



AOTT

ACTA ORTHOPAEDICA et TRAUMATOLOGICA TURCICA

Acta Orthop Traumatol Turc
ISSN 1017-995X • EISSN 2589-1294

The Official Journal of
The Turkish Association of Orthopaedics and Traumatology (TOTDER)
and
The Turkish Society of Orthopaedics and Traumatology (TOTBİD)

**Executive Board of Turkish Association of
Orthopaedics and Traumatology**

Önder Aydıngöz (*President*)
Yusuf Öztürkmen (*Former President*)
Mustafa Gökhan Bilgili
Ali Şeker
Yavuz Sağlam
Turgut Akgül
Sefa Giray Batıbay
Süleyman Semih Dedeoğlu
Adnan Kara
Mehmet Ali Talmaç

**Executive Committee of the Turkish Society of
Orthopaedics and Traumatology**

Mehmet Demirhan (*President*)
Cem Nuri Aktekin (*Former President*)
Güzelali Özdemir
Mahmut Kalem
Osman Tecimel
Ahmet Murat Bülbül
Ali Erşen
İrfan Esenkaya
Önder Kalenderer
Tülin Türközü

Owner on behalf of the Turkish Association of Orthopaedics and Traumatology:
Önder Aydıngöz • Publication Type: Bimonthly periodical • Publication date: April 30, 2024 •
Published by the Turkish Association of Orthopaedics and Traumatology





AOTT

ACTA ORTHOPAEDICA et TRAUMATOLOGICA TURCICA

The Official Journal of the Turkish Association of Orthopaedics and Traumatology (TOTDER) and the Turkish Society of Orthopaedics and Traumatology (TOTBID)



General Manager
Ali Şahin

Finance Coordinator
Sinem Fehime İlhan

Journal Managers
Deniz Kaya
Irmak Berberoğlu

Publications Coordinators
Alara Ergin
İrem Özmen
Derya Azer
Nisanur Atıcı
Şeref Mert Gücün

Web Specialists
Erdem Ercivan

Project Assistant
Batuhan Kara

Contact Address:
Büyükdere Cad. 199/6, 34394,
Şişli, İstanbul, Turkey
Phone: +90 212 217 17 00
Fax: +90 212 217 22 92
E-mail: info@avesyayincilik.com

Editor-in-Chief

Haluk Berk
*Dokuz Eylül University, School of
Medicine, İzmir Turkey*
editor@aott.org.tr

Former Editor-in-Chief

Önder Kılıçoğlu
*İstanbul University, İstanbul School of
Medicine, İstanbul, Turkey*
kilicoglu@aott.org.tr

Technical Editors

Emre Acar
*Dokuz Eylül University, School of
Medicine, İzmir, Turkey*

Onur Başçı
*Dokuz Eylül University, School of
Medicine, İzmir, Turkey*

Mehmet Demirel
*İstanbul University, İstanbul Faculty of
Medicine, İstanbul, Turkey*

Murat Korkmaz
Koç University Hospital, İstanbul, Turkey

Emre Anıl Özbek
*Ankara University, School of Medicine,
Ankara Turkey*

Cemil Cihad Gedik
*Koç University, School of Medicine,
İstanbul, Turkey*

Associate Editor and Social Media Editor

İlker Eren
*Koç University, School of Medicine,
İstanbul, Turkey*

Alper Şükrü Kendirci
*İstanbul University-Cerrahpaşa,
School of Medicine, İstanbul, Turkey*

Associate Editors

Kaya Akan
*Okan University, School of Medicine,
İstanbul, Turkey*

Turgut Akgül
*İstanbul University, İstanbul School of
Medicine, İstanbul, Turkey*

Umut Akgün
*Acıbadem Mehmet Ali Aydınlar University,
School of Medicine, İstanbul, Turkey*

Andrea Angelini
*Department of Orthopedics and
Orthopedic Oncology, University of
Padova, Padova, Italy*

Ata Can Atalar
*Acıbadem Mehmet Ali Aydınlar University,
School of Medicine, İstanbul, Turkey*

Umur Aydoğan
*Penn State Hershey Medical Center,
Pennsylvania, USA*

İbrahim Azboy
*İstanbul Medipol University, İstanbul,
Turkey*

Burak Bektaş
İstanbul, Turkey

Jason Cheung
*Queen Mary Hospital, The University of
Hong Kong, Hong Kong*

Derya Çelik
*İstanbul University-Cerrahpaşa, Faculty
of Health Sciences, İstanbul, Turkey*

Özgür Dede
*Department of Orthopaedic Surgery,
UPMC Children's Hospital of Pittsburgh,
Pittsburgh, PA, USA*

Nihat Demirhan Demirkıran
*Department of Orthopedics and
Traumatology, Kütahya Health Sciences
University, School of Medicine, Evliya
Çelebi Education and Research Hospital,
Kütahya, Turkey*

Mehmet Ali Deveci
*Koç University, School of Medicine,
İstanbul, Turkey*

Bülent Erdemli
*Ankara University, School of Medicine,
Ankara, Turkey*

Fabio Galbusera
*IRCCS Istituto Ortopedico Galeazzi, via
Galeazzi 4, 20161 Milan, Italy*

Emel Gönen
*Koç University, School of Medicine,
İstanbul, Turkey*

Gazi Huri
*Hacettepe University, School of
Medicine, Ankara, Turkey*

Ayşegül Ketenci
*Department of Physical Medicine and
Rehabilitation, Koç University, İstanbul,
Turkey*

Pembe Keskinoglu
*Dokuz Eylül University, School of
Medicine, İzmir, Turkey*

Hakan Kınık
*Ankara University, School of Medicine,
Ankara, Turkey*

Esat Kiter
Odak Hospital, Denizli, Turkey
Chiu Chee Kidd
*Department of Orthopaedic Surgery,
Faculty of Medicine, University of
Malaya, Kuala Lumpur, W. Persekutuan
Kuala Lumpur, Malaysia*

Salih Marangoz
*Acıbadem Mehmet Ali Aydınlar University,
School of Medicine, İstanbul, Turkey*

Bjarne Møller-Madsen
*Aarhus University Hospital, Aarhus,
Denmark*

Haluk Özcanlı
*Akdeniz University, School of Medicine,
Antalya, Turkey*

Tuna Özyüreköglü
*Department of Surgery, Division of Hand
Surgery, Christine M Kleinert Institute
for Hand and Microsurgery, University of
Louisville, USA*

Gökhan Polat
*İstanbul University, School of Medicine,
İstanbul, Turkey*

Dündar Sabah
*Ege University, School of Medicine,
İzmir, Turkey*

Aksel Seyahi
*Koç University, School of Medicine,
İstanbul, Turkey*

Alpaslan Şenköylü
*Gazi University, School of Medicine,
Ankara, Turkey*

Ali Turgut
*İzmir Tepecik Training and Research
Hospital, İzmir, Turkey*

Rajeev Vohra
*Department of Orthopaedics, Amandeep
Hospital, Amritsar, India*

Merter Yalçınkaya
*Bahçeşehir University, School of
Medicine, İstanbul, Turkey*

International Scientific Review Consultants

Gregory J. Della Roca
*University of Missouri, Orthopaedics,
Columbia, Missouri*

Enrique Gomez-Barrena
*Department of Orthopedics and
Traumatology, Hospital Universitario La
Paz, Universidad Autónoma de Madrid,
Madrid, Spain*



AOTT

ACTA ORTHOPAEDICA et TRAUMATOLOGICA TURCICA

AIMS AND SCOPE

Acta Orthopaedica et Traumatologica Turcica (AOTT) is a scientific, open access periodical published by independent, unbiased, and double-blinded peer-review principles. The journal is the official publication of the Turkish Association of Orthopaedics and Traumatology and the Turkish Society of Orthopaedics and Traumatology. It is published bimonthly in January, March, May, July, September, and November. The publication language of the journal is English.

The aim of the journal is to publish original studies of the highest scientific and clinical value in orthopedics, traumatology, and related disciplines. The scope of the journal includes but not limited to diagnostic, treatment, and prevention methods related to orthopedics and traumatology. Acta Orthopaedica et Traumatologica Turcica publishes clinical and basic research articles, case reports, personal clinical and technical notes, systematic reviews and meta-analyses and letters to the Editor. Proceedings of scientific meetings are also considered for publication.

The target audience of the journal includes healthcare professionals, physicians, and researchers who are interested or working in orthopedics and traumatology field, and related disciplines.

Acta Orthopaedica et Traumatologica Turcica is currently indexed in Web of Science-Science Citation Index Expanded, PubMed/Medline, PubMed Central, Scopus, DOAJ, CNKI and TUBITAK ULAKBIM TR Index.

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).

All manuscripts must be submitted via the online submission system, which is available at www.aott.org.tr. The journal guidelines, technical information, and the required forms are available on the journal's web page.

Expenses of the journal are covered by the article processing charges and the financial support received from the Turkish Association of Orthopaedics and Traumatology and the Turkish Society of Orthopaedics and Traumatology. Potential advertisers should contact the Editorial Office. Advertisement images are published only upon the Editor-in-Chief's approval.

Statements or opinions expressed in the manuscripts published in the journal reflect the views of the author(s) and not the opinions of the Turkish Association of Orthopaedics and Traumatology, 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.aott.org.tr.

Turkish Association of Orthopaedics and Traumatology holds the international copyright of all the content published in the journal. The journal's content is licensed under a Creative Commons Attribution-NonCommercial 4.0 International License (CC BY-NC 4.0).

Editor-in-Chief: Prof. Dr. Haluk Berk

Address: TOTDER Genel Merkezi, Şehremini, Koyuncu Sk. No: 4/5, 34104 Fatih, İstanbul, Turkey

Phone: +90 212 530 15 08

Fax: +90 212 530 15 21

E-mail: editor@aott.org.tr

Publisher: AVES

Address: Büyükdere Cad., 105/9 34394 Mecidiyeköy, Şişli, İstanbul, Turkey

Phone: +90 212 217 17 00

Fax: +90 212 217 22 92

E-mail: info@avesyayincilik.com

Web page: www.avesyayincilik.com



AOTT

ACTA ORTHOPAEDICA et TRAUMATOLOGICA TURCICA

CONTENTS

Invited Reviews

- 80 Personalizing adult spinal deformity surgery through multimodal artificial intelligence**
Tej D. Azad, Vikas N. Vattipally, Christopher P. Ames
- 83 The effect of bony morphology on anterior cruciate ligament injury and surgery**
Janina Kaarre, Gillian Ahrendt, Joseph D. Giusto, Emre Anil Özbek, Nicholas A. Apseloff, Volker Musahl

Research Articles

- 89 Biomechanical comparison of an intramedullary nail combined with a reconstruction plate combination versus a single intramedullary nail in unstable intertrochanteric fractures with lateral femoral wall fracture: A finite element analysis**
Jun Zhang, Yan Wei, Guoding Li, Jian Wang, Baoqing Yu
- 95 Impact of surgery simulation using a 3-dimensional printed model on outcomes of hallux valgus surgery with distal chevron osteotomy: A randomized controlled trial**
Onur Süer, Mehmet Asım Özer, Figen Govsa, Anil Murat Öztürk, Salih Kemal Aktuğlu
- 102 Effect of the low-intensity pulsed ultrasound therapy on healing of Achilles tendinopathy in a rat model**
Tuhan Kurtulmuş, Mehmet Emin Çelebi, Ebubekir Bektaş, Çiğdem Dicle Arican, Bedri Onur Kucukyildirim, Metehan Demirkol
- 110 A new configuration of lateral-pin fixation for pediatric supracondylar humeral fracture: A biomechanical analysis**
Fuat Bilgili, Mehmet Demirel, Fevzi Birişik, Halil İbrahim Balcı, Emin Sunbuloglu, Ergun Bozdog
- 116 Which lumbar vertebra should be the lowest level of fusion in adolescent idiopathic scoliosis of Lenke types 5 and 6?**
Alim Can Baymurat, Mehmet Ali Tokgoz, Ferid Abdulaliyev, Muhammed Furkan Tosun, Mustafa Melik Can, Alpaslan Senkoylu
- 124 Triple osteotomy of first ray for severe hallux valgus surgery: Long-term follow-up**
Borna Guevel, Catherine Rutherford, Muhammad Ali Fazal
- 130 An investigation into the quality of life improvements after vertebral osteomyelitis depending on the status of pathogen detection**
Frank Beyer, Birte Wenk, Norma Jung, Jan Bredow, Peer Eysel, Ayla Yagdiran

Case Report

- 135 Management of calcific myonecrosis using vacuum sealing drainage: A rare case report and 5-year follow-up**
Chenliang Wang, Dongsheng Hao, Sijie Wang

- 140 Erratum**