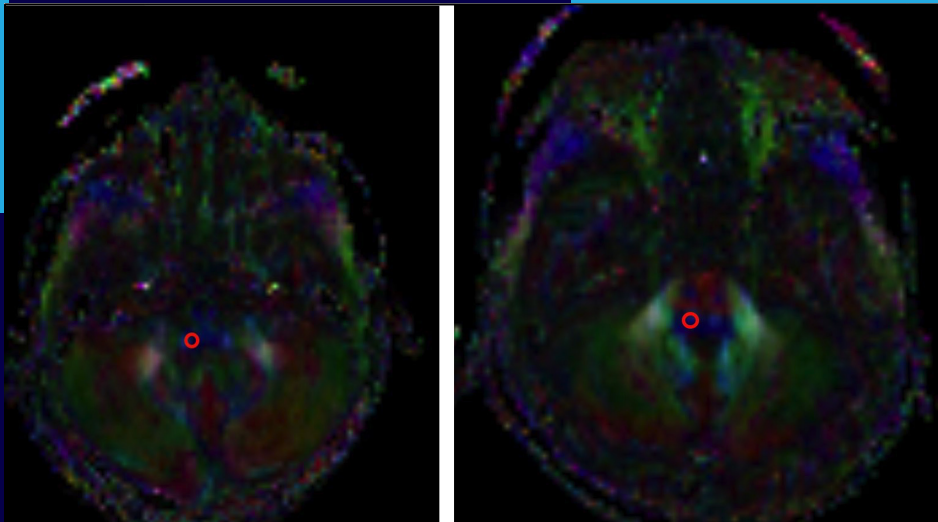


# The Journal of International Advanced Otology



The region of interests on the cochlear nucleus (CN) and the lateral lemniscus (LL) on color-coded maps. (Page 335)

Official Journal  
of the European  
Academy of  
Otology and  
Neurotology

Vol.19 • Issue 4 • July 2023

The Journal of International  
Advanced Otology is fully  
sponsored and owned by

**EA<sup>NO</sup>**  
European Academy of  
Otology & Neuro-Otology



Indexed In



**SCI EXPANDED**

[www.advancedotology.org](http://www.advancedotology.org)



# JIAO The Journal of International Advanced Otology

## EDITOR

**O. Nuri Özgirgin**

Department of Otolaryngology-Head and Neck Surgery, Bayındır Hospital, Ankara, Turkey

## ASSOCIATE EDITORS

**Francisco Cabral**

Department of Surgery, ENT, University School of Medicine of UFRN, Natal, Brazil

**Froukje Gals**

Radboud University Medical Center, Nijmegen, Netherlands

**Chunfu Dai**

Eye Ear Nose & Throat Hospital, Fudan University, Shanghai, China

**Arun Gadre**

University of Louisville, Louisville, USA

ORCID ID: 0000-0002-7784-5533

**Arata Horii**

Niigata University, Niigata City, Japan

**Ja-Won Koo**

Seoul National University Bundang Hospital, Seongnam-si, Korea

**Shakeel R. Saeed**

University College London Ear Institute, London, UK

**Bülent Satar**

University of Health Sciences, Gülhane Medical School, Ankara, Turkey

ORCID ID: 0000-0002-1079-2393

**Morgana Sluydts**

Sint-Augustinus Antwerp European Institute For ORL, Wilrijk, Belgium

The Journal of International Advanced Otology  
is fully sponsored and owned by



European Academy of  
Otology & Neuro-Otology



Address for correspondence

Mailing address: 2610 Antwerp,

Oosterveldlaan 24, Belgium

URL: [www.advancedotology.org](http://www.advancedotology.org)

E-mail: [jiao@advancedotology.org](mailto:jiao@advancedotology.org)

Founded by MSOA



The Journal of International Advanced Otology  
(J Int Adv Otol)

Copyright © All rights reserved.

ISSN 1308-7649

E ISSN 2148-3817

## ADMINISTRATIVE ADVISORY BOARD

**Manohar Bance**  
*University of Cambridge, Cambridge, UK*

**Maurizio Barbara**  
*Sapienza University, Sant'Andrea Hospital, Rome, Italy*

**Rubens de Brito**  
*University of Sao Paulo, Sao Paulo, Brazil*

**Arnaud Deveeze**  
*Clinique Clairval, Marseille, France*

**Neil Donnelly**  
*Spire Cambridge Lea Hospital, Cambridge, UK*

**Arun Gadre**  
*University of Louisville, Louisville, USA*

**Karl-Bernd Huttenbrink**  
*University of Koln, Köln, Germany*

**Dan Jiang**  
*The London Bridge Hospital, London, UK*

**Mohan Kameswaran**  
*Madras Ear Nose Throat Research Foundation, Chennai, India*

**Thomas Lenarz**  
*Medizinische Hochschule Hannover, Hannover, Germany*

**Simon Lloyd**  
*University of Manchester, Manchester, UK*

**Jacques Magnan**  
*Causse Ear Clinic, Beziers, France*

**Jef Mulder**  
*Radboud University Hospital, Nijmegen, The Netherlands*

**Codruta Neumann**  
*One Ashford Hospital, Ashford, UK*

**Gerry O'Donoghue**  
*Queens Medical Centre, Nottingham, UK*

**F. Erwin Offeciers**  
*Sint-Augustinus Hospital University, Wilrijk, Belgium*

**Seung Ha Oh**  
*Seoul National University Hospital, Seoul, South Korea*

**Milan Profant**  
*Department of Otorhinolaryngology, Bratislava University, Bratislava, Slovakia*

**Angel Ramos**  
*University Hospital Insular, Las Palmas, Spain*

**Jay T. Rubinstein**  
*Virginia Merrill Bloedel Hearing Research Center, Washington, USA*

**Shakeel Saeed**  
*University College London Ear Institute, London, UK*

**Masafumi Sakagami**  
*Hyogo College of Medicine, Hyogo, Japan*

**Bülent Satar**  
*University of Health Sciences, Gülhane Medical School, Ankara, Turkey*

**Samuel H Selesnick**  
*Weill Cornell Medical College, New York, USA*

**Graziela Souza Queiroz Martins**  
*University of Sao Paulo, Sao Paulo, Brasil*

**Holger Sudhoff**  
*Bielefeld Academic Teaching Hospital, Muenster University, Bielefeld, Germany*

**Per Caye Thomasen**  
*Gentofte University Hospital, Hellerup, Denmark*

**Franco Trabalzini**  
*University of Siena, Siena, Italy*

**Robby Vanspauwen**  
*Department of Ear Nose Throat, Sint-Augustinus Antwerp European Institute For ORL, Wilrijk, Belgium*

**Andrzej Zarowski**  
*Sint-Augustinus Antwerp European Institute For ORL, Wilrijk, Belgium*

**Ashley Wackym**  
*Ear and Skull Base Institute, Portland, Oregon, USA*

## EDITORIAL CONSULTANTS

**Fatthi Abdel Baki**  
*University of Alexandria, Alexandria, Egypt*

**Mehmet Ada**  
*University of Istanbul, Istanbul, Turkey*

**Hemant Ahluwalia**  
*ENT Institution - Uttar Pradesh University of Medical Sciences, Etawah, India*

**Songül Aksoy**  
*Department of Audiology, Hacettepe University School of Medicine, Ankara, Turkey*

**Mesut Akyol**  
*Yildirim Bayazit University, Ankara, Turkey*

**Aynur Aliyeva**  
*Otology-Neurotology Clinical Fellow, The Catholic University of the Korea St. Mary Hospital, Seoul, South Korea*

**Cüneyt Alper**  
*University of Pittsburg, Pennsylvania, USA*

**Fazil Necdet Ardiç**  
*Pamukkale University, Denizli, Turkey*

**Miguel Aristegui**  
*Hospital General Universitario Gregorio Marañon, Madrid, Spain*

**Bernard Ars**  
*University of Antwerp, Antwerp, Belgium*

**Nenad Arsovic**  
*Belgrade Otorhinolaryngology Clinic, Belgrade, Serbia*

**Asım Aslan**  
*Celal Bayar University, Manisa, Turkey*

**Ahmet Ataş**  
*Istanbul University, Istanbul, Turkey*

**Paul Avan**  
*Université d'Auvergne, Clermont-Ferrand, France*

**Manohar Bance**  
*University of Cambridge, Cambridge, UK*

**Maurizio Barbara**  
*Sapienza University, Sant'Andrea Hospital, Rome, Italy*

**Saba Battelino**  
*University Medical Centre, Ljubljana, Slovenia*

**Yıldırım Bayazit**  
*Medipol University, Istanbul, Turkey*

**Aziz Belal**  
*Alex Ear Center, Alexandria, Egypt*

**Ricardo Bento**  
*University of Sao Paulo, Sao Paulo, Brazil*

**Daniele Bernardeschi**  
*GH Pitié Salpêtrière, Paris, France*

**Dirk Beutner**  
*HNO-Universitätsklinik Köln, Köln, Germany*

**Anirban Biswas**  
*Neurotology Center, Kalkota, India*

**Bruce Black**  
*Royal Children's Hospital, Brisbane, Australia*

**Srecko Branica**  
*University of Zagreb, Zagreb, Croatia*

**Robert Briggs**  
*Royal Victorian Eye and Ear Hospital, Melbourne, Australia*

**Italo Cantore**  
*Asl Roma 1, San Filippo Neri Hospital, Rome, Italy*

**Augusto Casani**  
*Pisa University, Pisa, Italy*

**Ricardo Ceballos-Lizarraga**  
*ABC Medical Center, Cuajimalpa, Mexico*

**Carlos Cenjor Espanol**  
*Fundacion Jimenez Diaz - Clinica Nuestra Senora Concepcion, Madrid, Spain*

**Udi Cinamon**  
*Edith Wolfson Medical Center, Cholon, Israel*

**Marcel Cosgarea**  
*University of Medicine and Pharmacy "Iuliu Hatieganu", Cluj-Napoca, Romania*

**Vincent Cousins**  
The Alfred Hospital, Melbourne, Australia

**Sebahattin Cüreoğlu**  
University of Minnesota, Minneapolis, USA

**Onur Çelik**  
Celal Bayar University, Manisa, Turkey

**Chunfu Dai**  
University of Shanghai, Shanghai, China

**Vincent Darrouzet**  
Hopital Pellegrin, Bordeaux, France

**Rubens de Brito**  
University of Sao Paulo, Sao Paulo, Brazil

**Olivier Deguine**  
University of Toulouse, Toulouse, France

**Angel Ramos de Miguel**  
Las Palmas University, Las Palmas de Gran Canaria, Spain

**Antonio della Volpe**  
Santobono Paediatric Hospital, Naples, Italy

**Arnaud Deveeze**  
Clinique Clairval, Marseille, France

**İrfan Devranoğlu**  
İstanbul University, İstanbul, Turkey

**Aarno Dietz**  
Kuopio University Hospital, Kuopio, Finland

**Norbert Dillier**  
University Hospital Zürich, Zurich, Switzerland

**Neil Donnelly**  
Spire Cambridge Lea Hospital, Cambridge, UK

**John Dornhoffer**  
UAMS Medical Center Little Rock, USA

**Bruce M. Edwards**  
University of Michigan, Ann Arbor, USA

**Antonio Lopez Escamez**  
Universidad de Granada, Granada, Spain

**Mario Faralli**  
University of Perugia, Perugia, Italy

**Jose Fayad**  
Saudi Aramco, Dhahran, Saudi Arabia

**Roberto Filipo**  
Sapienza University, Rome, Italy

**Peter Franz**  
Rudolfstiftung Teaching Hospital, Vienna, Austria

**Bernard Fraysse**  
University of Toulouse, Toulouse, France

**Henning Frenzel**  
Universitätsklinikum Schleswig-Holstein, Lübeck, Germany

**Arun Gadre**  
University of Louisville, Louisville, USA

**Michael Gaihede**  
Aarhus University, Aarhus, Sweden

**Aydan Genç**  
Department of Audiology Hacettepe University  
School of Medicine, Ankara, Turkey

**Imre Gerlinger**  
Department of Ear Nose Throat University Pécs, Pécs,  
Hungary

**Mislav Gjuric**  
SINTEZA Health Center, Zagreb, Croatia

**Wilko Grolman**  
University of Utrecht, Utrecht, Netherlands

**Kemal Görür**  
Mersin University, Mersin, Turkey

**Jean-Philippe Guyot**  
University of Geneva, Geneva, Switzerland

**Enis Alpin Güneri**  
Dokuz Eylül University İzmir, Turkey

**İbrahim Hızalan**  
Novomet Ear Nose Throat Center, Bursa, Turkey

**Margriet A. Huisman**  
Leiden University, Leiden, The Netherlands

**Malou Hultcrantz**  
University of Karolinska, Stockholm, Sweden

**Karl-Bernd Huttenbrink**  
University of Köln, Köln, Germany

**Yukiko Iino**  
Jichi Medical University Saitama Medical Center,  
Saitama, Japan

**Armağan İncesulu**  
Eskişehir Osmangazi University, Eskişehir, Turkey

**Adrian James**  
The Hospital for Sick Children, Ontario, Canada

**Herman Jenkins**  
University of Colorado, Aurora, USA

**Daniel Jiang**  
St Thomas' Hospital, London, UK

**Seiji Kakehata**  
Yamagata University, Yamagata, Japan

**Mohan Kameswaran**  
Madras Ear Nose Throat Research Foundation,  
Chennai, India

**Daniel Kaplan**  
Ben Gurion University, Beer Sheva, Israel

**Herman Kingma**  
University of Maastricht, Maastricht,  
The Netherlands

**Tayfun Kirazlı**  
Ege University, İzmir, Turkey

**Mete Kiroğlu**  
Çukurova University, Adana, Turkey

**Hiromi Kojima**  
Jikei University, Tokyo, Japan

**Nazım Korkut**  
Istanbul University, İstanbul, Turkey

**Sergey Kosyakov**  
Russian Medical Academy for Postgraduate  
Education, Moscow, Russia

**Rudi Kuhweide**  
A.Z. St-Jan Brugge A.V., Bruges, Belgium

**Roland Laszig**  
University of Freiburg, Freiburg, Germany

**Thomas Lenarz**  
Medizinische Hochschule Hannover, Hannover,  
Germany

**Thomas Linder**  
University of Luzern, Luzern, Switzerland

**Simon Lloyd**  
University of Manchester, Manchester, UK

**Daniela Lucidi**  
University Hospital of Modena, Modena, Italy

**Jacques Magnan**  
Causse Ear Clinic, Beziers, France

**Mans Magnusson**  
University of Lund, Lund, Sweden

**Marco Mandala**  
University of Siena, Siena, Italy

**Antonino Maniaci**  
Departement of Medical, Surgical Sciences and  
Advanced Technologies, ENT Unit, University of  
Catania, Catania, Italy

**Manuel Manrique**  
University of Pamplona, Pamplona, Spain

**Salah Mansour**  
Lebanese University, Beirut, Lebanon

**Daniele Marchioni**  
University of Verona, Verona, Italy

**Paul Merkus**  
VU University Medical Center Amsterdam,  
Amsterdam, The Netherlands

**Hidemi Miyazaki**  
Kyosai Hospital, Tokyo, Japan

**Constantino Morera**  
University of Valencia, Valencia, Spain

**Badr Eldin Mostafa**  
Ain-Shams University, Cairo, Egypt

**Jef Mulder**  
Radboud University Hospital, Nijmegen,  
The Netherlands

**Marcus Neudert**  
Technische Universität Dresden, Dresden,  
Germany

**Thomas Nikolopoulos**  
University of Athens, Athens, Greece

**Daniel Nuti**  
Universita degli Studi di Siena, Siena, Italy

**Gerry O'Donoghue**  
Queens Medical Centre, Nottingham, UK



JIAO

# The Journal of International Advanced Otology

*Michael Joseph O'Leary*  
Senta Clinic, California, USA

*Stephen O'Leary*  
University of Melbourne, Melbourne, Australia  
*Onur Odabaşı*  
Adnan Menderes University, Aydın, Turkey

*F. Erwin Offeciers*  
Sint-Augustinus Hospital University, Wilrijk,  
Belgium

*Seung Ha Oh*  
Seoul National University Hospital, Seoul, South  
Korea

*Levent Olgun*  
İzmir Bozyaka Hospital, İzmir, Turkey

*Carlos A. Oliveira*  
University of Brasília Medical School, Brasilia, Brazil

*Ewa Olszewska*  
Medical University of Białystok, Białystok, Poland

*Eva Orzan*  
Audiology and Otorhinolaryngology Institute for  
Maternal and Child Health IRCCS "Burlo Garofolo",  
Trieste, Italy

*Levent Naci Ozluoğlu*  
Başkent University, Ankara, Turkey

*Blake Papsin*  
University of Toronto, Toronto, Canada

*Ronen Perez*  
Shaare Zedek Medical Center, Jerusalem, Israel

*Nicolas Perez Fernandez*  
University of Navarra, Navarra, Spain

*Stefan Plontke*  
University Hospital Halle, Saale, Germany

*Milan Profant*  
Department of Otorhinolaryngology University of  
Bratislava, Bratislava, Slovakia

*Angel Ramos*  
University Hospital Insular, Las Palmas, Spain

*Giampietro Ricci*  
University of Perugia, Perugia, Italy

*John Rutka*  
Toronto General Hospital, Toronto, Canada

*Ayşe Sanem Sahli*  
Department of Audiology Hacettepe University  
School of Medicine, Ankara, Turkey

*Masafumi Sakagami*  
Hyogo College of Medicine, Hyogo, Japan

*Issam Saliba*  
University of Montreal, Quebec, Canada

*Mario Sanna*  
Gruppo Otologico, Piacenza, Italy

*Pascal Senn*  
University of Geneva, Geneva, Switzerland

*Avi Shupak*  
Technion - Israel Institute of Technology, Haifa,  
Israel

*Henryk Skarzynski*  
World Hearing Center, Warsaw, Poland

*Ad Snik*  
University of Nijmegen, Nijmegen, The Netherlands

*Thomas Somers*  
Sint-Augustinus Hospital University, Wilrijk, Belgium

*Holger Sudhoff*  
Bielefeld Academic Teaching Hospital, Muenster  
University, Bielefeld, Germany

*Witold Szyfter*  
Poznan University of Medical Sciences, Poznan,  
Poland

*Bülent Şerbetcioğlu*  
İstanbul Medipol University, İstanbul, Turkey

*Rinze A. Tange*  
University of Utrecht, Utrecht, The Netherlands

*George Tavartkiladze*  
National Research Centre for Audiology and Hearing  
Rehabilitation, Moscow, Russia

*Per Caye Thomasen*  
Gentofte University Hospital, Hellerup, Denmark

*Michael Tong*  
St. Joseph's Health Inc., New York, USA

*Tetsuya Tono*  
Miyazaki Medical College, Miyazaki, Japan

*Vedat Topsakal*  
University of Utrecht, Utrecht, The Netherlands

*Franco Trabalzini*  
University of Siena, Siena, Italy

*Eric Truy*  
University of Lyon, Lyon, France

*Nina Bozanic Urbancic*  
University Medical Centre Ljubljana, Ljubljana,  
Slovenia

*Cem Uzun*  
Trakya University, Edirne, Turkey

*Paul Van de Heyning*  
University of Antwerp, Antwerp, Belgium

*Frederic Venail*  
CHU Montpellier, Montpellier, France

*Christophe Vincent*  
Lille University Hospital, Lille, France

*Magnus von Unge*  
Akershus Universitetssykehus, Nordbyhagen,  
Norway

*Sertac Yetişer*  
Anadolu Hospital, İstanbul, Turkey

*Orhan Yılmaz*  
Clinic of Otorhinolaryngology, University of Health  
Sciences Dışkapı Yıldırım Beyazıt Training and  
Research Hospital, Ankara, Turkey

*Robin Youngs*  
Gloucestershire Royal Hospital, Gloucestershire, UK

*Diego Zanetti*  
University of Milano, Milano, Italy

*Nicola Quaranta*  
University of Bari, Bari, Italy

*Ashley Wackym*  
Ear and Skull Base Institute, Portland, Oregon, USA

*Stephen Wetmore*  
University West Virginia Medical Center,  
Morgantown, USA



#### **Founder**

İbrahim KARA

#### **General Manager**

Ali ŞAHİN

#### **Finance Coordinator**

Elif YILDIZ ÇELİK

#### **Journal Managers**

Deniz KAYA

Irmak BERBEROĞLU

Arzu ARI

#### **Publications Coordinators**

Gökhan ÇİMEN

Alara ERGİN

İrem ÖZMEN

Derya AZER

Burcu DEMİRER

Beyza HİMMETOĞLU DAL

Beril TEKAY

#### **Project Coordinators**

Doğan ORUÇ

Sinem Fehime KOZ

#### **Project Assistant**

Batuhan KARA

#### **Contact**

Address: Büyükdere Cad. 199/6,

34394, Şişli, İstanbul, Türkiye

Phone: +90 212 217 17 00

E-mail: info@avesyayincilik.com

## About The Journal of International Advanced Otology

The Journal of International Advanced Otology (J Int Adv Otol) is a peer-reviewed, open-access, online-only journal published by the European Academy of Otology and Neurotology and the Politzer Society.

The Journal of International Advanced Otology is a bimonthly journal that is published in English in January, March, May, July, September, and November.

### Journal History

As of 2009, the journal has changed its title to Journal of International Advanced Otology.

Current Title (2009 - ...)

Journal of International Advanced Otology

EISSN: 2148-3817

Previous Titles (2005 - 2008)

Mediterranean Journal of Otology

ISSN: 1305-5267

### Abstracting and Indexing

The Journal of International Advanced Otology is covered in the following abstracting and indexing databases;

- Web of Science-Science Citation Index Expanded
- PubMed/Medline
- PubMed Central
- CNKI
- EBSCO
- PROQUEST
- DOAJ
- SCOPUS

All content published in the journal is permanently archived in Portico.

### Aims, Scope, and Audience

The Journal of International Advanced Otology aims to publish studies of the highest scientific and clinical value and encourages the submission of high-quality research that advances in otology and neurotology.

The Journal of International Advanced Otology covers a wide range of topics related to otology, neurotology, audiology (excluding linguistics) and skull base medicine. The journal is interested in publishing original research that addresses important clinical questions and advances the understanding and treatment of these conditions. This may include studies on the effectiveness of different treatments, new diagnostic tools or techniques, and novel approaches to preventing or managing orthopedic and traumatic conditions.

The Journal of International Advanced Otology publishes clinical and basic research articles, case reports, reviews, systematic reviews and meta-analyses, short reports, video reports and letters to the editor. Conference proceedings may also be considered for publication.

The target audience of the journal includes physicians and academics who work in the fields of otology, neurotology, audiology and skull base medicine.

### Open Access Policy

The Journal of International Advanced Otology is an open access publication.

Starting on April 2019, all content published in the journal is licensed under the Creative Commons Attribution-NonCommercial (CC BY-NC) 4.0 International License which allows third parties to use the content for non-commercial purposes as long as they give credit to the original work.

JIAO

# The Journal of International Advanced Otology

This license allows for the content to be shared and adapted for non-commercial purposes, promoting the dissemination and use of the research published in the journal.

The content published before April 2019 was licensed under a traditional copyright, but the archive is still available for free access.

All published content is available online, free of charge at <https://www.advancedotology.org/EN>.

Authors retain unrestricted copyrights and publishing rights in The Journal of International Advanced Otology.

When using previously published content, including figures, tables, or any other material in both print and electronic formats, authors must obtain permission from the copyright holder. Legal, financial and criminal liabilities in this regard belong to the author(s).

#### Copyright Policy

A Copyright Agreement and Acknowledgement of Authorship form should be submitted with all manuscripts. By signing this form, authors agree that the article, if accepted for publication by The Journal of International Advanced Otology, will be licensed under a Creative Commons Attribution-Non Commercial 4.0 International License (CC BY-NC 4.0) which permits third parties to share and adapt the content for non-commercial purposes by giving the appropriate credit to the original work.

When using previously published content, including figures, tables, or any other material in both print and electronic formats, authors must obtain permission from the copyright holder. Legal, financial and criminal liabilities in this regard belong to the author(s).

Authors retain unrestricted copyrights and publishing rights in The Journal of International Advanced Otology.

#### Publication Fee Policy

The Journal of International Advanced Otology is funded by the European Academy of Otology and Neurotology and the Politzer Society. Authors are not required to pay any fees during the evaluation and publication process.

#### Disclaimer

The statements or opinions expressed in the manuscripts published in the journal reflect the views of the author(s) and not the views of the editors, editorial board, and/or publisher. The editors, editorial board, and publisher are not responsible for the content of the manuscripts and do not necessarily endorse the views expressed in them. It is the responsibility of the authors to ensure that their work is accurate and well-researched, and the views expressed in their manuscripts are their own. The editors, editorial board, and publisher simply provide a platform for the authors to share their work with the scientific community.

You can find the current version of the Instructions to Authors at <https://www.advancedotology.org/en/instructions-to-authors-1016>.



#### Editorial Office: Prof. Dr. O. Nuri Ozgirgin

Address: Bayındır Hospital, Söğütözü, Ankara, Turkey

Tel: +90 312 287 90 00 - int: 7811

Fax: +90 312 284 42 76

e-mail: [ozgirgin@icloud.com](mailto:ozgirgin@icloud.com)

#### Publisher: AVES

Address: Büyükdere Cad. 199/6, 34394, Şişli, İstanbul, Türkiye

Phone: +90 212 217 17 00

Web page: [avesyayincilik.com](http://avesyayincilik.com)

E-mail: [info@avesyayincilik.com](mailto:info@avesyayincilik.com)

## Contents

### 269 Editorial

- 269 | Artificial Intelligence (AI) in Otology: What Will the Future Be?  
O. Nuri Özgirgin

### Original Articles

- 271 | Comparison of Endoplasmic Reticulum Stress Messenger Ribonucleic Acid Expression Between Chronic Otitis Media With and Without Cholesteatoma  
Dae Woong Kang, Yong Jun Kim, Sung Soo Kim, Young Il Kim, Jeon Gang Doo, Sang Hoon Kim, Seung Geun Yeo

### Review

- 277 | Sensorineural Hearing Loss in Autoimmune Diseases: A Systematic Review and Meta-analysis  
Xin Li, Zuwei Cao, Feifan Chen, Dong Yang, Fei Zhao

### Original Articles

- 283 | Gene Screening for Non-Syndromic Deafness in Hainanese Patients  
Yifei Fu, Zhibin Zhao, Jing Zheng, Yuanping Zhu, Liang Sun
- 288 | Bone Conduction Threshold Measurements in Patients with Bone Conduction Devices: A Comparison of Available Methods  
Maciej Juliusz Wróbel, Renata Gibasiewicz, Marta Pietraszek, Łukasz Kluczyński, Wojciech Gawęcki
- 295 | Objective Measure of Listening Effort in Hearing-Impaired Individuals With and Without Tinnitus  
Hemant Narayan Shetty, Suma Raju

### 303 Review

- 303 | Facial Nerve Tumors in Children: Two Clinical Cases and a Review of the Literature  
Mariapaola Guidi, Flavio Giordano, Simone Peraio, Greta Conti, Renzo Guerrini, Franco Tralbalzini

### Original Articles

- 311 | Autologous Fat Injection for the Treatment of Patulous Eustachian Tube  
Juan Chen, Hao Xiong, Yuebo Chen, Haidi Yang
- 318 | Diagnostic Delay in Pediatric Vestibular Disorders  
Anita Bhandari, Rajneesh Bhandari, Payal Kumbhat
- 323 | Associations Among Medical Therapy, Self-Administered Exercise, and Characteristics of Ménière's Disease  
Ilmari Pyykkö, Nora Pyykkö, Vinaya Manchaiah
- 333 | Diffusion Tensor Imaging of Auditory Pathway: A Comparison of Pediatric Cochlear Implant Candidates and Healthy Cases  
Direnç Özlem Aksoy, Yeşim Karagöz, Kemal Furkan Kaldırımoğlu, Melis Baykara Uluşan, Abdullah Soydan Mahmutoğlu
- 342 | Comparison of Computed Tomography-Based Artificial Intelligence Modeling and Magnetic Resonance Imaging in Diagnosis of Cholesteatoma  
Orkun Eroğlu, Yeşim Eroğlu, Muhammed Yıldırım, Turgut Karlıdag, Ahmet Çınar, Abdulvahap Akyiğit, İrfan Kaygusuz, Hanefi Yıldırım, Erol Keleş, Şinasi Yalçın



## Case Reports

- 350 | Barotrauma-Induced Perilymph Fistula: Video Head Impulse Test and High-Resolution Temporal Bones Computed Tomography Role in Evaluation and Follow-Up  
Yoni E. Gutkovich, Lev Shlizerman, Miki Paker, Salim Mazzawi, Kfir Siag, Avi Shupak
- 355 | Acute Bacterial Meningitis and Petrous Apicitis in a Child with Aplasia Cutis Congenita: A Case Report  
Marina Saldanha, Vhaishakh Nayar, Benita Anna Augustine, Rathika D. Shenoy