



Thoracic

Research & Practice

Formerly Turkish Thoracic Journal

Volume 26 November Supplement 1-2025

EgeSam Symposium on the 102nd
Anniversary of the Republic of Türkiye:
The Impact of the Exposome on Epithelial
Barriers, Regeneration, and Disease

7-8 October 2025

TÜBİTAK-2223-B National Scientific Event
Organization Support



Thoracic Research & Practice

Official Journal of the Turkish Thoracic Society

EDITORS in CHIEF

Metin AKGÜN 

Ağrı İbrahim Çeçen University Faculty of Medicine, Department of Pulmonary Medicine, Ağrı, Türkiye

Begüm ERGAN 

Department of Chest Diseases, Dokuz Eylül University School of Medicine, İzmir, Türkiye

EDITORS

Aylin ÖZGEN ALPAYDIN 

Department of Chest Diseases, Dokuz Eylül University School of Medicine, İzmir, Türkiye

Ege GÜLEÇ BALBAY 

Department of Chest Disease, Düzce University School of Medicine, Düzce, Türkiye

İpek ÇAYLI CANDEMİR 

Ataturk Chest Diseases and Surgery Education and Research Hospital, Ankara, Türkiye

Ufuk ÇAĞIRICI 

Department of Chest Surgery, Ege University School of Medicine, İzmir, Türkiye

Necati ÇITAK 

Department of Thoracic Surgery, İstanbul Bakırköy Dr. Sadi Konuk Training and Research Hospital, İstanbul, Türkiye

Aslı GÖREK DİLEKTAŞLI 

Department of Chest Diseases, Uludağ University School of Medicine, Bursa, Türkiye

Zuhal KARAKURT 

Respiratory Intensive Care Unit, Süreyyapaşa Chest Diseases and Surgery Training and Research Hospital, İstanbul, Türkiye

Leyla PUR ÖZYİĞİT 

Department of Allergy and Immunology, University Hospitals of Leicester, Leicester, United Kingdom

Özge YILMAZ 

Department of Pediatrics, Celal Bayar University School of Medicine, Manisa, Türkiye

BIostatistical CONSULTANT

Ahmet Uğur DEMİR 

Department of Chest Diseases, Hacettepe University School of Medicine, Ankara, Türkiye

Seval KUL 

Department of Biostatistics and Medical Informatics, Gaziantep University School of Medicine, Gaziantep, Türkiye

PUBLICATION COORDINATOR

Oğuz KILINÇ 

İzmir University of Economics, School of Medicine, İzmir, Türkiye



Publisher Contact

Address: Molla Gürani Mah. Kaçamak Sk.

No: 21/1 34093 İstanbul, Türkiye

Phone: +90 (530) 177 30 97

E-mail: info@galenos.com.tr Web: www.galenos.com.tr

Publisher Certificate Number: 14521

Online Publication Date: November 2025

E-ISSN: 2979-9139

International scientific journal published bimonthly.



Thoracic Research & Practice

Official Journal of the Turkish Thoracic Society

EDITORIAL BOARD

Ian M. Adcock

Cell and Molecular Biology Airways Disease Section,
National Heart and Lung Institute, Imperial College
London, United Kingdom

Piergiuseppe Agostoni

Department of Clinical Sciences and Community
Health, Cardiovascular Section, Università di Milano,
Milano, Italy

M. Selim Arcasoy

Pulmonary, Allergy, and Critical Care Division,
Department of Medicine, Columbia University New York,
USA

Philippe Astoul

Thoracic Oncology - Pleural Diseases - Interventional
Pulmonology, Hôpital Nord - Chemin des Bourrelly,
Marseille, France

Ülkü Bayındır

Retired Faculty Member, Ege University School of
Medicine, İzmir, Türkiye

Dominique MA Bullens

Department of Immunology and Microbiology, KU
Leuven Laboratory of Pediatric Immunology Division of
Pediatrics, Leuven, Belgium

Richard Casaburi

Rehabilitation Clinical Trials Center, Los Angeles
Biomedical Research Institute at Harbor-UCLA Medical
Center, Torrance, California, USA

Turgay Çelikel

Department of Chest Diseases, Marmara University
School of Medicine, İstanbul, Türkiye

Tansu Ulukavak Çiftçi

Department of Chest Diseases, Gazi University School
of Medicine, Ankara, Türkiye

Lütfi Çöplü

Department of Chest Diseases, Hacettepe University
School of Medicine, Ankara, Türkiye

Çağlar Çuhadaroğlu

Acıbadem Maslak Hospital, İstanbul, Türkiye

Antonio M. Esquinas

International Fellow AARC, Fellow NIV, Intensive Care
Unit, Hospital Morales Meseguer, Murcia, Spain

Andrew J. Ghio

US Environmental Protection Agency Chapel Hill, North
Carolina, USA

James E. Hansen

St. John's Cardiovascular Research Center, Los Angeles
Biomedical Research Institute at Harbor- University of
California at Los Angeles, Torrance, CA, USA

İlhan İnci

University Hospital Zurich, Department of Thoracic
Surgery, Zurich, Switzerland

Oya İtil

Department of Chest Diseases, Dokuz Eylül University
School of Medicine, İzmir, Türkiye

A. Fuat Kalyoncu

Department of Chest Diseases, Hacettepe University
School of Medicine, Ankara, Türkiye

Fazilet Karakoç

Department of Child Chest Diseases, Marmara
University Pendik Training and Research Hospital,
İstanbul, Türkiye

Ali Kocabaş

Department of Chest Diseases, Çukurova University
School of Medicine, Adana, Türkiye

Emel Kurt

Department of Chest Diseases, Osmangazi University
School of Medicine, Eskişehir, Türkiye

Atul Malhotra

Pulmonary and Critical Care, University of California
San Diego, La Jolla, California, USA

Muzaffer Metintaş

Department of Chest Diseases, Osmangazi University
School of Medicine, Eskişehir, Türkiye

Zeynep Mısırlıgil

Department of Chest Diseases, Ankara University
School of Medicine, Ankara, Türkiye

Nesrin Moğulkoç

Department of Chests Diseases, Ege University School
of Medicine, İzmir, Türkiye

Dilşad Mungan

Department of Chest Diseases, Ankara University
School of Medicine, Ankara, Türkiye



Thoracic Research & Practice

Official Journal of the Turkish Thoracic Society

Gökhan M. Mutlu

Division of Pediatric Critical Care Medicine, Northwestern University, Chicago, USA

Gül Öngen

Department of Chest Surgery, İstanbul University Cerrahpaşa School of Medicine, İstanbul, Türkiye

Kent E. Pinkerton

University of California, Davis, Center for Health and the Environment, Davis, USA

Kannan Ramar

Division of Pulmonary and Critical Care Medicine, Center for Sleep Medicine, Mayo Clinic, Rochester, MN, USA

Joseph Roca

Instituto de Biología Molecular de Barcelona, CSIC, Baldiri Reixac, Barcelona, Spain

Israel Rubinstein

Section of Pulmonary, Critical Care, Sleep and Allergy Medicine, Department of Medicine, College of Medicine, University of Illinois at Chicago, Chicago, Illinois, USA

Abdullah Sayiner

Department of Chest Diseases, Ege University School of Medicine, İzmir, Türkiye

Z. Toros Selçuk

Department of Chest Diseases, Hacettepe University School of Medicine, Ankara, Türkiye

Nadja Triller

Department of Pulmonary Medicine, University Pulmonary Clinic Golnik, Golnik, Slovenia

Haluk Türktaş

Department of Chest Diseases, Gazi University School of Medicine, Ankara, Türkiye

E. Sabri Uçan

Department of Chest Diseases, Dokuz Eylül University School of Medicine, İzmir, Türkiye

Karlman Wasserman

Respiratory and Critical Care Physiology and Medicine, Los Angeles Biomedical Research Institute Harbor-UCLA Medical Center, Torrance, California, USA

Mark Woodhead

Honorary Clinical Professor of Respiratory Medicine, Department of Respiratory Medicine, Manchester Royal Infirmary, Manchester, England



Thoracic Research & Practice

Official Journal of the Turkish Thoracic Society

ABOUT

About the Thoracic Research and Practice

Thoracic Research and Practice is a peer reviewed, open access, online-only journal published by the Turkish Thoracic Society.

Thoracic Research and Practice is a bimonthly journal that is published in English in January, March, May, July, September, and November.

Journal History

Thoracic Research and Practice started its publication life following the merger of two journals which were published under the titles "Turkish Respiratory Journal" and "Toraks Journal" until 2008. From 2008 to 2022, the journal was published under the title "Turkish Thoracic Journal". Archives of the journals were transferred to Thoracic Research and Practice.

Abstracting and indexing

Thoracic Research and Practice is covered in the following abstracting and indexing databases; PubMed Central, Web of Science - Emerging Sources Citation Index, Scopus, EMBASE, EBSCO, CINAHL, Gale/Cengage Learning, ProQuest, DOAJ, CNKI, TUBITAK ULAKBIM TR Index.

Aims, Scope, and Audience

Thoracic Research and Practice aims to publish studies of the highest scientific and clinical value, and encourages the submission of high-quality research that advances the understanding and treatment of pulmonary diseases.

Thoracic Research and Practice covers a wide range of topics related to adult and pediatric pulmonary diseases, as well as thoracic imaging, environmental and occupational disorders, intensive care, sleep disorders and thoracic surgery, including diagnostic methods, treatment techniques, and prevention strategies. 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 pulmonary diseases.

Thoracic Research and Practice publishes clinical and basic research articles, reviews, statements of agreement or disagreement on controversial issues, national and international consensus reports, systematic reviews and meta-analyses, letters to the editor and editorials. Conference proceedings may also be considered for publication.

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

Open Access Policy

Thoracic Research and Practice is an open access publication.

Starting on January 2022 issue, 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. 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 January 2022 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 thoracrespract.org.

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 transfer the copyright of their work to the Turkish Thoracic Society and agree that the article, if



Thoracic Research & Practice

Official Journal of the Turkish Thoracic Society

accepted for publication by the Thoracic Research and Practice 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 the copyright of their published work in the Thoracic Research and Practice.

Publication Fee Policy

Thoracic Research and Practice is funded by the the Turkish Thoracic Society. Authors are not required to pay any fees during the evaluation and publication process.

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



Thoracic Research & Practice

Official Journal of the Turkish Thoracic Society

CONTENTS

- 1 Bioengineered Humanoid-on-Chip Platforms: Tools for Evaluating the Effects of Environmental Exposure on Human Physiological Barriers**
Pelın Sağlam-Metiner, Özlem Goksel, Tuncay Goksel, Omer H. Yılmaz, Esra Erdal, Özlem Yesil-Celiktas
- 4 A NAMs-Based Microphysiological System for Metastasis and Mechanobiology Studies**
Basar Dogan, Pelın Sağlam-Metiner, Tuncay Goksel, Özlem Yesil-Celiktas
- 7 Occupational and Environmental Exposures: Trends in Publications, Diseases, and Experimental Models**
Omur Sert, Özlem Yesil-Celiktas
- 10 Hydrogel Formulations to Investigate Lung Cancer Mechanism**
Aysel Saskara, Yagmur Arslan, Özlem Yesil-Celiktas
- 12 The Development of Laboratory-made NTD Sensor Systems for the Analysis of Volatile Organic Compounds (VOCs) in Synthetic Breath Samples**
Tugberk Nail Dizdas, Levent Pelit
- 15 Determination of Untargeted Metabolomic Profile in Breath Condensate Using LC-QTOF/MS and Investigation of Potential Lung Cancer-Specific Biomarkers**
Ebru Cakan Yildirim, Fusun Pelit, Korcan Korba, Murat Ali Salan, Tuncay Goksel, Levent Pelit
- 18 A Thin Film Micro-Extraction Based Salivary Metabolomics and Chemometric Strategy for Rapid Lung Cancer Diagnosis**
İlknur Erbas, Fusun Pelit, Nazlı Mert Ozupek, Merve Gul, Esra Sakrak, Kasım Ocakoglu, Durmuş Ozdemir, Tuncay Goksel, Yasemin Basbınar, Özlem Goksel, Levent Pelit
- 21 From Scarcity to Survival: Adaptive Strategies of A549 Lung Cancer Cells Under Serum Starvation**
Gunel Mukhtarova, Cagla Ozdenizer, Deniz Ece, Ufuk Mert, Ayse Caner
- 23 Effects of *Staphylococcus aureus* on Lung Cancer Cells**
Deniz Ece, Can Muftuoglu, Ufuk Mert, Gokhan Gurur Gokmen, Cagla Ozdenizer, Gunel Mukhtarova, Uygur Alaman, Tuncay Goksel, Ayse Caner
- 25 Expression Profile of circRNA in Lung Cancer Cells Infected with *Staphylococcus aureus***
Deniz Ece, Cagla Ozdenizer, Can Muftuoglu, Ufuk Mert, Ayse Caner
- 28 Large-Scale Production and Therapeutic Evaluation of Exosomes for Cancer Treatment**
Ilgin Kimiz-Gebologlu, Suphi S. Oncel
- 31 Nanoparticle-Based Therapeutic Strategies in Respiratory Diseases: Current Approaches and Future Perspectives**
Ozge Cinar, Ilgin Kimiz-Gebologlu, Suphi S. Oncel
- 34 MSC-Exosomes as Novel Therapeutics in Asthma and Allergic Airway Inflammation**
Sevval Kurt, Ilgin Kimiz-Gebologlu, Suphi S. Oncel