



# 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 Aydınöz (*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 Aydınöz • Publication Type: Bimonthly periodical • Publication Date: April 29, 2025 •  
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)

**AVES**

Founder  
**İbrahim Kara**

General Manager  
**Ali Şahin**

Journal Manager  
**Deniz Kaya**

Publications Coordinators  
**Nisanur Atıcı**  
**Şeref Mert Gücün**  
**Lütfiye Çetin**  
**Seda Pakyürek**  
**Gizem Doğan**

Finance Coordinator  
**Gözde Doğan**

Publications Technologies Coordinator  
**Aya Nur Sezen**

Project Assistant  
**Ozan Şahin**

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

## Editor-in-Chief

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

## Former Editor-in-Chief

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

## Deputy Editors

**İlker Eren**  
Koç University, School of Medicine,  
İstanbul, Türkiye  
eren@aott.org.tr

**Merter Yalçınkaya**  
Bahçeşehir University, School of  
Medicine, İstanbul, Türkiye  
yalcinkaya@aott.org.tr

## Technical Editors

**Emre Acar**  
North Middlesex University Hospital, UK

**Derya Akbaba**  
Cerrahpaşa University, Cerrahpaşa  
School of Medicine, İstanbul, Türkiye

**Mehmet Demirel**  
İstanbul University, İstanbul School of  
Medicine, İstanbul, Türkiye

**Selim Ergün**  
Kartal Dr. Lütfi Kırdar City Hospital,  
İstanbul, Türkiye

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

**Peri Kından**  
Ankara University, School of Medicine,  
Ankara, Türkiye

**Murat Korkmaz**  
İstanbul University, İstanbul School of  
Medicine, İstanbul, Türkiye

## Social Media Editors

**Alper Şükrü Kendirci**  
İstanbul University İstanbul School of  
Medicine, İstanbul, Türkiye

**Merve Dursun Savran**  
Ankara University School of Medicine,  
Ankara, Türkiye

## Associate Editors

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

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

**Umur Akgün**  
Acıbadem Mehmet Ali Aydınlar University,  
School of Medicine, İstanbul, Türkiye

**Yunus Emre Akman**  
Karolinska Universitetssjukhuset Solna,  
Stockholm, Sweden

**Cristina Marta da Gama  
Gomes Alves**  
Hospital Pediátrico – Centro Hospitalar e  
Universitário de Coimbra, EPE, Portugal

**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, Türkiye

**Umur Aydoğan**  
İzmir, Türkiye

**İbrahim Azboy**  
İstanbul Medipol University, İstanbul,  
Türkiye

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

**Burak Bektaş**  
İstanbul, Türkiye

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

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

**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, Türkiye

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

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

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

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

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

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

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

**Pembe Keskinöğlü**  
Dokuz Eylül University, School of  
Medicine, İzmir, Türkiye

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

**Esat Kıter**  
Odak Hospital, Denizli, Türkiye

**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 Univer-  
sity, School of Medicine, İstanbul, Türkiye

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

**Cumhur Öner**  
Acıbadem International Medical Center,  
Amsterdam, NL

**Emre Anıl Özbek**  
İbni Sina Hastanesi, Ankara Üniversitesi,  
Ankara, Türkiye

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

**Tuna Özyürekoğlu**  
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, Türkiye

**Dündar Sabah**  
İzmir, Türkiye

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

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

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

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

**Luigi Zagra**  
IRCCS Istituto Ortopedico Galeazzi,  
Milan, Italy

## International Scientific Review Consultants

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



# 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](http://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](http://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, Türkiye

**Phone:** +90 212 530 15 08

**Fax:** +90 212 530 15 21

**E-mail:** [editor@aott.org.tr](mailto:editor@aott.org.tr)

**Publisher:** AVES

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

**Phone:** +90 212 217 17 00

**Fax:** +90 212 217 22 92

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

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



# AOTT

ACTA ORTHOPAEDICA et TRAUMATOLOGICA TURCICA

## CONTENTS

### Editorial

- 72 **Editorial**  
*Haluk Berk*

### Research Articles

- 73 **Does biceps tenodesis screw with forked eyelet decrease the risk of Popeye deformity when compared to traditional closed eyelet screws?**  
*Emrah Caliskan, Kadir Buyukdoğan, Ilker Eren, Olgar Birscl, Lercan Aslan, Mehmet Demirhan*
- 79 **Biomechanical comparison of rotator cuff repair techniques in osteoporotic conditions: testing a novel technique**  
*Hakan Eskara, Ahmet Keskin, Yasar Tatar, Necla Gercek, Yunus Imren, Suleyman Semih Dedeoglu*
- 86 **Efficacy of hyaluronic acid and conditioned serum in acute rotator cuff tear repair: A rat model study**  
*Yavuz Önel, Ercan Şahin, Meryem Akpolat Ferah, Akin Sezgin, İdrak Mammadov, Gökhan Bilgin*
- 93 **Glenoid-version-measurement methods on magnetic resonance imaging: accuracy and reliability analysis**  
*Gokhan Karademir, Onur Tunali, Ata Can Atalar*
- 100 **Dose-independent adverse effects of corticosteroid injections on rotator cuff healing in a rat model**  
*Hikmet Şahin, Yavuz Akalin, Nazan Çevik, Özgür Avcı, Harun Sağlıcak, Alpaslan Öztürk*
- 105 **The dose-dependent effect of tranexamic acid on epidural fibrosis after laminectomy: an experimental study on rats**  
*Alican Baris, Esra Circi, Emre Ozmen, Hazal Izol Ozmen, Serdar Yuksel, Ozan Beytemur*
- 111 **Role of Piezo2/P2X7/MG pathway in synaptic plasticity and analgesic effects of massage therapy in cervical spondylotic radiculopathy: A preclinical study in animal models**  
*Xueyu Jiang, Song Yang, Xiaxia Duan, Keying Liao, Siqi Li, Zhifang Qiu, Jiakuan Tan, Lingyao Xie, Yaoyao Xiao, Jiani Yang, Kuiming Zhou*
- 117 **Presence of sacralized lumbar vertebra predisposes to adjacent level lumbar disc degeneration: A cross-sectional study**  
*Serkan Bayram, Yekta Furkan Altin, Abdullah Kahraman, Taha Furkan Yağci, Murat Korkmaz, Turgut Akgül*
- 122 **A quantitative analysis of symmetry on standard anteroposterior pelvic X-ray**  
*Abdurrahman Yilmaz, Turab Selcuk, Taha Aksoy, Bülent Atilla*
- ### Case Report
- 129 **A rare case of a mature intramedullary cystic teratoma in an adult female: A case report and literature review**  
*Qinyang Zhang, Xuepeng Liu, Haijun Li*