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# IJS TIMES

Official Newsletter of Indian Endodontic Society

Vol 2 : Issue 1 : 2023





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### Editor's Message

## It's time to go 'green' in Dentistry

Hello friends,

In recent times, the word "green" is in trend with almost all industries trying to create and sell green products. A lot is being written and discussed in media to highlight environmental concerns about carbon emissions, temperature rise, and melting of ice caps etc. Dental professionals including Endodontists too are interested to become environment friendly but are not fully aware of how to go about it.

Eco-friendly, green and sustainability are often used synonymously to indicate renewability, energy efficiency, non-toxicity, being minimally invasive, and having a reduction in carbon footprint. In health-care sector including dentistry, it includes sustainable and eco-friendly practices, designing of clinics as well as waste management. Sustainable dentistry integrates dental surgeon's commitment to the society and environment.

Sustainable dentistry is a type of dental practice that uses materials and methodologies which are harmless to the environment. It involves steps like conservation of water and energy, use of non-hazardous materials, minimum generation of biomedical and chemical waste, that adversely affect patient's health and the environment and promoting increased use of eco-friendly products which may be summarized into four Rs – Rethink, Reduce, Re-use, and Recycle.

By focusing more on prevention, precaution, sustainability, and creating awareness, we as dental professionals can contribute significantly to improving the health of the patients, society and environment.

**Dr Vineeta Nikhil** MDS, FICD  
Editor IES Times

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# Chronicles of success

## NATIONAL CONFERENCE

**30<sup>th</sup> National Conference** of Indian Endodontic Society was held in Delhi at the Hotel 'The Grand' from 14<sup>th</sup> -16<sup>th</sup> October 2022 and thematically revolved on a unique and notable concept "*As much learning, as much Leisure*", which was remarkably imbibed in the well-structured preconference and conference program.

The **preconference** was a prelude to how distinct, distinguished and divergent the conference promised to be. The diverse range of hands- on course ranged from Unravelling the Myth of Modernized Endodontics by **Dr Prashant Bhasin**, Restorative dentistry following the alpine Edelweiss concept by **Dr Nikhil Bahuguna**, the concept of biomimetic repair by **Dr Kuber Sood** and for the first time an animal model for management of mucosal fenestration in non-vital teeth by **Dr Vikender Singh Yadav** and **Dr Sidharth Sharma**.

The Conference was inaugurated amidst great show and pomp seeped in Indian tradition. The Guest of Honour, **Director General Dental services**, Col Commandant, Army Dental Corps motivated and inspired the young impressionable minds to explore the possibility of having a distinct, dignified and honourable career in uniform. The mood was lightened by wit and wisdom of the Guest of Honour, **Dr Mahesh Verma**, Vice Chancellor, Guru Gobind Singh, Indraprastha University. The Chief Guest **Shri Rajesh Bhushan** Secretary, Ministry of Health and Family Welfare, shared the key thrust areas in oral health care policies the Government of India was working upon. He lauded the effort of IES in tirelessly working toward taking the endodontic and restorative health care system to its pinnacle of success and making it imprints felt globally.

The sui generis of this conference was its distinct, unconventional **scientific deliberations** format. The IES Oration, the crowning glory of the conference was by the legend **Dr James Gutman** from USA. For the very first-time enigmas like Artificial Intelligence and its clinical relevance in dentistry at large and specifically Endodontics was discussed by **Dr Himanshu Tagra** from HCL technologies and **Dr Krithika Datta**.

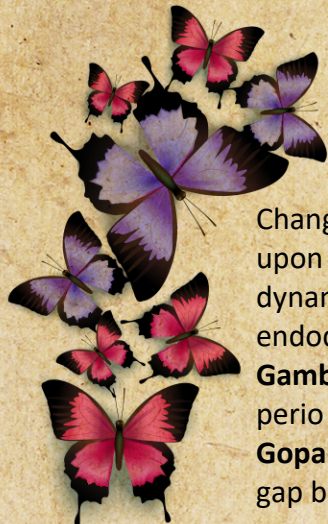
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Changing concepts and management strategies of Vital pulp therapy were debated upon by **Dr Jeeraphat Jantarat**, **Dr Philip Thomson** and **Dr Tugba Turk**. The concept of dynamic navigation has permeated from the medical field and implantology to endodontics and the stalwarts who made this transition smooth were **Dr Gianluca Gambarini**, **Dr Vivek Hegde** and **Dr Sanjay Jain**, a dynamic periodontist. The endo perio continuum was deliberated upon by **Dr Fernando Duran -Sinreu Terol** and **Dr D Gopalkrishnan** a renowned Periodontist. Their deliberations bridged the knowledge gap between endodontics and periodontics.

The national conference heralded new ideas and new beginnings. **The IES Medal of Honour** was initiated and the first recipient of it was **Dr Shashikumar Talim**, *the first batch of Endodontist of Independent India*, a true pioneer in the Indian Endodontic arena.



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The IES Times the *official news letter of IES* was launched and unveiled with a lot of fanfare under the able guidance of the **Editor Dr Vineeta Nikhil** and **Co-Editor Col (Dr) Sonali Sharma** ably supported by their team **Dr. Poorni S, Dr. Marina Fernandes, Dr. Sonal Sahu and Dr. Kushal Fuladi.**



The conference adhered to its theme in toto and along with learning there was a fun filled Banquet with traditional Indian flavour and vibrancy. The valedictory function marked and celebrated the achievements and awards of scientific paper and poster competition.



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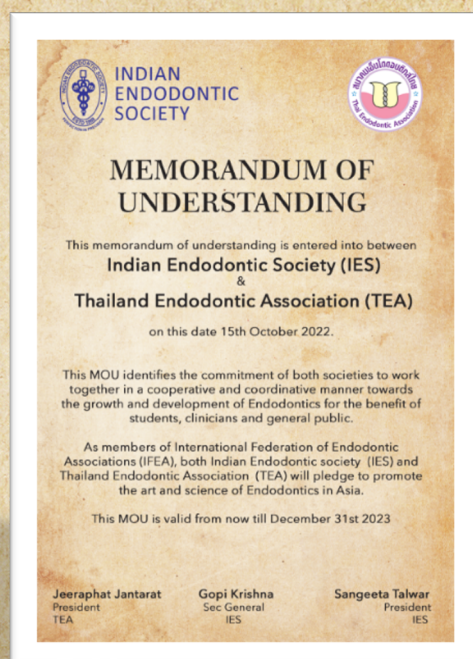


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## Signing of Memorandum of Understanding with Thailand Endodontic Association

A proud moment for IES was the signing of Memorandum of Understanding (MOU) with Thailand Endodontic Association (TEA) on 15th October 2022. As per this MOU, both the societies will be committed to work in cooperation to elevate the field of Endodontics and spread and strengthen the art and science of Endodontics in Asia. This collaboration is aimed to benefit students, clinicians and general public.



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## Signing of Memorandum of Understanding with KIIT TBI

IES signed a Memorandum of Understanding with KIIT Technology Business Incubator (KIIT TBI). KIIT TBI is a nonprofit incubator supported by various Govt of India agencies such as DST, BIRAC-DBT, MSME, TDB and MeiT<sub>y</sub>. IES will be one of the first dental society to have a dedicated partner (KIIT TBI) to facilitate procuring of research grants for innovations. The IES head office acknowledges the contribution of Dr Swadheena Patro in facilitating this concept and project.



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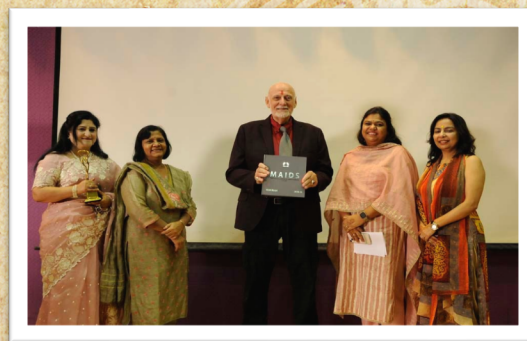


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## Meet The Master-Series Challenges in Tooth Retention - The Crazy World of Resorption

Maulana Azad Institute of Dental Sciences, New Delhi in Collaboration with Indian Endodontic Society (IES) on 12th October 2022 conducted a CDE "MEET THE MASTER-SERIES" CHALLENGES IN TOOTH RETENTION- THE CRAZY WORLD OF RESORPTION by Professor "Dr. James L. Gutmann" a Professor, Chair and Postgraduate Program Director, Department of Endodontics, Nova Southeastern University College of Dental Medicine, Davie, Florida.



## Endodontic Master Class with Live Microsurgical Demonstration

Saveetha Dental College, along with Indian Endodontic Society (IES) conducted the Master class by Dr. James L Gutmann on 18th October 2022. The inauguration was carried out in the presence of Dr. Sheeja S. Varghese, Registrar, SIMATS and Dr. S. Aravind Kumar, Dean, Saveetha Dental College and Hospitals, Chennai along with Dr. V. Gopi Krishna, IES Secretary General and Dr. M. Kavitha, Joint Secretary, IES.

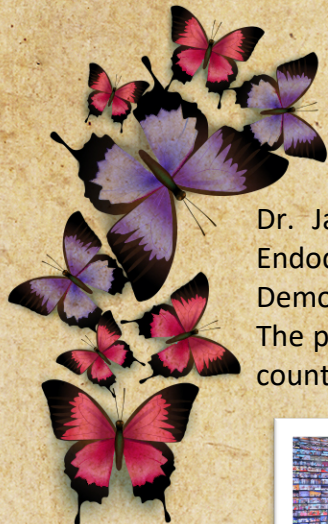
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Dr. James L. Gutmann, delivered the lecture on various topics in the field of Endodontics in Dentistry. The most spectacular part of the event was the Live Demonstration on Microsurgical Endodontics, an advanced endodontic procedure. The program was attended by more than 200 students and faculties from across the country.



## Navigating the Endodontic Blues

Department of Conservation Dentistry and Endodontics, Saveetha Dental College, under the aegis of Indian Endodontic Society (IES) conducted a live demo on **“Dynamic Navigation Practicum - Navigating Endodontics Blues”** on 29th November 2022.



The guest speakers for the workshop were Dr Vivek Hegde, Head of the Department of Endodontics at M. A. Rangoonwala Dental College. He is President of the Society of Oral Laser Applications, Director of the Indian Board of Endodontics, Faculty at the University of Vienna, Founder of One Dental, Director at The White Arch Dental Centre. Dr Sanjay Jain is Faculty- Biohorizon implant program, India and Society of oral

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laser application, India. He is India's First Master trainer for dynamic surgical navigation for implants.

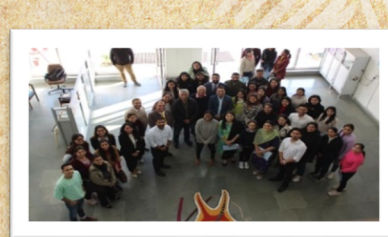


The masters conducted lecture on dynamic navigation followed by a live demonstration of dynamic navigation in endodontic microsurgery. More than 100 students and faculty members participated in the workshop.

## “MASTERCLASS IN ENDODONTICS”

**Endodontic Emergencies, Working length determination and Management of open apex.**

Department of Conservative Dentistry and Endodontics Bhojia Dental College, Baddi, in collaboration with Indian Endodontic Society (IES) on **8<sup>th</sup> December 2022** organized “**MASTERCLASS IN ENDODONTICS**”. Dynamic speaker “**Dr Ajay Logani**” (HOD in the prestigious AIIMS, New Delhi) lectured on the topic Endodontic Emergencies, Working length determination and Management of open apex. Guest of Honor was “**Dr Sanjay Miglani**” President elect IES.



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## IES CARES

(Clinical, Academic & Research in Endodontics Online Series)

Indian Endodontic Society has launched the **IES CARES** (Clinical, Academic & Research in Endodontics Online Series) resource repository for the benefit of all Life members of IES.

The **first program** was successfully conducted by eminent speaker from Thailand; Dr. Jeeraphat Jantararat on 24 January 2023 and attended by hundreds of faculties, students, private practitioners and researchers across the country.

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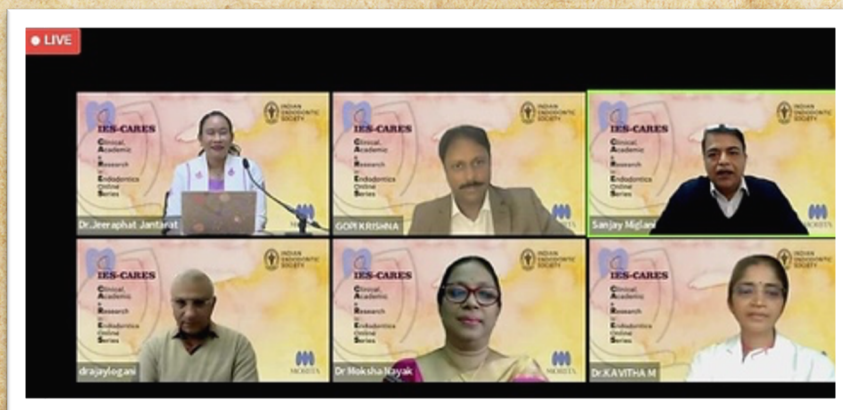
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Clinical, Academic & Research  
in Endodontics Online Series

View online content :  
<https://ies.vidocto.com/sign-up>

**Complimentary for all life members  
of Indian Endodontic Society**

IES member login : [https://ies.org.in/member\\_area](https://ies.org.in/member_area)

Life members helpline :  
e-mail : [info@ies.org.in](mailto:info@ies.org.in),  
WhatsApp : +91 98411 61131  
Join IES : <https://ies.org.in/join.html>



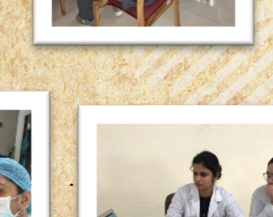
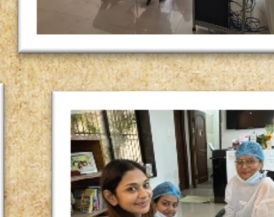
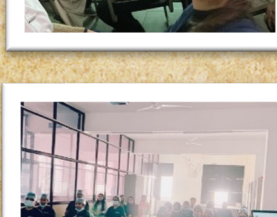
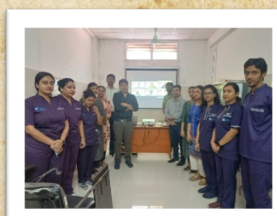
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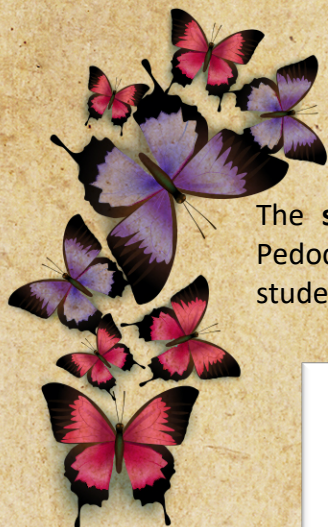
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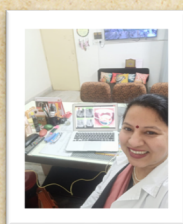
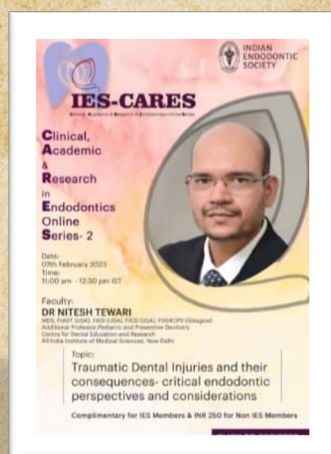




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The **second program** was successfully conducted on **07 Feb 2022** by eminent Pedodontist from AIIMS New Delhi; **Dr Nitesh Tiwari** and attended by hundreds of students across the country.



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## Indian Board of Endodontics

*"Learning never exhausts the mind."*

Founded in 2013, the Indian Board of Endodontics is the only certifying board for the specialty of Endodontics in India and has been constituted under the aegis of the Indian Endodontic Society – IES. The mission of the Indian Board of Endodontics (IBE) is to certify Individuals who have demonstrated special extraordinary knowledge and skills in field of Endodontics and allied sciences.

The Board also seeks to certify those who are committed to life-long learning and a lifetime of ethical practices, who value the doctor/patient relationship, who respect those with philosophical, cultural or physical differences and who are committed to the advancement of the Science of Endodontics.

The Indian Board of Endodontics (IBE) here within recognizes its responsibility to the profession and to the public and accepts this responsibility through the conduct of an examination designed to identify individuals with the knowledge, skills and attitudes deemed important to those who will be called Diplomates of the Indian Board of Endodontics.

The IBE endeavors to foster excellence amongst endodontists thereby enhancing the quality of endodontic care rendered to the public at large. To achieve this purpose, the Board intends to stimulate the spirit of self-improvement amongst teachers, practitioners and students of Endodontics in India. The Board encourages continued professional review, elevation of standards of education and treatment in endodontics throughout ones professional career. Board Certification is intended as a bench mark of the level of professional attainment.

For more details on the registration process visit [www.ibeonline.org](http://www.ibeonline.org)

For requests for applications and any other communication related to IBE contact:

### **Dr V Gopikrishna**

General Secretary, Indian Board of Endodontics

No: 91, D Block, Anna Nagar First Avenue,

Anna Nagar East, Chennai - 600102, INDIA

**Email:** indianboardofendodontics@gmail.com

**Phone:** +91-44-42171813

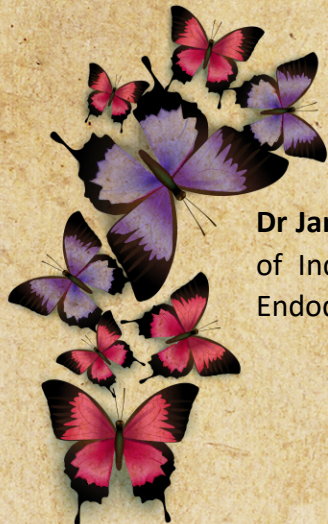
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## IBE Star Gallery 2022

Dr James Gutmann and Dr Jeeraphat Jantararat were conferred **Honorary Diplomate** of Indian Board of Endodontics for their immense contribution to the field of Endodontics.



Indian Board of Endodontics conferred the Diplomate on the next batch of successful candidates. Indian Endodontic Society congratulates the Diplomates for their efforts and perseverance.

Dr. Ambica Khetarpal  
Dr. Vandana James  
Dr. Rahul Pandey  
Dr. Ratheesh Rajendran  
Dr. Purabi Edbor  
Dr. Sameer Makkar  
Dr. Arunima  
Dr. Gauri Malik  
Dr. Rhythm Bains

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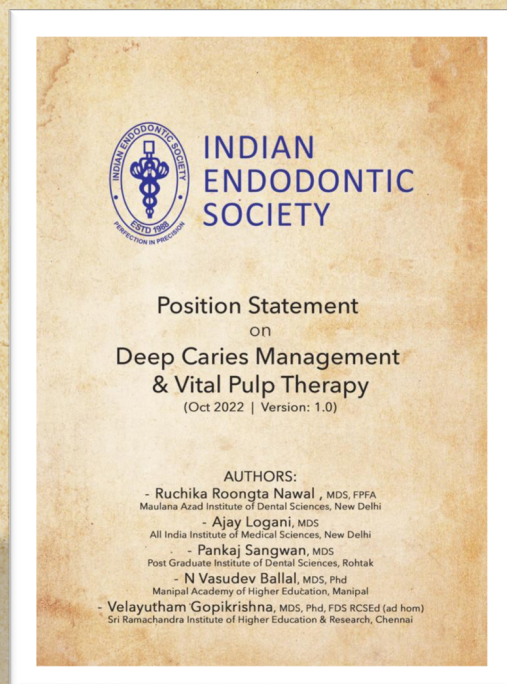




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## IES Position Statement



The **position statement on Deep Caries Management & Vital Pulp therapy** was conceptualized and presented to the Endodontic forum by **Dr Ruchika Roongta Nawal MAIDS, Dr Ajay Logani AIIMS, Dr Pankaj Sangwan PGI, N Vasudev Ballal MCODS and Dr V Gopikrishna.**

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## Dr Jeeraphat Jantararat

MDS, PhD

A buoyant person, great researcher, innovator and a committed teacher, in the field of Endodontics specifically regenerative endodontics. Dr. Jeeraphat will converse with us and will share her professional and personal journey in this column.

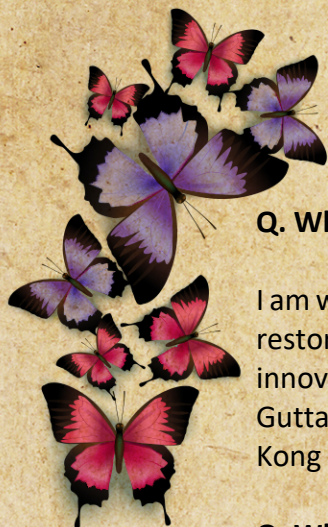
### **Q. Can you tell us about your professional journey in Dentistry?**

After completing my graduation from Prince of Songkla University, I did my Master's in Endodontics at University of Melbourne, Australia. It was a wonderful experience to work under the greatest supervisor Professor Harold H Messer, as a postgraduate student. There itself I made a decision to do PhD in Dental Science under his supervision. It was a turning point of my life. I enjoyed working as an endodontist as well as teacher and researcher. Thereafter I started to work as lecturer in Endodontics, Faculty of Dentistry, Mahidol University. After 1 year of working, I was conferred the outstanding young staff award. Presently I am Associate Professor and Head of Department of Operative Dentistry and Endodontics. I became the Diplomat of the Thai Board of Endodontics in 2007 and was granted honorary Indian board of Endodontics last year. I received distinguished alumni award from Prince of Songkhla University in 2016 and outstanding lecturer award from Mahidol University in 2017. I received Innovation Research Award 2021 in Medical Science from National Research Council of Thailand. I am now at the second term as a President of Endodontic Association of Thailand. Currently, it's an honour to be elected as IFEA Board of Directors: Regent Asia (2022-2024).

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**Q. What research projects are you currently working on?**

I am working on many aspects of Regenerative Endodontics such as Irrigation protocol, restoration of REPs and some prospective clinical studies. Moreover, I also enjoy innovating new materials and devices. For example, I have my own product called GuttaClear. It is a natural gutta-percha solvent. Now it is available in Thailand, Hong Kong and very soon will be available in Malaysia and Vietnam.

**Q. What drew you to your area of expertise- Regenerative Endodontics?**

Twenty-one years ago, Professor Asgeir Sigurdsson came to Thailand. He gave lectures in our dental school and at the end of his lecture he presented revascularization cases. It was an eye opening lecture for me. I remember he said that “there is nothing to lose for the patient and in the worst case we can perform MTA Apexification for the patient if it did not work”. In my opinion, if it works well, patients will have a lot of benefits. I started my 1<sup>st</sup> case on the same lines of Martin Trope protocol. It went well and I remember my heart beat when the child raised his hand up responding positive to EPT 6 months later. I started teaching my graduate student and I was criticized a lot for performing such an unknown treatment on patient. I decided to go on with the treatment based on evidence as it caused no harm to patients. We have collected more than 120 cases now and hope to publish these at the end of this year. Because we have 20 years of experience on Regenerative Endodontics, Mahidol University has unique guidelines for Regenerative Endodontic Procedures.

**Q. How do you achieve compliance in children who need Regenerative Endodontics?**

I have a lot of experience treating children especially trauma cases. With young patients, I talk to them in simple language. Sometime we need to understand what is the trend for young kids such as cartoon, movie or computer games. I am very lucky, my dental assistant is very good with children and she really helps me to perform the treatment with ease and fun with children. I remember one child watched me performing the treatment under microscope. He watched it on the big screen and during the treatment I was talking with the kid. At the end, he was laughing and said “can we do this again”. Not all the kids are friendly to endodontist and sometimes I take help of my pedodontist friend in managing children.





**Q. Do you conduct any courses on REPs?**

Yes, I teach all new residents every year and I have also invented artificial blood clot with 3D printed model for training. I also conduct workshops in Thailand, Malaysia, Hong Kong and Indonesia. In some countries I conduct workshops 2-3 times.

**Q. According to you what are the 3 areas of focus in dentistry which need to be researched today?**

Because I am an endodontist, I can think of 3 areas in Endodontics. First area is stem cells. If we can generate pulp or pulpo-dentine complex, it will be very beneficial for our patients. Second area, we still need good root canal filling material that can prevent coronal leakages. The third area may be Artificial Intelligence in Endodontics, who knows.

**Q. Who is your role model/ person who inspires and motivates you?**

I can answer this question without any delay at all. My role model is my MDS and PhD supervisor, Professor Harold H Messer. All that I have achieved today is because of his guidance. He is an outstanding teacher for both endodontics and research. He teaches his students with kindness and he has trained so many endodontists around the world. All of his students have become leaders in Endodontics in their country. For example, at least 3 Presidents of Thailand Endodontic association were his students. I am also lucky to work with Professor Hargreaves, we have been collaborated for research for many years. I and Prof. Hargreaves had the same mentor, Professor HH Messer.

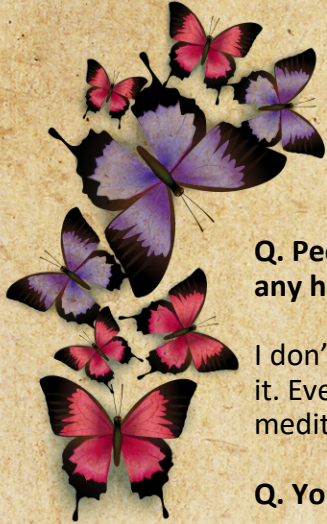
**Q. Could you give us a peek into your personal life?**

I love travelling to explore different architecture. I want to visit historical sites of different countries. From time to time, I also try to escape from busy life to simple life, eat one meal a day and do some work in the temple.





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**Q. People know you as a clinician, as a researcher and as a professor. Are there any hidden talents that the world doesn't know?**

I don't think this is a talent. I learned meditation since I was a kid and kept practicing it. Every year, I usually spend 5-7 days in a temple (sometimes on a mountain). I think meditation helps a lot in my work and research.

**Q. You love to travel, tell us about your favourite place?**

I love one temple in northeast of Thailand "Wat Pa Phu Wua at Bueng Kan". This temple is in National Park. There is very beautiful waterfall. I love nature and good environment of that place. Once, I saw 31 wild elephants in the forest. We sat on a platform hung on a tree and were stuck there for few hours till the herd of the elephants went back to the forest.

**Q. Since you are so active on social media, what according to you is the role of social media in dentistry today?**

I used social media to connect to my friend all over the world specially during the pandemic. I can see how my friends are without travelling. We also can get so much of information in new technology, learning some cases in special groups or find out about great meetings and conferences. However, you have to be selective about information from social media because anyone can post anything. I post only good stories to make my friends happy when they follow me. I do not post unwanted information on social media. If we use the social media correctly, it is a very good tool to catch up with the world.

**Q. Can you give a message to our Endodontists in India?**

I would like to take this opportunity to thank Indian Endodontic Association for inviting me to give presentations many times and also awarding me honorary Indian Board of Endodontics. It was one of the most precious moment in my career. For young endodontists, I would say keep doing good work. We save our patients from pain and make them smile again. Don't give up if you have problems. Where there is a will, there is a way.

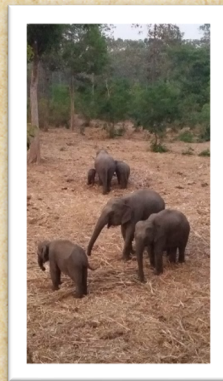
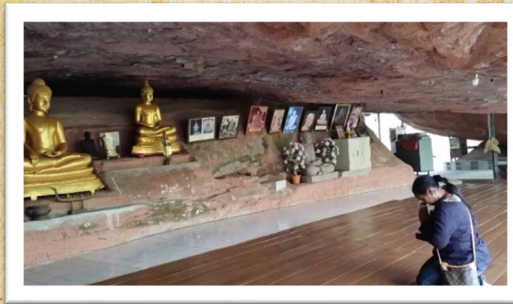
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## Overseas Endo

**Dr. Viresh Chopra** BDS, MDS, Diplomate (IBE), FPFA, PhD fellow (QMUL, UK)  
Course lead, Endodontology,  
Assistant Professor, Adult Restorative Dentistry,  
Oman Dental College, Muscat, Oman.  
Adjunct Professor,  
Saveetha Dental College, Chennai India.

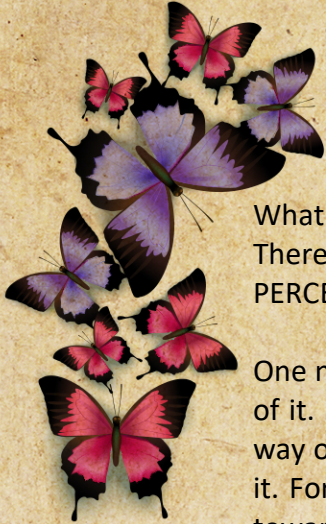
### Life, Endodontics And Problems

If you are reading this then "Congratulations". You are one of the recipients of the biggest but most ignored gift called "LIFE". However, it does not come alone. Life is always gift-wrapped along with an accessory popularly known as "THE PROBLEM". The relation of Life and Problem is like that of a mother and child. The day a female conceives, 2 new lives start their preparation to enter the world after 36 weeks. The first one is the child and second is the female who discovers her new-self as a different personality, updated better & stronger than her previous self. Similarly, the day problem is born, that very day there is a chance for us to discover another version of ourselves which is till date hidden from us. Yes, destiny is written by the Almighty but sometimes HE wishes to recheck if we are capable of HIS decisions and that is when we do additions or subtractions to His wills towards our destiny.

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What we do with the problem depends upon how we perceive the problem. Therefore, it is imperative to understand that “It is not the problem but the PERCEPTION of the problem” that decides our path.

One needs to be friends with the problem in order to understand it and find way out of it. If you are still with me, just imagine yourself in a dead dark room finding your way out. You know the location of the door but need to trade your path smoothly till it. For that you need to familiarize with the dark surroundings and take baby steps towards the exit. Don't you think, these last few lines feel familiar to everyday life. Exactly, this is what we do being an “Endodontist”. We travel the distance through the dark zone in order to knock at the door present at the “North Pole” end of the tooth making sure to be precise enough not to enter the arctic beyond the north pole.

Personally, to me an endodontist is a person who likes to play in the dark, loves to discover the unknown and fights with the often unseen. This profession helps us to build all those qualities that are required by every human to achieve success and face any challenge in life. I call these qualities as the 3P's of life.

The first P is “Passionate”. Yeah, I know, we have heard this word a greater number of times than the breaths taken till date. Every mentor, parent or even an insignificant person in a mood to give advice would say “Dear, you should be passionate to achieve your goals”. However, here I do not mean being passionate as having passion about the profession. You may be an endodontist but it is not necessary that we all share the same passion about the profession and that's totally fine. More importantly, we should have a strong belief in whatever we do or wish to do. This stature of belief system can only be built if we believe in ourselves more than anyone does in us. Belief comes most handy when we are down. This is THE quality that helps us to gather ourselves back and stand again in the face of the adversity and this time more focused, strong willed and more resilient. It is the same belief that helps the endodontist to make a comeback on another day with missed canal, calcified canal or fractured instrument bypass patient to reattempt only to achieve success this time. Therefore, the only thing you should be passionate about is “YOURSELF” because when you are passionate about yourself then you are not in for the money game but you are in for the “increasing your value” game and that very day money becomes a consistent byproduct of the journey towards your double worded goal i.e. “BETTER YOU”.





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The second P is "Patience". Who knows better than an endodontist that how much patience we need to make an ideal endodontic access cavity in a tooth with completely calcified pulp chamber. We as humans are generally very hard-working but impatient when it comes to waiting for the result of our hard work. Imagine yourself negotiating a calcified/curved canal. It is absolutely right to expect a positive result of your work. However, we dilute our efforts when we become impatient and that is what effects the results. It is not "HOW FAST" but "HOW WELL" you travel the path that decides the outcome. Patience does not guarantee a positive result but it does improve one's ability to accept the result (positive and negative). With patience comes calmness and control over taking impulsive decisions when in times of frustration. Endodontists need this quality for every canal they travel through. When one file fails, we do not fear to try with another one. If the day is bad then we pack the patient and call him again for another start on a better day because that very moment, through patience we accept our inability to move forward, learn how to consciously slow down and "HOW WELL" to travel through that phase on another given day.

The third P is "Perseverance". Every Endodontist I have ever met has one quality in common, i.e. "NEVER GIVING UP". Growing up amongst some eminent endodontists, that too around with this quality in abundance, made it easy for me to understand that this is THE ingredient for the recipe of *Success*. A skilful endodontist never gives up on a calcified/curved canal or a fractured instrument. We very well know the satisfaction we feel when our efforts open a calcified canal, negotiate a curved canal or bypass/retrieve a fractured instrument. The job is done with our mind and hands but the happiness is felt in hearts and visible on our lips that widen up to smile when we see the result on a periapical radiograph. That is the same feeling every human goes through when they overcome an obstacle in their life. Perseverance is a more accurate predictor of achievement as it helps us to stick to our path, despite of umpteen number of obstacles, after which is the ribbon of success that we are waiting to cut for so long.

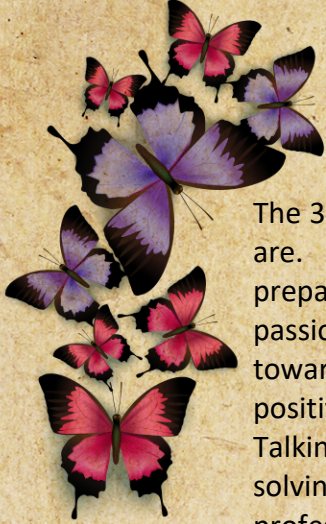
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The 3P's are connected to each other exactly the way the basic steps of endodontics are. Failure to make a straight-line access led to inadequate biomechanical preparation, mostly concluding to an inferior 3D obturation. Similarly, not being passionate leads to not being persistent in our efforts and eventually lose patience towards our goal of "BETTER YOU". The combination of these 3P's helps us to have a positive outlook towards any problem and enjoy the journey of problem solving. Talking about problem solving, who else in the world would understand problem solving better than an endodontist? This has always been an integral part of our profession and therefore I always believe that we all are born to win.

All it needs is to take the LEAP beyond faith in order to make the problem-solving journey pleasant and to discover the hidden, better us. Any number of successfully locating missed canals, opening calcified canals, negotiating curved canals, bypassing/retrieving fractured instruments would not give you the happiness that you will feel when you discover the better you that has been waiting for you for so long. Therefore, to see the BETTER YOU, have faith in yourself and take the **LEAP**.

**V. Chopra**

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## Emerging concept in Endo



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### **Has there been a paradigm shift in management of permanent teeth with symptomatic irreversible pulpitis?**

Disclaimer

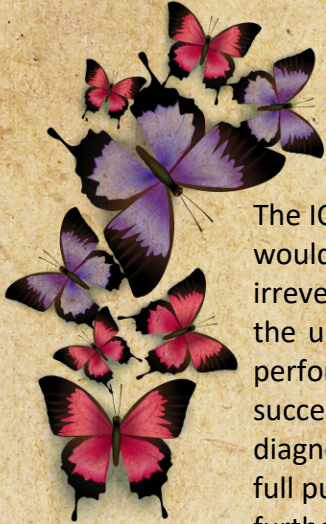
This article is based on evidence and experience of the author.

Let's start this article with a hypothetical situation. The year is 2014 and a patient comes with the chief complaint of severe pain in relation to the right mandibular first molar for the past 24 hours. It was throbbing in nature and was not relieved by any over the counter analgesics. Pain was exaggerated with intake of both hot and cold beverages. It was referred to the forehead. It increased in the night which made him to wake up. He was not able to localize the exact tooth as the source of pain. The pulp sensibility tests (electric pulp, cold and heat test) were positive. The tooth was non-tender to percussion and palpation.

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The IOPA x-ray revealed deep caries with healthy periapical tissue. An astute clinician would interpret these findings and would put forth a diagnosis of symptomatic irreversible pulpitis with normal apical tissue. Based on the “strangulation theory” and the understanding that the entire pulp is irreversibly inflamed, the clinician would perform a single visit non-surgical endodontic therapy (NSET) which has an excellent success rate (94-96%). Let us fast forward the same hypothetical situation and the diagnosis to the year 2023. The pertinent question today is that would we still perform full pulpectomy or do we have alternatives to manage such cases. Before we proceed further, it would be prudent to answer two important questions.

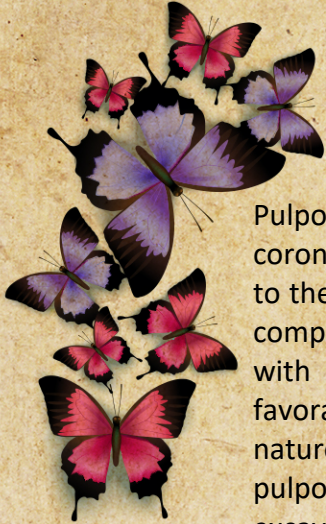
### Q1 Why are we looking for alternatives?

We need alternatives because root canal therapy *per se* is always associated with tooth structure loss starting with access opening, orifice enlargement (which results in loss of all-important peri-cervical dentine) and the shaping of the root canal to achieve irrigation dynamics and receive an obturating material result in loss of the radicular dentine. This material tooth structure can lead to catastrophic coronal and radicular fractures. Further due to the root canal complexities, an endodontist is at an inherent risk of iatrogenic errors like instrument separation, ledge formation, apical transportation. Remember ROOT CAUSE FOR FAILURE OF ROOTCANAL THERAPY LIES IN ITS ROOTS. Hence manipulation of the roots should be best avoided.

### Q2 Are these alternatives feasible?

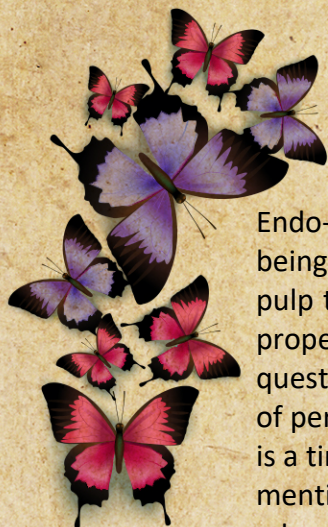
Yes, because of a better understanding of pulp biology, where in now we understand that the pulp tissue has edema preventing mechanism and that pulp inflammation proceeds in compartments (coronal to apical) rather “*intoto*” as previously thought. Furthermore, alternatives to NSET are possible due to the availability of calcium enriched materials like mineral trioxide aggregate and Biodentine. These materials are bestowed with bio conductive and inductive properties and can achieve a bacterial tight seal in the presence of blood and moisture. This has resulted in a paradigm shift towards pulp preservation and has given the concept of “Endolight”- the minimally invasive endodontic concept (1) where there has been a change in diagnostic terminologies and treatment plan. This has led clinicians to perform pulpotomy in adult teeth with moderate and severe pulpitis. Pulpotomy is removal of the coronal pulp and application of a biomaterial directly onto the pulp tissue, prior to placement of a permanent restoration.





Pulpotomy could either be partial i.e. the surgical removal of a small portion of the coronal pulp tissue (2-3mm) or complete where in the entire pulp tissue is removed to the level of canal orifices (i.e. coronal pulpotomy). A randomized clinical trial that comparatively evaluated partial and complete pulpotomy in mature permanent teeth with symptomatic irreversible pulpitis concluded that both the procedures have favorable outcomes. The authors recommended that given the more conservative nature of partial pulpotomy it may be attempted first before proceedings to complete pulpotomy (2). Pulpotomy procedure involves atraumatic (either with spoon excavator or round diamond bur) removal of coronal inflamed pulp tissue under local anesthesia and rubber dam isolation. To achieve hemostasis from the remaining coronal/radicular pulp, application of 2.5 percent sodium hypochlorite with a cotton pellet is recommended. The cardinal rule is that if bleeding stops within five minutes proceed with pulpotomy otherwise abort the procedure and perform full pulpectomy. This is because bleeding time is considered as a surrogate measure of pulp inflammation. Inability to achieve haemostasis is indicative that the inflammation is spread to the radicular pulp. Pulpotomy can be performed in a single visit. It involves application of MTA or Biodentine in a thickness of 2-3mm over the remaining pulp tissue. Apply a moist cotton pellet for 10-15 minutes for the calcium enriched material to achieve initial set. Adapt a layer of resin modified glass ionomer cement and light cure. Restore the tooth with composite resin material. The tooth should be followed up clinically and radiographically (for no evidence of root resorption, furcal or periapical pathosis) at regular intervals. Electric pulp test is preferred to monitor the pulp status (3). Pulpotomy has a success rate between 82-92% and can be performed in either occlusal or proximal carious teeth (4). However, the success rate of full pulpotomy drops (65- 76%) when it is performed in teeth with irreversible pulpitis and associated periapical rarefaction (5,6). The lesion is established because of the disintegration products coming from the partially necrotic pulp and this pulp is not capable of regenerating and hence the pulpotomy procedure fails. However, in a multi- rooted tooth, different stages of disease process may be observed throughout the pulp i.e. one root may have periapical rarefaction and the other root may have healthy pulp tissue. In such teeth Endo- Vital which is combination of non-surgical endodontic therapy and vital pulp therapy can be performed (7). NSET is performed in the root with periapical rarefaction or in the root where haemostasis cannot be achieved with the application of 2.5% sodium hypochlorite and the other root vital pulp therapy using MTA is performed.





Endo-Vital is a truly minimally invasive endodontics with only the diseased pulp tissue being dissected with the vital healthy pulp tissue maintained. The retained radicular pulp tissue maintains immunological and proprioceptive function and decreases the propensity for vertical root fracture. Following the appended information a pertinent question to be answered is that has there been a paradigm shift in the management of permanent teeth with irreversible pulpitis?. Well, non-surgical endodontic therapy is a time tested procedure with a high success rate..... but it has certain drawbacks as mentioned above. Although pulpotomy overcomes those drawbacks and has the advantage of preserving the vital pulp, the predictability remains an issue as there is no mean to assess level and depth of inflammation. Time taken to achieve haemostasis remains as a surrogate measure of degree of inflammation and frankly it is an arbitrary method. Further with limited high level evidence, at present pulpotomy remains as an empirical treatment for the management of teeth with irreversible pulpitis. But still this last question would need to be answered. Is pulpotomy a promising modality in treatment of permanent teeth with irreversible pulpitis?. The answer is definitely yes. However we need to generate more indigenous data and through that standardize the procedure. Once that is done this treatment modality would be a game changer in the management of teeth with irreversible pulpitis.

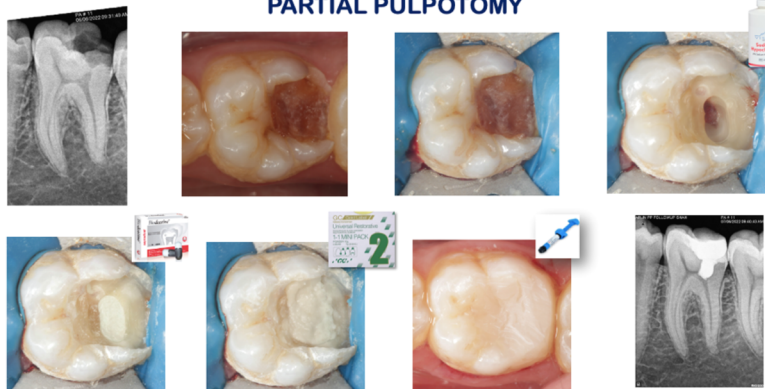
#### REFERENCES

1. Wolters WJ, Duncan HF, Tomson PL, Karim IE, McKenna G, Dorri M, Stangvaltaite L, van der Sluis LWM. Minimally invasive endodontics: a new diagnostic system for assessing pulpitis and subsequent treatment needs. *Int Endod J.* 2017 Sep;50(9):825-829
2. Ramani A, Sangwan P, Tewari S, Duhan J, Mittal S, Kumar V. Comparative evaluation of complete and partial pulpotomy in mature permanent teeth with symptomatic irreversible pulpitis: A randomized clinical trial. *Int Endod J.* 2022 May;55(5):430-440
3. Aravind A, Rechitra R, Sharma R, Rana A, Sharma S, Kumar V, Chawla A, Logani A. Response to Pulp Sensibility Tests after Full Pulpotomy in Permanent Mandibular Teeth with Symptomatic Irreversible Pulpitis: A Retrospective Data Analysis. *J Endod.* 2022 Jan;48(1):80-86.
4. Rechitra R, Aravind A, Kumar V, Sharma S, Chawla A, Logani A. Influence of occlusal and proximal caries on the outcome of full pulpotomy in permanent mandibular molar teeth with partial irreversible pulpitis: A prospective study. *Int Endod J.* 2021 Oct;54(10):1699-1707
5. Linsuwanont P, Wimonsutthikul K, Pothimoke U, Santiwong B. Treatment outcomes of mineral trioxide aggregate pulpotomy in vital permanent teeth with carious pulp exposure: The retrospective study. *J Endod.* 2017;43:225-30.
6. Zafar K, Nazeer MR, Ghafoor R, Khan FR. Success of pulpotomy in mature permanent teeth with irreversible pulpitis: A systematic review. *J Conserv Dent.* 2020 Mar-Apr;23(2):121-125
7. Koli B, Chawla A, Logani A, Kumar V, Sharma S. Combination of Nonsurgical Endodontic and Vital Pulp Therapy for Management of Mature Permanent Mandibular Molar Teeth with Symptomatic Irreversible Pulpitis and Apical Periodontitis. *J Endod.* 2021 Mar;47(3):374-381.





### PARTIAL PULPOTOMY



### FULL PULPOTOMY



### ENDO VITAL

Teeth with **Symptomatic irreversible pulpitis**



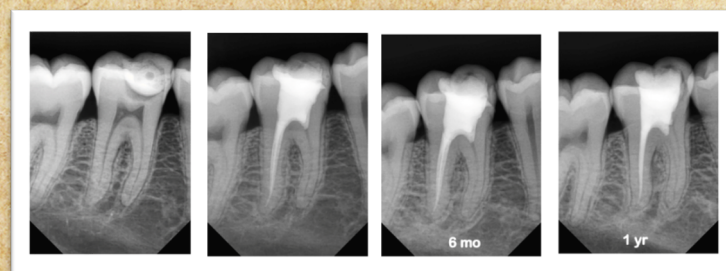
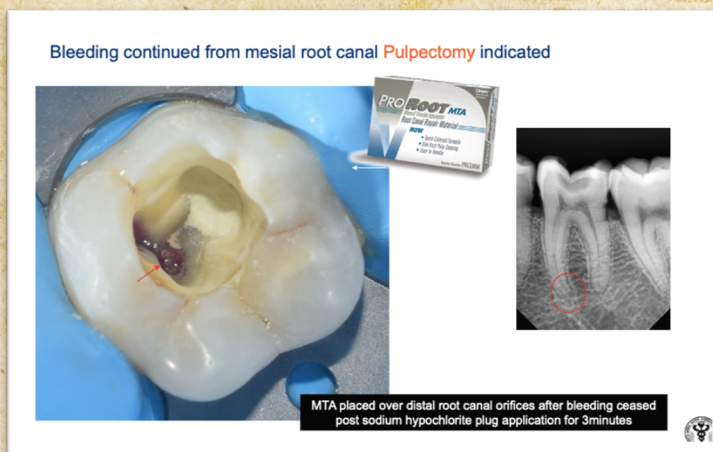
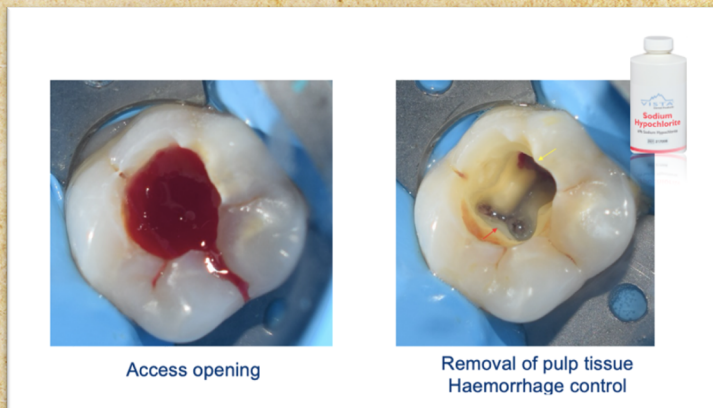
With **periapical rarefaction** (PAI  $\geq$  3)  
or  
inability to control bleeding in **either one** of the roots



PAI score-3  
irt mesial root

PAI score-1  
irt distal root









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Professor, Conservative Dentistry and Endodontics  
Manipal College of Dental Sciences  
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**Vital pulp therapy in mature permanent tooth with irreversible pulpitis**

The consequences of pulpal exposure due to trauma, caries or iatrogenic tooth preparation can be severe and result in pain, inflammation, and infection of the pulp tissue (Hilton TJ, 2009). The decision to maintain pulp vitality in such clinical scenarios is controversial (Bergenholtz *et al.*, 2013) among the clinicians, considering carious pulp exposure as an event that requires root canal treatment. Vital pulp treatment (VPT) techniques aim to preserve the vitality and function of the dental pulp following an injury due to trauma, caries, or any restorative procedure (AAE 2021). Preserving the pulp in a healthy state with sustained vitality, preventing apical periodontitis and developing minimally invasive biologically based treatment strategies are key themes within contemporary clinical endodontics (Duncan HF *et al.*, 2019). While conservative caries management strategies, aimed at avoiding pulpal exposure which can have favorable effects on treatment outcome (Bjørndal *et al.*, 2010), complete caries removal and the visual inspection of the pulp under magnification have diagnostic advantages (Lin *et al.*, 2020). VPT has a high success rate, provided the following conditions are met: absence or limited amount of pulp tissue inflammation, hemostasis, aseptic working field, and adequate seal of final restoration (capping material / restorative material) to minimize microbial penetration. However, the most important governing factor in the success rate of VPT is the correct evaluation of the

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inflammatory condition of pulp (reversible / irreversible) and the extent of infection. Considering the emerging need for regenerative and minimally invasive dentistry, various materials have been introduced for VPT in order to seal the pulpal wound and induce tertiary dentine regeneration. The newer pulp capping agents aim at sealing the exposure site while inducing odontogenesis, thus enhancing the success rate of VPT techniques. Newer materials range from various synthetic materials such as bioceramics to the newly proposed biological scaffolds such as collagen, hydrogels etc. (Sharma LA & Love RM, 2019).

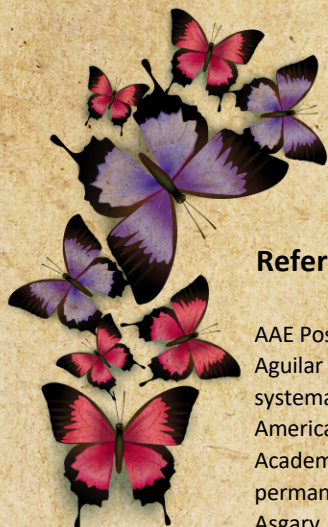
The various treatment strategies in VPT includes indirect pulp capping, direct pulp capping, partial pulpotomy and full pulpotomy. VPT offers great benefits over conventional root canal treatment. In cases with immature apices, preserving the vitality of the tooth is beneficial for the continuation of root development and enhancing the strength of the affected tooth (Ward J, 2002). As summarized by the American Academy of Pediatrics Dentistry (AAPD), good prognosis and long-term retention of a permanent tooth requires favorable crown / root ratio, favorable dentine thickness and vitality which are offered by the VPT after the tooth structure has been compromised due dental caries or trauma etc. (AAPD 2008-09). Another advantage offered by VPT over conventional RCT is, better protective resistance against masticatory forces (Caplan DJ *et al.*, 2005).

Asgary S *et al.*, (2021) demonstrated the success rates of VPT to be comparable with the root canal treatment as a treatment modality for irreversible pulpitis. These findings were supported by a multicentric randomized clinical trial conducted earlier by Asgary S *et al.*, (2015), where in a 5-year follow-up revealed no significant difference in the success rates of both VPT and root canal treatment. Several other studies have also demonstrated the long-term success of VPT techniques for teeth diagnosed with irreversible pulpitis (Aguilar P & Linsuwanont P 2011, Dhar V *et al.*, 2017, Ballal V *et al.*, 2020, Ballal V *et al.*, 2022). Thus, considering the success rates of VPT in teeth with established irreversible pulpitis, this evidence-based, simple, and cost-effective treatment option could be recommended as a viable alternative for root canal treatment or tooth extraction.

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## References

- AAE Position Statement on Vital Pulp Therapy, (2021) *Journal of Endodontics*, 47, 1340–44.
- Aguilar P, & Linsuwanont P (2011). Vital pulp therapy in vital permanent teeth with cariously exposed pulp: a systematic review. *Journal of Endodontics*, 37, 581-7.
- American Academy on Pediatric Dentistry Clinical Affairs Committee-Pulp Therapy subcommittee, & American Academy on Pediatric Dentistry Council on Clinical Affairs (2008). Guideline on pulp therapy for primary and young permanent teeth. *Pediatric dentistry*, 30, 170–4.
- Asgary S, Eghbal MJ, Fazlyab M, Baghban AA, & Ghoddusi J (2015). Five-year results of vital pulp therapy in permanent molars with irreversible pulpitis: a non-inferiority multicenter randomized clinical trial. *Clinical oral investigations*, 19, 335-41.
- Asgary S, Eghbal MJ, Shahravan A, Saberi E, Baghban AA & Parizhkar A (2022). Outcomes of root canal therapy or full pulpotomy using two endodontic biomaterials in mature permanent teeth: a randomized controlled trial. *Clinical Oral Investigations*, 26, 3287–97.
- Ballal V, Duncan F, Rai N, Jalan P, & Zehnder M (2020). Sodium hypochlorite reduces postoperative discomfort and painful early failure after carious exposure and direct pulp capping—initial findings of a randomized controlled trial. *Journal of clinical medicine*, 9, 2408.
- Ballal V, Duncan H, Wiedemeier D, Rai N, Jalan P, Bhat V, Belle V, Zehnder M (2022). MMP-9 Levels and NaOCl lavage in randomized trial on direct pulp capping. *Journal of Dental Research*, 101, 414-19.
- Bergenholtz G, Axelsson S, Davidson T, Frisk F, Hakeberg M, Kvist T, Norlund A, Petersson A, Portenier I, Sandberg H, (2013) Treatment of pulps in teeth affected by deep caries—A systematic review of the literature. *Singapore Dental Journal* 34, 1–12
- Bjørndal L, Reit C, Bruun G, Markvart M, Kjældgaard M, Näsman P, Thordrup M, Dige I, Nyvad B, Fransson H, (2010) Treatment of deep caries lesions in adults: randomized clinical trials comparing stepwise vs. direct complete excavation, and direct pulp capping vs. partial pulpotomy. *European Journal of Oral Sciences* 118, 290–7
- Bjørndal L, Reit C, Bruun G, Markvart M, Kjældgaard M, Näsman P, Thordrup M, Dige I, Nyvad B, Fransson H, (2010) Treatment of deep caries lesions in adults: randomized clinical trials comparing stepwise vs. direct complete excavation, and direct pulp capping vs. partial pulpotomy. *European Journal of Oral Sciences* 118, 290–7.
- Caplan DJ, Cai J, Yin G, & White BA, (2005) Root canal filled versus non-root canal filled teeth: a retrospective comparison of survival times. *Journal of Public Health Dentistry*, 65, 90–6.
- Dhar V, Marghalani AA, Crystal YO, Kumar A, Ritwik P, Tulunoglu O, & Graham L (2017). Use of vital pulp therapies in primary teeth with deep caries lesions. *Pediatric dentistry*, 39, 146E-159E.
- Hilton TJ, (2009) Keys to clinical success with pulp capping: a review of the literature. *Operative Dentistry* 34, 615–25.
- Lin LM, Ricucci D, Saoud TM, Sigurdsson A, & Kahler B, (2020) Vital pulp therapy of mature permanent teeth with irreversible pulpitis from the perspective of pulp biology. *Australian Endodontic Journal: the Journal of the Australian Society of Endodontology Inc*, 46, 154–66.
- Sharma LA, & Love RM, (2019) Scaffolds for regeneration of the pulp–dentine complex. In *Handbook of Tissue Engineering Scaffolds: Volume One* (pp. 459-478). Woodhead Publishing.
- Ward J, (2002) Vital pulp therapy in cariously exposed permanent teeth and its limitations. *Australian Endodontic Journal: The Journal of the Australian Society of Endodontology Inc*, 28, 29–37.





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## Endo hack

### Dr. Diana Davidson *BDS, MDS*

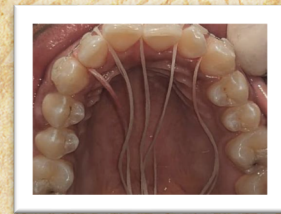
Associate Professor  
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#### Dental Floss To The Rescue!

Splinting is advocated after repositioning of tooth/teeth following luxative or subluxative injuries, replantation following avulsion or fractured teeth to stabilize them; in an attempt to optimise the healing of pulp and periodontal ligament thereby improving the function of such teeth. To position the splint onto the tooth surface in the desired position and to maintain it until one secures it permanently with a composite resin is quite a challenge. To overcome this there is a simple trick for us to follow:

1. Spot etch and bond the facial / lingual surfaces of teeth intended for the splinting procedure.
2. Secure dental floss interproximally. The dental floss takes up a loop form in between the teeth into which the wire is passed.
3. The ends of the dental floss are pulled together at the same time - this pulls the splint towards the desired position and then the wire is secured using composite resin.
4. The interproximally secured floss is gently lifted using a probe and removed.

This trick eliminates the risk of the splint, displacing from the desired position before being secured with a composite resin.



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## Stress & Its Management

### **Am I finishing the degree or is the degree finishing me? Stresses during Post graduation and its management**

*"It's not the load that breaks you down, it's the way you carry it." - Lou Holtz*

In all seriousness, many people walk straight into their postgraduate degree with no idea as to what awaits them. Reminiscing my own post graduate days almost 15 years ago and having seen so many post graduates finishing their degrees in front of me I would definitely agree to the fact that Stress can be a normal part of university life, especially as a postgraduate student. Post Graduates fall down the rabbit hole without a clue as to what their day-to-day life will be like, what the work will consist of and whether or not they'll ever cope with it. In UG you are one among a class of 100 but in PG you are one in 5 to 8 maximum. Life as a post graduate is very crucial for students for its multiple dimensions. Students get an exposure of life in different ways at personal, academic and administrative level and they face many challenges. The post graduate students confront various challenges throughout their academic career ranging from cognitive skills, pressure of assignments and presentations on time, rivalry and grouping and fear of isolation and neglect, financial, family and time management challenges, examination related problems, instructors' role, poor communication skills and curriculum in the study which affect students learning directly or indirectly.

Life in itself is a challenge. It is a journey with ups and downs. However, flexible attitude and adjustments in routine life practices make the life worth living even in odd circumstances. It's crucial to recognise when things are getting too much, and to know how to regulate your stress levels to ensure your health and wellbeing. Adopting ways to cope with the challenges would help the path become easier and livelier. At the end of it, you have not only got a

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postgraduate degree in dentistry but have also metamorphosed into a beautiful butterfly ready to take on all challenges that life can present with.

## DEAR STRESS.....LET'S BREAK UP:

### • **Develop good habits:**

Remember that academic performance is tied to your health and wellbeing. It's important to be kind to yourself, to work through each task one at a time and to recognise that each day is a chance to start again. Leaning towards intoxication would only distress you in the moment and subsequently add to your existing stress. Taking the time to take care of your body through eating and sleeping well and staying hydrated will also benefit your mental wellbeing, leaving you feeling nourished and reinvigorated.

### • **Shift your Perspective:**

When feeling stressed or anxious, make a note of the thoughts that come into your mind and observe what you are feeling. Ask yourself if there's evidence for the way that you're feeling; are there other ways of viewing the situation; how is thinking this way affecting you; are you concentrating on your weaknesses instead of your strengths?

### • **All work and no play make Jack a dull boy:**

While dedication towards academic performance and studying is key, studying is not the be-all and end-all of post graduate life. It is important to maintain balance by practising pleasurable things as well as necessary and routine tasks, and taking time to rest, relax and have fun in order to de-stress and improve the quality of your work.

### • **Break it up:**

When a task feels overwhelming, break it down into manageable chunks and focus on getting through each one in turn. This will help you to focus on the moment rather than panicking about a large piece of work and stop you from feeling overwhelmed and procrastinating as a result.

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**ROME WAS NOT BUILT IN A DAY:**

Don't get discouraged too quickly. Persistence, perseverance and patience are the keys to success. Keep trying. (lage raho munna bhai.....)

**• Listen to talk and Talk to be listened:**

Having a very clear open communication channel with your mentors and colleagues would help you and others have a better understanding instead of anticipating things on your own and creating a story unconsciously.

**• Breathe:**

Whenever your emotions are haywire your breathing is also haywire. Practise deep breathing as it helps regulate your emotions and calms you down. Learn to respond to challenges instead of reacting.

**• I am Listening:**

Seek professional help if you feel too bogged down with stress and unable to cope up. Important is to talk to a counsellor/therapist who would provide you a non-judgemental space so that you become aware of the emotions and would subsequently be dealt with. Good Emotional health is the basis of your life.

**“Give your stress wings and let it fly away.”**

—Terri Guillemets

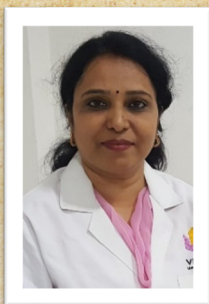
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Prof and Head

Conservative Dentistry and Endodontics

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Chairman and Member, Board of Studies PG

YSR University of Health Sciences Vijayawada

Dr. Durgabavani Panitini (PG student)

*“Dynamic Navigation System – Operational Experience with Most Advanced technology”*

“Navigation is the act or practice of steering, directing the course of, or finding a way through”. Navigation in earlier days was by means of celestial, or by map and compass orientation. Later, the Global Positioning System (GPS) a navigation system based on satellite was discovered. It is mainly used in positioning, navigation, monitoring and varying applications. Artificial intelligence and navigational technology breakthroughs have been incorporated into medical and dental practice to enhance patient diagnosis and care.

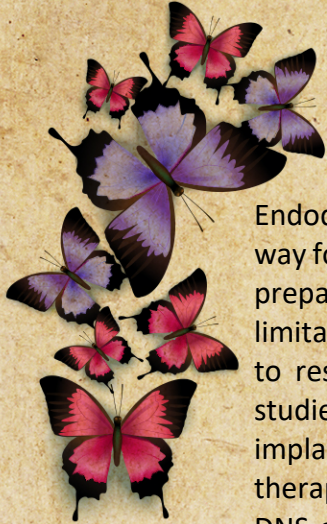
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Endodontics, has succeeded from the use of CBCT and 3D printing, which paved the way for guided endodontics [1]. It is a relatively new technology that navigates a cavity preparation tool inside the root canal or in the periapical region. Static guides have limitations, such as difficulties or impossibility to be employed in posterior teeth due to restricted interocclusal space, despite the great accuracy shown by numerous studies [2]. The dynamic navigation system (DNS), a distinct technique adopted from implant dentistry, has been used for both surgical and non-surgical endodontic therapy. Using an optical tracking device managed by a special computer interface, DNS combines CBCT and spatial positioning technologies. Based on the results of a preoperative plan, a clinical real-time navigation directs the user to drill into the specified position [3].

In endodontics, it can help with access opening and guidance in tilted teeth, calcified canals, retreatment, and periapical surgery with great precision. It can be difficult for us as clinicians to treat angulated teeth, teeth with dental anomaly and pulp canal obliteration. Numerous calcification instances have benefited greatly from the application of Cone-beam computed tomography (CBCT), magnification with illumination and ultrasonics. However, despite these developments, excessive dentin removal or even perforation can still happen and compromise the survival of the tooth [4,5]. Dynamic Navigation System is a viable and reliable method with a reduced possibility of iatrogenic errors for treating teeth with calcified canals. Dynamic Navigation can also guide us to minimal invasive surgical procedure with predictable corticotomy and root resection [4].

CBCT and intraoral scanning/model scanning are the requirements for DNS. For precise tracking, the DICOM (CBCT data) and STL (intraoral/lab scanner data) files will be superimposed in the NAVIDENT programme [6]. The intended location will be filled with a simulated implant. A drill tag should be fixed on the handpiece, and a jaw tracker or head tracker should be fastened to the patient. A minimum of three randomly selected sites on teeth that are dispersed along the arch should be traced. There will be calibration of the drilling tool. A calibration procedure should be repeated for every drill. The clinician should focus on the BULLS EYE shown in the virtual window while performing the procedure. Both angulation and depth of seating would be guided in real-time [7]. By superimposing postoperative CBCT over preoperative planned CBCT, the evaluation tool Evalunav allows users to compare the

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final access preparation with the anticipated position. This allows the user to evaluate the degree of departure and serves as a manual for developing operator abilities.

We at the Vishnu Dental College in Bhimavaram, utilised DNS in successful management of complex cases like calcified canals, Minimal Invasive Endodontic Surgeries and other speciality procedures like Arthrocentesis, placement of inter-radicular mini implants and accurate placement of Implants. In the sequencing of a digital workflow, dynamic navigation is another value chain. The path of dentistry will go in the future toward minimally invasive procedures. Dynamic navigation can preserve the remaining tooth structure and prevent the mishaps in a single appointment. However, a steep learning curve and initial investments are the relative limitations.

References:

1. Nikhil V. Dynamic navigation system: A real time guide to endodontists. Indian J Conserv Endod 2020;46(9):1286-90.
2. Mageshwari M.1, Ravishankar M. S.2, Benin Paulaian<sup>3</sup>, Arvind Kumar A.4 Dynamic Navigation System - A New Era in Endodontics International Journal of Science and Research Volume 11 Issue 4, April 2022
3. Dianat O, Gupta S, Price JB, Mostoufi B. Guided endodontic access in a maxillary molar using a dynamic navigation system. J Endod 2021 Apr 1;47(4):658-62.
4. Gambarini G, Galli M, Stefanelli LV, Di Nardo D, Morese A, Seracchiani M, De Angelis F, Di Carlo S, Testarelli L. Endodontic microsurgery using dynamic navigation system: a case report. J Endod 2019 Nov 1;45(11):1397-402.
5. Bun San Chong B, Manpreet Dhese B, Makdissi J, RCR D. Computer-aided dynamic navigation: a novel method for guided endodontics. Quintessence International. 2019 Mar;50(3):196-202.
6. Connert T, Weiger R, Krastl G. Present status and future directions-Guided endodontics. Inter Endod J. 2022 Jan 25;10.
7. Mujumdar SV, Borkar AC, Maral SA, Nighot NB, Aras SD. Use of dynamic navigation system in endodontics: A literature review. Journal of the International Clinical Dental Research Organization. 2022 Jan 1;14(1):17.





Fig.1: Pre-op IOPA radiograph of pulp canal obliteration of # 37



Fig.2: CBCT image of #37



Fig.3: Clinical image during the procedure

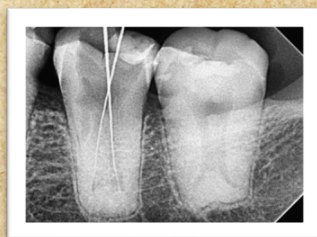


Fig.4: Post-op IOPA radiograph of pulp canal negotiation of # 37.





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## Dr. Ramya Raghu BDS, MDS

Prof & Head,  
Conservative Dentistry & Endodontics,  
Bangalore Institute of Dental Sciences, Bangalore.  
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Dr. Nikhitha K L (PG student)

### **ARTIFICIAL INTELLIGENCE IN ENDODONTICS – A NEW FRONTIER**

Artificial Intelligence (AI), first highlighted by John McCarthy in 1956 can be considered as the fourth industrial revolution as it marks the convergence of human ability and computer technology to positively impact industry and health sciences. It employs algorithms and software programmes to mimic human intelligence. AI is fast emerging as a complementary tool to enhance diagnosis, treatment and prognosis in medicine and dentistry. In tandem with its applications in other fields of dentistry, AI is also making rapid strides in the field of endodontics.

Machine learning and deep learning are the two main subsets of AI which can be applied in virtual and physical forms. Virtual type is used for analysing tooth morphology, diagnosis, treatment planning and prediction of prognosis of various clinical conditions. The physical form deals with robotics for performing different treatment procedures.

AI uses panoramic radiographs, CBCTs, hrCBCT etc., paired with deep learning applications for virtual applications in endodontics. Here, image patches extracted from conventional radiographs and algorithms are applied for analysing root canal morphology, detecting pathologies and crown/root fractures, prediction of viability of

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stem cells and assessing prognosis following treatment and re-treatment. U-net is a deep learning architecture that uses 3D wavelets for analysing the number of voxels in extracted images. The areas with microcracks and periapical pathologies possess increased number of voxels compared to normal tooth structure. The same principle is applied for accurate determination of working length.

The physical type of AI uses nano robots for performing various procedures like management of dentine hypersensitivity, inducing local anaesthesia, root canal disinfection, cavity preparation and pulp regeneration. Nanorobots can provide permanent cure to hypersensitivity by selectively binding to open dentinal tubules with increased diameter. Nano robots with nanometric resolution of  $10^{-9}$   $\mu\text{m}$  are instilled into the pulp to induce fast acting and reversible anaesthesia by desensitising the sensory nerves. These can be safely retrieved after the treatment procedure. Micro Endo Robot is a computerised machine which is mounted on the tooth to perform automated root canal treatment by accurate navigation within the canal space. Recently, magnetically driven nanorobots were designed by Indian Institute of Science (IISC), Bangalore for root canal debridement. These bots penetrate the tubules to the depth of 2000  $\mu\text{m}$  and generate heat to destroy resident bacteria.

Together, the virtual methods and robotics have an important role in dental education. Dental simulators introduced in the 1990s are virtual means that aid students and clinicians to hone their skills greatly. Traditional preclinical training methods have many limitations, since the procedures are irreversible, force applied on models vary from clinical practice and multiple tooth morphologies cannot be experienced. In contrast, simulators provide individual learning guidance by creating haptic environment with virtual reality and force feedback mechanism. Showa Hanako II is a robotic patient developed by Tokyo's Showa University in 2010 which mimics human responses. This allows dental students to have realistic experiences during preclinical training.

With so many innovative applications, the use of AI in endodontics is still in its nascent stages. The implementation of this novel technology however requires adequate understanding of the complex mechanisms as well as considerations regarding increased cost and surplus data necessary to train computer systems.

With the evolution of Artificial Intelligence, the field of endodontics is on the edge of a new frontier. Utilizing this technology will contribute immensely to propel future growth of endodontics while enhancing clinical practice and decision-making skills.

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**Dr. S. BALAGOPAL** BDS, MDS, MSc.

Vice Principal, Professor & HOD  
Tagore Dental College & Hospital, Chennai.

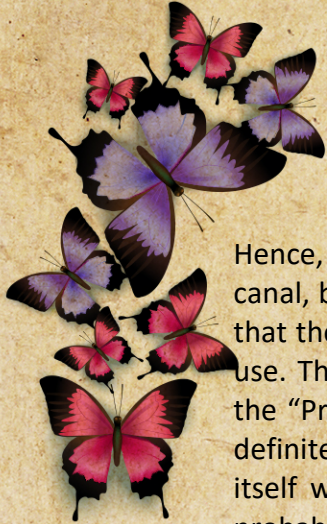
#### **Swift Biologic Glide Creation For Rotary Instrumentation**

Endodontic success depends on the cleaning, shaping and obturation of the root canal. To achieve a clean canal the canal should be optimally shaped that aids in the process of debriding and disinfecting. In this task instrumentation play a vital role. A number of mechanised canal shaping instruments are introduced into the market that rapidly enlarge the narrow, irregular and curved canals. Most of these are Nickel-Titanium (NiTi) instruments with varying types of heat treatment, surface coating and finishing. What is paramount before the use of these instruments are that the canal should be already secured and made amenable for these differently designed enlarging NiTi instruments. The term Glide Path is assigned for this pre-enlarging procedure. It is currently accepted that the creation of Glide Path is most essential and fundamental in rotary NiTi preparation of root canal. Glide path must "follow" and replicate the original canal path in order to preserve the position of nature's portal of exit. According to John West, "The endodontic Glidepath is a smooth radicular tunnel from canal orifice to physiologic terminus (foraminal constriction). Its minimal size should be a super loose No. 10 endodontic file. The Glidepath must be discovered if already present in the endodontic anatomy or prepared if it is not present." (1).

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Hence, a Rotary NiTi canal enlarging instrument should never be used to path find a canal, but only to rapidly enlarge a canal made receptive for the same. Else we know that there is a high risk of the rotary instrument getting separated in the canal during use. The first rotary instrument introduced into my endodontic armamentarium was the “Profile” instrument launched by Dr Ben Johnson for Dentsply. The journey was definitely not very smooth. After the first use of the instrument in a canal, a second use itself was scary. As the instrument grated through the walls of the canal, I could probably feel the pounding of my heart. It was not very different with the use of other instruments that entered the market like the RaCe from FKG and Protaper from Dentsply. This fear of breaking the instrument was eased when I attended the lecture by Dr Arnaldo Castellucci, on 26<sup>th</sup> October 2006. Ever since it has been a smooth journey.

The general method suggested for the creation of glide path was to use the smallest size endodontic instrument copiously in the canal till the next size fitted the canal. It is also generally suggested to enlarge the canal with “at least to size 15 instrument” before a rotary NiTi instrument is used. Practitioners often suggest enlarging a canal to larger than size 15 hand instrument and sometimes even upto size 30 hand instrument before confidently using a rotary NiTi instrument to get the large tapered canal configuration for achieving a clean and aseptic canal that can be thoroughly obturated. But the most difficult part is to enlarge a narrow canal to size 20 instrument or larger.(2) Hence, a different approach is suggested here which the upcoming endodontists will find it useful. The same can also be adopted to the rotary instrument systems after the concept has been grasped and the dexterity gained. The procedure or technique is titled ‘Swift Biological Glide’.

1. Structure bound guided access cavity is prepared (3)
2. Irrigate the pulp chamber and establish tentative tooth length.
3. Scout the canal with #10K file to the tooth length





4. Orifice Opening/Coronal flaring is performed using either Gates Glidden drills or any rotary orifice openers. Between every gates glidden drills or orifice openers the canal should be irrigated well and #10 instrument scouted to tooth length. When the orifice opening is done the #10 instrument which was going with resistance is found to go with ease to the apex. This confirms that the resistance offered to the instrument during its passage to the apex in the canal was not because of the narrowness of the canal. It must be because of the deflections to the instrument because of the irregularities and curvatures that begin from the orifice itself. This is the basis for the currently suggested method of instrumentation of the canal.
5. After the orifice opening is completed the working length of the tooth is determined using an electronic apex locator and the #15K file is worked into the canal. If the file does not reach the working length, execute 2 to 3 watch winding motion with apical thrust.
6. Remove the instrument and irrigate the canal. Scout with #10K file to tooth length
7. Place the next larger #20K file to the length at which it reaches and apply 2 to 3 watch winding motion with apical pressure. Follow it by irrigation and scouting with #10K file to tooth length.
8. Place the next larger K file (#25) to the length at which it reaches, apply 2 to 3 watch winding motion with apical pressure, followed by irrigation and scouting with #10 K file.
9. Place the next larger file (#30) to the length at which it reaches, apply 2 to 3 watch winding motion, followed by irrigation and scouting with #10 K file.
10. After working with the #30 K file the #15 instrument would easily reach the working length. The #20 and #25 instruments may also approach the working length.

By the execution of the procedure from 5 to 9 the canal curvature in the apical to mid or coronal portion would have been eased. When care is taken to pre curve the instruments and keep the watch winding motion within 30 to 90 degree the instrumentation retains the natural path of the canal. There are a number of device operated rotary glide path files from different manufacturers. It should be remembered that the canal should be pre-hand-instrumented before the safe use of these rotary glide path files too.





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The swift biological glide path creation

1. Reduces the strain on patient
2. Reduces the strain on operator
3. Reduces the stress on instruments
4. Reduces the time taken for creation of glide path.
5. Economic when compared to glide path files.

#### References:

- West JD. *The endodontic Glidepath: "Secret to rotary safety"*. *Dent Today*. 2010 Sep;29(9):86, 88, 90-3.
- Clifford J. Ruddle. *Glide Path Management with Path Files*. *Advanced Endodontics*. May 3<sup>rd</sup>, 2011. <https://www.endoruddle.com/blogs/show/8/glide-path-management-with-pathfiles>. downloaded on 03.02.2023.
- Balagopal S, Chandrasekaran C. *Structure bound guide to access cavity preparation for molar root canal treatment*. *Indian J Dent Res*. 2020 Jul-Aug;31(4):621-4. doi: 10.4103/ijdr.IJDR\_856\_19. PMID: 33107466.

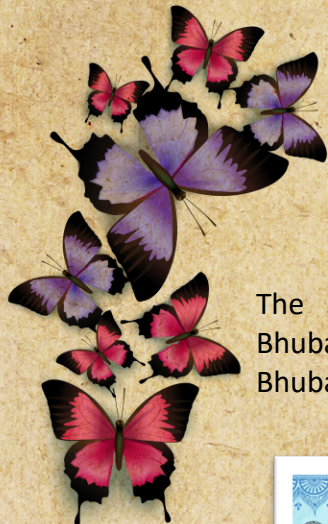
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## What next?

The 31<sup>st</sup> National Conference of Indian Endodontic Society will be held in Bhubaneswar from 30<sup>th</sup> September to 1<sup>st</sup> October 2023 at hotel Mayfair Lagoon, Bhubaneswar, Odisha India.

**Indian Endodontic Society**

**31<sup>st</sup> NATIONAL CONFERENCE OF INDIAN ENDODONTIC SOCIETY**  
29<sup>th</sup> Sep - 1<sup>st</sup> Oct 2023  
Hotel Mayfair, Bhubaneswar

**Theme : Broaden Your Endodontic Horizon**  
www.iescon2023.com

**INVITATION**

It is said that " Knowledge is power, knowledge shared is power multiplied". Keeping our belief in the fundamental philosophy and perspective, we are extremely honored to announce that the 31<sup>st</sup> National Conference of the Indian Endodontic Society would be held in Bhubaneswar from 30<sup>th</sup> September to 1<sup>st</sup> October, 2023 at the Hotel Mayfair Lagoon, Bhubaneswar, Odisha India.

We take this opportunity to welcome delegates from all across India and abroad to the beautiful and culturally rich, heritage-driven "Temple City" of India, Bhubaneswar. It is home to rich cultural diversity, numerous awe-inspiring ancient temples and stunning natural landscapes. Many noted national and international speakers have consented to be a part of this platform, upholding our belief that such platforms prove to be an essential network to exchange knowledge and skills within the profession and between different professionals all across the globe.

This conference will serve as a platform for crucial opportunities to discuss new research, theories as well as gain an understanding of the skills to practice through academic sessions, hands-on courses and great insights on recent technologies and research which will inspire the attendees to practice to further evolved level of dentistry.

This conference would also herald the rising potential of the eastern India as a region of great scientific, academic and research progress. Eastern India has become a hub for international collaboration, stable professional-friendly ecosystem and is slated to be the growth driver of the Indian development story in the 21<sup>st</sup> century. The conference in Odisha could not have come at a better time than this to further showcase the rising prowess of the region and that of the state of Odisha and Eastern India.

Inspired by the Indian ethos of Vasudhaiva Kutumbakam (The whole world is one family) and Abhi Dharma Bharat (Great to World), we welcome all the delegates to join us and not only enjoy a great academic platform but also explore Bhubaneswar and Odisha which has so much history and cultural heritage to offer. After all, it's India's best kept secret.

In case of any Queries or further assistance required, please feel free to contact

Thankyou!

Prof. (Dr.) Swadheeno Patra,  
Organizing Secretary  
IESCON 2023

Dr. Subash Chandra Bho  
Chairperson  
IESCON 2023

**ABOUT CONFERENCE VENUE**

MAYFAIR Lagoon is a sprawling resort in the heart of the city and one of the best luxury hotels in Bhubaneswar. This top hotel in Bhubaneswar offers lavish luxury as well as wonderful service. MAYFAIR Lagoon is a 5 Star Deluxe Hotel that is spread out across 10 acres with various categories of luxury accommodation available to suit the needs of the business as well as the leisure traveller, from the opulent lagoon side villa to family-friendly suites and cottages to comfortable well-appointed club rooms. There are state-of-the-art conference rooms, banquet halls, and lush outdoor venues to host meetings, seminars, and conferences, etc.

**REGISTRATION DETAILS:**

Conference Registration Charges:	29 <sup>th</sup> June 2023	From 1 <sup>st</sup> July 2023
PG Student - IES Members*	7,000/-	7,500/-
PG Student - non Members*	7,500/-	8,000/-
Delegates - IES Members*	8,500/-	9,500/-
Delegates - non Members*	9,000/-	10,000/-
Banquet Charge	3,000/-	3,500/-

\* GST as applicable

Registration includes Lunches on Congress Days, Entry to Scientific and Trade area and Congress Kit.

**Account details**

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WCDDT  
TOKYO  
2024  
July 12-14

22nd World Congress on Dental Traumatology  
In Celebration of Jens Ove Andreasen

The 22<sup>nd</sup> Congress on Dental Traumatology is being held in Tokyo on July 12-14<sup>th</sup>

For more details log onto <https://www.iadt-dentaltrauma.org/meetings.html>

World Dental Congress

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**4 DAY SCIENTIFIC PROGRAMME**  
**4 DAY EXHIBITION**  
**200+ HOURS OF CPD**

*Educating for Dental Excellence*

FDI World Dental Congress, will be hosted by the Australian Dental Association, from 24th to 27th September 2023 in Sydney, Australia. A four-day mega-scientific event with more than 200 hours of presentations by leading dentists from around the world. For more details log onto [world.dentalcongress.com](http://world.dentalcongress.com)

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The AAE's annual meeting continues to be the most comprehensive endodontic education summit, vendor exhibition and networking opportunity in the world!

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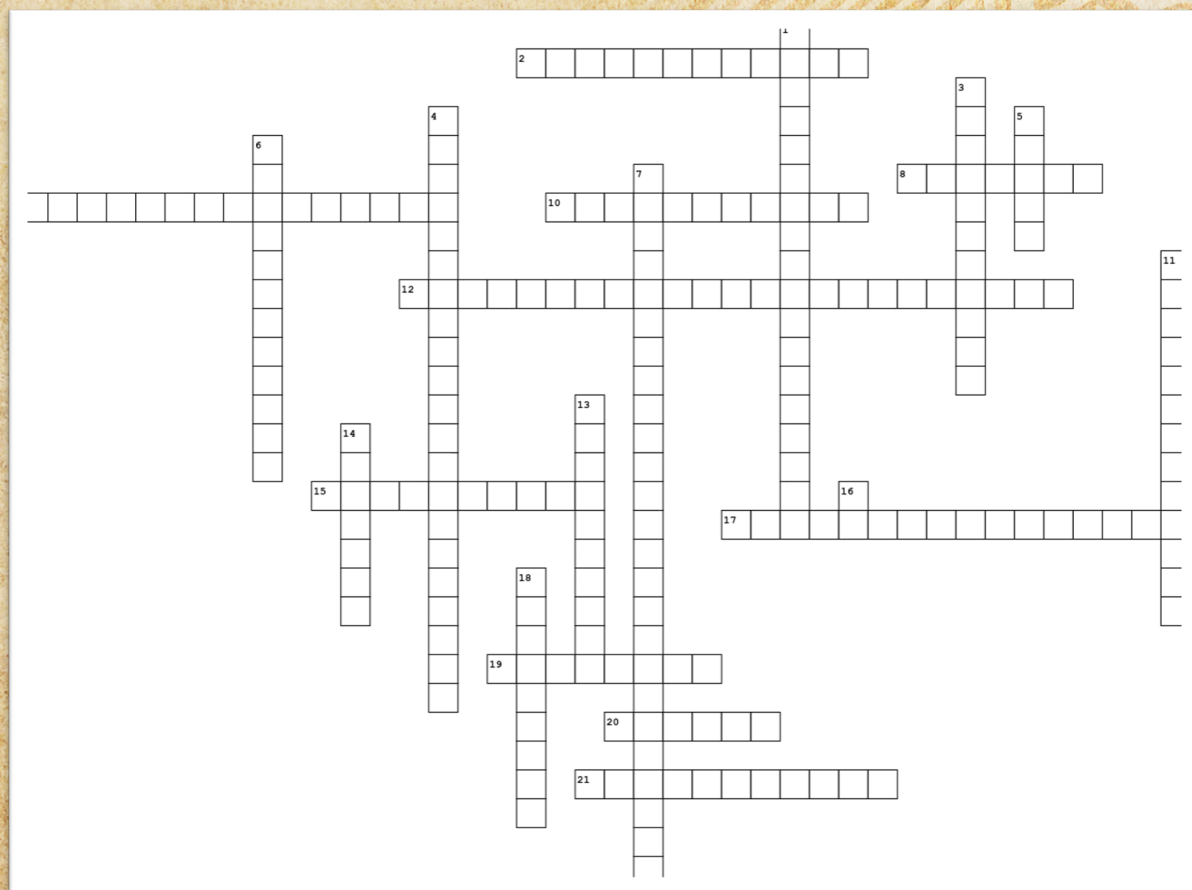




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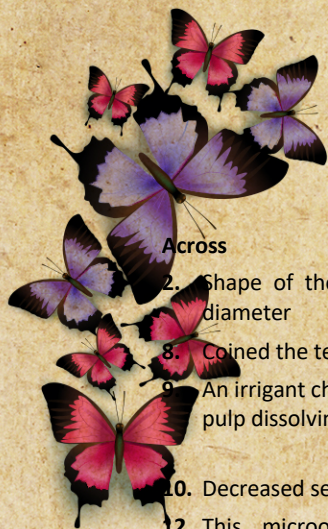
## Endo-cross-o-mania



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**Across**

2. Shape of the space between major and minor diameter
8. Coined the term "Nanodentistry"
9. An irrigant chemically similar to hypochlorite with pulp dissolving capability and antimicrobial action
10. Decreased sensitivity to painful stimuli
12. This microorganism possesses antiphagocytic capsule
15. Minimally invasive, a non-instrumentation technique of root canal preparation
17. The seeding of cells on tissue engineering scaffolds is known as
19. Electronic anesthetic syringe
20. 3- dimensional pixels
21. Ability of a test to identify teeth without disease

1. Condensingosteitis
2. Morningglory
3. Superclamps
4. Laserdopplerflowmetry
5. Pitch
6. Hydrodynamics
7. Bonemorphogeneticprotein2
8. Freitas
9. Chlorinedioxide
10. Hypoalgesia
11. Quorumsensing
12. Porphyromonasgingivalis
13. Paperpoint
14. Tween80
15. Gentlewave
16. Xu
17. Tissueconstructs
18. Kakehashi
19. Dentapen
20. Voxels
21. Specificity

**Down**

1. Localised bony reaction to a low-grade stimulus at the apex of a tooth
3. A modified clamp that isolates the operative site while protecting gingiva, tongue & cheek
4. A great indicator of pulpal vascularity in cases of luxation injuries
5. Distance from one "spiral twist" to the other
6. Most accepted theory of dentinal hypersensitivity
7. Growth factor involved in the proliferation and differentiation of stem cells
11. Cell to cell communication
13. Can also be used to take cultures from root canals
14. The detergent in MTAD
16. Gave the Glucose leakage model
18. The first to say that bacteria are responsible for most pulpal diseases





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## The Debutante

### X guide Endo (X-Nav Technologies)



Dynamic navigation systems have elevated 3D Endodontics to the next level. They allow the Endodontist to precisely navigate the drill to the exact location especially in calcified canals, thus producing minimally invasive access cavity preparations. They also facilitate minimally invasive apicoectomy and root end preparations. Recently, X-Nav Technologies received clearance from FDA to extend the use of its X-Guide® Dynamic 3D Navigation system to aid endodontists in carrying out minimally invasive endodontic procedures. This technology can help conserve tooth structure, minimize damage to anatomical structures and save time.

<https://x-navtech.com/endodontics>

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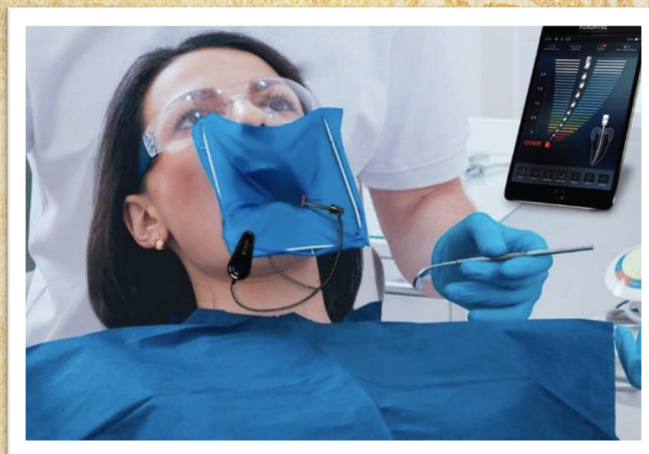




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## Wirele-X (Forum Tec)



It is said, "Wireless is freedom...". Wireless technology has now been incorporated into an apex locator, Wirele-X, eliminating the need for long cables. This apex locator from Forum Tec is small and has a 7-in high-resolution touch display screen. Measurements are transmitted from the apex locator to the display unit using Bluetooth technology. Studies have found Root ZX II and Wirele-X to be equally accurate\*. Its user-friendly product architecture and simplified measurement procedure may prove to be appealing to dental clinicians.

<https://www.forumtec.net/products-apexlocators>

\*Brand et al. Aust Endod J 2022; Sep 15.

\*De-Deus et al. J Endod 2022; 48(9):1152-1160.

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## EndoSequence BC Temp (Brasseler USA)



Bioceramics, the wonder materials in Endodontics, are being used as sealers, for obturation, perforation repair, retrograde filling, pulpotomy, resorption, apexification and regenerative endodontics. A new addition is their application as an intracanal medicament. Endosequence BC Temp is a premixed bioceramic paste for intracanal dressing. Unlike traditional Calcium Hydroxide pastes, the primary components of BC Temp are Calcium Silicates and Calcium Oxide which combine with the water naturally present in dentin to produce Calcium Hydroxide which dissociates into  $\text{Ca}^{2+}$  and  $\text{OH}^-$ . The hydroxyl ions ( $\text{OH}^-$ ) released are responsible for a significant increase in the pH of the surrounding tissues, making the environment unsuitable for bacterial growth. The hydration reaction of Calcium Silicates allows BC Temp to have a gradual and slow release of calcium and hydroxyl ions which eliminates the need for frequent applications. It is also easy to remove and thus reduces chair time.

<https://brasselerusadental.com/products/endosequence-bc-temp>

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- *H.E. Luccock*



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