

## Editorial

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### [Insights into the January 2020 Issue of the \*Journal of Endodontics\*](#)

Amir Azarpazhooh, Anibal R. Diogenes, Ashraf F. Fouad, Gerald N. Glickman, Mo K. Kang, Anil Kishen, Linda Levin, Robert S. Roda, Christine M. Sedgley, Franklin R. Tay, Kenneth M. Hargreaves

## Review Article

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### [Genetic Polymorphism and Expression of Matrix Metalloproteinases and Tissue Inhibitors of Metalloproteinases in Periapical Lesions: Systematic Review](#)

Ariane Ferraz Corrêa Torres, Leonardo Santos Antunes, Natália Felizardo de Oliveira, Erika Calvano Küchler, Cinthya Cristina Gomes, Livia Azeredo Alves Antunes

### [Risk of Bias and Its Impact on Intervention Effect Estimates of Randomized Controlled Trials in Endodontics](#)

Jianru Yi, Haibo Li, Yu Li, Xiaobing Li, Wei Zheng, Zhihe Zhao

## Clinical Research

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### [Comparing Quality of Life of Patients Undergoing Root Canal Treatment or Tooth Extraction](#)

Emma Wigsten, Thomas Kvist, Peter Jonasson EndoReCo, Thomas Davidson

### [Incidence of Altered Sensation after Mandibular Premolar and Molar Periapical Surgery](#)

Anshul Mainkar, Qiang Zhu, Kamran Safavi

### [The Influence of Missed Canals on the Prevalence of Periapical Lesions in Endodontically Treated Teeth: A Cross-sectional Study](#)

Abayomi Omokeji Baruwa, Jorge N.R. Martins, João Meirinhos, Beatriz Pereira, José Gouveia, Sérgio A. Quaresma, Adam Monroe, António Ginjeira

### [Incidence of Middle Mesial Canals Based on Distance between Mesial Canal Orifices in Mandibular Molars: A Clinical and Cone-beam Computed Tomographic Analysis](#)

Eric M. Weinberg, Alejandro E. Pereda, Sonam Khurana, Priti P. Lotlikar, Carla Falcon, Craig Hirschberg

## Regenerative Endodontics

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### [Regenerative Endodontic Treatment as a Biologically Based Approach for Non-Surgical Retreatment of Immature Teeth](#)

Jerome J. Cymerman, Ali Nosrat

### [Effect of the Periapical "Inflammatory Plug" on Dental Pulp Regeneration: A Histologic \*In Vivo\* Study](#)

Samer H. Zaky, Qahtan AlQahtani, Jingming Chen, Avinash Patil, Juan Taboas, Elia Beniash, Herbert Ray, Charles Sfeir

### [Potential of Treated Dentin Matrix Xenograft for Dentin-Pulp Tissue Engineering](#)

Hengameh Bakhtiar, Amir Mazidi, Saeed Mohammadi-Asl, Sadegh Hasannia, Mohammad Reza Ellini, Mohammad Pezeshki-Modaress, Seyed Naser Ostad, Kerstin Galler, Amir Azarpazhooh, Anil Kishen

# Basic Research

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## Biology

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### [Intracanal Metformin Promotes Healing of Apical Periodontitis via Suppressing Inducible Nitric Oxide Synthase Expression and Monocyte Recruitment](#)

Han-Wei Wang, Eddie Hsiang-Hua Lai, Cheng-Ning Yang, Sze-Kwan Lin, Chi-Yuan Hong, Hsiang Yang, Jenny Zwei-Chiang Chang, Sang-Heng Kok

### [The Use of Histidine-tryptophan-ketoglutarate Solution as a New Storage Medium for the Avulsed Tooth](#)

Tae Jun Oh, Ok Hyung Nam, Mi Sun Kim, Hyo-Seol Lee, Yu-Shik Hwang, Sung Chul Choi

### [Glucose Transporter 2 and 4 Are Involved in Glucose Supply during Pulpal Wound Healing after Pulpotomy with Mineral Trioxide Aggregate in Rat Molars](#)

Aiko Tohma, Naoto Ohkura, Kunihiko Yoshida, Ryosuke Takeuchi, Nagako Yoshida, Naoki Edanami, Mari Shirakashi, Razi Saifullah Ibn Belal, Hayato Ohshima, Yuichiro Noiri

### [Dentin Matrix Protein 1 Compensates for Lack of Osteopontin in Regulating Odontoblastlike Cell Differentiation after Tooth Injury in Mice](#)

Kotaro Saito, Mitsushiro Nakatomi, Hayato Ohshima

## Technology

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### [Volume of Voids in Retrograde Filling: Comparison between Calcium Silicate Cement Alone and Combined with a Calcium Silicate-based Sealer](#)

Jaeheon Jung, Sunil Kim, Euseong Kim, Su-Jung Shin

### [Higher Speed and No Glide Path: A New Protocol to Increase the Efficiency of XP Shaper in Curved Canals—An \*In Vitro\* Study](#)

Mariel Webber, Lucila Piasecki, Eduardo Inocente Jussiani, Avacir Casanova Andreello, Paulo José dos Reis, Katharina A. Azim, Adham A. Azim

### [Comparative Study of Four Endodontic File Systems to Assess Changes in Working Length during Root Canal Instrumentation and the Effect of Canal Curvature on Working Length Change](#)

Michelle Tien, Hermawan Tjoa, Maggie Zhou, Paul V. Abbott

## Case Report/Clinical Techniques

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### [Modified Apexification Procedure for Immature Permanent Teeth with a Necrotic Pulp/Apical Periodontitis: A Case Series](#)

Kamolthip Songtrakul, Talayeh Azarpajouh, Matthew Malek, Asgeir Sigurdsson, Bill Kahler, Louis M. Lin