals Hugo Sousa Dias



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# Abstract

Endodontic treatment is a predictable procedure with high success rates. Success depends on a number of factors, including appropriate instrumentation, successful irrigation and decontamination of the root canal space up to the apices.Complete preparation of the canal with proper working length and adequate debridement of infectious tissue are essential factors to successful root canal treatment. Occasionally, restorative materials, diffuse or discrete calcifications, root canal dilacerations or iatrogenic canal blockages might hinder our ability to achieve patency to the apical third jeopardizing the treatment outcome. In this lecture we will try to give some indications to avoid some of this complications and explain how we can deal with them when they happen.

10:30 - 11:00 — COFFEE BREAK —



# 8 Session chair: Ove Peters

11:00 - 11:40

The skill of removing fractured endodontic instruments Yoshi Terauchi



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# Abstract

One of the most significant factors for instrument retrieval is visibility of the fractured instrument under a dental operating microscope (DOM). A recent retrospective study demonstrated that the success rate in removal of visible fractured instruments under the DOM following the standardized protocol is 100%. On the other hand, when it comes to removal of non-visible fractured instruments, it is completely different from that of visible fractured ones because it is challenging to accurately place the ultrasonic tip in the space on the inner wall of the root canal especially when it is beyond a severe curve. However, it is still deemed possible to remove fractured instruments in non-visible conditions. Therefore, in the lecture it will be shown to maximize the success in removing non-visible fractured instruments as predictably as possible.

#### 11:45 - 12:30

The skill of guided endodontics Thomas Connert



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# Abstract

Luxation injuries and other stimuli may lead to a pulp canal obliteration (PCO). Even though the apposition of tertiary dentine is a sign of a vital pulp, in some cases root canal treatment is indicated in the long term due to apical periodontitis or pulpitis. Depending on the extent of PCO, root canal treatment may be challenging even for experienced and well-equipped endodontic specialists. The 'guided endodontics' (GE) technique was introduced 6 years ago as an alternative to conventional access cavity preparation for teeth with PCO and apical pathosis or irreversible pulpitis. Using three-dimensional radiological imaging such as cone-beam computed tomography and a digital surface scan, an optimal access to the orifice of the calcified root canal can be planned virtually with appropriate software. GE is implemented either with the help of templates analogous to guided implantology (= static navigation) or by means of dynamic navigation based on a camera-marker system. GE has emerged as a field of research in the last 6 years with very promising laboratory-based results regarding the accuracy of guided endodontic access cavities for both static and dynamic navigation.



#### 12:30 - 13:30 — LUNCH —

13:30 - 14:30 POSTER PRESENTATIONS / TRADE EXHIBITION

# 8 Session chair: Leo Tjaderhane

14:30 - 15:10

**The skill of managing Endo-Perio lesions** Stéphane Simon & Jean Yves Cochet



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### Abstract

Endodotium and periodontium relationship has been highly described in the past. There is no doubt left regarding the close relationship between the two structures.

Treating endo perio lesions is finally based on a god understanding of physiology, initial development and microbiology of tooth and bone jaws.

In this presentation mainly based on clinical cases, we will de describe in a first part the biological involvement into endo perio lesions development. In a second part, we will provide clinical skills to treat such lesions, even for teeth considered initially as compromised.

This lecture was initially entrusted to Dr Jean Yves Cochet who cannot attend the meeting. Stéphane SIMON will be the speaker and wil present several cases of Dr Cochet.

#### 15:15 - 16:00

The skill of placing post-endodontic direct restorations Maciej Zarow



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# Abstract

Root canal treated teeth represent a challenge for the dentists. Besides the difficulty concerning complex root canal anatomy and endo treatment by itself, dentist need to consider many other aspects for tooth good long-term outcome.

The first of the most important aspects is a structural risk which can be especially important in case of tooth subgingival deficiencies. The second one is functional risk that needs to be estimated



in each individual case. Depending on the structural deficiency, the type of the tooth (anterior, premolar or molar) and the functional risk, it is important to choose the suitable restoration. For many years the prosthetic crown represented the most chosen option. At the beginning of XXI century, more conservative methods, like onlays or veneers, became more and more popular. Today, however, dentists received the new generation materials and through continuous training they can shape their skills adequately, in order to perform direct composite restorations even in case of structurally compromised root canal treated teeth. During the lecture, the most practical aspects of placing post-endodontic direct restorations will be discussed.

16:00 - 16:30 — COFFEE BREAK —

16:30 - 18:00
 Symposium - Endodontic outcomes - increasing the treatment longevity
 Led by: Shanon Patel

16:30 – 17:15 Outcome in Endodontics – Part 1 Shanon Patel



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#### Aim

To present the latest cutting-edge clinical research which have an impact on the SUCCESS and SURVIVAL of endodontic (re-)treatment.

#### **Objectives**

After attending this presentation, the delegate will appreciate:

- How the CBCT has confirmed new prognostic factors influencing endodontic outcome;
- How the use if the Dental Practicality Index can help predict the SUCCESS and SURVIVAL endodontic (re-) treatment;
- Success or survival-which is more relevant?
- What about the systemic impact of leaving 'hidden' lesions untreated.



#### 17:15-18:00

Outcome in Endodontics – Part 2 Bekir Karabucak



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#### Aim

How to decide when to carry out endodontic microsurgery, intentional replantation, or replace the tooth with an implant-retained crown.

#### **Objectives**

After attending this presentation, the delegate will appreciate the:

- New insights into improving the outcome of microsurgery;
- Indications for intentional implantation;
- When to extract and replace a hopeless tooth.



# **HALL 3**

O9:00 - 12:30
 Symposium - From deep caries to pulp infection treatment: myths and reality
 Led by: Francesco Mannocci

09:00 - 10:30 Management of deep caries: state of the art Marisa Maltz



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### Abstract

An early management of deep carious lesions can prevent pulp therapies and arrest demineralization. Although the discussion about the amount of carious dentin to be removed during cavity preparation is quite old, concepts for caries removal have evolved and changed considerably over the last decades. The antiquate understanding that it was necessary to eliminate completely the microbial contamination of a cavity before placing the restoration was replaced by the current knowledge that maintaining contaminated dentin beneath restorations is inevitable and it is not associated with treatment failure. This lecture will bring together the body of evidence behind caries dentine removal to indicate a conservative treatment, aiming to preserve both tooth vitality and structure. Studies that evaluated the effects of sealing contaminated dentin were described, which were focused on different outcomes, as microbiological counts, clinical characteristics, laboratorial analysis, and radiographic findings. Long-term studies and randomized clinical trials also support the current recommendations. After addressing the available literature on this topic, this lecture will demonstrate that the selective caries removal to soft dentin in a single session is indicated for deep caries lesions aiming to preserve tooth vitality.

#### 11:00 - 11:45

Microbiologic status of dentin caries and treatment directives Domenico Ricucci



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#### Abstract

Within this lecture, the histobacteriological condition of human carious dentine, and the histological response of dental pulps below deep caries lesions are illustrated. Pulp inflammatory





reactions of varying extent are observed, which can remain reversible until bacteria penetrate the pulp space. The opportunity to clinically diagnose reversibility/irreversibility of pulp inflammation is discussed on the basis of recent research. Controversies exist in the literature concerning the depth of caries excavation. Based on the fear of pulp exposure, some clinicians and researchers advocate "selective" excavation, leaving a layer of "firm" dentine, deemed to be noninfected. The results of recent investigations clarifying the pulpal response to selective and non-selective excavation are presented. When a carious pulp exposure occurs, as long as the diagnosis is reversible inflammation and certain clinical conditions are met, a direct pulp--capping procedure may be indicated. Pulpectomy is still regarded as the standard treatment for teeth diagnosed with irreversible pulpitis. Based on histopathologic observations, new treatment directives are proposed for this condition. The possibility to clinically locate the front of infection, remove the diseased/infected tissue through a pulpotomy procedure, and protect the uninfected pulp wound with biocompatible and potentially bioactive materials will be analysed through the use of clinical videos.

#### 11:45 - 12:30

The outcome of vital pulp and root canal treatment – a different perspective *Francesco Mannocci* 



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#### Abstract

The outcome of vital pulp preservation and root canal treatment has been compared in a very small number of clinical studies; clinicians and dental schools in different parts of the world may have entirely different approaches to this topic.

The evaluation of treatment outcomes may also include different aspects, including patient's pain relief and quality of life, the radiographic endodontic outcome assessed with periapical radiographs or cone beam computed tomography, the microbiologic status of the root canal space, and the survival of the tooth itself.

This lecture will go through the final and preliminary results of clinical trials on the outcome of full pulpotomy and root canal treatments looking into the factors which affect the success of these procedures.

#### 12:30 - 13:30 - LUNCH -

#### 13:30 - 14:30

**POSTER PRESENTATIONS / TRADE EXHIBITION** 



# ① 14:30 - 18:00

Symposium – Revitalization and regenerative endodontic procedures Led by: Kerstin Galler

14:30 - 15:15

**Revitalization - Challenges in Disinfection** *Xenos Petridis* 



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# Abstract

Revitalization is a valid treatment option for permanent teeth presented with arrested root development as a result of pulp necrosis that enables healing of apical periodontitis and a biological root canal filling with periodontal tissue ingrowth. Biologically, the treatment relies on events mediated by the periapical stem cells, fossilized dentin matrix growth factors and induced blood scaffold. Most frequently, pulp necrosis is either followed or caused by bacterial invasion resulting in the establishment of biofilm root canal infection. Thus, revitalization takes place into a (previously) biofilm-infected root canal environment after disinfection has been performed.

In immature teeth, irrigation and intracanal medication are the primary means for biofilm disinfection, as root canal instrumentation is recommended it be kept to a minimum. In addition, considering the role of stem cells and growth factors in revitalization, effective disinfection protocols that will not impair the cellular and protein activity are desirable. Clinical studies have shown that root canals can be predictably rendered a niche conducive to mineralized tissue neo-formation only after biofilm infection has been practically eliminated. Laboratory studies have elucidated underlying mechanisms governing bacterial stem cell modulation and indicated an attenuated release of fossilized dentin matrix growth factors in the presence of residual biofilms.

Evidently, biofilm disinfection is both a challenge and the overarching objective in revitalization treatment. The aim of this presentation is to draw attention to aspects concerning biofilm disinfection in revitalization procedures by fulfilling the following objectives:

- 1. outline the profile of endodontic infections in immature teeth;
- review the challenges of chemical biofilm disinfection in immature teeth treated with revitalization procedures;
- **3.** summarize the evidence on the antibiofilm efficacy of root canal irrigants and intracanal medicaments used in revitalization procedures;
- demonstrate how biofilms respond to the various endodontic irrigants used in revitalization procedures;
- 5. present future perspectives on biofilm disinfection in immature teeth treated with revitalization procedures and potential means to mitigate the adverse effects of the realistic encounter between stem cells and residual bacteria/biofilms.



#### 15:15 - 16:00

Revitalization – Considerations for Clinical Procedures Nastaran Meschi



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### Abstract

Nearly one in five children worldwide have a history of dental trauma before the age of twelve. Generally, the immature permanent upper front teeth get injured, often resulting in pulpal inflammation or necrosis and arrested root development. In human beings, post-natal wound healing occurs mainly as a combination of repair and regeneration. However, in the regenerative medical field, novel treatment protocols, biomaterials and scaffolds have been developed to tilt the balance towards tissue regeneration. A huge body of in vitro and in vivo evidence in the tissue engineering field formed the basis for "revitalization" or "regenerative endodontic procedures". In order to translate the lab results into the clinical reality and to create standardization, the European Society of Endodontology and the American Association of Endodontists have prescribed a position statement and clinical considerations, respectively. Nevertheless, clinical and immunohistological reports indicate that this novel endodontic acumen cannot significantly induce regeneration of the pulp-dentinecomplex nor further root development. Where did we get lost in translation?

#### 16:00 - 16:30 — COFFEE BREAK —

#### 16:30 - 17:15

# Outcome after Revitalization Procedures Nessrin Taha



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#### Abstract

Revitalization endodontic procedures are defined as biologically based procedures designed to physiologically replace damaged structures as well as cells of the pulp-dentine complex. Effective control of root canal infection is the key to success of revitalization procedures.

While there aren't enough high-quality outcome studies of revitalization available yet, current data reports generally high success rates despite variable treatment protocols.

In this presentation, patient-based, clinician-based and scientist-based outcome of revitalization procedures will be reviewed. Potential predictive factors for success will be also discussed along with clinical case presentations. The importance of adhering to published guidelines on revitalization procedures, and long term follow up will be highlighted based on published reports of late failures of initially successful cases.



#### 17:15 - 18:00

Biological Bases and Future Perspectives on Regenerative Endodontic Procedures Matthias Widbiller



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#### Abstract

Both preclinical and clinical studies of regenerative endodontic procedures have presented promising results in recent years, bringing the idea of pulp regeneration closer to general dental practice. In addition to the revitalization, which is based on blood clot formation in the root canal, innovative tissue engineering concepts in particular are also coming to the fore. Endodontic tissue engineering (ETE) describes the various approaches based on the orthograde introduction of scaffolds or biomaterials (with or without cells) into the root canal to achieve pulp regeneration.

For revitalization as well as ETE, the first priority for both the practitioner and the patient is clinical success, which is defined by the absence of symptoms and advancement of tooth maturation through thickening and lengthening of the root walls. Nevertheless, further aspects with regard to the structure and microscopic anatomy must be fulfilled to achieve a biological regeneration of the pulp-dentin-complex. The biological conditions that must be met to allow regeneration will be discussed in detail during this presentation.

At first, it is of great importance that the appropriate cells are introduced into the root canal. This can be achieved by autologous transplantation or cell homing from local sources, e.g. the apical papilla. Accordingly, another important factor is the developmental stage of the tooth, because as it matures, the apical foramen narrows progressively and the apical papilla gradually disappears. Furthermore, despite the utmost importance of antiseptic measures, the biological milieu in the root canal should be maintained, which has to be taken into account with regard to disinfection or intracanal dressings. Particularly in ETE, bioactive molecules also play an important role. They are added to scaffold materials in recombinant form or can be isolated directly from the patient's root canal and facilitate the differentiation of cells and the formation of pulp tissue.



# **HALL 4**

#### 09:00 - 09:45 DirectEndodontics Lecture

Modern Endodontics—Traditional versus Minimally Invasive Charles J Goodis



I declare that I have a past or present financial interest/arrangement, consulting position, or affiliation with the corporate organization(s) whose product(s) I will discuss in my presentation

### Aims

- 1. Review the geometry of Traditional versus Minimally Invasive Endodontic instruments.
- 2. Discuss the shapes produced by Traditional versus Minimally Invasive Endodontic instruments.
- **3.** Talk about case selection advantages and disadvantages when choosing Traditional versus Minimally Invasive Endodontic Instruments.



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#### **Learning Objectives**

- **1.** For the attendees to better understand the geometry of Traditional versus Minimally Invasive Endodontic instruments.
- 2. For the attendees to better know the shapes produced by Traditional versus Minimally Invasive Endodontic instruments.
- **3.** For the attendees to be aware of case selection advantages and disadvantages when choosing Traditional versus Minimally Invasive Endodontic Instruments.

This lecture and speaker are sponsored by DirectEndodontics

#### 09:50 - 10:35 Fotona Lecture 2

The Light Walking to ESE – Efficiency, Safety and Excellence of the Lasers in Endodontics Damir Šnjarić



I declare that I have a past or present financial interest/arrangement, consulting position, or affiliation with the corporate organization(s) whose product(s) I will discuss in my presentation.

Rising awareness of morphology complexity in endodontics sets new clinical standards regarding cleaning and disinfection procedures during endodontic therapy. The benefits of contemporary dental laser application in dentistry are supported by both scientific studies and clinical experience. Dental lasers may present an addition, but also the alternative to conventional endodontic disinfection, as well as to advanced ultrasound and sound techniques of irrigant agitation. Beside irradiation methods using diodes and Nd:YAG lasers, novel evidence-based techniques of laser activated irrigation (LAI) with Er:YAG laser represent new standards of both efficient and safe clinical procedures. The aim of the lecture is to present the latest studies regarding the thermal effects during the endodontic laser irradiation procedures, as well as apical extrusion potential of LAI, but also to provide comprehensive review of indications, benefits and methods of laser application in endodontics, with the particular emphasis on PIPS (Photon Initiated Photoacoustic Streaming) and the novel SWEEPS (ShockWave Enhanced Emission Photoacoustic Streaming) concept of LAI.

#### This lecture and speaker are sponsored by Fotona

10:35 - 11:00 — COFFEE BREAK —



#### 11:00 - 11:45 **VDW Lecture**

Reciprocating canal preparation for the management of challenging canals: clinical applications based on scientific evidence

Ghassan Yared



I declare that I have a past or present financial interest/arrangement, consulting position, or affiliation with the corporate organization(s) whose product(s) I will discuss in my presentation."

# Abstract

Reciprocation with unequal angles is widely used for canal preparation. Scientific evidence supporting this concept is exhaustive. More than 350 articles evaluating all clinical aspects of canal preparation have been published on Reciproc in peer-reviewed endodontic journals. Based on science, this presentation will discuss the clinical applications, safety and efficiency of Reciproc, with emphasis on the management of challenging canals such as second mesiobuccal canals in maxillary molars, and blocked, calcified and severely curved canals.

This lecture and speaker are sponsored by VDW

### 11:50 - 12:35 **Eighteeth Lecture 2**

Warm gutta-percha tips & tricks Fabio Gorni



I declare that I have a past or present financial interest/arrangement, consulting position, or affiliation with the corporate organization(s) whose product(s) I will discuss in my presentation.

#### Abstract

Root canal shaping and cleaning are two essential steps of the root canal treatment to achieve a positive outcomes, but if we want to close the gap between what is possibile and what we need the role of the tridimensional obturation becomes fundamental for the final success. The obturation system we will choose in our daily practice should be suitable in all different anatomic conditions. That's why the role of warm gutta-percha in three dimensional obturation is one of the most important step of the therapy, especially when the anatomy is non compatible with the single cone technique. In the lecture we will describe how is possible to reach a perfect control of the apical limit of the filling, maintaining a great hydraulic pressure and a 3D sealing. Warm gutta-percha, tips & tricks, cone fit, vertical condensation and new devices are the keys of endodontic the success.





### Learning objectives:

- How to create a perfect cone fit
- How to improve the hydraulic pressure during the packing
- How to modify the setting of the new devices in order to use different sealer

This lecture and speaker are sponsored by Eighteeth

12:30 - 13:30 — LUNCH —

13:30 - 14:30 POSTER PRESENTATIONS / TRADE EXHIBITION

#### 14:30 - 15:15 **Coltene Lecture 2**

Actual perspective on retreatability of bioceramic root canal sealing material Sebastian Ortolani



I declare that I have a past or present financial interest/arrangement, consulting position, or affiliation with the corporate organization(s) whose product(s) I will discuss in my presentation.

# Abstract

When initial nonsurgical endodontic treatment fails, root canal retreatment is one of the treatment options that allows a patient to retain their natural tooth. Infection of the root canal system is thought to be the main reason for treatment failure, and, therefore, access to the contaminated areas inside the root canal system is crucial for success.

The obturation of the initial root canal treatment can affect the outcome of the retreatment. Removal of obturation materials from the root canal is the first aim of retreatment procedures. Bioceramic sealing materials from the calcium silicate family seem to be promising because of their biocompatibility and limited cytotoxicity, but the ability to retreat canals obturated with bioceramic sealing materials is a current concern for practitioners.

The aim of this lecture is to evaluate the efficacy of conventional techniques and rotary instrumentation in the endodontic retreatment of bioceramic sealers.

# This lecture and speaker are sponsored by Coltene



# 15:20 – 16:05 Guilin Woodpecker Medical Instrument Co.,Ltd. Lecture 2

Canal Blockage ESE Version Antonis Chaniotis



I declare that I have a past or present financial interest/arrangement, consulting position, or affiliation with the corporate organization(s) whose product(s) I will discuss in my presentation: Coltene.

Hugo Sousa Dias



I declare that I have a past or present financial interest/arrangement, consulting position, or affiliation with the corporate organization(s) whose product(s) I will discuss in my presentation.

The main objective of root canal treatment procedures is to reach the apical third and achieve infection control compatible with tissue healing. Occasionally, restorative materials, diffuse or discrete calcifications, root canal dilacerations or iatrogenic canal blockages might hinder our ability to achieve patency to the apical third jeopardizing the treatment outcome. This workshop aims to discuss and practice the management of root canal blockages that relate to calcifications and ledges.

#### **Learning Objectives**

Management of calcifications Bypassing ledges and false canals

This lecture and speakers are sponsored by Guilin Woodpecker Medical Instrument Co.,Ltd

16:05 - 16:30 - COFFEE BREAK -

#### 16:30 - 17:15 **Eighteeth Lecture 3**

Management of complex endodontic anatomy Mohammad Hammo



II declare that I have a past or present financial interest/arrangement, consulting position, or affiliation with the corporate organization(s) whose product(s) I will discuss in my presentation.

#### Abstract

Root canal anatomy is a highly complex with over time clinicians missing canals, or unable to negotiate them properly. Failure to recognize the variations in root canal anatomy may result in unsuccessful endodontic outcomes.



Clinicians have commonly encountered with severely curved canals, bifurcating canals, multiple foramina, fins, deltas, loops, inter-canal links, and accessory canals

This presentation describes the endodontic management of teeth with anatomic variations in the root canals that were identified during routine endodontic treatment

This lecture-based on clinical cases-is designed for general dentists who wish to advance their clinical skills while managing teeth with anatomic variations in the root canals that were identified during routine endodontic treatment. Attendees will learn how to perform efficient endodontic access, clean and shape the root canals system and finally obturate in a predictable manner.

### This lecture and speaker are sponsored by Eighteeth

17:20 - 18:05 Bondent Group, Lecture 1 Flat Side Files the New Trend Nuno Pinto



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Nowadays it is important to simplify our protocols as much as possible.

In my clinical experience over the years, I always have tried to simplify my procedures as far as I can, yet never neglecting the guarantee of success in the long run.

Specifically talking about shaping procedures, the trend is split between rotary and reciprocation. The introduction of the reciprocation movement has broken many paradigms, as well as pushing the boundaries of canal shaping and its parameters.

It is true that reciprocation was already discussed in the last century, but it has never had as much prominence as nowadays, moreover tending to evolve.

In my talk Im going to show cases where I use a single file, rotary or reciprocating, and will be able to show the advantages of using flat sided files.

This new and innovative reciprocating system has a design that is a complete departure from the norm. We can also complement it with some "accessory" files so this system can be used not only by those keen on the use of the single file but also by the those who like to introduce more files and make the treatment more complex yet theoretically completer and more predictable as it is claimed.

The new reciprocating file is a hybrid with an innovator design.

The first 6 mm are solely a reciprocating S design and then the patterns change creating a very interesting M-wire resistant where needed, giving space for the debris to come up freely. The advantage of having two designs on the same file makes its performance very effective and with a very interesting resistance for a supposedly unique file.

The introduction of flat side files may be the route that instrumentation needs in the path towards minimally invasive procedures.

This lecture and speaker are sponsored by Bondent Group



# **HALL 5**

# © 09:00 – 18:00 Oral presentations on freely chosen subjects

OP21 – A Prospective clinical study investigating the effectiveness of partial pulpotomy using two materials after relating preoperative symptoms to a new classification of pulpitis: Reflections

\*Careddu R, Duncan H

**OP22 – Case selection for successful pulpotomy in symptomatic permanent mature teeth** *\*Santos J* 

**OP23 – Comparative efficacy of materials used in patients undergoing pulpotomy or direct pulp capping in carious teeth: A systematic review and meta-analysis** Fasoulas A, \*Keratiotis G, Spineli L, Pandis N, De Bruyne M, De Moor R, Meire M

OP24 - Withdrawn

**OP25 – Nano Intracanal Medicaments; A New Era For Root Canal Disinfection Begins** \*Nashaat Y

OP63 – The use of bacteriophages in combination with antibiotics against persistent root canal infections caused by Enterococcus faecalis \*Voit M, Trampuz A, González Moreno M

10:30 - 11:00 — COFFEE BREAK —

**OP31 – Large bone lesions of the jaws: differential diagnosis and surgical treatment** *Tochhio C, Ettorina Soldati C, \*Darvizeh A* 

**OP32 - Surgical retreatment – The past or the future of endodontic surgery?** *\*Weissman A* 

**OP33 – Current update on targeted endodontic microsurgery** \*Antal M

**OP34 – Decompression of a large size through and through maxillary lesion ultimately solved with an endodontic microsurgical approach using L-PRF regeneration technique** \*Gonçalves N, Martins J, Pereira M, Ginjeira A

OP35 – Application of cold atmospheric plasma and ozone therapy in the treatment of large cyst-like periapical lesions

\*Pavelic B, Pavlovic I, Bago I, Segovic S, Anic I

12:30 - 13:30 - LUNCH -



13:30 – 14:30 POSTER PRESENTATIONS / TRADE EXHIBITION

OP41 - Cytocompatibility and osteogenic potential of calcium silicate-based endodontic sealers S\*Ismael S

**OP42 – Biological interaction between calcium silicate-based endodontic cements and human dental stem cells** \*Sanz J

**OP43 – Epoxy silicate-based vs. Tricalcium silicate-based root canal sealers in different clinical scenarios** \*Solomonov M

OP44 – Clinical Outcome of Non-Surgical Root Canal Treatment and Retreatment of teeth with Apical Periodontitis using Cold Hydraulic Condensation with CeraSeal Bioceramic Sealer: a retrospective analysis

\*Cardinali F

**OP45 – Tooth discoloration effect of a novel calcium silicate based material – BIOfactor MTA** *Mutlu S, \*Akbulut M* 

16:05 - 16:30 — COFFEE BREAK —

**OP51 - Do Medico-Legal Considerations Influence the Decision-Making Process in Endodontic Treatment? A Systematic Review of the Literature** *Rosen E, \*Merzlak I, Baram S, Bjørndal L, Pigg M, Tsesis I* 

OP52 – Psychological factors associated with pain in patients undergoing endodontic procedures

\*Sadr A, Gholamrezai A, Gray Mcneilage A, L. Randall C, P. Kapos F, Ashton-James C

**OP53 – Management and Treatment Planning for The Ageing Patient** \*Basturk F

OP54 – Root canal treatment outcome in pediatric patients with and without general anesthesia

\*Elbahary S



# **OP55 - Should CBCT be used routinely to evaluate outcome of root canal treatments?**

Guerreiro Viegas O, \*Brochado Martins J

# **HALL 6**

# ① 09:00 - 18:00 Oral presentations on freely chosen subjects

**OP26 – Anatomical features and treatment of lesions in the premaxillary zone** *\*Soldati C, Darvizeh A, Tochhio C* 

# OP27 – Importance of diagnosis and case management in teeth with periapical pathology and presence of open apex

\*Nieto Suárez J, Estevez Luaña R, Perez Alfayate R, Conde Villar A, Valencia de Pablo O

# OP28 – Biodentine apical plugs in the treatment of traumatized immature teeth with large periapical lesions

\*Georgiadou A

# OP29 - Withdrawn

**OP30 – Endodontic regeneration: myths vs. Facts** \*Abo Hatab T

10:30 - 11:00 — COFFEE BREAK —

# OP36 - Evaluation of the sealing ability of three root canal sealers

\*Kelmendi T

**OP37 – Disinfection of gutta-percha cones for increased wettability: effect on surface topography, chemical surface modifications and surface free energy** *\*Felicjan K, Abram A, Drnovšek N, Kocjan A, Fidler A* 

OP38 – Antimicrobial activity of root canal sealers against an endodontic multispecies biofilm

\*Kapralos V, Sunde P, Camilleri J, Karygianni L

#### **OP39 – Synchronized hydraulic condensation obturation technique** \* Chawshli M

**OP40 - Postoperative pain following root canal filling with bioceramic vs. traditional filling techniques: a systematic review and meta-analysis of randomized controlled trials** \*Mekhdieva E, Del Fabbro M, Alovisi M, Comba A, Scotti N, Tumedei M, Carossa M, Berutti E, Pasqualini D

#### 12:30 - 13:30 - LUNCH -

13:30 – 14:30 POSTER PRESENTATIONS / TRADE EXHIBITION FRIDAY, SEPTEMBER 9<sup>TH</sup>



#### **OP46 – Endodontic diagnosis and healing assessment of periapical lesions – intraoral periapical radiographs vs high resolution cbct scans case series** *Cristescu Rosu A, Chaniotis A, Pangica A,\*Manea S, Cosac D*

### OP47 – How to deal with large cystic-like periapical lesions: diagnosis, clinical management and outcome

\*Ruiz Sánchez X, Abella F, Durán-Sindeu F, Roig M

**OP48 – Finding the scope for the efficacy Of Dental Imaging In Crack Teeth Diagnosis, A Scoping Review** \*Sadr A, Hegde S, Zhou X

OP49 – Diagnostic aspects and treatment planning in cases with extremely obliterated and supplementary root canals – CBCT imaging and microscope visualization \*Kiefner P, Gilga A

**OP50 – Root Canal Treatment Strategies: Managing Challenges for Better Outcomes** \*Zogheid C

16:05 - 16:30 — COFFEE BREAK —

OP56 – A novel ultrasonic canal irrigation system: Mechanism of action and cleaning efficacy

\*Park E, Ahn Y, Shon W

**OP57 – New waves in endodontic irrigation** \*Fayek H

**OP58 – The Effect of Hypochlorous–Acid on Dissolving Bovine Pulp Tissue** \*Bozkurt D, Terlemez A

OP59 – Surface free energy and wetting of root dentin surface treated with different irrigation protocols

\*Pavlova K, Abram A, Kocjan A, Fidler A

OP60 - Efficacy of calcium hydroxide-loaded poly (lactic-co-glycolic acid) biodegradable nanoparticles as an intracanal medicament for antimicrobial activity against endodontopathogenic microorganisms in a multi-species bacterial-fungal biofilm model: an ex vivo study

\*Leelapornpisid W





# **HALL 1**

8 Session chair: Ildikó Márton

09:00 - 09:40 Understanding tooth discolouration Hany Mohamed Aly Ahmed



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### Abstract

The previous two decades have witnessed improvements in endodontic materials and treatment protocols. However, tooth discolouration, especially in anterior teeth, is considered as one undesirable consequence as it creates a range of aesthetic problems. This lecture aims to discuss tooth discolouration caused by different clinical procedures such as vital pulp therapy, regenerative endodontic procedures and root canal treatment. It provides an update on the discolouration potential of materials including root canal irrigants, intra-canal medicaments, cements, endodontic and post-endodontic filling materials. This lecture also aims to discuss the recommended guidelines that should be followed by dental practitioners to prevent and manage tooth discolouration, in addition to potential challenges and prognosis of different bleaching approaches.

#### 09:45 - 10:30

#### Understanding vertical root fractures Aviad Tamse



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# Abstract

Vertical Root Fracture (VRF) in the endodontically treated tooth, is a complication of root canal treatment manifesting itself as a chronic Endodontic –Periodontal entity. It is difficult at time to diagnose VRF despite AAE's "pathognomonic combination" for accurate VRF clinical diagnosis and recent developments in dental imaging.

VRF usually manifest itself clinically, years after it was originated in the root. The direction and propagation of the fracture is mostly bucco lingual. The etiology of the VRF is multifactorial, resulting in difficulty to prevent it. The result of such a fracture in the endodontically treated tooth is, in most times, extraction of the root or tooth although with surgical endodontics some of these teeth can be saved.



VRF is a frustrating issue both for the operator and the patient alike. This presentation will focus on the most vexing issue for the dentist – achieving accurate and timely VRF diagnosis. If the diagnosis is not achieved in time, it can lead to destructive results in the bone surrounding the tooth. The AAE 2008 communique regarding the chronic dental fractures and the new 2015 categorization will be discussed in this presentation.

#### 10:30 - 11:00 — COFFEE BREAK —

# 8 Session chair: Valérie Chevalier

11:00 - 11:40 Understanding the outcomes of endodontic treatments Lise-Lotte Kirkevang



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### Abstract

Endodontology deals with the causes, diagnosis, prevention, and treatment of pulpitis and apical periodontitis. After any treatment, it is essential to assess the treatment result, - the treatment outcome, and this information is then used to inform our patients on prognosis of a proposed treatment.

A treatment outcome can be defined as a measure used to assess:

- Efficacy, the ability of an intervention to provide the desired effect under ideal conditions.
- Effectiveness, the ability of an intervention to have a meaningful effect on patients under normal clinical conditions.
- Efficiency, how to do things in the most economical way.

What is most important and relevant to investigate?

A review of the endodontic literature reveals that outcome have been measured and reported in many ways. Most of the reported outcomes tend to be clinician-reported and not patientreported, and it is difficult to find a clear consensus among researchers, clinicians, patients and other stakeholders, on what are the most important and relevant outcomes for a given endodontic treatment.

At the same time, our diagnostic tools constantly evolve. New tools appear, and we become able to detect more subtle signs related to both detection of disease and recovery after treatment. But are more details always relevant for the patient? Will it affect our decision-making process and eventually our treatment choices? Who will gain from new methods, and does implementation of new methods come with a price we are willing to pay?



#### 11:45 - 12:30

Understanding the new IADT guidelines for the management of traumatic dental injuries *Paul Abbott* 



Conflict of interest statement: I declare that I have a past or present consulting position / affiliation with a corporate organization whose product(s) I may discuss in my presentations. The corporate organization is: OzDent Dental Products Pty Ltd. Position: Occasional Consultant and/or Lecturer for which I am paid an Honorarium. Products I may mention: Ledermix Paste, Calmix paste, Calasept Plus paste.

# Abstract

Traumatic dental injuries (TDI's) are the 5th most common disease/condition in humans with about 1 billion people having suffered such an injury. Hence, it is imperative that all dentists are familiar with the best evidenced-based information to allow timely and appropriate management of TDI's. The International Association of Dental Traumatology (IADT) first published Guidelines for the management of TDI's in 2001. They were revised in 2007 and 2012. The most recent update was published in Dental Traumatology in August 2020. The latest Guidelines consist of four articles. The first article presents general information relevant to all traumatic dental injuries. The second article covers the management of avulsed teeth and the third covers the management of fractures and luxation injuries of permanent teeth. The final article covers injuries to the primary teeth. The Guidelines have been based on the best available evidence following extensive reviews of the literature, along with the expert opinions of the committee members who come from a wide variety of speciality backgrounds. The main aim of the Guidelines is to provide readers with easy-to-access information that can be consulted when faced with a TDI. In particular, they outline the emergency management of the various injuries and they have general information for follow-up management and the possible outcomes. This lecture will summarise the main changes in the latest Guidelines to provide practitioners with an update on the management of TDI's.

#### 12:30 - 13:30 — LUNCH —

### 13:30 - 14:30 POSTER PRESENTATIONS / TRADE EXHIBITION

Session chair: Roberto Careddu

14:30-15:10 Understanding nanotechnology in Endodontics Anil Kishen



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SATURDAY, SEPTEMBER 10<sup>TH</sup>

# Abstract

Therapeutic methods to eliminate root canal biofilm is the primary focus in endodontic treatment. In spite of some significant technological advances in the past two decades, root canal environment still remains to be a challenging niche to eliminate surface-adherent bacterial biofilm predictably. Engineered bioactive nanoparticles belonging to the group non-conventional antimicrobials are described as a class of antimicrobials that display potent antibiofilm characteristics with low rates of bacterial resistance and cellular toxicity besides the distinct immune modulatory capabilities. These agents, if employed as a final irrigant or intracanal medication, have the potential to present supplementary antimicrobial effect as well as immunomodulatory effect, reducing periradicular inflammation, while promoting rapid and predictable periapical tissue healing.

### Aims:

This lecture aims to cover the applications of engineered bioactive chitosan based-nanoparticles in the treatment of teeth with apical periodontitis.

### **Objectives:**

- Will learn the role of engineered nanoparticles in root canal treatment
- Will learn the mechanism by which engineered nanoparticles improve mechanical integrity of root-filled teeth
- Will learn the mechanism by which engineered nanoparticles modulate cellular functions to promote healing

#### 15:15 - 16:00 Understanding tooth autotransplantation Francesc Abella



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# Abstract

When a tooth has been non-surgically retreated and disease persists, the option for saving the tooth is often based on performing an apical micro-surgery. However, apical surgery may be contraindicated because of anatomic factors, thick bone, periodontal attachment loss or some medical conditions. Intentional replantation is the treatment of choice for some of these cases. In the case of teeth that are not restorable or with a poor prognosis, the options

include no treatment (wait and see), extraction and replacement using a single-tooth implant, a fixed dental prosthesis or a removable dental prosthesis and tooth autotransplantation if an appropriate donor tooth is available.

As opposed to dental implants, an autotransplanted tooth presents several advantages including proprioception from the periodontal ligament, continuous skeletal growth and potential betters' esthetics, especially in growing patients.





Surgical extrusion, intentional replantation and tooth auto-transplantation have been well known clinical procedures in the past, supported by scientific evidence and numerous clinical studies. The advent of titanium implant rehabilitation has reduced the use of these successful treatments in daily practices and the present average clinical perception is of a riskful treatment, which, in the major percentage of the cases, can evolve in ankylosis and / or resorption. This perception is due to the confusion of data coming from traumatology studies of replantation of traumatically avulsed teeth, in which biological and clinical conditions are completely different. The new trend in extreme conservation and preservation of natural sound tissues is leading to a rediscovery of these kind of treatments.

This presentation is based on current clinical and scientific evidence and aims to provide dentists a detailed background, clinical procedures and the outcome of these procedures and to compare them with other alternatives.



Partnering for the future of endodontics, will you accept the challenge?

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# **HALL 2**

🕺 Session chair: Roula Abiad

09:00 - 09:40

The skill of orthograde endodontic treatments with microscope *Peter Komora* 



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# Abstract

The impact of magnification.

An orthograde endodontic treatment is one of the most complex dental intervention. Without any type of magnification, the operator have just a few visual information about the complicated internal structure of the tooth. The good visual control is essential in the modern endodontics. The use of the operating microscope raised the quality of the everyday endodontic works. The high magnification and the good illumination helped to increase the number of succesfully manageable cases. The microscope could help to improve every steps of the root canal treatment procedure. In my lecture I would like to show, how can we apply the microscope in the everyday routine. Through case presentations I would like to show the impact and advantages of the high magnification on the endodontic field.

#### 09:45-10:30

The skill of single cone canal filling with bioceramic sealers *Nicola Grande* 



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# Abstract

The rise of calcium silicate-based root canal sealers, commonly known as Bioceramic (BC) Sealers, is determining a change of paradigm in the field of root canal filling. The properties that these materials have in common with the former Mineral Trioxide Aggregate, such as hydrophilicity, bioactivity, sealing ability, slight expansion upon setting, biocompatibility and high stability over time, allow clinicians to change the aim of the technical procedures used to seal the endodontic space. The tridimensional approach of all the techniques using warm gutta-percha and traditional sealers aims to seal with the maximum amount of gutta-percha and the minimum amount of sealer, because of the intrinsic properties of the sealer used. Using BC sealers, the gutta-percha point is conceived as a vehicle to deliver a tight seal that is obtained by the sealer itself, other than to make retreatment easier. Researches and clinical trials are still controversial about the



possibility to use heat in the compaction of gutta-percha and BC sealers. In fact, the use of cold techniques is still recommended for most BC sealers, because of their possible degradation due to high temperatures. This lecture aims to give a complete view on the different possible alternative root canal filling techniques and a detailed description how to obtain a hydraulic tight seal of the root canal space using BC sealers, thus giving the attendees the capability to choose the optimal clinical technique based on anatomical features of the root canal system.

#### 10:30 - 11:00 — COFFEE BREAK —

# 🕺 Session chair: Fadi Jarad

#### 11:00 - 11:40

The skill of warm compaction of gutta-percha Fabio Gorni



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#### Abstract

Root canal shaping and cleaning are two essential steps of the root canal treatment to achieve positive outcomes, but if we want to close the gap between what is possibile and what we need, the role of the tridimensional obturation becomes fundamental for the final success. The obturation system we will choose in our daily practice should be suitable in all anatomic conditions, that's why warm gutta-percha compaction is one of the most important steps of the therapy, especially when the anatomy is non compatible with the single cone technique. Are bioceramic cements the solution? are the techniques compatible? In the lecture we will describe how is possible to reach a perfect control of the apical limit of the filling, maintaining a great hydraulic pressure and a 3D sealing. Warm gutta-percha, tip & tricks, cone fit, vertical condensation are the key words of endodontic success.

#### 11:45 - 12:30

#### The skill of endodontic microsurgery Charbel Allam



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#### Abstract

Periradicular surgery is now increasing in importance as practitioners increase their knowledge and skill in saving teeth that were previously extracted. Many advances have occurred in recent years in both technique and materials. However, because endodontic surgery can be more difficult



than nonsurgical treatment, many dentists refer patients needing endodontic surgery to those more specialized. The practitioner should incorporate the many advances in endodontic surgical techniques and materials into their practice in order to ensure more predictable results.

Talking about skill means talking about our experience during all these years. However, the prognosis of the surgical procedure can be affected by the presence of serious anatomical elements such as the maxillary sinus, the mandibular nerve and the palatal root. In such case, the surgeon will be facing two situations: whether the apex is in close contact with the sinus membrane or the mandibular nerve, or the apex is in the sinus or beyond the nerve or near the palatal vessel if we have to get to the palatal root.

Endodontic infections that develop in the maxillary posterior teeth can easily spread into the maxillary sinuses causing pathological effects.

The relationship between dental infections and sinus disease is widely recognized in both the dental and medical literature. How to treat sinusitis due to apical infection and the treatment depend if it is a granuloma, a large cyst or a benign tumor like odontogenic keratocyst.

The paresthesias of the inferior dental nerve consists of a complication that can occur after performing a root canal treatment due to overfilling material: how to solve the problem?

How to treat large cyst due to endodontic infection?

Many questions but one answer: Endodontic Microsurgery, and the procedure will be descripted step by step for the different type of situation.

#### 12:30 - 13:30 — LUNCH —

13:30 - 14:30 POSTER PRESENTATIONS / TRADE EXHIBITION

# ℜ Session chair: Julian Leprince

14:30 – 15:10 The skill of using lasers in endodontics Roeland de Moor



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# Abstract

Laser technology has already been introduced in dentistry since the 1960s and more specific in endodontics since the 1990s. The most interesting options with clear scientific background include cleaning and disinfection of the root canal system, the assessment of pulp vitality with Laser Doppler Flowmetry, treatment of dentinal hypersensitivity and laser bleaching of sclerotic teeth (no walking bleach needed). "Wavelength specificity" is the keyword and this will determine how laser light interacts with the target i.e. enamel and dentin, smear layer, debris, biofilm, bacteria, irrigation solutions and the dental pulp.



During this presentation the laser-target interaction of the different endodontic wavelengths is explained, special attention is given to the topic of laser cleaning and disinfection with a more specific focus on the power of the bubble (laser activated irrigation – LAI). A comparison is also made with the more popular (ultra)sonically activated irrigation. High speed imaging is used to explain how fluid agitation is created during LAI and to illustrate the different types of LAI.

#### 15:15 – 16:00 The skill of placing apical plugs

Marga Ree



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### Abstract

Treatment of young permanent teeth with pulp involvement represents both an endodontic and a restorative challenge. In this presentation, treatment options for non-vital teeth with open apices will be discussed. Although regenerative endodontic procedures (REP) have been recommended as a promising alternative to the calcium silicate cement barrier technique, there are still limitations and disadvantages, which might result in an unpredictable outcome. In contrast, there is substantial evidence of the favorable outcome of immature teeth treated with the MTA barrier technique.

Marga Ree has practiced endodontics since 1998 and recently undertook a recall of all her trauma patients, of which she was able to recall 80%. She will compare the apical plug technique with regenerative endodontic procedures and discuss pros and cons of both treatment modalities. A variety of cases with long-term follow-ups will be presented.

Key learning points:

- **1.** Understand the advantages and disadvantages of apical plug placement versus regenerative endodontic procedures
- 2. Describe the clinical procedure of placing an apical plug of calcium silicate cement
- **3.** Understand the role of reinforcement with an adhesive build-up for the longevity of non-vital immature teeth



O9:00 - 12:30
 Symposium - Is the pulp overexposed?
 Led by: Hal Duncan

Moderator: Hal Duncan



09:00 - 09:45 Why keep the pulp? Opportunities and challenges from an Endodontist and Pulp Biologists perspective Nikita Ruparel



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### Abstract

Treatment planning is key to clinical success. Permanent teeth diagnosed with "irreversible pulpitis" have long been implied to have an irreversibly damaged dental pulp that is beyond repair and warranting root canal treatment. Pulpotomy, an often-overlooked vital pulp therapy procedure, has now re-emerged as a minimally invasive, biologically based treatment option for teeth diagnosed with pulpitis. Moreover, with recent advances in newer biocompatible, anti-inflammatory and osteo-inductive biomaterials, the face of vital pulp therapy has evolved. Clinical findings by Cushley et al, demonstrate successful outcomes in 88% of cases at 3-years. However, the clinical dilemma of who should perform vital pulp therapy procedures, case selection, restorative timeline and financial sustainability are areas that continue to pose a significant challenge to adopting these procedures in mainstream endodontics. This presentation therefore aims to present the biological basis for vital pulp therapy procedures, new data pertaining to outcomes, predictive factors for success, clinical scenarios for best practices and emerging ideologies for pulp biologists and clinicians.



#### 09:45 - 10:30

Is exposing the pulp a problem? What should we really do with deep caries *Matthias Zehnder* 



Conflict of interest statement: Matthias Zehnder is a founding member of smartodont IIc, an ETH/University of Zurich spin-off that specializes in product development and technology transfer. Through this connection, he is financially involved with these products: RepliDens, MM.Tooth, and DualRinse HEDP.

### RESUMO

Recent discussion has focused on the avoidance of pulp exposure and the selective removal of caries in cases with deep caries, a sensible pulp and symptoms of not more than reversible pulpitis. However, is pulp exposure a negative prognostic factor and is complete (non-selective removal) really over-treatment? Are other factors important such as pulpal lavage or material choice.

This presentation will take a closer and sceptic look at the evidence for and against pulpal exposure in teeth with deep caries.

#### 10:30 - 11:00 — COFFEE BREAK —

### 11:00 - 11:45

New Insights into pulpits management: Can we reverse the irreversible? *Ikhlas El-Karim* 



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### Abstract

A wave of recent in vitro research has investigated potential anti-inflammatory therapies for pulpitis, while in addition a series of in vivo studies which have demonstrated good success with VPT in teeth with signs and symptoms indicative of irreversible pulpitis. So can we now reverse the irreversible? And are there next-regeneration solutions available that may positively affect the balance of inflammation-regenerative axis?

This lecture will exam scientific and clinical evidence investigating advanced pulpits and consider what is possible now and what may be possible in the future, while considering if irreversible pulpitis remains a reflective diagnosis.



### 11:45 - 12:30

Should it stay or should it go: Is VPT cost-effective and do dentists believe in it? *Falk Schwendickie* 



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### Abstract

Maintaining pulp vitality when managing deep lesions is increasingly supported by evidence. However, it remains unclear what the long-term impact (also in terms of costs for health services) of this in comparison with alternative strategies is, and if providers and patients accept such minimal-invasive approach. The lecture will lay out how the clinical approach of dentists worldwide towards deep lesions differs and how it changed over time – along the emerging evidence. It will also provide an overview on current long-term data and frame maintaining pulp vitality under a health services perspective with an economic focus.

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12:30 - 13:30 — LUNCH —

13:30 - 14:30 POSTER PRESENTATIONS / TRADE EXHIBITION

# ① 14:30 - 16:00 Symposium - Tooth (root) Resorption - from confusion to clarity Lod by Should in C. Doul Abbett

Led by: Shaul Lin & Paul Abbott

14:30 - 15:15

Immune pathways of tooth and bone resorption at the cell and molecular levels Shaul Lin



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### Abstract

Bone and tooth resorption are complicated processes that involve systemic and local stimuli that are influenced by local stimuli such as infection or tissue damage. While bone turnover is a continuous physiologic mechanism homeostasis by cytokines as *receptor activators of nuclear factorkB* ligand (RANK-Ligand), *receptor activator of nuclear factorkB* (RANK), and the *osteoprotegerin* (OPG) system, tooth resorption is a pathologic process categorized as: (1) infection induced bone and TR, including cytokines such as RANKL, OPG, tumor necrosis factor alpha (TNF- $\alpha$ ) interleukins (IL) (i.e., IL-1,IL-6,IL-8,IL-11), and other cytokines; or (2) Resorption due to aseptic inflammation that includes RANKL, OPG and IL-1, IL-6, IL-10, TNF- $\alpha$ , vascular endothelia growth factor (VEGF) and other cytokines. The aim of this lecture is to describe the cells and molecules that participate in bone and tooth resorption.

### 15:15-16:00

Tooth Resorption – Diagnosis and Management Paul Abbott



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### Abstract

Many dentists find it very challenging to differentiate between the different types of tooth resorption, which leads to uncertainty regarding the treatment required. There are 11 different





types of resorption and each type requires different management so it is essential to know which type is present. However, historically, there has been conflicting and confusing terminology used to classify and diagnose tooth resorption. During this lecture, a clinical classification will be presented with justification for the use of specific terminology. Each of the 11 types of resorption will be described to enable easy diagnosis and an outline of the principles of management of each type of resorption will provide clinicians with guidelines to use in their own cases. Examples showing the outcomes of these treatment protocols will also be presented.

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09:50 - 10:35 Orodeka Lecture Not just white lines Andrea Balocco



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### Aim:

New rotary system

### Learning objectives:

- Many rotary system appears every year. So how do the various systems differ?
- How does one decide which to use?

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### 10:35 - 11:00 — COFFEE BREAK —

### 11:00 - 11:45

### Bondent Group Lecture 2

Minimally Invasive Endodontics: A Case Dependent Scenario Mostafa Anwar



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### Lecture Learning Objectives:

- 1. How to predict the Outcome for Primary Root Canal Treatment?
- 2. How MIE Changed Our Approach in Endodontics?
- 3. Know the Importance/Impact of Different Remaining Tooth Structure.



- 4. Impact of Access Cavity Designs on Root Canal Shaping & Disinfection.
- 5. How to Select the Proper MAF Tip Size & Taper?
- 6. Learn the Clinical Guidelines for Every Primary Endodontic Treatment.

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O 09:00 - 16:00
 Oral presentations on freely chosen subjects

**OP61 – Microbiota status and oral health in professional rugby players: A case– control study** \*Diemer F, Minty M, Canceill T, Lé S, Loubieres P, Mallet J, Blasco–Baqué V

**OP62 – The Microbiome of Endodontic Infections and its Association with Clinical Features** \*Georgiou A, Van der Waal S, Crielaard W, Zaura E, Brandr B

**OP64 – Effect of Aseptic Approach in Endodontic Flare-ups (A Literature Review)** \*Elli M

10:30 - 11:00 - COFFEE BREAK -

**OP73 – Decisions and tools during Non–Surgical Retreatment** \*Habib M

**OP74 – Effect of different retreatment file systems on the apically extruded debris** *Ozturk S, \*Keles A, Tuncel B* 

**OP75 – Nosurgical endodontic r-treatment with periapical lesion in a first mandibular molar** \*Villatoro Herrera M

**OP76 – Antibacterial effectiveness and clinical outcome in retreatment of teeth with endodonticinfection** \*Zandi H

12:30 – 13:30 — LUNCH —

13:30 – 14:30 POSTER PRESENTATIONS / TRADE EXHIBITION

OP81 – Restore WHEN? HOW? WITH? An overview on the Restoration of the Endodontically Treated Tooth

\*Zaman M

**OP82 – Long-term clinical evaluation of direct resin composite restorations in vital vs. endodontically treated posterior teeth – Retrospective study up to 13 years** \* Lempel E, Lovász B, Bihari E, Krajczár K, Jeges S, Tóth Á, Szalma J



### OP83 - CAD-CAM fabricated indirect restorations over two endodontically retreated mandibular molars \*Proestaki E

OP84 - Complex aesthetic treatment on anterior maxillary teeth caused by complex caries trough combination of endodontic and restorative with interdisciplinary approacha case report

\*Masa M, Lina R, Nanik L, Zubaidah N, Yaunita T

**OP85 - Restorative management of dental trauma** \*Tanvir M, Khalid S, Green D



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# OP65 – The influence of apical periodontitis on circulatory inflammatory mediators in peripheral blood

Georgiou A, Twisk J, Crielaard W, Ouwerling P, Schoneveld A, \*Van Der Waal S

**OP66 – Evaluation of serum pro-diabetic inflammation levels in subjects affected by chronic apical periodontitis and in-vitro study of their potential impact on insulin resistance** \*Multari S, Bergandi L, Baima G, Alovisi M, Comba A, Carpegna G, Scotti N, Pasqualini D, Berutti E

**OP67 - Attenuated development of apical periodontitis with age - a murine model** Goldman E, Reich E, Roshihotzki B, Saketkhou M, wald S, Goldstein A, Klein Y, \*Abramovitz I, Klutstein M

OP68 – Thermosensitive Transient Receptor Potential (TRP) ion channels in human dental pulp cells

\*Marincsák R, Kunka Á, Bohács J, Lisztes E, Racskó M, Bágyi K, Kovalecz G, Kelemen B, Tóth B

10:30 - 11:00 — COFFEE BREAK —

OP77 - Withdrawn

# OP78 – The platformless technique: a minimal invasive approach in the management of separated instruments

\*Gilga A, Imre M, Grandini S, Marruganti C, Gaeta C, Kiefner P

**OP79** – Management of missed canals and broken file in a mandibular lateral incisor \**Tsotou F* 

OP80 – A rare case report of the presence of the second mesio-buccal canal (mb2) during root canal treatment of an upper left second deciduous molar (ule) *\*Humdani A, Malik K* 

12:30 - 13:30 - LUNCH -

13:30 – 14:30 POSTER PRESENTATIONS / TRADE EXHIBITION

### **OP87 - Endodontic Consideration in Fiber Post Cementation** \*Alnahlawi T



# OP88 – Correlation between root canal taper and residual resistance of post and core restored maxillary premolars

\*Palopoli P, Pugno N, Moccia E, Pasqualini D, Scotti N, Comba A, Berutti E, Alovisi M

### OP89 – A combination of long and short fibers for individualized post solutions to reinforce root canal treated teeth – data gathered from own in vitro studies \*Fráter M

OP90 – Bond strength and mmps activity of radicular dentin obtured with different bioceramic sealers

\*Dirutigliano A, Comba A, Pasqualini D, Alovisi M, Scotti N, Mazzoni A, Breschi L, Berutti E



### © 09:00 – 10:30 Oral presentations on freely chosen subjects

### **OP69 - Management of External Cervical Resorption** \*Mohamed K

### **OP70 – ECR management based on periodontal status** \*Churlinov M

### **OP71 – – Management of root resorption using biomaterials based scaffolds – a scoping review** \*Suresh N, Varghese A, Suresh J

### **OP72 – External Cervical Root Resorption: A treatment approach strategy and its 10-year outcome** \*Mavridou A, Lambrechts P



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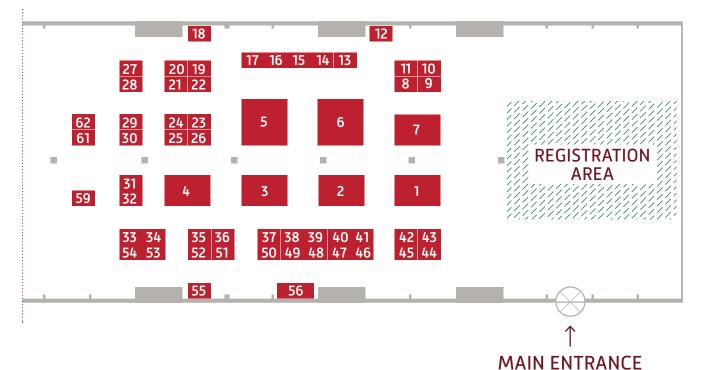
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| DRSK   | 36      | Neolix SAS                                     | 30      |
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