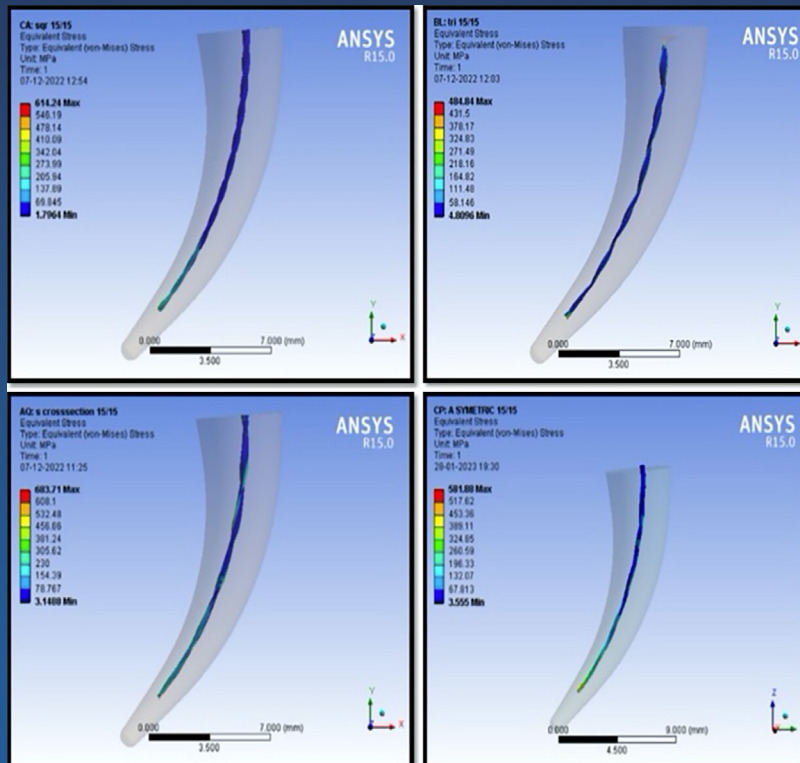




# EUROPEAN ENDODONTIC JOURNAL



From Singh et al. EEJ Issue 3; 243-51

VOLUME NINE, ISSUE 3  
2024

[www.eurendodj.com](http://www.eurendodj.com)



## Editor-in-Chief

İsmail Davut Çapar, İstanbul, Türkiye

## Deputy Editors-in-Chief

Hany Mohamed Aly Ahmed, Kuala Lumpur, Malaysia  
William Nguyen Ha, Sydney, Australia

## Associate Editors

Ahmad Madarati, Madina, Saudi Arabia  
Emmanuel Silva, Niterói, Brazil  
Flávio Alves, Rio de Janeiro, Brazil  
Frédéric Bukiet, Marseille, France  
Giampiero Rossi-Fedeles, Adelaide, Australia  
Gianrico Spagnuolo, Naples, Italy  
Till Dammaschke, Münster, Germany

## Editorial Board Members

Anna Turkina, Moscow, Russia  
Daniel Decurcio, Goiânia, Brazil  
Davide Mancino, Strasbourg, France  
Fausto Zamparini, Bologna, Italy  
Frank Setzer, Philadelphia, USA  
Gianluca Plotino, Rome, Italy  
Hakan Arslan, İstanbul, Türkiye  
Hyeon Cheol Kim, Yangsan, Korea  
James Leo Gutmann, Texas, United States  
Jukka P. Matinlinna, Sai Ying Pun, Hong Kong  
Luciana Sassone, Rio de Janeiro, Brazil  
Mohammad Ali Saghiri, New Jersey, United States  
Mostafa Elkholy, Cairo, Egypt  
Parisa Soltani, Isfahan, Iran  
Paulo J Palma, Coimbra, Portugal  
Salvatore Sauro, Valencia, Spain  
Velayutham Gopikrishna, Chennai, India  
Mariano Simón Pedano De Piero, Leuven, Belgium

## Ethics Editor

Hüseyin Sinan Topçuoğlu, Kayseri, Türkiye

## Statistical Editor

Nurdan Çolakoğlu, İstanbul, Türkiye

Editor-in-Chief  
İsmail Davut Çapar  
Phone: +90 553 600 37 12  
E-mail: capardt@hotmail.com



Publisher: Kare Medya (Kare Media)  
Göztepe Mah. Fahrettin Kerim Gökay Cad. Cad. No: 200  
D: 2, Göztepe, Kadıköy, İstanbul, Türkiye  
Phone: +90 216 550 61 11  
Fax: +90 216 550 61 12  
<http://www.kareyayincilik.com>  
E-mail: [kareyayincilik@gmail.com](mailto:kareyayincilik@gmail.com)

## AIMS AND SCOPE

European Endodontic Journal (Eur Endod J) is an international, scientific, open access, online-only journal published in accordance with independent, unbiased, and double-blinded peer-review principles. Three issues are released every year in April, August, and December.

European Endodontic Journal publishes clinical and experimental studies on all aspects of endodontics, reviews on current topics, case reports, editorial comments and letters to the editor that are prepared in accordance with the ethical guidelines. The journal's publication language is English.

Journal's target audience includes academicians, specialists, residents, and general practitioners working in the fields of endodontics, dentistry, medicine and other related fields.

European Endodontic Journal is currently indexed in **Web of Science-Emerging Sources Citation Index (ESCI), Scopus, PubMed Central, TürkMEDLINE, EBSCO, ASOS, ProQuest, TUBITAK TR Dizin, DOAJ, Scope Database, OUCI, SCILIT, Hinari/Research4Life and Worldcat.**

The editorial and publication processes of the journal are shaped in accordance with the guidelines of the International Committee of Medical Journal Editors (ICMJE), World Association of Medical Editors (WAME), Council of Science Editors (CSE), Committee on Publication Ethics (COPE), European Association of Science Editors (EASE), and National Information Standards Organization (NISO). The journal is in conformity with the Principles of Transparency and Best Practice in Scholarly Publishing ([doaj.org/bestpractice](http://doaj.org/bestpractice)).

**Submission Charges:** The journal has no article submission charges.

**Article Processing Charges (APCs):** European Endodontic Journal levies an article-processing charge of € 400 for each article accepted for publication.

The APC is payable when your manuscript is editorially accepted and before publication. The corresponding author of the manuscript is responsible for making the payment upon editorial acceptance of the manuscript. Prompt payment is recommended since we cannot publish accepted manuscripts until payment has been received.

An article-processing charge (APC) covers the range of publishing services including article production and hosting, copyediting, typesetting, publication on our website, and marketing, as well as technical development and maintenance of the publishing platform.

Statements or opinions expressed in the manuscripts published in the journal reflect the views of the author(s) and not the opinions of the editors, editorial board, and/or publisher; the editors, editorial board, and publisher disclaim any responsibility or liability for such materials.

All published content is available online, free of charge at [www.eurendodj.com](http://www.eurendodj.com)

**Editor-in-Chief : İsmail Davut Çapar**

Address: Privite Practice, Endodonti Akademi Dental Clinic and Education Center, Bakirkoy, Istanbul, Türkiye

Phone: +90 (553) 600 37 12

E-mail: [capardt@hotmail.com](mailto:capardt@hotmail.com)

**Publisher : KARE MEDIA**

Address: Göztepe Mah. Fahrettin Kerim Gökay Cad. Cad. No: 200 D: 2, Göztepe, Kadıköy, İstanbul, Türkiye

Phone: +90 216 550 61 11

Fax: +90 216 550 61 12

E-mail: [kare@kareyayincilik.com](mailto:kare@kareyayincilik.com)

## INSTRUCTIONS FOR AUTHORS

European Endodontic Journal publishes clinical and experimental studies on all aspects of endodontics, reviews on current topics, case reports, editorial comments and letters to the editor that are prepared in accordance with the ethical guidelines. The journal's publication language is English.

The editorial and publication processes of the journal are shaped in accordance with the guidelines of the International Council of Medical Journal Editors (ICMJE), the World Association of Medical Editors (WAME), the Council of Science Editors (CSE), the Committee on Publication Ethics (COPE), the European Association of Science Editors (EASE), and National Information Standards Organization (NISO). The journal conforms to the Principles of Transparency and Best Practice in Scholarly Publishing ([doaj.org/bestpractice](http://doaj.org/bestpractice)).

Originality, high scientific quality, and citation potential are the most important criteria for a manuscript to be accepted for publication. Manuscripts submitted for evaluation should not have been previously presented or already published in an electronic or printed medium. Manuscripts that have been presented in a meeting should be submitted with detailed information on the organization, including the name, date, and location of the organization.

Manuscripts submitted to European Endodontic Journal will go through a double-blind peer-review process. Each submission will be reviewed by at least two external, independent peer reviewers who are experts in their fields in order to ensure an unbiased evaluation process. The editorial board will invite an external and independent editor to manage the evaluation processes of manuscripts submitted by editors or by the editorial board members of the journal. The Editor in Chief is the final authority in the decision-making process for all submissions.

An approval of research protocols by the Ethics Committee in accordance with international agreements (World Medical Association Declaration of Helsinki "Ethical Principles for Medical Research Involving Human Subjects," amended in October 2013, [www.wma.net](http://www.wma.net)) is required for experimental, clinical, and drug studies and for some case reports. If required, ethics committee reports or an equivalent official document will be requested from the authors. For manuscripts concerning experimental research on humans, a statement should be included that shows that written informed consent of patients and volunteers was obtained following a detailed explanation of the procedures that they may undergo. For studies carried out on animals, the measures taken to prevent pain and suffering of the animals should be stated clearly. Information on patient consent, the name of the ethics committee, and the ethics committee approval number should also be stated in the Materials and Methods section of the manuscript. It is the authors' responsibility to carefully protect the patients' anonymity. For photographs that may reveal the identity of the patients, releases signed by the patient or their legal representative should be enclosed.

Authors who used AI technology to conduct the study should describe its use in this section in sufficient detail to enable replication to the approach, including the tool used, version, and prompts where applicable.

All submissions are screened by a similarity detection software (iThenticate by CrossCheck).

In the event of alleged or suspected research misconduct, e.g., plagiarism, citation manipulation, and data falsification/fabrication, the Editorial Board will follow and act in accordance with COPE guidelines.

Each individual listed as an author should fulfil the authorship criteria recommended by the International Committee of Medical Journal Editors

(ICMJE - [www.icmje.org](http://www.icmje.org)). The ICMJE recommends that authorship be based on the following 4 criteria:

1. Substantial contributions to the conception or design of the work; or the acquisition, analysis, or interpretation of data for the work; AND
2. Drafting the work or revising it critically for important intellectual content; AND
3. Final approval of the version to be published; AND
4. Agreement to be accountable for all aspects of the work in ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved.

In addition to being accountable for the parts of the work he/she has done, an author should be able to identify which co-authors are responsible for specific other parts of the work. In addition, authors should have confidence in the integrity of the contributions of their co-authors.

All those designated as authors should meet all four criteria for authorship, and all who meet the four criteria should be identified as authors. Those who do not meet all four criteria should be acknowledged in the title page of the manuscript.

### Declaration of Artificial Intelligence (AI)-Assisted Technology in Scientific Writing

At submission, authors should disclose whether they used artificial intelligence (AI)-assisted technologies (such as Large Language Models [LLMs], chatbots, or image creators) in the production of submitted work. Authors who use such technology should describe, in both the Title Page and the submitted work, how they used it. Authors who used AI technology to conduct the study should describe its use in the methods section in sufficient detail to enable replication to the approach, including the tool used, version, and prompts where applicable. Chatbots (such as ChatGPT) and AI-assisted technologies should not be listed as an author or co-author nor cited because they cannot be responsible for the accuracy, integrity, and originality of the work, and these responsibilities are required for authorship. Therefore, humans are responsible for any submitted material that included the use of AI-assisted technologies. Authors should carefully review and edit the result because AI can generate authoritative-sounding output that can be incorrect, incomplete, or biased. Authors should be able to assert that there is no plagiarism in their paper, including in text and images produced by the AI. Humans must ensure there is appropriate attribution of all quoted material, including full citations.

European Endodontic Journal requires corresponding authors to submit a signed and scanned version of the authorship contribution form (available for download through [www.eurendodj.com](http://www.eurendodj.com)) during the initial submission process in order to act appropriately on authorship rights and to prevent ghost or honorary authorship. If the editorial board suspects a case of "gift authorship," the submission will be rejected without further review. As part of the submission of the manuscript, the corresponding author should also send a short statement declaring that he/she accepts to undertake all the responsibility for authorship during the submission and review stages of the manuscript.

European Endodontic Journal requires and encourages the authors and the individuals involved in the evaluation process of submitted manuscripts to disclose any existing or potential conflicts of interests, including financial, consultant, and institutional, that might lead to potential bias or a conflict of interest. Any financial grants or other support received for a submitted study from individuals or institutions should be disclosed to the Editorial Board. To disclose a potential conflict of interest, the ICMJE Potential Conflict of Interest Disclosure Form should be filled in and submitted by all contributing authors. Cases of a potential conflict of interest of the editors, authors, or reviewers are resolved by the journal's Editorial Board within the scope of COPE and ICMJE guidelines.

The Editorial Board of the journal handles all appeal and complaint cases within the scope of COPE guidelines. In such cases, authors should get in direct contact with the editorial office regarding their appeals and complaints. When needed, an ombudsperson may be assigned to resolve cases that cannot be resolved internally. The Editor in Chief is the final authority in the decision-making process for all appeals and complaints.

Statements or opinions expressed in the manuscripts published in European Endodontic Journal reflect the views of the author(s) and not the opinions of the editors, the editorial board, or the publisher; the editors, the editorial board, and the publisher disclaim any responsibility or liability for such materials. The final responsibility in regard to the published content rests with the authors.

**Submission Charges:** The journal has no article submission charges.

**Article Processing Charges (APCs):** European Endodontic Journal levies an article-processing charge of € 250 for each article accepted for publication.

No APC fee is charged for letters to the editor that are no more than two pages in length.

The APC is payable when your manuscript is editorially accepted and before publication. The corresponding author of the manuscript is responsible for making the payment upon editorial acceptance of the manuscript. Prompt payment is recommended since we cannot publish accepted manuscripts until payment has been received.

An article-processing charge (APC) covers the range of publishing services including article production and hosting, copyediting, typesetting, publication on our website, and marketing, as well as technical development and maintenance of the publishing platform.

**Authors can complete the APC process after depositing € 250.- to the Euro account. The article number and corresponding author name must be written in the bank shipment description section. Authors are responsible for any bank transfer costs.**

Note: The APC process will be applied for articles submitted to the system as of August 26, 2022.

**MANUSCRIPT PREPARATION**

The manuscripts should be prepared in accordance with ICMJE-Recommendations for the Conduct, Reporting, Editing, and Publication of Scholarly Work in Medical Journals (updated in December 2016 - <http://www.icmje.org/icmje-recommendations.pdf>). Authors are required to prepare manuscripts in accordance with the CONSORT guidelines for randomized research studies, STROBE guidelines for observational original research studies, STARD guidelines for studies on diagnostic accuracy, PRISMA guidelines for systematic reviews and meta-analysis, ARRIVE guidelines for experimental animal studies, and TREND guidelines for non-randomized public behaviour.

Manuscripts can only be submitted through the journal's online manuscript submission and evaluation system, available at [www.eurendodj.com](http://www.eurendodj.com). Manuscripts submitted via any other medium will not be evaluated.

Manuscripts submitted to the journal will first go through a technical evaluation process where the editorial office staff will ensure that the manuscript has been prepared and submitted in accordance with the journal's guidelines. Submissions that do not conform to the journal's guidelines will be returned to the submitting author with technical correction requests.

**Authors are required to submit the following:**

- Copyright Transfer Form,
- Author Contributions Form, and
- ICMJE Potential Conflict of Interest Disclosure Form (should be filled in by all contributing authors) during the initial submission. These forms are available for download at [www.eurendodj.com](http://www.eurendodj.com).

**Preparation of the Manuscript**

**Title page:** A separate title page should be submitted with all submissions and this page should include:

- The full title of the manuscript as well as a short title (running head) of no more than 50 characters,
- Name(s), affiliations, and highest academic degree(s) of the author(s),
- Grant information and detailed information on the other sources of support,
- Name, address, telephone (including the mobile phone number) and fax numbers, and email address of the corresponding author,
- Acknowledgment of the individuals who contributed to the preparation of the manuscript but who do not fulfill the authorship criteria.
- Authors should disclose whether they used artificial intelligence (AI)-assisted technologies (such as Large Language Models [LLMs], chatbots, or image creators) in the production of submitted work. Authors should assert that there is no plagiarism in their paper, including in text and images produced by the AI -if any- and must ensure there is appropriate attribution of all quoted material, including full citations. Authors who used AI technology to conduct the study should describe its use in the methods section in sufficient detail.

**Abstract:** An abstract should be submitted with all submissions except for Letters to the Editor. The abstract of Original Articles should be structured with subheadings (Objective, Methods, Results, and Conclusion). Please check Table 1 below for word count specifications.

**Keywords:** Each submission must be accompanied by a minimum of three to a maximum of six keywords for subject indexing at the end of the abstract. The keywords should be listed in full without abbreviations. The keywords should be selected from the National Library of Medicine, Medical Subject Headings database (<https://www.nlm.nih.gov/mesh/MBrowser.html>).

**Manuscript Types**

**Original Articles:** This is the most important type of article since it provides new information based on original research. The main text of original articles should be structured with Introduction, Methods, Results, Discussion, and Conclusion subheadings. Please check Table 1 for the limitations for Original Articles.

Statistical analysis to support conclusions is usually necessary. Statistical analyses must be conducted in accordance with international statistical reporting standards (Altman DG, Gore SM, Gardner MJ, Pocock SJ. Statistical guidelines for contributors to medical journals. *Br Med J* 1983; 7; 1489-93). Information on statistical analyses should be provided with a separate subheading under the Materials and Methods section and the statistical software that was used during the process must be specified.

Units should be prepared in accordance with the International System of Units (SI).

**Review Articles:** Reviews prepared by authors who have extensive knowledge on a particular field and whose scientific background has been translated into a high volume of publications with a high citation potential are welcomed. These authors may even be invited by the journal. Reviews should describe, discuss, and evaluate the current level

**TABLE 1.** Limitations for each manuscript type

Type of manuscript	Word limit	Abstract word limit	Reference limit	Table limit	Figure limit
Original Article	3500	350 (Structured)	40	6	5 or total of 15 images
Review Article	5000	350	50	6	10 or total of 20 images
Case Report	1000	200	25	No tables	5 or total of 15 images
Case Series	2000	200	25	10 or total of 20 images	10 or total of 20 images
Case Report: Literature of Review	3500	200	No limit	10 or total of 20 images	10 or total of 20 images
Letter to the Editor	500	No abstract	5	No tables	No media

of knowledge of a topic in clinical practice and should guide future studies. The main text should contain Introduction, Clinical and Research Consequences, and Conclusion sections. Please check Table 1 for the limitations for Review Articles.

**Case Reports, Case Series and Literature of Review:** There is limited space for case reports in the journal and reports on rare cases or conditions that constitute challenges in diagnosis and treatment, those offering new therapies or revealing knowledge not included in the literature, and interesting and educative case reports are accepted for publication. The text should include Introduction, Case Presentation, Discussion, and Conclusion subheadings. Please check Table 1 for the limitations for Case Reports.

**Letters to the Editor:** This type of manuscript discusses important parts, overlooked aspects, or lacking parts of a previously published article. Articles on subjects within the scope of the journal that might attract the readers' attention, particularly educative cases, may also be submitted in the form of a "Letter to the Editor." Readers can also present their comments on the published manuscripts in the form of a "Letter to the Editor." Abstract, Keywords, and Tables, Figures, Images, and other media should not be included. The text should be unstructured. The manuscript that is being commented on must be properly cited within this manuscript.

**Tables**

Tables should be included in the main document, presented after the reference list, and they should be numbered consecutively in the order they are referred to within the main text. A descriptive title must be placed above the tables. Abbreviations used in the tables should be defined below the tables by footnotes (even if they are defined within the main text). Tables should be created using the "insert table" command of the word processing software and they should be arranged clearly to provide easy reading. Data presented in the tables should not be a repetition of the data presented within the main text but should be supporting the main text.

**Figures and Figure Legends**

Figures, graphics, and photographs should be submitted as separate files (in TIFF or JPEG format) through the submission system. The files should not be embedded in a Word document or the main document. When there are figure subunits, the subunits should not be merged to form a single image. Each subunit should be submitted separately through the submission system. Images should not be labelled (a, b, c, etc.) to indicate figure subunits. Thick and thin arrows, arrowheads, stars, asterisks, and similar marks can be used on the images to support figure legends. Like the rest of the submission, the figures too should be blind. Any information within the images that may indicate an individual or institution should be blinded. The minimum resolution of each submitted figure should be 300 DPI. To prevent delays in the evaluation process, all submitted figures should be clear in resolution and large in size (minimum dimensions: 100x100 mm). Figure legends should be listed at the end of the main document.

All acronyms and abbreviations used in the manuscript should be defined at first use, both in the abstract and in the main text. The abbreviation should be provided in parentheses following the definition.

When a drug, product, hardware, or software program is mentioned within the main text, product information, including the name of the product, the producer of the prod-

uct, and city and the country of the company (including the state if in USA), should be provided in parentheses in the following format: "Discovery St PET/CT scanner (General Electric, Milwaukee, WI, USA)."

All references, tables, and figures should be referred to within the main text, and they should be numbered consecutively in the order they are referred to within the main text.

Limitations, drawbacks, and the shortcomings of original articles should be mentioned in the Discussion section before the conclusion paragraph.

Please note that British English spelling and terminology should be used in the manuscripts.

### Highlights

Each submission should be accompanied by 3 to 5 "highlight points" which should emphasize the most striking results of the study and highlight the message that is intended to be conveyed to the readers. As these highlights would be targeting endodontics residents, experts and residents of other fields of medicine, as well as endodontics experts, they should be kept as plain and simple as possible. These points should be constructed in a way that provides the readers with a general overview of the article and enables them to have a general idea about the article. The highlights should be listed at the end of the main text, above the reference list.

### References

While citing publications, preference should be given to the latest, most up-to-date publications. If an ahead-of-print publication is cited, the DOI number should be provided. Authors are responsible for the accuracy of references. Journal titles should be abbreviated in accordance with the journal abbreviations in Index Medicus/MEDLINE/PubMed. When there are 6 or fewer authors, all authors should be listed. If there are 7 or more authors, the first 6 authors should be listed followed by "et al." In the main text of the manuscript, references should be cited using Arabic numbers in parentheses. The reference styles for different types of publications are presented in the following examples.

#### Journal Article:

Author. Title. Journal Year|Volume|Issue|Pages|.

Rankovic A, Rancic N, Jovanovic M, Ivanovic M, Gajovic O, Lazic Z, et al. Impact of imaging diagnostics on the budget – Are we spending too much? *Vojnosanit Pregl* 2013; 70(7): 709-11.

#### Book Section:

Author. Title. In: Editor, `editor`. `^` editors`. | Book Title|. Edition ed|. Place Published|: Publisher|; Year|. p. Pages|.  
Suh KN, Keystone JS. Malaria and babesiosis In: Gorbach SL, Barlett JG, Blacklow NR, editors. *Infectious Diseases*. 3<sup>rd</sup> ed. Philadelphia: Lippincott Williams; 2004. p.2290-308.

#### Books with a Single Author:

Author. Title|. Edition ed|. Place Published|: Publisher|; Year|. Sweetman SC. *Martindale the Complete Drug Reference*. 34<sup>th</sup> ed. London: Pharmaceutical Press; 2005.

#### Conference Proceedings:

Author. Title. In: Editor, `editor`. `^` editors`. | Conference Name|; Year of Conference| Date|; Conference Location|; Publisher|; Year of Conference|. p. Pages|.  
Bengissson S. Sothemin BG. Enforcement of data protection, privacy and security in medical informatics. In: Lun KC, Degoulet P, Piemme TE, Rienhoff O, editors. *MEDINFO 92. Proceedings of the 7<sup>th</sup> World Congress on Medical Informatics*; 1992 Sept 6-10; Geneva, Switzerland. Amsterdam: North-Holland; 1992. pp.1561-5.

#### Scientific or Technical Report:

Author. Title|. Type|. Place Published|: Institution|; Year| Date|. Report No.: Report Number|. Cusick M, Chew EY, Hoogwerf B, Agrón E, Wu L, Lindley A, et al. Early Treatment Diabetic Retinopathy Study Research Group. Risk factors for renal replacement therapy in the Early Treatment Diabetic Retinopathy Study (ETDRS), Early Treatment Diabetic Retinopathy Study Kidney Int: 2004. Report No: 26.

#### Thesis:

Author. Title|. Type|. Place Published|: Institution|; Year| Date|. Report No.: Report Number|. Kaplan SI. Post-hospital home health care: elderly access and utilization (dissertation). St Louis (MO): Washington Univ; 1995.

#### Epub Ahead of Print Articles:

Author. Title. Alternate Title Year| Date Accessed. doi: DOI. [Epub ahead of print].  
Cai L, Yeh BM, Westphalen AC, Roberts JP, Wang ZJ. Adult living donor liver imaging. *Diagn Interv Radiol*. 2016 Feb 24. doi: 10.5152/dir.2016.15323. [Epub ahead of print].

#### Webpage:

Author. Title. Available at: URL. Accessed Access Date, Access Year.

### REVISIONS

When submitting a revised version of a paper, the author must submit a detailed "Response to the reviewers" that states point by point how each issue raised by the reviewers has been covered and where it can be found (each reviewer's comment, followed by the author's reply and line numbers where the changes have been made) as well as an annotated copy of the main document. Revised manuscripts must be submitted within 60 days from the date of the decision letter. If the revised version of the manuscript is not submitted within the allocated time, the revision option may be cancelled. If the submitting author(s) believe that additional time is required, they should request this extension before the initial 30-day period is over.

Accepted manuscripts are copy-edited for grammar, punctuation, and format. A PDF proof of the accepted manuscript is sent to the corresponding author and their publication approval is requested within 2 days of their receipt of the proof. Once the publication process of a manuscript is completed, it is published online on the journal's webpage.

### Open Access and Commons User Licenses

#### Open Access

The European Endodontic Journal is an open access journal which means that all content is freely available without charge to the user or his/her institution. Users are allowed to read, download, copy, distribute, print, search, or link to the full texts of the articles, or use them for any other lawful purpose, without asking prior permission from the publisher or the author. This is in accordance with the BOAI definition of open access.

#### Commons User Licenses

This work is licensed under a Creative Commons Attribution-NonCommercial 4.0 International License (CC BY-NC 4.0).

#### Editor in Chief

İsmail Davut Çapar  
Associate Professor in Endodontics  
Address: Privite Practice, Endodonti Akademi Dental Clinic and Education Center, Bakirkoy, İstanbul, Türkiye  
E-mail: capardt@hotmail.com

## FOR REVIEWERS

### Requirements for Reviewers

All interested reviewers must meet the requirements depicted below for European Endodontic Journal.

The interested reviewer must both have a valid degree in Medicine and a Specialty diploma, or a Ph.D. in research related areas such as Biostatistics, medicine.

The interested reviewer must be academically affiliated with a university, hospital, institution or must be an educator in a research hospital with residency training.

The interested reviewer must have at least 1 original research publication listed on his or her CV. All articles pending a final decision must be included.

The reviewer is expected to review 1 to 4 at least reviews per calendar year.

The reviewer is invited to review a manuscript by an invitation e-mail which includes the proposed review duration (2 or 3 weeks) and their log-in information for the electronic submission system.

Reviewer has to log-in to the electronic submission system in 5 days after he or she received the e-mail and must inform the editorial board if they will review the manuscript or not by selecting one of the two options in the system ("I Accept" or "I Decline"). Reviewer duties are no longer valid after 5 days since we assume that you are unavailable to respond to this request.

The reviewer must complete the assigned review within the proposed review duration provided in the invitation e-mail (2 or 3 weeks according to the type of manuscript).

There are occasions where a reviewer may be unable to complete his/her review within the allotted time due to unforeseen circumstances. In this case, please contact

the editor immediately so that arrangements can be made for the review to be completed in a timely fashion.

Reviewers who seek assistance from a trainee or colleague in the performance of a review should acknowledge these individuals' contributions in the written comments submitted to the editor. Reviewers must maintain the confidentiality of the manuscript, which may prohibit the uploading of the manuscript to software or other AI technologies where confidentiality cannot be assured. Reviewers must request permission from the journal prior to using AI technology to facilitate their review.

### High-quality review should be as follows

- The reviewer should have identified and commented on major strengths and weaknesses of study design and methodology
- The reviewer should comment accurately and constructively upon the quality of the author's interpretation of the data, including acknowledgment of its limitations.
- The reviewer should comment on major strengths and weaknesses of the manuscript as a written communication, independent of the design, methodology, results, and interpretation of the study.
- The reviewer should comment on any ethical concerns raised by the study, or any possible evidence of low standards of scientific conduct.
- The reviewer should provide the author with useful suggestions for improvement of the manuscript.
- The reviewer's comments to the author should be constructive and professional
- The reviewer should provide the editor the proper context and perspective to make a decision on acceptance (and/or revision) of the manuscript. (Some journals may wish a recommendation on whether the article should be published; others will not, as such decisions are usually made on priorities different than the reviewer's).

## ETHICAL POLICIES

### Open Access Policy

European Endodontic Journal (EEJ) is an open access journal which means that all content is freely available without charge to the user or his/her institution. Users are allowed to read, download, copy, distribute, print, search, or link to the full texts of the articles, or use them for any other lawful purpose, without asking prior permission from the publisher or the author. This is in accordance with the BOAI definition of open access.

Copyright of open access article is retained by the author(s).

EEJ supports the Budapest Open Access Initiative statement of principles that promotes free access to research literature. The declaration defines open access to academic literature as free availability on the internet, permitting users to read, record, copy, print, search, or link to the full text, examine them for indexing, use them as data for software or other lawful purposes without financial, legal, or technical barriers. Information sharing represents a public good, and is essential to the advancement of science. Therefore, articles published in this journal are available for use by researchers and other readers without permission from the author or the publisher provided that the author and the original source are cited. The articles in the EEJ are accessible through search engines, websites, blogs, and other digital platforms.

Additional details on the Budapest Open Access Initiative and their guidelines are available at <https://www.budapestopenaccessinitiative.org/>, including a Turkish translation of the recommendations at <http://www.budapestopenaccessinitiative.org/boai-10-translations/turkish-translation>.

### Open Access Statement

The journal is an open access journal and all content is freely available without charge to the user or his/her institution. Except for commercial purposes, users are allowed to read, download, copy, print, search, or link to the full texts of the articles in this journal without asking prior permission from the publisher or the author. This is in accordance with the BOAI definition of open access. The open access articles in the journal are licensed under the terms of the Creative Commons Attribution-NonCommercial 4.0 International (CC-BY-NC 4.0) license.

### Editorial Processing Charge

Submission Charges: The journal has no article submission charges.

Article Processing Charges (APCs): European Endodontic Journal levies an article-processing charge of € 400 for each article accepted for publication.

The APC is payable when your manuscript is editorially accepted and before publication. The corresponding author of the manuscript is responsible for making the payment upon editorial acceptance of the manuscript. Prompt payment is recommended since we cannot publish accepted manuscripts until payment has been received.

An article-processing charge (APC) covers the range of publishing services including article production and hosting, copyediting, typesetting, publication on our website, and marketing, as well as technical development and maintenance of the publishing platform.

Authors can complete the APC process after depositing € 400 to the Euro account. The article number and corresponding author name must be written in the bank shipment description section.

For more information, please send an e-mail to Kare Publishing at [kare@karepb.com](mailto:kare@karepb.com).

### Creative Commons License

A Creative Commons license is a public copyright license that enables the free distribution of copyrighted work. The EEJ articles are licensed under the Attribution-NonCommercial 4.0 International (CC BY-NC 4.0) version. The author grants the right to share and use original work with the condition that it be appropriately credited, it may not be used for commercial purposes, and secondary products must also be made available under the same terms of use. Specific details can be found at <https://creativecommons.org/licenses/by-nc/4.0/>.

The EEJ is committed to encouraging dissemination of academic work and interdisciplinary cooperation.

### Ethics Policy

The observance of ethical principles throughout the research and publication process is fundamental to ensuring the integrity of the work and furthering the goal of contributing to and sharing high-quality, objective, reliable, and useful information.

The EEJ has adopted ethical principles based on the guidelines prepared by the Committee on Publication Ethics (COPE) (<https://publicationethics.org/>). We implement these processes to ensure appropriate support for our authors and their institutions, as well as our readers. It is crucial that all of the stakeholders in the process (authors, readers and researchers, publishers, reviewers, and editors) comply with ethical principles.

### Ethical Responsibilities of the Authors

Studies submitted for publication must be original work of the author. References to other studies must be cited and/or quoted completely and accurately;

Only those who provide a substantial intellectual contribution to the content of the work may be cited as an author. Other contributors may be recognized with acknowledgements at the conclusion of the article;

All competing interests or relationships that may be perceived to constitute a conflict of interest must be declared and explained;

All studies involving human or animal subjects must comply with national and international laws and guidelines regarding privacy and ethical conduct (e.g., World Medical Association Declaration of Helsinki, US National Institutes of Health Policy on the Use of Laboratory Animals, EU Directive on the Use of Animals) and the details of approval and observance should be indicated in the Materials and Methods section of the manuscript;

Authors must be able to provide documentation showing that they have the right to use the data analyzed, all necessary permission related to the research, and appropriate consent;

Raw data and other material used in the article must be available and may be requested from the author(s) in order to verify the validity of the reporting;

In the event the author(s) notice an error at any point in the publication process or after publication, they have the obligation to inform the journal editor or publisher and cooperate in appropriate corrective action;

Authors may not submit their article for publication to more than one journal simultaneously. Each application must be initiated following the completion of any previous effort. Previously published articles, will not be accepted, including translations, without the proper acknowledgement of the original author;

Changes in authorship designation (such as adding authors, changing the printed order of the authors, removing an author) once the evaluation process has begun will not be accepted in order to protect all parties involved.

### Ethical Duties and Responsibilities of the Editors

The editor is responsible for everything published in the journal. In the context of this responsibility, editors have the following duties and obligations:

Endeavor to meet the needs of readers and authors;

Maintain continuous development to improve the journal;

Consistently work to ensure quality and academic integrity. The editor is responsible for confirming that the publishing policies and standards are upheld;

Support freedom of thought;

Prevent business needs or other considerations from compromising intellectual and ethical standards, including acting in a balanced, objective, and fair manner in the course of their duties without any discrimination based on gender, religious or political beliefs, ethnic or geographical origin, sponsorship, renown, or other influence;

Apply the publicly defined publication policies created and enforced to ensure a timely and impartial evaluation process for all submissions;

Protect intellectual property and to defend the rights of the journal and author(s);

Demonstrate clarity and transparency. The editor is expected to ensure that any errors, inconsistencies, or misleading statements are corrected quickly and appropriately acknowledged;

Perform a thorough, timely, and objective investigation of any complaint or allegation of misconduct, including providing the opportunity for the author to present information refuting accusations, and to share the findings and conclusions and implement appropriate action, which may include, but is not limited to rejection of an article.

### Declaration of Artificial Intelligence (AI)-Assisted Technology in Scientific Writing

At submission, authors should disclose whether they used artificial intelligence (AI)-assisted technologies (such as Large Language Models [LLMs], chatbots, or image creators)

in the production of submitted work. Authors who use such technology should describe, in both the Title Page and the submitted work, how they used it. Authors who used AI technology to conduct the study should describe its use in the methods section in sufficient detail to enable replication to the approach, including the tool used, version, and prompts where applicable. Chatbots (such as ChatGPT) and AI assisted technologies should not be listed as an author or co-author nor cited because they cannot be responsible for the accuracy, integrity, and originality of the work, and these responsibilities are required for authorship. Therefore, humans are responsible for any submitted material that included the use of AI-assisted technologies. Authors should carefully review and edit the result because AI can generate authoritative-sounding output that can be incorrect, incomplete, or biased. Authors should be able to assert that there is no plagiarism in their paper, including in text and images produced by the AI. Humans must ensure there is appropriate attribution of all quoted material, including full citations.

### Reader Relationship

The editor is to make publication decisions based on expectations of suitable and desirable material. Studies accepted for publication must be original contributions that benefit the reader, researcher, practitioner, and the literature. In addition, editors are obliged to take into account feedback from readers, researchers, and practitioners, and to provide an informative response. Readers will also be informed of any funding provided to support published research.

### Author Relationship

The decision to accept an article is to be based on the importance, original value, validity, and clarity of expression of the work, and the goals and objectives of the journal;

Studies accepted for evaluation and publication will not be withdrawn unless serious problems are identified;

The editor will not disregard positive reviewer comments unless there is a serious problem with the study;

New editors will not change publishing decisions made by previous editor(s) unless there is a serious problem;

A description of the submission and evaluation process is publicly available;

Authors are provided with descriptive and informative feedback.

### Reviewer Relationship

Reviewers are to be selected according to the subject of the study;

Information and guidance for the evaluation phase is provided;

Any conflicts of interest between authors and reviewers will be disclosed and managed appropriately;

Reviewer identity is to be kept confidential to preserve a blind review process;

Reviewers are to evaluate the study using unbiased, scientific, and constructive comments. Unkind or unscientific commentary will not be permitted;

Reviewers will be evaluated using criteria such as timely response and quality of observations;

The pool of reviewers is to be assessed and supplemented regularly to ensure a broad scope of expertise.

### Editorial Board Relationship

The editor works with the members of the editorial board to ensure that they are familiar with journal policies and developments in regular meetings and announcements, and will provide training for new members and assistance to board members during their tenure in their role as a supporter of the journal.

Editorial board members must be qualified and able to contribute to the journal;

Members of the editorial board must evaluate studies impartially and independently;

Editorial board members with the appropriate expertise will be given the opportunity to evaluate suitable articles;

The editor will maintain regular contact with the editorial board and hold regular meetings regarding the development of editorial policies and other aspects of journal management.

### Creativity and Openness

Constructive criticism is to be encouraged;

Authors will be given the opportunity to reply to criticism or lodge complaints;

Negative results will not be a reason for submission denial.



### Peer-Review Policy

Only those manuscripts approved by its every individual author and that were not published before in or sent to another journal, are accepted for evaluation.

Submitted manuscripts that pass preliminary control are scanned for plagiarism using iThenticate software. After plagiarism check, the eligible ones are evaluated by Editor-in-Chief for their originality, methodology, the importance of the subject covered and compliance with the journal scope. Editor-in-Chief evaluates manuscripts for their scientific content without regard to ethnic origin, gender, sexual orientation, citizenship, religious belief or political philosophy of the authors and ensures a fair double-blind peer review of the selected manuscripts.

The selected manuscripts are sent to at least two national/international referees for evaluation and publication decision is given by Editor-in-Chief upon modification by the authors in accordance with the referees' claims.

Editor-in-Chief does not allow any conflicts of interest between the authors, editors and reviewers and is responsible for final decision for publication of the manuscripts in the Journal.

Reviewers' judgments must be objective. Reviewers' comments on the following aspects are expected while conducting the review.

Does the manuscript contain new and significant information?

Does the abstract clearly and accurately describe the content of the manuscript?

Is the problem significant and concisely stated?

Are the methods described comprehensively?

Are the interpretations and conclusions justified by the results?

Are adequate references made to other Works in the field?

Is the language acceptable?

Reviewers must ensure that all the information related to submitted manuscripts is kept as confidential and must report to the editor if they are aware of copyright infringement and plagiarism on the author's side.

A reviewer who feels unqualified to review the topic of a manuscript or knows that its prompt review will be impossible should notify the editor and excuse himself from the review process.

The editor informs the reviewers that the manuscripts are confidential information and that this is a privileged interaction. The reviewers and editorial board cannot discuss the manuscripts with other persons. The anonymity of the referees is important.

### Ethical Responsibilities of the Reviewers

Peer review of research embodies the scientific method, subjecting the work to the exacting scrutiny of knowledgeable colleagues. The rigor of the review process directly affects the quality of the literature; it provides confidence in an objective and independent evaluation of the published work. The EEJ uses a double-blind review process. All comments and the evaluation are transmitted through the journal management system. Reviewers should:

Only agree to evaluate studies related to their specialty;

Return reviews promptly and within the designated timeframe;

Evaluate with impartiality. Nationality, gender, religious beliefs, political beliefs, commercial concerns, or other considerations must not influence the evaluation;

Refuse to review any work with a potential conflict of interest and inform the journal editor;

Maintain confidentiality of all information. Destroy manuscripts and related material following the review. Only the final published version may be used for any purpose;

Report any suspicion of misconduct to the editor;

Use thoughtful and constructive language intended to improve the quality of the article. Hostile or derogatory comments are not acceptable.

Communications between Editors and peer reviewers contain confidential information that should not be shared with third parties. Reviewers who seek assistance from a trainee or colleague in the performance of a review should acknowledge these individuals' contributions in the written comments submitted to the editor. Reviewers must maintain the confidentiality of the manuscript, which may prohibit the uploading of the manuscript to software or other AI technologies where confidentiality cannot be assured. Reviewers must request permission from the journal prior to using AI technology to facilitate their review.

### Ethical Responsibilities of the Publisher

The role of the publisher includes stewardship of the scholarly record. As such, the publisher should:

Abide by ethical principles related to research integrity; the process of application, review, and selection; and publication;

Collaborate with the editor and the editorial board to maintain and develop the journal in a relationship that recognizes editorial independence and is defined by written agreement;

Publish content in a timely manner, including corrections, clarifications, and retractions;

Preserve published work.

The publication processes of the journal are conducted in accordance with the guidelines of International Committee of Medical Journal Editors (ICMJE), the World Association of Medical Editors (WAME), the Council of Science Editors (CSE), the Committee of Publication Ethics (COPE), the European Association of Science Editors (EASE) and National Information Standards Organization (NISO).

Examples of some activities considered to be contrary to scientific research and publication ethics:

**Plagiarism:** The representation of the ideas, methods, data, or other work of another, in whole or in part, as one's own. The original source must be appropriately acknowledged. Authors are encouraged to offer unique work that does not rely on substantial use of other sources, regardless of citation.

**Fraud:** The use of fabricated or falsified data or other deceptive misrepresentation of fact.

**Distortion:** Manipulation of the research records, data, images, or results, or presenting unused devices or materials as if they were used in the research, particularly in the interests of study sponsors.

**Republication:** Duplicate submissions presented as unique publications.

**Slicing:** The use of a portion of data or findings derived from a single research idea in multiple smaller units as separate publications.

**Inaccurate authorship:** The inclusion of individuals as named authors who were not active contributors, the failure to include contributors, or the inappropriate ranking of authors.

Lack of acknowledgement of individuals, institutions, or organizations that provided financial or other substantial support to the work.

Use of a thesis or unpublished study without the permission of the owner.

Failure to comply with ethical rules for human and animal research, including respect for patient rights and animal welfare, or obtaining the required approval.

The misuse of resources, facilities, or devices provided for scientific research.

The use of false or misleading statements.

On rare occasions it may be necessary for a journal to impose sanctions on researchers who have engaged in questionable research practices or publishing ethics malpractice: for example, a ban against publishing any further articles in the journal when doing so puts the journal's reputation demonstrably at risk, or not permitting a researcher to serve as a reviewer or editor. Bans of this nature may be implemented for a period of time and revoked or extended if necessary, upon review at the conclusion of the allotted time period. Sanctions may be appealed by writing to the journal editor.

### Plagiarism Policy

Plagiarism is the theft of another's work and a violation of ethics, regardless of whether it is intentional or not. It is unacceptable conduct to submit or publish manuscripts using other sources without appropriately citing the reference. It is the policy of the EEJ, to use plagiarism detection software for all submissions and to perform an editorial review when necessary. The editor or the editorial board may request revision or reject a manuscript that does not meet publication standards, including plagiarism, citation or other manipulation, or any fraudulent misrepresentation.

### Copyright Transfer

Articles published in EUROPEAN ENDODONTIC JOURNAL have the international license of (CC-BY-NC) "Creative Commons Attribution-NonCommercial 4.0". Accordingly, the authors who publish their articles in the journal are deemed to have accepted the following conditions:

- The author(s) retain the copyright of the article and give the journal the first publication right. The article is licensed under the Creative Commons Attribution license, which allows it to be shared by others, provided that the author(s) are specified and published first in this journal.

- The author(s) can make a separate agreement for the distribution of the published version in the journal of the article (such as sending to an institutional database or publication in a book) without giving full authorization.
- The author(s) can share the published version of the article on the corporate database or on their own websites. This can lead to efficient exchanges, earlier dissemination of the article and more citations. The final form of the manuscript has been seen and approved by all authors.

Authors must return a completed copyright form upon submission.

**Conflict of Interest**

The editor is required to ensure that any conflicts of interest between authors, reviewers, or other parties are disclosed and managed appropriately to provide an independent and impartial process. Any potential perception of a financial or personal interest that may affect decision-making creates a conflict of interest. The presence of a conflict of interest is independent of the occurrence of inappropriateness. The reliability of the scientific process and published articles is directly related to the objective consideration of conflicts of interest during the planning, implementation, writing, evaluation, editing, and publication of scientific studies.

Financial relationships are the most easily identified conflicts of interest, and if undisclosed, they undermine the credibility of the journal, the authors, and the science.

However, conflicts can also occur through individual relationships, academic competition, intellectual approach, and more. Authors should refrain as much as possible from any relationship that could restrict their ability to objectively access data or analyze, interpret, prepare, and publish their article. Authors must disclose any relationships related to study submissions.

Editors and peer reviewers should also be aware of potential conflicts of interest and refrain from engaging in any activity that could be questionable and report associations that could be perceived as presenting a conflict.

**Archiving Policy**

The content published by EEJ is electronically preserved by using Internet and PubMed Central Archives.

1. <https://eurendodj.com/jvi.aspx?pdire=eurendodj&plng=eng&list=pub>
2. <https://www.ncbi.nlm.nih.gov/pmc/journals/3757/>

The publication team works diligently to ensure that the evaluation process is conducted in an impartial manner in order to protect the interests of all parties. The conflict of interest form and more detailed information are available at: <http://www.icmje.org/disclosure-of-interest/>

**COPYRIGHT**

The European Endodontic Journal is an open access journal which means that all content is freely available without charge to the user or his/her institution. Users are allowed to read, download, copy, distribute, print, search, or link to the full texts of the articles, or use them for any other lawful purpose, without asking prior permission from the publisher or the author. This is in accordance with the BOAI definition of open access.

Copyright of open access article is retained by the Author(s).

The Author(s) warrant that their manuscript is their original work that has not been published before; that it is not under consideration for publication elsewhere; and that its publication has been approved by all co-authors, if any, as well as tacitly or explicitly by the responsible authorities at the institution where the work was carried out. The Author(s) affirm that the article contains no unfounded or unlawful statements and does not violate the rights of others. If copyrighted works are included, the Author(s) bear the responsibility to obtain written permission from the copyright owners. The Corresponding author, as the signing author, warrants that he/she has full power to make this grant on behalf of the Author(s).

**Important Notes:**

- If authors have used their own previously published work, or work that is currently under review, as the basis for a submitted manuscript, they must cite the previous articles and indicate how their submitted manuscript differs from their previous work. Reuse of the authors' own words outside the Methods should be attributed or quoted in the text. Reuse of the authors' own figures or substantial amounts of wording may require permission from the copyright holder and the authors are responsible for obtaining this.
- Publishers and editors takes reasonable steps to identify and prevent the publication of papers where research misconduct has occurred.
- In no case shall a publisher or editors encourage such misconduct or knowingly allow such misconduct to take place.
- In the event that a journal's publisher or editors are made aware of any allegation of research misconduct the publisher or editor will deal with allegations appropriately.
- The journal has guidelines for retracting or correcting articles when needed.
- Publishers and editors always be willing to publish corrections, clarifications, retractions and apologies when needed.

**ADVERTISEMENT**

On behalf of the Editorial Board of the European Endodontic Journal (EEJ) (<http://www.eurendodj.com/>), we would like kindly to introduce potential collaborations of EEJ with your company. The EEJ is a peer-review journal which has recently been indexed in the Web of Science. Up to date, the journal has published many papers, and the journal continues to gain more popularity (up to date >30000 readers for most accessed papers – journal web for most accessed papers: <http://www.eurendodj.com/>).

We are receiving many submissions in a regular basis, and nowadays, we are looking forward to provide some slots on the website of the journal in the form of banners for prominent companies in the field of endodontics. The editors of EEJ officially invite you to join us in which your company can advertise in the website of the journal in the form of images or videos.

**There are 3 options available for advertising**

1. Advertising in PDF files: We will attach one full page advertisement page below each of the pdf papers. Eur Endod J publishes three issues in a year and each issue has 10-12 papers. Advertisement price is 4000 USD for each issue.

2. Pop-Up Videos: Each Pop-Up advertisement will be available on our webpage for 1 year.
3. Home Page (5000 USD): Pop Up video of your advertisement will be published on the home page of [eurendodj.com](http://www.eurendodj.com) - In this page, the readers will see the recent issue of the journal.
4. Most Accessed Papers Page (3500 USD): Pop Up video of your advertisement will be published on most accessed papers page that lists most popular papers. <http://www.eurendodj.com/jvi.aspx?pdire=eurendodj&plng=eng&list=town>
5. Ahead of Print Page (3000 USD): Pop Up video of your advertisement will be published on ahead of print papers page that list most recent accepted papers (<http://www.eurendodj.com/jvi.aspx?pdire=eurendodj&plng=eng&list=inpress>)
6. 3. The banners available now for images (Logo of the company in an image of one product) are: Banner will be available on our webpage for 1 year; Prices: USD 2500 USD for homepage, 2000 USD for Most Accessed Papers Page or Ahead of Print Page 1000 USD.

## CONTENTS

## REVIEW

- ▶ Endodontic Applications of Propolis in Primary and Permanent Teeth: A Scoping Review of Clinical Studies 167  
Hayat Alghutaimel, Manal Matoug-Elwerfelli, Venkateshbabu Nagendrababu, Paul Michael Howell Dummer

## ORIGINAL ARTICLES

- ▶ Normal Saline or Sodium Hypochlorite Irrigation for Vital Pulp Therapy? A Non-Inferiority Randomised Controlled Trial 180  
Hataichanok Machareonsap, Papimon Chompu-inwai, Nattakan Chaipattanawan, Chanika Manmontri, Areerat Nirunsittirat, Phichayut Phinyo
- ▶ Effectiveness of Lignocaine with and without Pre-Operative Oral Ibuprofen in Controlling Pain in Primary Mandibular Molars with Irreversible Pulpitis in 5 to 9-Year-Old Children: A Randomized Controlled Trial 191  
Zeel Gandhi, Subhadra Halemane Nagaraj Gowda
- ▶ Effectiveness of Lidocaine versus Lidocaine with Magnesium Sulphate During Inferior Alveolar Nerve Block in Patients with Symptomatic Irreversible Pulpitis: A Randomised Double-Blinded Clinical Trial 198  
Kavimalar Sitharthan, Dhanavel Chakravarthy, Vijayaraja Selvapandiyan, Subramanian Ajithkumar, Manoj Thirunavukarasu, Harshavardhan Manokaran
- ▶ Diclofenac Transdermal Patch versus Oral Diclofenac on Post Endodontic Pain and Quality of Life: A Randomised Clinical Trial 203  
Kajal Modi, Sathish Sundar, Dinesh Kowsky, Velmurugan Natanasabapathy
- ▶ Examining the Physicochemical Composition of Three Bioceramic Putties for Endodontic Use 210  
Daniel Chavarria-Bolanos, Takashi Komabayashi, Jose Vega-Baudrit, Esteban Ulate, Reinaldo Pereira-Reyes, Mauricio Montero-Aguilar
- ▶ Spontaneous and Masticatory Post-endodontic Pain After Using Endomethasone N versus SP Root Canal Sealers: A Randomised Controlled Clinical Trial 218  
Yves Boucher, Hugo Abergall, Vincent Bar, Françoise Baslé-Thébault, Stéphane Cano, Hughes Colombel, Gwenvael Le Guicher, Charlotte Cameli
- ▶ Evaluating the Solubility of Endodontic Sealers in Response to Static and Dynamic Stress: An *In Vitro* Study 231  
Mohammad Ali Saghiri, Mahsa Amanabi, Elham Samadi, Armen Asatourian, Fatereh Samadi, Steven M. Morgano
- ▶ Effect of Disinfection Protocols on Bacterial Reduction in Mandibular Molars 236  
Helder Fernandes de Oliveira, Luan Carlos Gomes Teixeira, Ismael Fernandes da Silva Júnior, Francisco Ferreira da Cruz, Hellen Cristina Silva, Alex da Rocha Gonçalves, Daniel de Almeida Decurcio, Orlando Aguirre Guedes
- ▶ Comparative Evaluation of Stress Distribution Against the Root Canal Wall at Three Different Levels by Using TruNatomy, XP-endo Shaper, F360, and 2Shape Files: A Finite Element Analysis 243  
Rimjhim Singh, Sandeep Dubey, Palak Singh, Praveen Singh Samant, Rajat Gupta
- ▶ Assessment of Treatment Quality Risk Factors Influencing the Radiographic Detection of Apical Periodontitis in Root-Filled Teeth: A Retrospective CBCT Analysis 252  
Noor Hayder Fadhil, Ahmed Hamid Ali, Raghad Abdulrazzaq Al-Hashimi, Omar Sabri Al-Qathi, Federico Foschi
- ▶ Potential Use of L-Arginine Amino Acids towards Proliferation and Migratory Speed Rate of Human Dental Pulp Stem Cells 260  
Rizka Andini Pratiwi, Deryana Avidhianita, Anggraini Margono, Indah Julianto, Dewa Ayu Nyoman Putri Artiningsih, Aryo Megantoro
- ▶ Accuracy of Working Length Measurement Using Cone Beam Computed Tomography at Three Field of View Settings, Conventional Radiography, and Electronic Apex Locator: An *Ex-vivo* Study 266  
Arash Izadi, Faezeh Golmakani, Ezatolah Kazeminejad, Amin Mahdavi Asl

- ▶ Students' Perception of Remote Extended Reality Simulation Systems Using Patient-specific Three-Dimensional-printed Models in Endodontic Education: A Pilot Study 273  
Riyadh Alroomy, Munirah Almimoni, Abdulaaly Alotaibi, Ahad Almutairi, Ebtesam Alyahya, Motoharu Unozawa, Takahito Kakumoto, Katsushi Okazaki
- ▶ A Novel Educational Approach For Safe Endodontic Syringe Irrigation: A Randomised Controlled *In Vitro* Study 279  
Eva Magni, Ana Scianna, Thomas Connert, Wadim Leontiev, Roland Weiger, Florin Eggmann

### **CASE SERIES**

- ▶ Negotiating and Treating Lateral Canals: A Report of 7 Cases 287  
Luis Felipe Jiménez-Rojas, Liliana Patricia Artaza, Vanessa Pandolfi Pessotti, Débora Parra Sellera, Jorge Carlos Alberdi, Alessandra Cristina Baasch, Karen Brisson-Suárez, Flávio Rodrigues Ferreira Alves, Isabela das Neves Rôças, José Freitas Siqueira Jr