

LIBRA JOURNAL CLUB

10-17-AUG-2025

Our legal office confirmed that articles NOT OPEN ACCESS cannot be distributed to the members of the list. Thus, we will transmit only the titles of articles.

ABSTRACTS of almost all these articles are available from PubMed, and full papers can be obtained through your institutions' library.

OPEN ACCESS articles are available by accessing the articles from PubMed using just the PMID for the search (eg PMID: 35514131 without . at the end)

(copd OR "Pulmonary Disease, Chronic Obstructive"[Mesh])

1

Eur J Heart Fail

-
-
-

. 2025 Aug 15.

doi: 10.1002/ejhf.3804. Online ahead of print.

[Reply to 'Impact of misclassification bias on interpretation of finerenone efficacy in chronic obstructive pulmonary disease and heart failure with mildly reduced/preserved ejection fraction: A critical appraisal of the FINEARTS-HF sub-analysis'](#)

[Jawad H Butt](#)^{1,2}, [John J V McMurray](#)¹

Affiliations Expand

- PMID: 40814245
- DOI: [10.1002/ejhf.3804](https://doi.org/10.1002/ejhf.3804)

No abstract available

Supplementary info

Publication typesExpand

Full text links



[Proceed to details](#)

Cite

2

JACC Heart Fail

-
-
-

. 2025 Aug 13;13(10):102589.

doi: 10.1016/j.jchf.2025.102589. Online ahead of print.

[Early Reduction of Pulmonary Artery Pressures Is Associated With Improved Mortality Among Medicare Beneficiaries With Heart Failure](#)

[Sandip Zalawadiya](#)¹, [Jacob Abraham](#)², [Lisa Rathman](#)³, [Kunjan Bhatt](#)⁴, [Gillian Grafton](#)⁵, [Joyce Chuang](#)⁶, [Nessa Johnson](#)⁶, [Allison Connolly](#)⁶, [JoAnn Lindenfeld](#)⁷

Affiliations Expand

- PMID: 40811935
- DOI: [10.1016/j.jchf.2025.102589](https://doi.org/10.1016/j.jchf.2025.102589)

Abstract

Background: The early hemodynamic trajectories of heart failure patients receiving implantable pulmonary artery pressure monitor and the clinical implications of those trajectories are unknown in a contemporary real-world population.

Objectives: This study aims to determine whether baseline pulmonary artery diastolic pressure (PAD) and its early trajectories predict risk of mortality.

Methods: Patients in Merlin.net implanted with the CardioMEMS sensor between 2017 and 2022 were linked to Medicare claims. Patients were categorized by PAD being acceptable (≤ 20 mm Hg) or elevated (> 20 mm Hg). Multivariable regression was used to evaluate the impact of baseline PAD (cohort A) and its early changes at 90 days (cohort B) on long-term mortality.

Results: In cohort A (N = 9,579), baseline PAD was elevated in 64.1%. The 2-year risk of mortality was lower for those with acceptable vs elevated PAD at baseline (HR: 0.68 [95% CI: 0.62-0.73]; P < 0.001). In cohort B (N = 8,452), 63.3% had elevated PAD at baseline; of those, 24.0% improved to having acceptable PAD (Δ : -6.5 ± 4.3 mm Hg), and 76.0% remained persistently elevated at 90 days despite experiencing a reduction (Δ PAD: -1.6 ± 4.3 mm Hg). Those with improved PAD (acceptable at 90 days from elevated at baseline) had lower mortality compared with those with

persistently elevated PAD (HR: 0.72 [95% CI: 0.64-0.81]; P < 0.001). Lower baseline PAD and no history of chronic obstructive pulmonary disease or atrial arrhythmia were associated with higher odds of improved PAD.

Conclusions: Among Medicare beneficiaries, CardioMEMS-guided management was associated with a reduction in PAD. Achieving acceptable PAD within 90 days of implant was associated with better survival. Our study highlights the need to develop novel strategies, including standardization of management algorithms that target elevated PAD.

Keywords: Medicare; heart failure; pulmonary artery pressure.

Copyright © 2025 The Authors. Published by Elsevier Inc. All rights reserved.

Conflict of interest statement

Funding Support and Author Disclosures This study is funded by Abbott. Abbott acquired the Medicare data sets, performed the analysis under the direction of the co-authors, and assisted in manuscript preparation. Dr Zalawadiya is a consultant for Endotronix, Inc, and Vectorious, Inc. Dr Abraham is a consultant for Ancora Heart, Abiomed, Abbott, CVRx; and owns stock in Edwards Lifesciences and CVRx. Ms Rathman is a consultant for Abiomed, Alnylam, Boehringer Ingelheim/Lilly, Boston Scientific, Impulse Dynamics, Merck, Medtronic, and NovoNordisk. Dr Bhatt is a consultant for Abbott, Alleviant Medical, CVRx, and Pfizer. Drs Chuang, Johnson, and Connolly are employees of Abbott. Dr Lindenfeld has received grant/research support from AstraZenca and Volumetrix; and is a consultant for Abbott, Alleviant Medical, Axon, Adona, Boston Scientific Corporation, Cordio, CVRx, Edwards Lifesciences, Fire1, Intershunt, Medtronic, Merck, OrchestraBiomed, Whiteswell, Vascular Dynamics, and V-Wave. Dr Grafton has reported that she has no relationships relevant to the contents of this paper to disclose.

Full text links



[Proceed to details](#)

Cite

3

Eur J Intern Med

-
-
-

. 2025 Aug 12:106424.

doi: 10.1016/j.ejim.2025.07.020. Online ahead of print.

[A person-centred clinical approach to the multimorbid patient with COPD](#)

[Bartolome R Celli](#)¹, [Leonardo M Fabbri](#)², [Abebaw M Yohannes](#)³, [Nathaniel M Hawkins](#)⁴, [Gerard J Criner](#)⁵, [Jessica Bon](#)⁶, [Marc Humbert](#)⁷, [Christine R Jenkins](#)⁸, [Leonardo Pantoni](#)⁹, [Alberto Papi](#)¹⁰, [Jennifer K Quint](#)¹¹, [Sanjay Sethi](#)¹², [Daiana Stolz](#)¹³, [Alvar Agusti](#)¹⁴, [Don D Sin](#)¹⁵

Affiliations Expand

- PMID: 40803921
- DOI: [10.1016/j.ejim.2025.07.020](https://doi.org/10.1016/j.ejim.2025.07.020)

Abstract

Most patients with a chronic disease are multimorbid. This is particularly important in patients with chronic obstructive pulmonary disease (COPD), who on average have five other identified comorbidities that independently impact their health and increase their mortality risk. Using a modified Delphi method, we selected the 20 most important diseases associated with COPD and clustered them into five domains: mental, respiratory, cardiovascular, metabolic and multiple organs loss of tissue. We then developed a systematic approach to characterise the impact and clinical presentation of individual diseases within each cluster, and to define the priority and timing of measurement of the potential markers of disease presence and severity. Given the absence of integrated guidelines to treat multimorbid patients, we reviewed and selected individual disease guidelines or recommendations that can be accessed for specific information related to the management of each disease. In addition, we built a multimorbidity 'Health Dashboard' that, completed by the patient or health practitioner, can help identify the presence and severity of comorbid diseases. By using a practical comprehensive approach, it is possible to identify and characterise important comorbid diseases in patients with COPD, and to implement management tools that should help improve their outcome. This expert consensus commentary summarises patient-centred recommendations to manage comorbidities in COPD patients, aiming to improve quality-of-life and reduce disease burden through a holistic approach. Prospective pragmatic trials comparing such an approach with usual care for multimorbid patients with COPD including long-term follow-up are urgently needed.

Keywords: Chronic obstructive pulmonary disease; Comorbidity; Disease management.

Copyright © 2025 The Authors. Published by Elsevier B.V. All rights reserved.

Conflict of interest statement

Declaration of competing interest In addition to editorial support disclosed above, the authors have the following conflicts of interest: Bartolome R. Celli received consulting fees from Chiesi for participation in this project. Outside the scope of this manuscript, he received fees from GlaxoSmithKline and AstraZeneca for consulting, speaking at meetings and participating in advisory boards, from Menarini for consulting and speaking at meetings, from Sanofi Aventis for consulting and participating in advisory boards, from Axios for consulting, and from Chiesi and Regeneron for lectures, presentations, speakers bureaus, manuscript

writing or educational events, support for attending meetings and/or travel from GlaxoSmithKline and Sanofi Aventis, and participated in a Data Safety Monitoring Board or Advisory Board for AZ Therapeutics, Sanofi Aventis, and Vertex. Leonardo M. Fabbri received consulting fees from Chiesi, GlaxoSmithKline, AstraZeneca, Novartis, and Verona Pharma, payment or honoraria for lectures, presentations, speakers bureaus, manuscript writing or educational events from Chiesi, GlaxoSmithKline, and Glemark, and participation in a Data Safety Monitoring Board or Advisory Board for Novartis, Chiesi and ICON. Abebaw M. Yohannes received consulting fees from Chiesi for participation in this project. He received support for attending a meeting from Theravance Bio Pharma limited, outside the scope of this manuscript. Nathaniel M. Hawkins declares a grant to his institution from AstraZeneca, consulting fees from AstraZeneca, and payment or honoraria for lectures, presentations, speakers bureaus, manuscript writing or educational events from AstraZeneca, Boehringer Ingelheim, and Novo-Nordisk. All are outside the scope of the current manuscript. Gerard J. Criner received consulting fees from Chiesi for participation in this project. Outside the scope of this manuscript, he declares grants or contracts to his institution from ALung Technologies Inc, American College of Radiology, American Lung Association, AstraZeneca, BioScale Inc, Boehringer Ingelheim, Breath Therapeutics Inc, COPD Foundation, Coridea/Zidan, Dr. Karen Burns/St. Michael's Hospital, Fisher & Paykel, Galapagos NV, GlaxoSmithKline, Lungpacer Medical Inc, NHLBI, NuVaira Inc, PCORI, Pulmonary Fibrosis Foundation, Pulmonx, Philips Respironics Inc, Respivant Sciences, Spiration Inc, Steward St Elizabeth's Medical Center of Boston Inc, Veracyte Inc, Bellerophon Therapeutics, Regeneron, Clear Creek Bio Inc, Corvus Pharmaceuticals Inc, Eli Lilly and Company, Gilead Sciences, Incyte Corporation, Janssen Vaccines & Prevention B.V., Daniel Benjamin, Hoffmann-La Roche, Merck Sharp & Dohme Corp., Swedish Orphan Biovitrum, Aevi Genomic Medicine, LLC, a Cerecor company, Massachusetts General Hospital, Pfizer, and CalciMedica Inc, and consulting fees from Aerwave Medical Inc, Amgen, AstraZeneca, Bayer AG, Boehringer Ingelheim Pharmaceutical, BTG International, Broncus Medical, Chiesi Farmaceutici, CSA Medical, Eolo Medical, Fisher & Paykel, Gala Therapeutics, GlaxoSmithKline, Helios Medical, Hospicom Inc, Intuitive Surgical Inc, Merck, Medscape, LLC, Medtronic, Mereo Biopharma, NGM Biopharmaceuticals, Novartis Pharma AG, Olympus, PneumRx, Patara Pharma, Prometic BioTherapeutics, Philips Respironics, Pulmonx, Regeneron Healthcare Solutions Inc, Respicant Sciences, ResMed, Sanofi US Services Inc, The Implementation Group, Verona Pharmaceuticals, and WebMD. Jessica Bon received consulting fees from Chiesi for participation in this project. She also declares consulting fees from Verona Pharma, GlaxoSmithKline, Genentech, ProPharma Group, Regeneron, and Sanofi, all outside the scope of the current manuscript. Marc Humbert declares grants to his institution from Gossamer and Merck, consulting fees from 35 Pharma, Aerovate, AOP Orphan, Chiesi, Ferrer, Gossamer, Janssen, Keros, Liquidia, Merck, Morphic, Novartis, Respira, Roivant, and United Therapeutics, payment or honoraria for lectures, presentations, speakers bureaus, manuscript writing or educational events from Janssen and Merck, and participation on a data safety monitoring board or advisory board for 35 Pharma, Aerovate, Janssen, Keros, Merck, Novartis, and United Therapeutics. All are outside the scope of the current manuscript. Christine R. Jenkins declares grants to her institution from AstraZeneca and Sanofi, consulting fees from AstraZeneca, GlaxoSmithKline, and Chiesi, payment or honoraria for lectures or educational events from AstraZeneca, GlaxoSmithKline, Sanofi, Novartis, and Chiesi, support for attending meetings and/or travel (only when an

invited speaker) from AstraZeneca and GlaxoSmithKline, participation on advisory boards for AstraZeneca, GlaxoSmithKline, Chiesi, Sanofi, and Novartis, and an unpaid leadership or fiduciary role for the Lung Foundation Australia and the Asbestos and Dust Diseases Research Institute. All are outside the scope of the current manuscript. Leonardo Pantoni received consulting fees from Chiesi for participation in this project. Outside the scope of this manuscript, he declares consulting fees from Amicus and PIAM, outside the scope of the current manuscript. Alberto Papi receiving consulting fees from Chiesi for participation in this project. Outside the scope of this manuscript, he declares payments to his institution from Chiesi, AstraZeneca, GlaxoSmithKline and Sanofi, consulting fees from Chiesi, AstraZeneca, GlaxoSmithKline, Sanofi, Avillion, Moderna, and Roche, payment or honoraria for lectures, presentations, speakers bureaus, manuscript writing or educational events from Chiesi, AstraZeneca, GlaxoSmithKline, Menarini, Zambon, Mundipharma, Sanofi, Iqvia, Avillion, Sanofi, Regeneron, Zambon, and participation on advisory boards for Chiesi, AstraZeneca, GlaxoSmithKline, Sanofi, Iqvia, Avillion, and Moderna. Jennifer K. Quint received consulting fees from Chiesi for participation in this project. Outside the scope of this manuscript, she declares grants to her institution from the Medical Research Council, NIHR, Health Data Research, GlaxoSmithKline, Boehringer Ingelheim, AstraZeneca, Insmmed, and Sanofi, and consulting fees from GlaxoSmithKline, Chiesi, and AstraZeneca. Sanjay Sethi received consulting fees from Chiesi for participation in this project. Outside the scope of this manuscript, he declares research grants to his institution from Chiesi, AstraZeneca, and Sanofi-Regeneron, royalties or licenses from Wolters Kluwer Health, consulting fees from AstraZeneca, Boehringer Ingelheim, Chiesi, and GlaxoSmithKline, payment or honoraria for lectures, presentations, speakers bureaus, manuscript writing or educational events from AstraZeneca, Boehringer Ingelheim, and GlaxoSmithKline, and participation on a data safety monitoring board for Nuaira, Boehringer Ingelheim, and Pulmonx. Daiana Stolz declares payment or honoraria for lectures, presentations, speakers bureaus, manuscript writing or educational events from AstraZeneca, Berline-Chemie/Menarini, Boehringer Ingelheim, Chiesi, CSL Behring, Curetis AG, GlaxoSmithKline, Merck, MSD, Novartis, Sanofi, Vifor, and Roche, participation on a data safety monitoring board or advisory board for AstraZeneca, Berline-Chemie/Menarini, Boehringer Ingelheim, Chiesi, CSL Behring, Curetis AG, GlaxoSmithKline, Merck, MSD, Roche, Novartis, Sanofi, OM Pharma and Vifor, and that she is a current unpaid GOLD representative for Switzerland. All are outside the scope of the current manuscript. Alvar Agusti received consulting fees from Chiesi for participation in this project. Outside the scope of this manuscript, he reports grants to his institution from AstraZeneca, GlaxoSmithKline, and Menarini, received consulting fees from GlaxoSmithKline, AstraZeneca, Chiesi, Menarini, Zambon, MSD, and Sanofi for lectures. He also declares an unpaid position as the Chairman of the Board of Directors of GOLD. Don D. Sin received an investigator-initiated grant from Nextone paid to UBC, and honoraria for giving talks on COPD from AstraZeneca, GlaxoSmithKline, and Boehringer Ingelheim, and declares that he was chair of a data safety monitoring board for a NHLBI-sponsored trial and is Deputy Editor of the European Respiratory Journal. All are outside the scope of the current manuscript.

Full text links



[Proceed to details](#)

Cite

4

Pulm Pharmacol Ther

-
-
-

. 2025 Aug 11:102383.

doi: 10.1016/j.pupt.2025.102383. Online ahead of print.

[Pharmacovigilance of five commonly used antibiotics in acute exacerbations of COPD \(AECOPD\): Analysis of the FDA Adverse Event Reporting System database](#)

[Qin Shen](#)¹, [Suzhen Yang](#)², [Sha Wang](#)³

Affiliations Expand

- PMID: 40803638
- DOI: [10.1016/j.pupt.2025.102383](https://doi.org/10.1016/j.pupt.2025.102383)

Abstract

Objective: Antibiotics are commonly administered during acute exacerbations of chronic obstructive pulmonary disease (AECOPD) to manage infections and alleviate their symptoms. However, their use may result in adverse drug events (ADEs), potentially compromising patient safety and treatment effectiveness. The U.S. Food and Drug Administration Adverse Event Reporting System (FAERS) provides valuable data for identifying such risks. This study aimed to analyze FAERS data to detect ADE signals associated with antibiotic use in patients with AECOPD, thereby supporting safer clinical practices.

Methods: Five antibiotics frequently used in AECOPD management, azithromycin, moxifloxacin, meropenem, gentamicin, and minocycline, were selected for analysis. FAERS data from January 1, 2004, to July 30, 2024, were extracted using OpenVigil 2.1 platform. Duplicate and incomplete reports were excluded. ADEs were coded using the Medical Dictionary for Regulatory Activities (MedDRA). Data mining techniques, including the proportional reporting ratio (PRR) and reporting odds ratio (ROR), were used to identify statistically significant ADE signals.

Results: 111,179 ADE reports involving 100,602 patients were identified, including azithromycin (41,241 reports), moxifloxacin (46,770), meropenem (5,904), gentamicin (4,142), and minocycline (13,122). Serious events comprised 30.6%-47.1% of the reported ADEs, with the lowest proportion observed for meropenem, and the highest proportion observed for gentamicin. Females accounted for 57.0% of the cases with known gender. Data mining identified 1,946 ADE signals, including novel

associations such as infectious chondromatosis (azithromycin), hemorrhagic obstructive retinal vasculitis (moxifloxacin), elevated procalcitonin (meropenem), Bartter syndrome (gentamicin), and nodular polyarteritis (minocycline).

Conclusion: This study identified novel ADE signals associated with antibiotics used in AECOPD treatment, highlighting the importance of continuous pharmacovigilance. Clinicians should be informed of the emerging safety concerns to enhance patient care.

Keywords: Adverse Event Reporting System (FAERS); Food and Drug Administration (FDA); acute exacerbations of chronic obstructive pulmonary disease (COPD); adverse event; antibiotic.

Copyright © 2025. Published by Elsevier Ltd.

Conflict of interest statement

Declaration of Competing Interest Authors report no conflicts of interest.

Full text links



[Proceed to details](#)

Cite

5

Am J Respir Crit Care Med

-
-
-

. 2025 Aug 13.

doi: 10.1164/rccm.202410-2101OC. Online ahead of print.

[Distinct Morphological Types of Small Airway Obstructions in Smokers with Emphysema and End-Stage COPD](#)

[Vincent Geudens¹](#), [Charlotte De Fays^{1,2}](#), [Lynn Willems¹](#), [Astrid Vermaut¹](#), [Gitte Aerts¹](#), [Pieterjan Kerckhof¹](#), [Janne Kaes¹](#), [Charlotte Hoof¹](#), [Xin Jin¹](#), [Hanne Beeckmans¹](#), [Yousry Mohamady¹](#), [Lucia Aversa¹](#), [Tinne Goos¹](#), [Marie Vermant¹](#), [Iwein Gyselinc¹](#), [Janne Verhaegen¹](#), [Jan Van Slambrouck¹](#), [Celine Aelbrecht¹](#), [Andrew Higham³](#), [Walter Coudyzer⁴](#), [Emanuela E Cortesi¹](#), [Arno Vanstapel¹](#), [John E McDonough⁵](#), [Marianne S Carlon¹](#), [Rozenn Quarck¹](#), [Matthieu N Boone⁶](#), [Lieven J Dupont¹](#), [Birgit Weynand⁷](#), [Charles Pilette²](#), [Stephanie Everaerts¹](#), [Dirk E Van Raemdonck¹](#), [Laurens J Ceulemans¹](#), [James C Hogg⁸](#), [Tillie-Louise Hackett⁸](#), [Robin Vos¹](#), [Wim A Wuyts¹](#), [Wim Janssens¹](#), [Joseph Jacob^{9,10}](#), [Bart M Vanaudenaerde¹](#), [Ghislaine Gayan-Ramirez¹¹](#)

Affiliations Expand

- PMID: 40802822
- DOI: [10.1164/rccm.202410-2101OC](https://doi.org/10.1164/rccm.202410-2101OC)

Abstract

Rationale: The precise nature of small airway obstructions in COPD remains poorly understood, especially at early disease stages.

Objectives: This study aimed to characterize small airway obstructions and numbers up to the terminal bronchioles (TB) in smokers with limited emphysema and end-stage COPD. We hypothesized that obstruction subtypes would differ in morphology, nature and number from early to end-stage COPD.

Methods: Whole lungs from seven donors (Control: declined for extrapulmonary reasons), eight donors (history of smoking), of which three had <5% emphysema (smokers with no emphysema, SNE) and five >5% emphysema (smokers with emphysema, SE) and eight end-stage COPD patients were inflated and processed. MicroCT of tissue was used to assess number of TB, aerated TB, number and type of obstructions and cross-correlated with histopathology.

Measurements and main results: Obstructions were mainly present in SE and COPD resulting in less aerated TB. Based on emphysema extent, more non-aerated TB were present in regions with no emphysema compared to mild emphysema, however, destruction was more prominent in mild emphysema. Multiple types of obstructions comprising occlusions, webs and collapses were identified. In SE, obstructions primarily comprised webs and occlusions, while all obstruction types were present in COPD. On histopathology, obstructions were identified as mucus plugs.

Conclusions: Multiple types of obstruction characterized as mucus plugs were identified in SE and end-stage COPD. Their morphology, nature and number evolved from SE to end-stage COPD. A shift from obstruction-dominant dysfunction to destruction-dominant pathology was found in smokers based on emphysema presence. This article is open access and distributed under the terms of the Creative Commons Attribution Non-Commercial No Derivatives License 4.0 (<http://creativecommons.org/licenses/by-nc-nd/4.0/>).

Keywords: MicroCT; Mucus plugs; Obstructions; Small airways.

Full text links



[Proceed to details](#)

Cite

6

COPD

•

-
-

. 2025 Dec;22(1):2544719.

doi: 10.1080/15412555.2025.2544719. Epub 2025 Aug 13.

[Use of a Personalised Early Warning Decision Support System for Acute Exacerbations of Chronic Obstructive Pulmonary Disease: Results of the "Predict & Prevent" Phase III Trial](#)

[Eleni Gkini](#)¹, [Rainikant L Mehta](#)², [Sarah Tearne](#)¹, [Lucy Doos](#)¹, [Sue Jowett](#)³, [Nicola Gale](#)⁴, [Alice M Turner](#)⁵

Affiliations Expand

- PMID: 40799048
- DOI: [10.1080/15412555.2025.2544719](https://doi.org/10.1080/15412555.2025.2544719)

Free article

Abstract

Rationale: The Predict&Prevent trial was designed to provide a definitive randomised clinical trial of a personalised early warning decision support system, COPDPredict™.

Methods: Adults with ≥1 AECOPD were randomly assigned in a 1:1 ratio to use of a personalised early warning decision support system (COPDPredict™) or standard self-management plans with rescue medication (RM) (control). The primary outcome was number of hospital admissions for AECOPD at 12 months post-randomisation (intention to treat).

Results: Ninety (11%) of 789 screened patients were enrolled. Admissions per participant due to AECOPD at 12 months was lower with COPDPredict™: Incidence rate ratio (IRR) 0.64 (95% CI 0.19-2.17, $p = 0.478$). Exploratory Bayesian analysis and sensitivity analyses saw similar results. No significant differences were seen in inpatient days, visits to accident and emergency visits, and number of exacerbations. COPD Assessment Test (CAT) score benefits occurred at 3 and 6 months with COPDPredict™ (adjusted mean difference -3.8 points, 95% confidence interval (CI) -6.3 to -1.2, $p = 0.004$ and -3.0 points, 95% CI -5.7 to -0.4, $p = 0.025$, respectively) but was non-significant at longer periods ($p > 0.22$). There was not enough evidence to indicate a statistically significant treatment effect on the other outcomes.

Conclusions: COPDPredict™ failed to show a reduction in severe AECOPD events resulting in hospitalisations, although the number of admissions per participant was lower among users. The quality of life data (CAT scores) suggests that 6 months usage of COPDPredict™ period may be helpful to patients, with benefits exceeding the minimum clinically important difference throughout that time.

Trial registration: [NCT04136418](https://www.clinicaltrials.gov/ct2/show/study/NCT04136418).

Keywords: Chronic obstructive pulmonary disease; clinical decision rules; digital health; randomised controlled trial; self-management.

Supplementary info

Associated dataExpand

Full text links



[Proceed to details](#)

Cite

7

Review

COPD

-
-
-

. 2025 Dec;22(1):2542153.

doi: 10.1080/15412555.2025.2542153. Epub 2025 Aug 12.

[Patterns and Underlying Mechanisms of Airway Epithelial Cell Death in COPD](#)

[Ting Wang](#)¹, [Yuanji Dong](#)², [Liangjie Fang](#)¹, [Hua Zhou](#)¹

Affiliations Expand

- PMID: 40798999
- DOI: [10.1080/15412555.2025.2542153](https://doi.org/10.1080/15412555.2025.2542153)

Free article

Abstract

Chronic obstructive pulmonary disease (COPD) is a common lung disease characterized by chronic inflammation of small airways and lung parenchyma, which manifests as irreversible and progressive airflow limitation. Inhalation of toxic particles is a major risk factor for the development of COPD. Due to long-term exposure to cigarettes, air pollutants, or occupational pollutants, the incidence of COPD continues to be stubbornly high. Although some treatments can improve symptoms, the remodeling of small airways in COPD cannot be reversed, which still brings heavy social and economic burdens. There is evidence that airway epithelial

cells are actively involved in the development of COPD. Damage, fibrotic repair, and death of airway epithelial cells lead to chronic inflammation and dysfunction of small airways. This review article summarizes the pattern of airway epithelial cell death and its role in the progression of COPD. At the same time, the corresponding mechanism is discussed in depth.

Keywords: Chronic obstructive pulmonary disease; airway epithelial cells; cell death.

Supplementary info

Publication types [Expand](#)

Full text links



[Proceed to details](#)

Cite

8

ERJ Open Res

-
-
-

. 2025 Aug 11;11(4):00892-2024.

doi: 10.1183/23120541.00892-2024. eCollection 2025 Jul.

[The impact of bronchoscopic lung volume reduction with endobronchial valves with or without pulmonary rehabilitation on symptoms of fatigue, anxiety and depression: a multicentre randomised controlled trial](#)

[Rein Posthuma^{1 2 3}, Marieke C van der Molen^{4 5}, Anouk W Vaes¹, Jorine E Hartman^{4 5}, Martijn A Spruit^{1 2 3}, Dirk-Jan Slebos^{4 5}, Lowie E G W Vanfleteren^{6 7}](#)

Affiliations [Expand](#)

- PMID: 40791921
- PMCID: [PMC12336990](#)
- DOI: [10.1183/23120541.00892-2024](#)

Abstract

Background: Bronchoscopic lung volume reduction using one-way endobronchial valves (BLVR-EBV) improves exercise capacity and quality of life in patients with severe emphysema. However, its effect on symptoms of fatigue, anxiety and depression is unclear. Furthermore, whether the combination of pulmonary rehabilitation (PR) and BLVR-EBV yields additional impact on these symptoms remains unknown. We hypothesised that BLVR-EBV would reduce symptoms of fatigue, anxiety and depression, and that the combination of BLVR-EBV with PR would lead to additional reduction when compared to BLVR-EBV alone.

Methods: The SoLVE study (ClinicalTrials.gov: [NCT03474471](https://clinicaltrials.gov/ct2/show/study/NCT03474471)) was a prospective multicentre randomised controlled trial to examine the impact and optimal timing of PR on exercise physiology and patient-reported outcomes in patients receiving BLVR-EBV treatment. Subjects were randomised into three groups: PR before BLVR-EBV, PR after BLVR-EBV and BLVR-EBV alone. Fatigue severity was assessed using the Checklist Individual Strength fatigue subscale (CIS-Fatigue). The Hospital Anxiety and Depression Scale evaluated symptoms of anxiety (HADS-A) and depression (HADS-D).

Results: 97 participants were included. After the 6-month follow-up the overall mean change after BLVR-EBV with or without PR was -8.2 ± 10.6 points on CIS-Fatigue, -2.2 ± 2.9 points on HADS-A and -2.3 ± 3.0 points on HADS-D ($p < 0.001$). No significant differences were observed between groups for changes in CIS-Fatigue, HADS-A or HADS-D.

Conclusion: BLVR-EBV is an effective intervention to improve symptoms of fatigue, anxiety and depression. The combination of PR and BLVR-EBV did not result in additional improvement when compared to BLVR-EBV alone.

Copyright ©The authors 2025.

Conflict of interest statement

Conflict of interest: M.A. Spruit reports grants from Lung Foundation Netherlands, Stichting Astmabestrijding, AstraZeneca, Teva, Boehringer Ingelheim and Chiesi. D.-J. Slebos reports grants from PulmonX Corp USA, NuVaira USA, PulmAir USA, Apreo USA and FreeFlowMedical; consultancy fees from NuVaira USA, MoreAir USA, Apreo USA and PulmonX USA; payment or honoraria for lectures, presentations, manuscript writing or educational events from PulmonX USA and NuVaira USA; and support for attending meetings from PulmonX USA. L.E.G.W. Vanfleteren reports grants from the Swedish Heart Lung Foundation, Kamprad Stiftelse, AstraZeneca, Swedish government and country council ALF grant (ALFGBG-824371), and Vinnova; payment or honoraria for lectures, presentations, manuscript writing or educational events from AstraZeneca, GSK, Chiesi, PulmonX, Grifols and Novartis; support for attending meetings from the Menarini Foundation; and participation on a data safety monitoring board or advisory board with AstraZeneca. The remaining authors have nothing to disclose.

- [34 references](#)
- [4 figures](#)

Supplementary info

Associated dataExpand

Full text links



[Proceed to details](#)

Cite

9

Review

Respiration

-
-
-

. 2025 Aug 11:1-25.

doi: 10.1159/000547704. Online ahead of print.

[Palliative care for patients with severe chronic lung diseases - a Swiss position paper](#)

[Sabina A Guler](#), [Tanja Fusi-Schmidhauser](#), [Filipa A Baptista Peixoto Befecadu](#), [Markus Hofer](#), [Garance Kopp](#), [Andreas Ebnetter](#), [Steffen Eychmüller](#), [Katrin E Hostettler](#)

- PMID: 40789277
- DOI: [10.1159/000547704](#)

Free article

Abstract

Background: Severe chronic lung diseases are frequently associated with a high symptom burden, dependence on caregivers, poor quality of life and a high risk of early mortality. Medical, psychological and social situations can become increasingly complex despite established disease-modifying treatment. In patients with lung cancer, palliative care (PC) is well established; however, PC is typically underused in chronic lung diseases including chronic obstructive pulmonary disease, interstitial lung disease and pulmonary hypertension. With this position paper the multidisciplinary and interprofessional expert group aims to guide health care professionals on how to assess and address PC needs and when to refer patients for specialized PC. Furthermore, to increase awareness and encourage interprofessional education and research on PC in patients with chronic lung diseases.

Summary: PC is a holistic, multidisciplinary, person-centred approach to control symptoms, and improve quality of life in patients with severe chronic respiratory diseases and to support their caregivers. PC and symptom-oriented treatment should be delivered early alongside with disease-modifying treatment and adapted to individual values and needs of patients and caregivers. General PC can be provided by non-specialists whereas a specialized PC team is needed when symptoms become challenging to treat and care situations become increasingly complex.

Key messages: Patients with severe chronic lung diseases and their caregivers benefit tremendously from PC, which ranges from simple symptom control to complex interventions delivered by multidisciplinary and interprofessional teams. There is still a clear need to improve availability, awareness, education, and research on PC for patients with severe chronic lung diseases.

The Author(s). Published by S. Karger AG, Basel.

Supplementary info

Publication typesExpand

Full text links



[Proceed to details](#)

Cite

10

Ann Am Thorac Soc

-
-
-

. 2025 Aug 11.

doi: 10.1513/AnnalsATS.202412-1329OC. Online ahead of print.

[Cough in Adults with Undiagnosed Respiratory Symptoms](#)

[Sheojung Shin](#)^{1,2}, [Jessica Poliwoda](#)³, [G A Whitmore](#)⁴, [Katherine L Vandemheen](#)⁵, [Celine Bergeron](#)^{6,7}, [Louis-Philippe Boulet](#)⁸, [Andréanne Côté](#)⁹, [Stephen K Field](#)¹⁰, [Erika Penz](#)¹¹, [R Andrew McIvor](#)¹², [Catherine Lemièr](#)¹³, [Samir Gupta](#)¹⁴, [Paul Hernandez](#)¹⁵, [Irvin Mayers](#)¹⁶, [Mohit Bhutani](#)¹⁷, [M Diane Lougheed](#)¹⁸, [Christopher J Liciskai](#)¹⁹, [Tanweer Azher](#)²⁰, [Nicole Ezer](#)^{21,22}, [Martha Ainslie](#)²³, [Tetyana Kendzerska](#)^{24,25}, [Gonzalo G Alvarez](#)⁵, [Sunita Mulpuru](#)^{26,27}, [Shawn D Aaron](#)²⁸

Affiliations Expand

- PMID: 40788604

- DOI: [10.1513/AnnalsATS.202412-1329OC](https://doi.org/10.1513/AnnalsATS.202412-1329OC)

Abstract

Rationale: Cough is a common symptom of undiagnosed respiratory conditions.

Objective: To investigate cough in adults with undiagnosed respiratory symptoms and its association with quality of life (QoL), sleep quality, and healthcare utilization for respiratory illness.

Methods: We used a case-finding strategy to find community-dwelling adults with respiratory symptoms but no previous history of diagnosed lung disease. Pre- and post-bronchodilator spirometry determined if participants met diagnostic criteria for asthma, chronic obstructive pulmonary disease (COPD), preserved ratio impaired spirometry (PRISm), or if they had normal spirometry. Twelve questions from the Asthma Screening Questionnaire, COPD Assessment Test, and the St. George's Respiratory Questionnaire were used to develop a cough score. The 36-Item Short Form Survey (SF-36) and Global Sleep Assessment Questionnaire (GSAQ) were used to assess QoL and sleep quality, respectively.

Results: Adults with undiagnosed respiratory symptoms (N=2857, mean score 57.8, 95%CI 56.9-58.6) reported higher cough scores than age-matched controls (N=231, mean score 17.7, 95%CI 15.6-19.8). Participants found to have asthma (N=265, mean score 61.0, 95%CI 58.2-63.7) and COPD (N=330, mean score 61.8, 95%CI 59.3 to 64.3) had higher cough scores than those with PRISm (N=172, mean score 54.5, 95%CI 51.1-58.0) or normal spirometry (N=2090, mean score 57.0, 95%CI 56.0-58.0). Higher cough scores were associated with decreased QoL (lower SF-36 score, regression coefficient -0.19; 95%CI -0.22 to -0.17, P <0.001), worse sleep quality (higher GSAQ score, regression coefficient 0.16, 95%CI 0.14-0.18, P <0.001), and higher healthcare utilization for respiratory illness (incidence rate ratio 1.007, 95%CI 1.004-1.010, P <0.001).

Conclusions: In adults with undiagnosed respiratory symptoms, cough was most severe in those with undiagnosed asthma or COPD and was independently associated with worse quality of life, impaired sleep quality, and higher healthcare utilization for respiratory illness.

Full text links



[Proceed to details](#)

Cite

11

Curr Med Res Opin

-
-

•
. 2025 Aug 11:1-15.

doi: 10.1080/03007995.2025.2545493. Online ahead of print.

Prompt initiation of single-inhaler budesonide/glycopyrrolate/formoterol fumarate (BGF) following a COPD exacerbation reduces exacerbations and cardiopulmonary risk in patients with COPD: insights from the MITOS EROS + CP Study in the United States

Michael Pollack¹, Joseph Tkacz², Jill Schinkel², Barnabie Agatep², Edward Portillo³, Hayley D Germack⁴, Michael G Crooks⁵, Charlie Strange⁶, Jonathan Marshall⁷, Hana Mullerova⁸

Affiliations Expand

- PMID: 40785459
- DOI: [10.1080/03007995.2025.2545493](https://doi.org/10.1080/03007995.2025.2545493)

Abstract

Objective: To investigate the association between the timing of single-inhaler triple therapy Budesonide/Glycopyrrolate/Formoterol Fumarate (BGF) initiation following a COPD exacerbation and subsequent COPD exacerbations and non-fatal cardiopulmonary events.

Methods: This was a retrospective analysis of the Inovalon MORE² Registry and Medicare Fee-for-Service claims databases spanning July 1, 2019 to May 31, 2023. Eligible patients with COPD were aged ≥ 40 years, and initiated BGF treatment within 1-year of a qualifying COPD exacerbation (index event) with 12 months of baseline enrollment. Secondary study populations included patients escalating from dual therapy and patients with comorbid asthma. Negative binomial regressions were used to evaluate the adjusted risks for subsequent annualized exacerbations and cardiopulmonary events based on the timing of BGF initiation: prompt (≤ 30 days), delayed (31-180 days), and very delayed (181-365 days).

Results: Among 25,603 patients included, 14.8% were prompt, 37.7% delayed, and 47.5% very delayed initiators. Mean age was 60.3 years and 64.3% were female. Among the 10,630 cardiopulmonary events observed, 63% were cardiovascular-related. During follow-up, prompt initiators had 25.7% (adjIRR_D: 0.74 [0.72-0.77]) and 30.6% (adjIRR_{VD}: 0.69 [0.67-0.72]) lower risk of subsequent annualized exacerbations compared to delayed and very delayed initiators, respectively. Additionally, prompt initiators had 16.3% (adjIRR_D: 0.84 [0.77-0.91]) and 17.5% (adjIRR_{VD}: 0.83 [0.77-0.89]) lower risk of cardiopulmonary events, respectively. Similar results were observed for patients escalating from dual therapy and those with asthma.

Conclusions: Prompt initiation of BGF following a COPD exacerbation, including among patients previously managed with dual therapy, was associated with lower annualized rates of cardiopulmonary and exacerbation events.

Keywords: COPD; budesonide/glycopyrrolate/formoterol fumarate; exacerbations; prompt therapy; triple therapy.

Full text links



[Proceed to details](#)

Cite

12

BMJ Open

-
-
-

. 2025 Aug 10;15(8):e101432.

doi: 10.1136/bmjopen-2025-101432.

[Performance of an ultrasound diagnostic algorithm for acute dyspneic patients in the emergency department: an EMERALD-US protocol](#)

[Deborah Jaeger](#)^{1,2,3}, [Charlene Duchanois](#)^{1,3}, [Kevin Duarte](#)², [Xavier Lepage](#)², [Ludovic Merckle](#)², [Adrien Bassand](#)¹, [Aurélien Buessler](#)¹, [Anthony Chauvin](#)⁴, [Jérôme Bokobza](#)⁵, [Alice Penine](#)⁶, [Gaetan Giacomini](#)¹, [Cyrielle Brossard](#)⁷, [Nicolas Girerd](#)^{2,3,8}, [Tahar Chouihed](#)^{9,2,3}

Affiliations Expand

- PMID: 40784781
- PMCID: [PMC12336469](#)
- DOI: [10.1136/bmjopen-2025-101432](#)

Abstract

Introduction: Dyspnoea frequently leads to admissions in the Emergency Department (ED). Rapid and accurate diagnosis, specifically to distinguish acute heart failure from pneumonia and exacerbations of chronic obstructive pulmonary disease (COPD), is imperative to initiate appropriate therapy. This study aims to evaluate the feasibility and performance of the EMERGENCY ALgorithm efficiency for Dyspneic patient-UltraSound (EMERALD-US) algorithm using ultrasound (US) to diagnose the etiology of dyspnea in the ED-admitted patients.

Method and analysis: 225 patients of 50 years and above, presenting with acute non-traumatic dyspnoea, across six participating EDs will be enrolled. Patients will

undergo a lung, a simplified four-chamber cardiac and a venous US. A physician, blinded to any clinical data or previous results, will execute the algorithm. The algorithm's performance will be assessed using a receiver operating characteristic (ROC) curve. Secondary objectives include an evaluation of the protocol's feasibility in the ED, an assessment of the concordance between the EMERALD-US algorithm diagnoses and results from other diagnostic tests (including laboratory work and imaging), as well as an evaluation of the algorithm's performance in diagnosing other causes of dyspnoea, such as pulmonary embolism or pleural effusion, and the 30-day mortality rate.

Ethics and dissemination: The study protocol was approved by the French Committee for the Protection of Persons (CPP) (RCB n°2018-A02136-49). Misdiagnosis of dyspneic patients on ED admission has been associated with inappropriate treatment, prolonged hospital stays and increased mortality, particularly among elderly patients. The implementation of protocols like the EMERALD-US algorithm can help physicians in expedited decision-making and diagnosis without increasing ED visit durations.

Trial registration number: [NCT03691857](#).

Keywords: Emergency Service, Hospital; Lung Diseases; Ultrasound.

© Author(s) (or their employer(s)) 2025. Re-use permitted under CC BY-NC. No commercial re-use. See rights and permissions. Published by BMJ Group.

Conflict of interest statement

Competing interests: None declared.

- [26 references](#)
- [2 figures](#)

Supplementary info

Publication types, MeSH terms, Associated dataExpand

Full text links



[Proceed to details](#)

Cite

13

Editorial

Thorax

-
-

•

. 2025 Aug 15;80(9):585-586.

doi: 10.1136/thorax-2025-223321.

[Home NIV for COPD: the devil is in the detail](#)

[Patrick Brian Murphy](#)^{1,2}, [Swapna Mandal](#)^{3,4}

Affiliations Expand

• PMID: 40393720

• DOI: [10.1136/thorax-2025-223321](#)

No abstract available

Keywords: COPD Exacerbations; Non invasive ventilation.

Conflict of interest statement

Competing interests: see forms.

Supplementary info

Publication typesExpand

Full text links



[Proceed to details](#)

Cite

14

Thorax

•

•

•

. 2025 Aug 15;80(9):616-623.

doi: 10.1136/thorax-2024-222392.

[Impact of long-term non-invasive ventilation on severe exacerbations and survival in COPD: a French nationwide cohort study using multistate models](#)

[Jean Louis Pépin](#)^{1,2}, [Eleonore Herquelot](#)³, [Helene Denis](#)³, [Anne Josseran](#)⁴, [Florent Lavergne](#)⁴, [Adam Benjafield](#)⁵, [Atul Malhotra](#)⁶, [Janna Raphelson](#)⁶, [Peter](#)

[Cistulli](#)⁷, [Aurelie Schmidt](#)³, [Sebastien Bailly](#)⁸, [Alain Palot](#)⁹, [Arnaud Prigent](#)¹⁰; [medXcloud group](#)

Collaborators, Affiliations Expand

- PMID: 40393719
- DOI: [10.1136/thorax-2024-222392](https://doi.org/10.1136/thorax-2024-222392)

Free article

Abstract

Rationale: Chronic obstructive pulmonary disease (COPD) is the most common indication for domiciliary non-invasive ventilation (NIV), but long-term outcomes data are limited.

Objective: This multistate model analysis estimated the impact of NIV therapy continuation versus cessation on transitions between three different disease states.

Methods: Model data came from the French national health insurance reimbursement system database for individuals aged ≥ 40 years with COPD and ≥ 1 NIV reimbursement in 2015-2019.

Measurement and main results: Data from 49 503 patients started on NIV were included (median age 70 years, 51.2% male, median 1 exacerbation in the previous year). There were 80 361 severe exacerbations and 18 125 deaths (including 7805 in severe exacerbation). In multistate models, NIV continuation was associated with a significant reduction in transition to death, from severe exacerbation (HR 0.84, 95% CI 0.79 to 0.91) and without exacerbation (HR 0.88, 95% CI 0.83 to 0.93). NIV continuation versus cessation had no significant effect on transition between without exacerbation to severe exacerbation (HR 0.98, 95% CI 0.95 to 1.00) but was significantly associated with slower transition from severe exacerbation to without exacerbation (HR 0.87, 95% CI 0.84 to 0.89).

Conclusion: This multistate model analysis found that the long-term use of domiciliary NIV was associated with a lower risk of transitions to death, but was not associated with a reduction in recovery time after severe exacerbation. These data highlight the potential mortality benefits of long-term domiciliary NIV in COPD and can be used as one piece of evidence to support evidence-based guideline recommendations.

Keywords: COPD Exacerbations; COPD Pathology; Non invasive ventilation.

© Author(s) (or their employer(s)) 2025. Re-use permitted under CC BY-NC. No commercial re-use. See rights and permissions. Published by BMJ Group.

Conflict of interest statement

Competing interests: JLP has received lecture fees or conference travel grants from ResMed, Philips, AstraZeneca, Jazz Pharmaceuticals, Agiradom and Bioprojet, and has received unrestricted research funding from ResMed, Philips, GlaxoSmithKline, Bioprojet, Fondation de la Recherche Medicale (Foundation for Medical Research),

Direction de la Recherche Clinique du CHU de Grenoble (Research Branch Clinic CHU de Grenoble), and fond de dotation 'Agir pour les Maladies Chroniques' (endowment fund 'Acting for Chronic Diseases'). AM is funded by the NIH. He reports income related to medical education from Livanova, Eli Lilly and Zoll, and ResMed provided a philanthropic donation to UCSD. PC has an appointment to an endowed academic Chair at the University of Sydney that was established from ResMed funding, has received research support from ResMed and SomnoMed and is a consultant to ResMed, SomnoMed, Signifier Medical Technologies, Bayer and Sunrise Medical. AB, FL and AJ are employees of ResMed. EH, HD and AS are employees of HEVA and their participation in this study was funded by ResMed. APa has received consulting fees from ResMed. APr has received investigator fees for clinical trials funded by ResMed. SB and JR have no conflicts of interest to disclose.

Supplementary info

Grants and fundingExpand

Full text links



[Proceed to details](#)

Cite

15

Thorax

-
-
-

. 2025 Aug 15;80(9):658-661.

doi: 10.1136/thorax-2024-222547.

[Reduced treatment response to inhaled corticosteroids in current smokers with COPD, regardless of blood eosinophil count: insights from the FLAME trial](#)

[Alexander G Mathioudakis^{1,2}, Andrew Higham³, Sebastian Bate^{4,5}, Victoria Chatzimavridou-Grigoriadou^{6,7}, Pradeesh Sivapalan^{8,9}, Jens-Ulrik Stæhr Jensen^{8,10,11}, Tim Felton^{3,12}, Jørgen Vestbo^{3,8}, Dave Singh^{3,2,13}](#)

Affiliations Expand

- PMID: 40350264
- DOI: [10.1136/thorax-2024-222547](https://doi.org/10.1136/thorax-2024-222547)

Abstract

Inhaled corticosteroids (ICSs) benefit patients with chronic obstructive pulmonary disease at high risk of exacerbations with raised blood eosinophil count (BEC). Emerging evidence suggests current smokers show a reduced response to ICS. This post-hoc analysis of the FLAME trial explored the impact of smoking status on the efficacy of long-acting beta-2 agonist (LABA)+ICS versus LABA+long-acting muscarinic antagonist (LAMA) for preventing exacerbations. Our findings indicate that LABA+LAMA is superior to LABA+ICS in preventing moderate to severe exacerbations in current smokers and inferior in ex-smokers with BEC ≥ 200 cells/ μ L. Smoking status significantly modifies ICS treatment effects on exacerbation outcomes, suggesting reduced ICS efficacy in current smokers, regardless of BEC.

Keywords: COPD Exacerbations; COPD Pharmacology; Pulmonary Disease, Chronic Obstructive; Smoking.

© Author(s) (or their employer(s)) 2025. No commercial re-use. See rights and permissions. Published by BMJ Group.

Conflict of interest statement

Competing interests: The authors declare no conflicts of interest directly related to this work. AH, SB, VC-G, PS and J-USJ report no conflicts of interest. AGM reports honoraria for presenting from GSK, not related to this work. JV reports honoraria for consulting and/or presenting from ALK, AstraZeneca, Boehringer Ingelheim, Chiesi, GSK, Novartis and Teva, not related to this work. DS reports grants and personal fees from AstraZeneca, Boehringer Ingelheim, Chiesi, GlaxoSmithKline, Glenmark, Menarini, Mundipharma, Novartis, Pfizer, Pulmatrix, Theravance, and Verona and personal fees from Cipla, Genentech and Peptinnovate, not related to this work.

Full text links

"Multimorbidity"[Mesh Terms] OR Multimorbidity[Text Word]

1

Review

Ageing Res Rev

-
-
-

. 2025 Aug 13:102870.

doi: 10.1016/j.arr.2025.102870. Online ahead of print.

Biomarkers of Multimorbidity: A Systematic Review

Maria Beatrice Zazzara¹, Federico Triolo², Leonardo Biscetti³, Ersilia Paparazzo⁴, Marco Fiorillo⁵, Davide Liborio Vetrano⁶, Graziano Onder⁷; BIO-SIGN Study Investigators

Affiliations Expand

- PMID: 40816451
- DOI: [10.1016/j.arr.2025.102870](https://doi.org/10.1016/j.arr.2025.102870)

Abstract

The development of multiple chronic diseases in the same individual (i.e., multimorbidity) results from the loss of homeostasis across several biological systems. Identifying pathophysiological pathways common to multiple diseases, using accessible biomarkers, could increase our understanding of multimorbidity and improve its prognostication and management. We conducted a systematic review of peer-reviewed articles published till September 2024 that investigated biomarkers of multimorbidity. Due to study heterogeneity, a synthesis without meta-analysis was performed on 43 studies employing harvest plots based on direction of effect, sample size and study quality. Findings highlight how inflammatory and metabolic biomarkers, such as interleukin-6 (IL-6) and glycated haemoglobin (HbA1c) especially, but also triglycerides, low-density lipoprotein (LDL) cholesterol and kidney and liver markers, along with markers of neurodegeneration including Neurofilament Light Chain (NfL) and Phospho-Tau 217 (p-tau 217), were directly associated with multimorbidity. Nonetheless, evidence for hormonal and vascular activation markers, as well as more novel geroscience biomarkers, remains limited. These markers could have a key role in identifying individuals at high risk of developing or worsening multimorbidity. The review also highlights how methodological challenges, including heterogeneity in study design, populations, and multimorbidity definitions, impact on comparability and generalizability of findings. Addressing these gaps through standardized, longitudinal studies and multi-omics approaches is crucial to improve our understanding of the pathophysiological mechanisms of multimorbidity. In summary, this review outlines the independent association of diverse biomarkers with multimorbidity, opening to the possibility of identifying specific pathophysiological pathways for risk stratification and possible target of future personalized interventions.

Keywords: Aging; Biomarkers; Individualized care; Multimorbidity; Pathophysiological pathways.

Copyright © 2025. Published by Elsevier B.V.

Conflict of interest statement

Declaration of Competing Interest None of the authors declare conflicts of interest to disclose. The BIO-SIGN project was funded by the European Union – Next Generation EU – “Piano Nazionale di Ripresa e Resilienza” PNRR M6C2 - Investment 2.1 Enhancement and strengthening of biomedical research in the National Health Care System [grant number PNRR-MAD-2022-12376569]. DLV received funding by

The Swedish Research Council (project number 2021-03324). Conflict of interest
None of the authors declare conflicts of interest to disclose.

Supplementary info

Publication typesExpand

Full text links



[Proceed to details](#)

Cite

2

JMIR Res Protoc

-
-
-

. 2025 Aug 14:14:e63339.

doi: 10.2196/63339.

[Guideline-Based Clinical Decision Support Framework for Multimorbidity: Protocol for a Formulation and Testing Study](#)

[Zijun Wang](#)¹²³⁴, [Ling Wang](#)¹⁵, [Bingyi Wang](#)¹²³, [Hongfeng He](#)¹²³⁶, [Zhewei Li](#)¹²³⁶, [Di Zhu](#)¹²³⁴⁶, [Jie Zhang](#)¹²³, [Huayu Zhang](#)¹²³⁶, [Yaolong Chen](#)¹²³⁶, [Janne Estill](#)¹⁴

Affiliations Expand

- PMID: 40812779
- DOI: [10.2196/63339](#)

Free article

Abstract

Background: The burden of multimorbidity is increasing globally, which complicates the use of guidelines in clinical practice and health care: practitioners may need to increasingly refer to multiple guidelines with potentially conflicting recommendations.

Objective: We aim to develop a guideline-based decision support framework for the management of patients with multimorbidity to help clinicians efficiently evaluate, select, and adapt recommendations focusing on the different comorbidities and aspects of multimorbidity.

Methods: We will conduct the project using the following steps: (1) needs assessment (searching published literature and documents on guideline use in multimorbidity care through the study initiators, and assessing the necessity of developing a comprehensive decision-making framework focusing on multimorbidity in a broad sense), (2) establishing international working groups (a coordination team, an evidence support group, and a consensus group) by leveraging existing participants' networks and inviting experts with relevant academic publications or activities, (3) conducting literature reviews of multimorbidity guidelines and original qualitative research involving interest-holders in multimorbidity care and/or guideline development to formulate an initial draft framework, (4) a consensus process including an expert survey and a consensus meeting, (5) formulating and releasing the final framework, and (6) testing the framework (collecting feedback through educating health professionals in different settings and applying the framework in practice to evaluate and improve it). We plan to complete the project within 3 years.

Results: The project has started in March 2024 and is due to conclude in June 2026. As of May 2025, we have finished the literature reviews and qualitative studies and are currently conducting the first round of the expert survey.

Conclusions: This framework will help clinicians from all levels of health care institutions to make decisions in the management of patients with multimorbidity based on the latest available evidence, and to reduce potential health risks to their patients. One limitation of this framework is that such a broad framework may not fully fit all disease combinations or realistic situations. To reduce the degree of inapplicability, after completion of the framework, we will continue to monitor its use with regular updates as needed.

International registered report identifier (irrid): DERR1-10.2196/63339.

Keywords: burden; clinical decision support; comorbidity; consensus; health care; inapplicability; monitoring; multimorbidity; protocol; support framework.

©Zijun Wang, Ling Wang, Bingyi Wang, Hongfeng He, Zhewei Li, Di Zhu, Jie Zhang, Huayu Zhang, Yaolong Chen, Janne Estill. Originally published in JMIR Research Protocols (<https://www.researchprotocols.org>), 14.08.2025.

Full text links



[Proceed to details](#)

Cite

3

J Am Med Dir Assoc

-
-
-

. 2025 Aug 11:105800.

doi: 10.1016/j.jamda.2025.105800. Online ahead of print.

[Adverse Events in Older Hospitalized Patients With Cognitive Impairment](#)

[Bo Schouten](#)¹, [Fleur C W Visser](#)², [Marlise E A van Eersel](#)³, [Hanneke Merten](#)¹, [Barbara C van Munster](#)⁴, [Cordula Wagner](#)⁵

Affiliations Expand

- PMID: 40812380
- DOI: [10.1016/j.jamda.2025.105800](https://doi.org/10.1016/j.jamda.2025.105800)

Abstract

Objectives: As an increasing number of hospitalized inpatients are older and frail, cognitive impairment is becoming more common. Cognitive impairment may increase susceptibility to adverse events (AEs). This study aimed to identify the prevalence of AEs, potentially preventable AEs, and deaths in patients with and without cognitive impairment and the nature, causes, and prevention strategies.

Design: We analyzed data from 1959 records of a nationwide retrospective record review study of hospitalized older deceased patients.

Setting and participants: The cognitive impairment group included those with documented International Classification of Diseases, 10th Revision codes for delirium, dementia, mild cognitive impairment, and unspecified cognitive impairment.

Methods: Records were reviewed in 2 stages to assess AEs, their preventability, nature, causes, and prevention strategies.

Results: Of the 1959 included older patients, 428 patients (21.8%) were cognitively impaired. The Charlson comorbidity index was scored ≥ 5 in $\geq 90\%$ of all patients. AE prevalence was 13.1% in patients without cognitive impairment vs 17.0% in cognitively impaired patients ($P = .071$). Potentially preventable AE prevalence was 4.0% in patients without cognitive impairment vs 5.1% in cognitively impaired patients ($P = .369$), and potentially preventable death prevalence was 3.3% vs 2.7%, respectively ($P = .458$). Cognitively impaired patients registered as delirium experienced more AEs than those with dementia. The nature of AEs in cognitively impaired patients was most often related to "other clinical management," that is, nursing clinical activities, nursing, and paramedical care. Organizational causes were more common in patients with cognitive impairment. Most AEs with a human cause were deemed potentially preventable in both groups. The recommended prevention strategies mainly included reflection and evaluation.

Conclusion and implications: This study shows no significant difference in AE prevalence between patients with documented cognitive impairment and those without; however, we did find differences in the nature and causes of AEs. Future research is needed to better understand the relationship among frailty, multimorbidity, cognitive impairment, and patient safety risks.

Keywords: CI; Dementia; cognitive dysfunction.

Copyright © 2025. Published by Elsevier Inc.

Conflict of interest statement

Disclosure The authors declare no conflicts of interest.

Full text links



[Proceed to details](#)

Cite

4

Eur J Intern Med

-
-
-

. 2025 Aug 12:106424.

doi: 10.1016/j.ejim.2025.07.020. Online ahead of print.

[A person-centred clinical approach to the multimorbid patient with COPD](#)

[Bartolome R Celli](#)¹, [Leonardo M Fabbri](#)², [Abebaw M Yohannes](#)³, [Nathaniel M Hawkins](#)⁴, [Gerard J Criner](#)⁵, [Jessica Bon](#)⁶, [Marc Humbert](#)⁷, [Christine R Jenkins](#)⁸, [Leonardo Pantoni](#)⁹, [Alberto Papi](#)¹⁰, [Jennifer K Quint](#)¹¹, [Sanjay Sethi](#)¹², [Daiana Stolz](#)¹³, [Alvar Agustí](#)¹⁴, [Don D Sin](#)¹⁵

Affiliations Expand

- PMID: 40803921
- DOI: [10.1016/j.ejim.2025.07.020](https://doi.org/10.1016/j.ejim.2025.07.020)

Abstract

Most patients with a chronic disease are multimorbid. This is particularly important in patients with chronic obstructive pulmonary disease (COPD), who on average have five other identified comorbidities that independently impact their health and increase their mortality risk. Using a modified Delphi method, we selected the 20 most important diseases associated with COPD and clustered them into five domains: mental, respiratory, cardiovascular, metabolic and multiple organs loss of tissue. We then developed a systematic approach to characterise the impact and clinical presentation of individual diseases within each cluster, and to define the priority and timing of measurement of the potential markers of disease presence and severity. Given the absence of integrated guidelines to treat multimorbid

patients, we reviewed and selected individual disease guidelines or recommendations that can be accessed for specific information related to the management of each disease. In addition, we built a multimorbidity 'Health Dashboard' that, completed by the patient or health practitioner, can help identify the presence and severity of comorbid diseases. By using a practical comprehensive approach, it is possible to identify and characterise important comorbid diseases in patients with COPD, and to implement management tools that should help improve their outcome. This expert consensus commentary summarises patient-centred recommendations to manage comorbidities in COPD patients, aiming to improve quality-of-life and reduce disease burden through a holistic approach. Prospective pragmatic trials comparing such an approach with usual care for multimorbid patients with COPD including long-term follow-up are urgently needed.

Keywords: Chronic obstructive pulmonary disease; Comorbidity; Disease management.

Copyright © 2025 The Authors. Published by Elsevier B.V. All rights reserved.

Conflict of interest statement

Declaration of competing interest In addition to editorial support disclosed above, the authors have the following conflicts of interest: Bartolome R. Celli received consulting fees from Chiesi for participation in this project. Outside the scope of this manuscript, he received fees from GlaxoSmithKline and AstraZeneca for consulting, speaking at meetings and participating in advisory boards, from Menarini for consulting and speaking at meetings, from Sanofi Aventis for consulting and participating in advisory boards, from Axios for consulting, and from Chiesi and Regeneron for lectures, presentations, speakers bureaus, manuscript writing or educational events, support for attending meetings and/or travel from GlaxoSmithKline and Sanofi Aventis, and participated in a Data Safety Monitoring Board or Advisory Board for AZ Therapeutics, Sanofi Aventis, and Vertex. Leonardo M. Fabbri received consulting fees from Chiesi, GlaxoSmithKline, AstraZeneca, Novartis, and Verona Pharma, payment or honoraria for lectures, presentations, speakers bureaus, manuscript writing or educational events from Chiesi, GlaxoSmithKline, and Glemark, and participation in a Data Safety Monitoring Board or Advisory Board for Novartis, Chiesi and ICON. Abebaw M. Yohannes received consulting fees from Chiesi for participation in this project. He received support for attending a meeting from Theravance Bio Pharma limited, outside the scope of this manuscript. Nathaniel M. Hawkins declares a grant to his institution from AstraZeneca, consulting fees from AstraZeneca, and payment or honoraria for lectures, presentations, speakers bureaus, manuscript writing or educational events from AstraZeneca, Boehringer Ingelheim, and Novo-Nordisk. All are outside the scope of the current manuscript. Gerard J. Criner received consulting fees from Chiesi for participation in this project. Outside the scope of this manuscript, he declares grants or contracts to his institution from ALung Technologies Inc, American College of Radiology, American Lung Association, AstraZeneca, BioScale Inc, Boehringer Ingelheim, Breath Therapeutics Inc, COPD Foundation, Coridea/Zidan, Dr. Karen Burns/St. Michael's Hospital, Fisher & Paykel, Galapagos NV, GlaxoSmithKline, Lungpacer Medical Inc, NHLBI, Nuaira Inc, PCORI, Pulmonary Fibrosis Foundation, Pulmonx, Philips Respironics Inc, Respivant Sciences, Spiration Inc, Steward St Elizabeth's Medical Center of Boston Inc,

Veracyte Inc, Bellerophon Therapeutics, Regeneron, Clear Creek Bio Inc, Corvus Pharmaceuticals Inc, Eli Lilly and Company, Gilead Sciences, Incyte Corporation, Janssen Vaccines & Prevention B.V., Daniel Benjamin, Hoffmann-La Roche, Merck Sharp & Dohme Corp., Swedish Orphan Biovitrum, Aevi Genomic Medicine, LLC, a Cerecor company, Massachusetts General Hospital, Pfizer, and CalciMedica Inc, and consulting fees from Aerwave Medical Inc, Amgen, AstraZeneca, Bayer AG, Boehringer Ingelheim Pharmaceutical, BTG International, Broncus Medical, Chiesi Farmaceutici, CSA Medical, Eolo Medical, Fisher & Paykel, Gala Therapeutics, GlaxoSmithKline, Helios Medical, Hospicom Inc, Intuitive Surgical Inc, Merck, Medscape, LLC, Medtronic, Mereo Biopharma, NGM Biopharmaceuticals, Novartis Pharma AG, Olympus, PneumRx, Patara Pharma, Prometic BioTherapeutics, Philips Respironics, Pulmonx, Regeneron Healthcare Solutions Inc, Respicant Sciences, ResMed, Sanofi US Services Inc, The Implementation Group, Verona Pharmaceuticals, and WebMD. Jessica Bon received consulting fees from Chiesi for participation in this project. She also declares consulting fees from Verona Pharma, GlaxoSmithKline, Genentech, ProPharma Group, Regeneron, and Sanofi, all outside the scope of the current manuscript. Marc Humbert declares grants to his institution from Gossamer and Merck, consulting fees from 35 Pharma, Aerovate, AOP Orphan, Chiesi, Ferrer, Gossamer, Janssen, Keros, Liquidia, Merck, Morphic, Novartis, Respira, Roivant, and United Therapeutics, payment or honoraria for lectures, presentations, speakers bureaus, manuscript writing or educational events from Janssen and Merck, and participation on a data safety monitoring board or advisory board for 35 Pharma, Aerovate, Janssen, Keros, Merck, Novartis, and United Therapeutics. All are outside the scope of the current manuscript. Christine R. Jenkins declares grants to her institution from AstraZeneca and Sanofi, consulting fees from AstraZeneca, GlaxoSmithKline, and Chiesi, payment or honoraria for lectures or educational events from AstraZeneca, GlaxoSmithKline, Sanofi, Novartis, and Chiesi, support for attending meetings and/or travel (only when an invited speaker) from AstraZeneca and GlaxoSmithKline, participation on advisory boards for AstraZeneca, GlaxoSmithKline, Chiesi, Sanofi, and Novartis, and an unpaid leadership or fiduciary role for the Lung Foundation Australia and the Asbestos and Dust Diseases Research Institute. All are outside the scope of the current manuscript. Leonardo Pantoni received consulting fees from Chiesi for participation in this project. Outside the scope of this manuscript, he declares consulting fees from Amicus and PIAM, outside the scope of the current manuscript. Alberto Papi receiving consulting fees from Chiesi for participation in this project. Outside the scope of this manuscript, he declares payments to his institution from Chiesi, AstraZeneca, GlaxoSmithKline and Sanofi, consulting fees from Chiesi, AstraZeneca, GlaxoSmithKline, Sanofi, Avillion, Moderna, and Roche, payment or honoraria for lectures, presentations, speakers bureaus, manuscript writing or educational events from Chiesi, AstraZeneca, GlaxoSmithKline, Menarini, Zambon, Mundipharma, Sanofi, Iqvia, Avillion, Sanofi, Regeneron, Zambon, and participation on advisory boards for Chiesi, AstraZeneca, GlaxoSmithKline, Sanofi, Iqvia, Avillion, and Moderna. Jennifer K. Quint received consulting fees from Chiesi for participation in this project. Outside the scope of this manuscript, she declares grants to her institution from the Medical Research Council, NIHR, Health Data Research, GlaxoSmithKline, Boehringer Ingelheim, AstraZeneca, Insmmed, and Sanofi, and consulting fees from GlaxoSmithKline, Chiesi, and AstraZeneca. Sanjay Sethi received consulting fees from Chiesi for participation in this project. Outside the scope of this manuscript, he declares research grants to his institution from Chiesi, AstraZeneca, and Sanofi-Regeneron, royalties or licenses from Wolters

Kluwer Health, consulting fees from AstraZeneca, Boehringer Ingelheim, Chiesi, and GlaxoSmithKline, payment or honoraria for lectures, presentations, speakers bureaus, manuscript writing or educational events from AstraZeneca, Boehringer Ingelheim, and GlaxoSmithKline, and participation on a data safety monitoring board for Nuaira, Boehringer Ingelheim, and Pulmonx. Daiana Stolz declares payment or honoraria for lectures, presentations, speakers bureaus, manuscript writing or educational events from AstraZeneca, Berline-Chemie/Menarini, Boehringer Ingelheim, Chiesi, CSL Behring, Curetis AG, GlaxoSmithKline, Merck, MSD, Novartis, Sanofi, Vifor, and Roche, participation on a data safety monitoring board or advisory board for AstraZeneca, Berline-Chemie/Menarini, Boehringer Ingelheim, Chiesi, CSL Behring, Curetis AG, GlaxoSmithKline, Merck, MSD, Roche, Novartis, Sanofi, OM Pharma and Vifor, and that she is a current unpaid GOLD representative for Switzerland. All are outside the scope of the current manuscript. Alvar Agusti received consulting fees from Chiesi for participation in this project. Outside the scope of this manuscript, he reports grants to his institution from AstraZeneca, GlaxoSmithKline, and Menarini, received consulting fees from GlaxoSmithKline, AstraZeneca, Chiesi, Menarini, Zambon, MSD, and Sanofi for lectures. He also declares an unpaid position as the Chairman of the Board of Directors of GOLD. Don D. Sin received an investigator-initiated grant from Nextone paid to UBC, and honoraria for giving talks on COPD from AstraZeneca, GlaxoSmithKline, and Boehringer Ingelheim, and declares that he was chair of a data safety monitoring board for a NHLBI-sponsored trial and is Deputy Editor of the European Respiratory Journal. All are outside the scope of the current manuscript.

Full text links



[Proceed to details](#)

Cite

5

Fam Med Community Health

-
-
-

. 2025 Aug 12;13(3):e003390.

doi: 10.1136/fmch-2025-003390.

[Global evidence on the effectiveness of task-shifting and task-sharing strategies for managing individuals with multimorbidity: systematic review and meta-analysis](#)

[Enying Gong](#)^{1,2}, [Yutong Long](#)³, [Xunliang Tong](#)^{4,5}, [Wai Yan Min Htike](#)⁶, [Jiahui Wang](#)³, [Shiqi Ni](#)⁷, [Yueqing Wang](#)³, [Zijun Wang](#)⁸, [Lijing L Yan](#)^{6,7}, [Sumit Kane](#)⁹, [Ruitai Shao](#)^{3,2}, [Yanming Li](#)^{10,5}

Affiliations Expand

- PMID: 40803770
- PMCID: [PMC12352192](#)
- DOI: [10.1136/fmch-2025-003390](#)

Abstract

Introduction: Task-shifting and task-sharing strategies show promise for managing chronic diseases especially in low-income and middle-income countries (LMICs), though their effectiveness in multimorbidity management remains unclear. This study synthesised evidence on task-shifting and task-sharing strategies globally and assessed the impact on core health outcomes in multimorbidity management.

Methods: We conducted a systematic review and meta-analysis of global studies evaluating task-shifting and sharing interventions for individuals with multimorbidity. Six databases, including PubMed, Embase, Web of Science, Ovid (Medline), CINAHL and Cochrane Library, were searched for studies reporting the core outcomes of multimorbidity management in quality of life, mortality, hospitalisation, emergency department visits and symptoms of depression and anxiety. Random-effects models were used to calculate pooled effect sizes with heterogeneity assessed through subgroup and meta-regression analyses.

Results: From 8471 records, 36 studies from 14 countries were included, with only 5 conducted in LMICs. Twenty-one studies, encompassing 20 989 participants, were eligible for meta-analysis. More than half of the studies involved nurses as delegates, with some sharing the tasks with health professionals and about 10% of studies involved non-health professionals, including community healthcare workers as delegates to share the responsibility in caring for individuals with multimorbidity. Most studies were multicomponent, with 16.7% addressing all guideline-recommended aspects of multimorbidity management. By pooling the findings, task-shifting and task-sharing interventions were associated with a 27% reduction in mortality (OR: 0.73, 95% CI: 0.55 to 0.97, $I^2=0\%$), a modest improvement in quality of life (standardised mean difference (SMD): 0.1, 95% CI: 0.03 to 0.17, $I^2=47\%$) and reduced symptoms of depression (SMD: 0.27, 95% CI: -0.52 to -0.02, $I^2=90\%$), but showed no significant effect on hospitalisation, emergency visits or anxiety-related symptoms.

Conclusions: Some evidence, although limited in existing research, indicates the great potential of task-shifting and task-sharing strategies in supporting management of multimorbidity. Further research is needed to optimise and adopt these interventions, particularly in LMICs where evidence remains scarce.

Prospero registration number: CRD42024526845.

Keywords: Community Health Services; Delivery of Health Care, Integrated; Multiple Chronic Conditions.

© Author(s) (or their employer(s)) 2025. Re-use permitted under CC BY-NC. No commercial re-use. See rights and permissions. Published by BMJ Group.

Conflict of interest statement

Competing interests: None declared.

- [30 references](#)
- [3 figures](#)

Full text links



[Proceed to details](#)

Cite

6

Intern Emerg Med

-
-
-

. 2025 Aug 11.

doi: [10.1007/s11739-025-04080-5](https://doi.org/10.1007/s11739-025-04080-5). Online ahead of print.

[The impact of chronic conditions on emergency department length of stay](#)

[Arian Zaboli](#)¹, [Marta Ziller](#)², [Francesco Brigo](#)³, [Alessandro Cipriano](#)⁴, [Norbert Pfeifer](#)⁵, [Antonio Voza](#)⁶, [Lorenzo Ghiadoni](#)⁷, [Gianni Turcato](#)⁸

Affiliations Expand

- PMID: [40788325](#)
- DOI: [10.1007/s11739-025-04080-5](https://doi.org/10.1007/s11739-025-04080-5)

Abstract

Background: Emergency Departments (EDs) are increasingly managing elderly patients with chronic diseases and complex comorbidities. While the association between chronic conditions and poor clinical outcomes is well established, their impact on ED operational performance, particularly on length of stay (LOS), remains underexplored.

Methods: We conducted a retrospective, single-center observational study at Merano Hospital (Italy), analyzing a random sample of adults ED visits in 2023. Patients were classified as having chronic conditions if they had ≥ 2 pre-existing chronic conditions. Demographic, clinical, and access-related variables were extracted from electronic health records. The primary outcome was ED LOS, defined as the time from registration to ED chart closure, excluding boarding time.

Univariate and multivariable logistic regression analyses were used to identify predictors of prolonged LOS (\geq 75th percentile).

Results: Among 4172 patients, 12.9% were classified as having chronic conditions. These patients were significantly older and more likely to present with prolonged symptoms and acute exacerbations of chronic illnesses. Median ED LOS was significantly longer among chronic patients (127.6 vs. 97.0 min, $p < 0.001$). Chronic status emerged as an independent predictor of prolonged LOS (OR 1.537, 95% CI 1.223-1.932). In patients with low triage priority, the presence of chronic conditions was associated with a 54-min increase in LOS and a 52% increase in log-transformed LOS ($p < 0.001$).

Conclusions: Chronic conditions are associated with significantly longer ED management times, irrespective of clinical urgency. These findings highlight the need for targeted strategies to enhance care integration and alleviate the burden on ED services.

Keywords: Chronic disease; Emergency service; Healthcare utilization; Hospital; Length of stay; Multimorbidity.

© 2025. The Author(s), under exclusive licence to Società Italiana di Medicina Interna (SIMI).

Conflict of interest statement

Declarations. Conflict of Interest, Human and animal rights statement and Informed consent: Ethical approval for this study was obtained from the Institutional Review Board of the Ethical Committee for Clinical Trials of the Autonomous Province of Bolzano (approval number: 28-2024). This study was conducted in accordance with the ethical standards outlined in the Declaration of Helsinki and other relevant international guidelines for biomedical research involving human subjects.

- [24 references](#)

Full text links



[Proceed to details](#)

Cite

7

Anesth Analg

-
-
-

. 2025 Sep 1;141(3):492-501.

doi: 10.1213/ANE.0000000000007228. Epub 2025 Aug 15.

[Association of Short-term Pain and Chronic Pain Intensity With Cardiometabolic Multimorbidity Progression: A Multistate Markov Model Analysis](#)

[Dongze Chen](#)¹, [Yali Zhang](#)², [Yi Zhou](#)³, [Zhisheng Liang](#)⁴

Affiliations Expand

- PMID: 39383101
- DOI: [10.1213/ANE.0000000000007228](#)

Abstract

Background: The impact of pain intensity on the progression trajectories of cardiometabolic multimorbidity (CMM) is not well understood. We attempted to dissect the relationship of short-term pain (STP) and chronic pain intensity with the temporal progression of CMM.

Methods: We conducted a prospective cohort study based on the UK Biobank participants. Incident cases of cardiometabolic diseases (CMDs) were identified based on self-reported information and multiple health-related records in the UK Biobank. CMM was defined as the occurrence of at least 2 CMDs, including heart failure (HF), ischemic heart disease (IHD), stroke, and type 2 diabetes (T2D). The pain intensity was categorized into 5 levels based on pain duration and the number of sites involved, including chronic widespread pain (CWSP), chronic multilocation pain (CMLP), chronic single-location pain (CSLP), STP, and free-of-pain (FOP). Multistate models were used to assess the impact of pain intensity on the CMM trajectories from enrollment to initial cardiometabolic disease (ICMD), subsequently to CMM, and ultimately to death.

Results: A total of 429,145 participants were included. Over the course of a 12.8-year median follow-up, 13.1% (56,137/429,145) developed ICMD, 19.6% (10,979/56,137) further progressed to CMM, and a total of 5.3% (22,775/429,145) died. Compared with FOP, CMLP (hazard ratio [HR], 1.11; 95% confidence interval [CI], 1.06-1.17) and CWSP (HR, 1.26; 95% CI, 1.13-1.42) elevated the risk of transitioning from ICMD to CMM. STP (HR, 0.89; 95% CI, 0.82-0.96), CSLP (HR, 0.88; 95% CI, 0.82-0.95), and CMLP (HR, 0.87; 95% CI, 0.81-0.93) lowered the risk of transition from ICMD to mortality, and STP also reduced the risk of transition from enrollment to mortality (HR, 0.94; 95% CI, 0.89-0.98). The results of disease-specific transitions revealed that the influence of pain intensity varied across transitional stages. Specifically, CMLP and CWSP heightened the risk of conversion from T2D or IHD to CMM, whereas only CWSP substantially elevated the transition risk from HF to CMM.

Conclusions: Our results highlighted reductions in chronic pain may mitigate both the onset and progression of CMM, potentially having an important impact on future revisions of cardiometabolic and pain-related guidelines.

Copyright © 2024 International Anesthesia Research Society.

Conflict of interest statement

Conflicts of Interest, Funding: Please see DISCLOSURES at the end of this article.

- [36 references](#)

"asthma"[MeSH Terms] OR asthma[Text Word]

1

Ann Allergy Asthma Immunol

-
-
-

. 2025 Aug 13:S1081-1206(25)00416-8.

doi: 10.1016/j.anai.2025.08.007. Online ahead of print.

[Adherence to inhaled corticosteroid medications following an asthma exacerbation and the risk of subsequent exacerbations](#)

[Mina Khezrian](#)¹, [Marjan Kerkhof](#)², [Tham T Le](#)³, [Tim Harrison](#)¹, [Tianshi David Wu](#)⁴, [Bill Cook](#)⁵, [Jonatan Hedberg](#)⁶, [Kirsty Rhodes](#)⁷, [Nicole Zubizarreta](#)⁸, [Joshua Enxing](#)⁹, [Trung N Tran](#)¹⁰

Affiliations Expand

- PMID: 40816497
- DOI: [10.1016/j.anai.2025.08.007](https://doi.org/10.1016/j.anai.2025.08.007)

Abstract

Background: Data on the duration of improved adherence to controller medications after an exacerbation and its impact on asthma outcomes are inconsistent.

Objective: To describe levels and changes in adherence to inhaled corticosteroid (ICS)-containing medication following a severe exacerbation and association with future exacerbation risk.

Methods: This retrospective cohort study used data from Optum's de-identified Clinformatics® Data Mart Database (October 2015-December 2023). Patients with asthma, ≥1 severe exacerbation, and adherence to ICS-containing therapy (proportion of days covered [PDC]) <80% in the 3 months prior to an exacerbation were included. Primary and secondary endpoints were annualized asthma exacerbation rate (AAER) and time to first subsequent severe exacerbation. Endpoints were compared between patients who improved adherence in the 3 months post-qualifying exacerbation to ≥80% versus those remaining at PDC <80%. Inverse probability of treatment weighting accounted for between-group imbalances.

Results: Of 68,398 participants, 85% stayed <80% PDC while 15% improved to PDC ≥80% at 3 months post-qualifying exacerbation. Of patients with improved PDC, only 40%, 31%, and 22% maintained PDC ≥80% at 3-6, 6-9, and 9-12 months post-qualifying exacerbation, respectively. Improving adherence to PDC ≥80% in the 3 months post-qualifying exacerbation did not reduce AAER (rate ratio: 0.958 [95% confidence interval (CI) 0.912, 1.007]) or increase time to next exacerbation (hazard ratio: 0.997 [95% CI 0.954, 1.041]). Results were consistent in sensitivity analyses.

Conclusion: Improvement in adherence to ICS-containing therapy after a severe exacerbation was transient and not beneficial for exacerbation outcomes, indicating a need to consider alternative treatment strategies in patients with asthma.

Keywords: adherence; asthma; inhaled corticosteroids; severe exacerbation.

Copyright © 2025. Published by Elsevier Inc.

Full text links



[Proceed to details](#)

Cite

2

Clin Ther

-
-
-

. 2025 Aug 14:S0149-2918(25)00237-1.

doi: 10.1016/j.clinthera.2025.06.020. Online ahead of print.

[Prevalence of Three Prominent Corticosteroid Side Effects in a Large Asthma Population by Age, Sex and ICD-10 Asthma Severity with Recommendations for Screening](#)

[Bowen Yao](#)¹, [Thomas Wilson](#)², [Ruitao Zou](#)³, [Nicholas Orfan](#)⁴

Affiliations Expand

- PMID: 40817019
- DOI: [10.1016/j.clinthera.2025.06.020](https://doi.org/10.1016/j.clinthera.2025.06.020)

Abstract

Purpose: The adverse effects of corticosteroid therapy in the treatment of asthma have been extensively documented and explored over the past several decades. Prominent among these adverse effects are osteoporosis, cataracts, and

osteonecrosis. We assessed the prevalence of these 3 well-known side effects of corticosteroid therapy for asthma in asthmatics versus nonasthmatics from a general adult population of 3.5 million individuals. The objective of the study was to make data-driven recommendations regarding screening for the 3 aforementioned comorbidities in specific asthmatic populations.

Methods: Using the Colorado all payers claims database with dates of service January 1, 2017 through June 30, 2020, we determined the prevalence of osteoporosis, cataracts, and osteonecrosis by asthma severity, age, and sex compared with an age and sex matched nonasthmatic comparator group.

Findings: Asthmatics generally showed an earlier onset and higher prevalence of these 3 side effects which correlated with asthma severity, often reaching statistically significant divergence from the nonasthmatic comparator group. Patterns of prevalence with regard to both age and sex were distinctive for each side effect.

Implications: Based on our findings, we suggest customized screening guidelines for osteoporosis, cataracts, and osteonecrosis for specific subpopulations of asthmatics as defined by age, sex, and asthma severity.

Keywords: Asthma comorbidities; Cataracts; Osteonecrosis; Osteoporosis.

Copyright © 2025 The Author(s). Published by Elsevier Inc. All rights reserved.

Conflict of interest statement

Declaration of competing interest None.

Full text links



[Proceed to details](#)

Cite

3

Review

Eur J Pharmacol

-
-
-

. 2025 Aug 13:178064.

doi: 10.1016/j.ejphar.2025.178064. Online ahead of print.

[Pulmonary surfactant in asthma](#)

[Odalys Blanco](#)¹, [Mercyleidi Díaz-Reyes](#)², [Alexis Labrada](#)³, [Chiara Autilio](#)⁴, [Jesús Pérez-Gil](#)⁵

Affiliations Expand

- PMID: 40816530
- DOI: [10.1016/j.ejphar.2025.178064](https://doi.org/10.1016/j.ejphar.2025.178064)

Abstract

Pulmonary surfactant is vital in human respiration. It maintains alveoli and terminal conducting airways open and therefore promotes an efficient gas exchange and low resistance in the airways during breathing dynamics. Lack or dysfunction of the pulmonary surfactant system is associated with severe lung disorders. Surfactant ability to maintain low surface tension at the respiratory air-liquid interface, with subsequent good compliance and low resistance in the airways, is extremely important for asthmatic patients. A growing series of experimental evidence indicates that surfactant dysfunction, either associated with the causes or as a consequence of asthma, can contribute to constriction of airways and exacerbation of asthma. Modulation by surfactant of the innate and induced immune response is also an important element defining propensity, but also the resolution of asthmatic crisis. Limited trials indicate that administration of exogenous therapeutic surfactant may offer favorable pharmacological effects to asthmatic patients, possibly by two different mechanisms. On the one hand, it can restore endogenous surface activity and, on the other hand, properly modulate the immune system. The objective of the present review has been to summarize and update available concepts and evidence that support the relationship between pulmonary surfactant and asthma, with particular attention to the role of pulmonary surfactant in the mechanisms of asthma manifestations as well as in the design of innovative future therapies.

Keywords: animal model; asthma; clinical trial; exogenous surfactant; pulmonary surfactant; surface tension.

Copyright © 2025. Published by Elsevier B.V.

Conflict of interest statement

Declaration of Competing Interest The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

Supplementary info

Publication typesExpand

Full text links



[Proceed to details](#)

Cite

4

Pediatr Qual Saf

-
-
-

. 2025 Aug 13;10(6):e829.

doi: 10.1097/pq9.0000000000000829. eCollection 2025 Sep-Oct.

[Project BREATHE: A Quality Improvement Initiative](#)

[Kara Oliver¹](#), [Xilei Xu Chen²](#), [Jamie Wooldridge³](#), [Brinda Prasanna Kumar⁴](#), [Lalina Sunuwar⁴](#), [Samantha Eng⁴](#), [Matthew Swatski⁴](#), [Daniel Hamilton⁴](#), [Geovanny F Perez²](#)

Affiliations Expand

- PMID: 40814404
- PMCID: [PMC12348406](#)
- DOI: [10.1097/pq9.0000000000000829](#)

Abstract

Introduction: Asthma is the most common chronic illness in pediatrics, placing a significant burden on patients and the healthcare system. The lack of standardization in screening, diagnosis, and treatment remains a key challenge in pediatric asthma management. This project used the Project BREATHE toolkit, supplied through the New York State Department of Health, to implement a care process for children with asthma receiving care at our institution. Our primary objective was to enhance asthma care through a quality improvement framework to optimize outcomes and reduce healthcare usage.

Methods: Following identifying key drivers contributing to suboptimal asthma care in our region, our transdisciplinary team developed a standardized asthma care process. From July 2020 to June 2021, the process was systematically applied to all patients admitted with a diagnosis of asthma. Control charts were reviewed monthly to assess adherence and uptake of care process components, facilitating continuous quality improvement and data-driven modifications.

Results: Following implementation, inhaled corticosteroid prescriptions increased from 50% to 81%, whereas subspecialist consults rose from 8.3% to 77%. The proportion of patients receiving asthma severity assessments ranged from 71% to 90%, and the rates of asthma education fluctuated from 50% to 89%. Additionally,

the rate of emergency department visits declined from 5.2% to 4.7% and hospitalizations from 12.7% to 10.1% following implementation.

Conclusions: Implementing a transdisciplinary asthma care process resulted in sustained improvements in asthma management and reduced asthma-related emergency department visits and hospitalizations. These findings highlight the effectiveness of a structured, team-based approach in optimizing pediatric asthma care.

Copyright © 2025 the Author(s). Published by Wolters Kluwer Health, Inc.

- [25 references](#)
- [5 figures](#)

Full text links



[Proceed to details](#)

Cite

5

J Allergy Clin Immunol

-
-
-

. 2025 Aug 12:S0091-6749(25)00858-9.

doi: 10.1016/j.jaci.2025.07.030. Online ahead of print.

[COVID-19 infection raises respiratory type-2 inflammatory disease risk, whereas vaccination is protective](#)

[Henning Olbrich](#)¹, [Sophie L Preuß](#)², [Khalaf Kridin](#)³, [Gema Hernandez](#)⁴, [Diamant Thaçi](#)⁵, [Ralf J Ludwig](#)⁶, [Philip Curman](#)⁷

Affiliations Expand

- PMID: 40812431
- DOI: [10.1016/j.jaci.2025.07.030](#)

Abstract

Background: COVID-19 infection and vaccination have unclear impacts on type-2 inflammatory diseases. Although viral infections can drive immune dysregulation, the extent to which COVID-19 infection and vaccination affect type-2 inflammatory diseases in various organ systems remains underexplored.

Objective: We aimed to assess the risk of new-onset type-2 inflammatory diseases after COVID-19 infection and vaccination.

Methods: We conducted a large-scale retrospective matched cohort study within a United States electronic health records database of over 118 million patients. Three cohorts were defined: individuals with COVID-19 infection (973,794), individuals with COVID-19 vaccination (691,270), and unexposed controls (4,388,409). Propensity-score matching balanced demographic and clinical covariates. We calculated hazard ratios for incident asthma, allergic rhinitis, chronic rhinosinusitis, atopic dermatitis, and eosinophilic esophagitis over a three-month follow-up.

Results: COVID-19 infection significantly increased the risks of asthma (hazard ratio 1.656, 95% confidence interval 1.590-1.725), allergic rhinitis (1.272, 1.214-1.333), and chronic rhinosinusitis (1.744, 1.671-1.821). Risks for atopic dermatitis or eosinophilic esophagitis remained unchanged. In contrast, vaccination lowered the risks of asthma (0.678, 0.636-0.722) and chronic rhinosinusitis (0.799, 0.752-0.850). Direct comparison showed a two- to threefold greater risk of respiratory type-2 inflammatory diseases with infection than with vaccination.

Conclusion: COVID-19 infection is associated with a heightened risk of respiratory type-2 inflammatory diseases, whereas vaccination appears protective.

Clinical implication: COVID-19 vaccination may reduce respiratory complications driven by type-2 inflammation, thereby diminishing disease burden.

Keywords: COVID-19; SARS-CoV-2; allergic rhinitis; asthma; atopic dermatitis; chronic rhinosinusitis; eosinophilic esophagitis; type-2 inflammatory diseases; vaccination.

Copyright © 2025. Published by Elsevier Inc.

Full text links



[Proceed to details](#)

Cite

6

Allergy

-
-
-

. 2025 Aug 14.

doi: 10.1111/all.70011. Online ahead of print.

[Preventive Role of COVID-19 Vaccination on Future Severe Exacerbation of Asthma According to Severe COVID-19 Status: A Nationwide Population-Based Cohort Study](#)

[Sang Hyuk Kim](#)¹, [Jong Geol Jang](#)², [Min Gu Kang](#)^{3,4}, [Youlim Kim](#)⁵, [Ji-Yong Moon](#)⁵, [Kyung Hoon Min](#)¹, [Sang-Heon Kim](#)⁶, [Kwang-Ha Yoo](#)⁵, [Ho Joo Yun](#)⁶, [Jong Seung Kim](#)^{3,4,7}, [Hyun Lee](#)⁶

Affiliations Expand

- PMID: 40810369
- DOI: [10.1111/all.70011](#)

No abstract available

Keywords: COVID-19; asthma; exacerbation; prevention; vaccines.

Supplementary info

Publication types, Grants and fundingExpand

Full text links



[Proceed to details](#)

Cite

7

Allergy Asthma Clin Immunol

-
-
-

. 2025 Aug 13;21(1):34.

doi: 10.1186/s13223-025-00979-y.

[Anti-IL-5 and anti-IL-5 receptor therapy significantly improves quality of life and FEV1 values in patients with severe asthma](#)

[Anaiza Odalis Villalobos Alfaro](#)^{#1}, [Haydee Carolina Gutiérrez Vargas](#)^{#2}, [Juan Manuel Díaz](#)³, [Jonathan Alvarez Pinto](#)⁴, [Diana Cristina García Cambero](#)⁵, [Eduardo Hernandez Cuellar](#)⁶, [Julio Augusto Palma Zapata](#)⁷, [Alondra Esthefanía Llamas Domínguez](#)⁷, [Juliana Palma Zapata](#)⁷, [Silvia Denise Ponce-Campos](#)⁸

Affiliations Expand

- PMID: 40804423
- PMCID: [PMC12351985](#)

- DOI: [10.1186/s13223-025-00979-y](https://doi.org/10.1186/s13223-025-00979-y)

Abstract

In recent years, the use of monoclonal antibodies directed against interleukin-5 (anti-IL-5) and its receptor alpha (anti-IL-5R) has proven to be an effective therapeutic option for patients with severe asthma by reducing the number of eosinophils, which may promote disease remission. This study aimed to evaluate clinical improvement and remission in patients with severe asthma treated with anti-IL-5 and anti-IL-5R antibodies over a period of 12 months. A cohort study was conducted with 49 patients diagnosed with severe eosinophilic asthma and who did not respond to conventional treatment. During follow-up, medical control was performed every 3 months using spirometry, eosinophil counts, quality of life scales, and disease control. The results revealed an improvement in FEV1 after 3 months of treatment, with statistical significance at 12 months in patients treated with anti-IL-5 and at 9 months in those treated with anti-IL-5R. In addition, better perceptions of asthma control and quality of life were observed, with significant differences at 6 and 12 months. Correlations between spirometry and ACT, ACQ, and AQLQ reflect a progressive recovery of well-being and function. Finally, the remission rate was 41.1% with anti-IL-5 treatment and 47.3% with anti-IL-5R treatment after one year of follow-up. These findings support the efficacy of anti-IL-5 and anti-IL-5R treatment in improving severe asthma control and patients' quality of life, suggesting their key role in disease remission.

Keywords: ACQ5; Anti-IL-5; Anti-IL5R; Asthma.

© 2025. The Author(s).

Conflict of interest statement

Declarations. Competing interests: The authors declare no competing interests.

- [44 references](#)
- [7 figures](#)

Full text links



[Proceed to details](#)

Cite

8

BMJ Paediatr Open

-
-
-

. 2025 Aug 13;9(1):e002892.

doi: 10.1136/bmjpo-2024-002892.

[Short-term effects of air pollution on childhood respiratory symptoms in general practice: a time-series analysis](#)

[Mata Sabine Fonderson](#)¹, [Evelien R van Meel](#)², [Saskia Willers](#)³, [P J E Bindels](#)², [A Burdorf](#)⁴, [A Bohnen](#)², [S van den Elshout](#)³

Affiliations Expand

- PMID: 40803866
- PMCID: [PMC12352254](#)
- DOI: [10.1136/bmjpo-2024-002892](#)

Abstract

Objective: To study the association between air pollutant concentrations and daily general practitioner (GP) consultations for respiratory problems in children in Rotterdam, Netherlands.

Design: A time-series study.

Setting: General practices in greater Rotterdam.

Patients: Children aged 0-17 years registered with participating GPs.

Exposure: Daily nitrogen dioxide (NO₂), ozone (O₃), particulate matter ≤2.5 µg/m³ (PM_{2.5}) and particulate matter ≤10 µg/m³ (PM₁₀) concentrations at GP addresses.

Main outcomes measured: Relative risk of respiratory consultations per 10 µg/m³ in pollutant concentration, adjusted for seasonality, pollen, day of the week and temperature.

Results: Over 100 000 consultations were analysed between 2015 and 2019. The baseline daily consultation rate was 18.12 per 1000 person-years. Children consulted their GP most frequently for acute upper respiratory infections (AURIs) (4.69 consultations per 1000 person-years), followed by asthma (3.68 consultations per 1000 person-years) and cough (2.31 consultations per 1000 person-years). Our results indicated that exposure to NO₂ was predominantly associated with a decreased risk of GP consultations across most lag periods for all respiratory diseases (ARD), AURIs and asthma. In contrast, exposure to NO₂ was generally associated with increased risk of GP consultations for cough. Conversely, exposure to O₃ was associated with statistically significant increases in risk for ARD across all lag periods. Exposure to PM_{2.5} and PM₁₀ showed opposite trends, with reduced risks in GP consultations for ARD and increased risks in consultations for AURI, asthma and cough.

Conclusions: Our findings expose a critical paradox on the impact of air pollution. For clinicians counselling families, these results emphasise that 'good' overall air quality days may still pose risks, although effects are small. High O₃ increases total respiratory visits while particulate matter, though appearing protective overall, specifically exacerbates AURIs, asthma and cough. This divergence between total and specific respiratory effects indicates that comprehensive air quality policies must consider pollutant-specific impacts rather than assuming uniform effects.

Keywords: Child Health; Epidemiology; Statistics.

© Author(s) (or their employer(s)) 2025. Re-use permitted under CC BY-NC. No commercial re-use. See rights and permissions. Published by BMJ Group.

Conflict of interest statement

Competing interests: There are no competing interests.

- [24 references](#)
- [2 figures](#)

Full text links



[Proceed to details](#)

Cite

9

Tuberc Respir Dis (Seoul)

-
-
-

. 2025 Aug 13.

doi: 10.4046/trd.2025.0107. Online ahead of print.

[To Achieve Asthma Remission, or to Achieve Asthma Control, That Is the Question in Asthma Treatment](#)

[Yeon-Mok Oh¹](#)

Affiliations Expand

- PMID: 40803579
- DOI: [10.4046/trd.2025.0107](#)

Free article

No abstract available

Full text links



[Proceed to details](#)

Cite

10

BMC Pulm Med

-
-
-

. 2025 Aug 12;25(1):387.

doi: 10.1186/s12890-025-03881-w.

[Predicting 30-day in-hospital mortality in ICU asthma patients: a retrospective machine learning study with external validation](#)

[Yuanshuo Ge](#) ^{#1}, [Guangdong Wang](#) ^{#2}, [Tingting Liu](#) ², [Wenwen Ji](#) ², [Jiaolin Sun](#) ³, [Yaxin Zhang](#) ⁴

Affiliations Expand

- PMID: 40797171
- PMCID: [PMC12341201](#)
- DOI: [10.1186/s12890-025-03881-w](#)

Abstract

Background: Asthma-related mortality in the intensive care unit (ICU) remains poorly characterized, with no existing predictive models specifically designed for this high-risk population. This study aimed to develop and externally validate a machine learning-based model to predict 30-day in-hospital mortality among ICU patients with asthma.

Methods: The model was developed using data from MIMIC-IV 2.2 and externally validated on a subset of MIMIC-IV 3.1. Clinical variables from the first 24 h of ICU admission were extracted. Feature selection was conducted using both LASSO regression and the Boruta algorithm. Seven machine learning algorithms were trained and evaluated using receiver operating characteristic (ROC) curves, calibration plots, and decision curve analysis. The best-performing model was identified based on internal and external validation results. SHapley Additive

exPlanations (SHAP) were employed to interpret feature importance. The final model was deployed as an interactive web-based tool.

Results: A total of 4385 ICU asthma patients were analyzed. The final XGBoost model, using 12 features, achieved the highest AUROC in both internal (0.83) and external (0.80) validation, and demonstrated the best calibration and net clinical benefit. SHAP analysis identified age, respiratory rate, RDW, urine output, and anion gap as top predictors. The model outperformed conventional ICU scores and is available as a web-based tool.

Conclusions: We developed and externally validated a robust prediction model for 30-day mortality in ICU patients with asthma. The model offers strong performance, interpretability, and clinical utility, supporting its use for real-time risk stratification and decision-making in critical care settings.

Keywords: Asthma; Intensive care unit; Machine learning; Mortality prediction; XGBoost.

© 2025. The Author(s).

Conflict of interest statement

Declarations. Ethics approval and consent to participate: The MIMIC-IV database adheres to the principles of the Helsinki Declaration and has been approved by the Institutional Review Board (IRB) of Beth Israel Deaconess Medical Center (2001P-001699/14). The IRB evaluated the data collection process and the creation of the research resource, authorized the data-sharing initiative, and exempted the need for informed consent. Consent for publication: Not applicable. Competing interests: The authors declare no competing interests.

- [36 references](#)
- [7 figures](#)

Full text links



[Proceed to details](#)

Cite

11

BMC Psychiatry

-
-
-

. 2025 Aug 12;25(1):786.

doi: 10.1186/s12888-025-07245-w.

[Association between depression and asthma: insight from observational and genetic evidence](#)

[Tanao Ji](#)¹, [Yue Lv](#)², [Jianan Yang](#)³, [Xianping Diao](#)³, [Jun Gu](#)⁴

Affiliations Expand

- PMID: 40796827
- PMCID: [PMC12341131](#)
- DOI: [10.1186/s12888-025-07245-w](#)

Abstract

Background: Depression and asthma share several pathophysiologic risk factors, and their precise connection remains unclear. Our research seeks to assess the relationship between depression and asthma.

Methods: The association between depression and asthma was assessed through a multivariable logistic regression analysis, with data sourced from The National Health and Nutrition Examination Survey (NHANES) 2007-2018 and the English Longitudinal Study of Ageing (ELSA) 2004-2019. Subsequently, a linkage disequilibrium score regression (LDSC) analysis was conducted to evaluate the genetic correlation between depression and asthma. Moreover, a two-sample Mendelian randomization (MR) analysis was conducted by employing genome-wide association study (GWAS) summary statistics by means of both univariable MR (UVMR) and multivariable MR (MVMR).

Results: This study included 31,434 participants from NHANES and 17,021 participants from ELSA for observational research. In the unadjusted model, participants with depression had a significantly increased risk of asthma in comparison to participants without depression, both in NHANES (OR = 2.002, 95%CI: 1.827-2.193, P < 0.001) and in ELSA (OR = 1.753, 95%CI: 1.581-1.943, P < 0.001). After adjusting potential confounders, the results remain significant. The LDSC result revealed a significant positive genetic correlation between depression and asthma ($r_g = 0.352$, P < 0.001). The UVMR results further substantiated a genetically predicted causality of depression on asthma (OR = 1.291, 95%CI: 1.157-1.442, P < 0.001), while the reverse causality does not stand. Similar findings from MVMR were obtained for the causality investigation after adjusting smoking (OR = 1.326, 95%CI: 1.156-1.520, P < 0.001), drinking (OR = 1.375, 95%CI: 1.186-1.593, P < 0.001), and education (OR = 1.425, 95%CI: 1.253-1.621, P < 0.001).

Conclusion: Our findings indicate that depression may play a contributory role in the development of asthma, underscoring the potential benefit of implementing prevention strategies aimed at managing depression to mitigate asthma risk.

Keywords: Asthma; Causal relationship; Depression; Mendelian Randomization; Observational study.

Conflict of interest statement

Declarations. Ethics approval and consent to participate: The NHANES protocol has received approval from the NCHS Ethics Review Committee. The ELSA study was approved by the London Multicenter Research Ethics Committee (MREC/01/2/91). All participants provided informed consent. The GWAS data was publicly available and ethics approval and informed consent were not required. **Consent for publication:** Not applicable. **Competing interests:** The authors declare no competing interests.

- [97 references](#)
- [4 figures](#)

Supplementary info

Grants and fundingExpand

Full text links



[Proceed to details](#)

Cite

12

Med Princ Pract

-
-
-

. 2025 Aug 12:1-13.

doi: 10.1159/000547902. Online ahead of print.

[Immunological Profile of Patients with Rheumatoid Arthritis and Asthma](#)

[Sana S Almutairi](#), [Fawaz Y Azizieh](#), [Adeeba A Al-Herz](#), [Tahany E Al-Shemary](#), [Ahmed R Alsaber](#), [Raj Raghupathy](#)

- PMID: 40795762
- DOI: [10.1159/000547902](#)

Free article

Abstract

Objectives: The aim of this study was to investigate cytokine profiles in patients with both rheumatoid arthritis (RA) and bronchial asthma (BA).

Methods: We studied 25 patients with RA, 25 with BA and 25 with both RA and BA (BARA). A respiratory questionnaire was completed by all the patients, they underwent spirometry and their production patterns of selected T helper (Th)1, Th2 and Th17 cytokines were assessed.

Results: BA patients had spirometry findings similar to BARA patients, while RA patients had normal spirometry. BA patients produced significantly higher levels of interleukin (IL)-5 ($p = 0.03$) and IL-10 ($p = 0.03$) than patients with RA. Median levels of IL-17A and IL-17F, and interferon (IFN)- γ were higher ($p = 0.001$, 0.004 and 0.04) in RA patients than in BA patients. No differences were seen in the levels of cytokines produced by BA patients compared to BARA patients. IL-4 and IL-10 levels were higher ($p = 0.04$ and 0.03) in BARA patients than in RA patients, while levels of IL-17A and IFN- γ were higher ($p = 0.037$ and 0.009 respectively) in RA patients than in BARA patients. Ratios of Th1/Th2 and Th17/Th2 cytokines in most combinations were different between RA and BA, and between RA and BARA, but were similar in BA and BARA.

Conclusions: Patients with both BA and RA have a Th2-dominant cytokine profile unlike patients with RA alone. These observations contribute to a better understanding of the immunopathogenesis of these diseases and for the management of patients using cytokine-based therapies.

The Author(s). Published by S. Karger AG, Basel.

Full text links



[Proceed to details](#)

Cite

13

Review

Cochrane Database Syst Rev

-
-
-

. 2025 Aug 12;8(8):CD013396.

doi: 10.1002/14651858.CD013396.pub2.

[Vitamin D supplementation in pregnant or breastfeeding women or young children for preventing asthma](#)

[Bonnie K Patchen](#)^{1,2}, [Cora M Best](#)^{1,3}, [Jocelyn Boiteau](#)⁴, [Beate Stokke Solvik](#)^{5,6}, [Alexander Vonderschmidt](#)^{1,7}, [Jiayi Xu](#)^{1,8}, [Robyn T Cohen](#)^{9,10}, [Patricia A Cassano](#)^{1,11,12,13}

Affiliations Expand

- PMID: 40792481
- PMCID: PMC12341026 (available on 2026-08-12)
- DOI: [10.1002/14651858.CD013396.pub2](https://doi.org/10.1002/14651858.CD013396.pub2)

Abstract

Background: Randomised controlled studies evaluating vitamin D supplementation in pregnancy or early childhood for preventing childhood asthma have yielded inconclusive results. Previous systematic reviews of vitamin D for asthma prevention focused on studies comparing vitamin D to placebo or studies intervening in pregnancy, limiting the body of evidence.

Objectives: Primary: to evaluate the efficacy of any vitamin D supplementation and high-dose vitamin D supplementation in early life, including the prenatal period, for preventing asthma in children. Secondary: to assess the efficacy of vitamin D supplementation: • for preventing asthma in children at risk of vitamin D deficiency at the start of the trial or whose mothers were at risk; • by intervention timing and the cumulative dose administered; • in preventing factors associated with early childhood asthma, including atopic dermatitis, respiratory tract infections, sensitisation to allergens, and airway inflammation.

Search methods: We searched CENTRAL, MEDLINE, Embase, ClinicalTrials.gov, the International Clinical Trials Registry Platform, and the Cochrane Airways and Skin Trial Registers. We checked the reference lists of relevant systematic reviews and meta-analyses. We contacted authors to obtain additional study information as needed. Date of last search: October 2023.

Selection criteria: We included randomised controlled studies comparing higher versus lower/standard dose vitamin D (≤ 400 international units (IU)/day) or any vitamin D versus placebo/no treatment in generally healthy pregnant or lactating women or children up to five years of age that evaluated childhood asthma, wheeze, atopic dermatitis, airway infections, allergic sensitisation, and airway inflammation. We excluded trials recruiting populations with pre-existing conditions.

Data collection and analysis: We followed standard Cochrane methodological procedures, including using Cochrane's Screen4Me workflow. We considered participants rather than events as the unit of analysis, performed fixed-effect meta-analysis, and reported risk ratios (RRs) or mean differences (MDs) with 95% confidence intervals (CIs) for four comparisons: (1) any vitamin D versus placebo/no supplementation in pregnant or breastfeeding women; (2) any vitamin D versus placebo/no supplementation in infants or children; (3) high versus low/standard dose vitamin D in pregnant or breastfeeding women; (4) high versus low/standard dose vitamin D in infants or children. Our outcomes were: asthma,

wheeze, atopic dermatitis, airway infections, allergic sensitisation, airway inflammation, and adverse events. We narratively described results that could not be meta-analysed. We used the Cochrane risk of bias tool (RoB) to assess bias in the studies. We used GRADE to assess the certainty of the evidence.

Main results: We included 18 studies involving a total of 10,611 participants, of which 16 contributed data to meta-analyses. Studies were conducted around the world, with most taking place in higher-income countries. The dose and frequency of vitamin D ranged from 200 IU/day to 100,000 IU bolus quarterly, and the duration of supplementation ranged from 28 days to two years. **Comparison 1. Any vitamin D versus placebo/no supplementation in pregnant or breastfeeding women (4 studies)** Compared to placebo or no supplementation, any vitamin D given to pregnant or breastfeeding women may reduce the risk of early childhood asthma (RR 0.17, 95% CI 0.05 to 0.61; 1 study, 236 participants; low-certainty evidence) and likely has little to no effect on childhood airway infections (RR 1.00, 95% CI 0.97 to 1.04; 3 studies, 1564 participants; moderate-certainty evidence). The evidence is very uncertain for wheeze, atopic dermatitis, allergic sensitisation, airway inflammation, or adverse events. **Comparison 2. Any vitamin D versus placebo/no supplementation in infants or children (5 studies)** Compared to placebo or no supplementation, any vitamin D given to infants or children may have little to no effect on childhood wheeze (RR 0.89, 95% CI 0.68 to 1.16; 2 studies, 431 participants; low-certainty evidence), atopic dermatitis (RR 1.01, 95% CI 0.80 to 1.28; 2 studies, 448 participants; low-certainty evidence), airway infections (RR 0.92, 95% CI 0.83 to 1.01; 2 studies, 500 participants; low-certainty evidence), allergic sensitisation (RR 2.25, 95% CI 0.60 to 8.50; 1 study, 228 participants; low-certainty evidence), or airway inflammation measured by eosinophil counts (RR 1.06, 95% CI 0.65 to 1.74; 1 study, 226 participants; low-certainty evidence). The evidence is very uncertain for asthma and adverse events. **Comparison 3. High versus low/standard dose vitamin D in pregnant or breastfeeding women (4 studies)** Compared to low/standard dose, high-dose vitamin D given to pregnant or breastfeeding women likely reduces the risk of childhood wheeze (RR 0.79, 95% CI 0.64 to 0.98; 3 studies, 1439 participants; moderate-certainty evidence), but likely results in little to no difference in childhood asthma, although the direction and magnitude of effect is similar to that for wheeze (RR 0.81, 95% CI 0.63 to 1.04; 2 studies, 1355 participants; moderate-certainty evidence). Compared to low/standard dose, high-dose vitamin D in pregnancy likely has little to no effect on childhood atopic dermatitis (RR 0.91, 95% CI 0.75 to 1.11; 3 studies, 1439 participants; moderate-certainty evidence), airway infections (RR 0.95, 95% CI 0.82 to 1.11; 3 studies, 1441 participants; moderate-certainty evidence), or allergic sensitisation (RR 1.01, 95% CI 0.87 to 1.18; 2 studies, 1110 participants; moderate-certainty evidence). The evidence is very uncertain for adverse events. No studies evaluated airway inflammation. **Comparison 4. High versus low/standard dose vitamin D in infants or children (7 studies)** Compared to low/standard dose, high-dose vitamin D given to infants or children may slightly reduce airway infections (RR 0.94, 95% CI 0.90 to 0.98; 6 studies, 2385 participants; low-certainty evidence) but may have little to no effect on atopic dermatitis (RR 0.76, 95% CI 0.55 to 1.05; 1 study, 769 participants; low-certainty evidence). The evidence is very uncertain for asthma, wheeze, allergic sensitisation, and adverse events. No studies evaluated airway inflammation.

Authors' conclusions: Evidence supporting a protective effect of vitamin D supplementation in early life, including the prenatal period, on childhood asthma is limited. Moderate-certainty evidence suggests that high-dose vitamin D in

pregnancy likely helps prevent childhood wheeze. Evidence for the effects of vitamin D in early childhood on asthma or wheeze is less certain. Additional high-quality studies, especially in infants and children, are needed to establish with any certainty the effects of vitamin D supplementation on childhood asthma and associated factors.

Copyright © 2025 The Cochrane Collaboration. Published by John Wiley & Sons, Ltd.

Conflict of interest statement

BP: National Institute of Diabetes and Digestive and Kidney Diseases (Grant / Contract)

PAC: none known.

CB: none known.

JB: none known.

BS: none known.

AV: none known.

JX: none known.

RC: SANOFI US SERVICES INC. (Independent Contractor - Consultant; Independent Contractor - Data Safety and Monitoring).

Update of

- doi: 10.1002/14651858.CD013396
- [225 references](#)

Supplementary info

Publication types, MeSH terms, SubstancesExpand

Full text links



[Proceed to details](#)

Cite

14

Editorial

ERJ Open Res

•

-
-

. 2025 Aug 11;11(4):00437-2025.

doi: 10.1183/23120541.00437-2025. eCollection 2025 Jul.

[Trajectories of gut microbiota and nonatopic wheeze: an early-life microbial footprint on preschool asthma](#)

[Hideaki Miyachi](#)¹, [Heidi Makrinioti](#)²

Affiliations Expand

- PMID: 40791920
- PMCID: [PMC12336993](#)
- DOI: [10.1183/23120541.00437-2025](#)

Abstract

Early-life gut microbial trajectories are associated with nonatopic preschool asthma and are possibly modified by breastfeeding practices <https://bit.ly/4jNAPgl>.

Copyright ©The authors 2025.

Conflict of interest statement

Conflict of interest: H. Makrinioti is an associate editor of this journal. H. Miyachi has no conflicts of interest to declare.

- [11 references](#)
- [1 figure](#)

Supplementary info

Publication typesExpand

Full text links



[Proceed to details](#)

Cite

15

NPJ Prim Care Respir Med

-

-
-

. 2025 Aug 11;35(1):38.

doi: 10.1038/s41533-025-00445-7.

[Using 21st century diagnostics to overcome barriers for lung function testing in primary care: it is time to consider oscillometry](#)

[Janwillem W H Kocks](#)^{1 2 3 4}, [Grietje H Prins](#)⁵, [Samuel Bardsley](#)^{5 6 7}, [Deesha Ghorpade](#)⁸, [Sundeep Salvi](#)^{8 9}

Affiliations Expand

- PMID: 40789859
- PMCID: [PMC12339983](#)
- DOI: [10.1038/s41533-025-00445-7](#)

Abstract

Obstructive airways diseases, including asthma and COPD as the most commonly encountered respiratory diseases in primary care, are both diagnosed by lung function testing using spirometry as the gold standard. However, this test is not always available in primary care practices and if it is, it is a difficult test to perform, requiring extensive operator training and patient co-operation with multiple forced manoeuvres. These barriers can lead to underdiagnosis and misdiagnosis, which further contributes to increased suffering and mortality associated with asthma and COPD. Oscillometry uses oscillating pressure waves to measure airflow obstruction and provides an alternative diagnostic test which is quicker and simpler than spirometry, requiring little training and no forced manoeuvres. Moreover, it provides additional aspects of lung function measurement which are not obtained by spirometry, making it a valuable option in primary care for diagnosing asthma and COPD.

Conflict of interest statement

Competing interests: G.H.P., D.G. and S.S. declare no competing interests. J.W.H.K. reports grants, personal fees and non-financial support from AstraZeneca, grants, personal fees and non-financial support from Boehringer Ingelheim, grants and personal fees from Chiesi, grants personal fees and non-financial support from GSK, non-financial support from Mundi Pharma, grants and personal fees from Teva, personal fees from MSD, personal fees from COVIS Pharma, grants from Valneva outside the submitted work, and holds <5% shares of Lothar Medtec GmbH and the majority of shares in the General Practitioners Research Institute. S.B. is a PhD student at GPRI and the UMCG and an employee of AstraZeneca and holds AstraZeneca stocks/shares.

- [14 references](#)

Supplementary info

Publication types [Expand](#)

Full text links

nature portfolio 

[Proceed to details](#)

Cite

16

Ann Am Thorac Soc

-
-
-

. 2025 Aug 11.

doi: [10.1513/AnnalsATS.202412-1329OC](https://doi.org/10.1513/AnnalsATS.202412-1329OC). Online ahead of print.

[Cough in Adults with Undiagnosed Respiratory Symptoms](#)

[Sheojung Shin](#)^{1,2}, [Jessica Poliwoda](#)³, [G A Whitmore](#)⁴, [Katherine L Vandemheen](#)⁵, [Celine Bergeron](#)^{6,7}, [Louis-Philippe Boulet](#)⁸, [Andréanne Côté](#)⁹, [Stephen K Field](#)¹⁰, [Erika Penz](#)¹¹, [R Andrew McIvor](#)¹², [Catherine Lemière](#)¹³, [Samir Gupta](#)¹⁴, [Paul Hernandez](#)¹⁵, [Irvin Mayers](#)¹⁶, [Mohit Bhutani](#)¹⁷, [M Diane Lougheed](#)¹⁸, [Christopher J Liczkai](#)¹⁹, [Tanweer Azher](#)²⁰, [Nicole Ezer](#)^{21,22}, [Martha Ainslie](#)²³, [Tetyana Kendzerska](#)^{24,25}, [Gonzalo G Alvarez](#)⁵, [Sunita Mulpuru](#)^{26,27}, [Shawn D Aaron](#)²⁸

Affiliations [Expand](#)

- PMID: [40788604](https://pubmed.ncbi.nlm.nih.gov/40788604/)
- DOI: [10.1513/AnnalsATS.202412-1329OC](https://doi.org/10.1513/AnnalsATS.202412-1329OC)

Abstract

Rationale: Cough is a common symptom of undiagnosed respiratory conditions.

Objective: To investigate cough in adults with undiagnosed respiratory symptoms and its association with quality of life (QoL), sleep quality, and healthcare utilization for respiratory illness.

Methods: We used a case-finding strategy to find community-dwelling adults with respiratory symptoms but no previous history of diagnosed lung disease. Pre- and post-bronchodilator spirometry determined if participants met diagnostic criteria for asthma, chronic obstructive pulmonary disease (COPD), preserved ratio impaired spirometry (PRISm), or if they had normal spirometry. Twelve questions from the

Asthma Screening Questionnaire, COPD Assessment Test, and the St. George's Respiratory Questionnaire were used to develop a cough score. The 36-Item Short Form Survey (SF-36) and Global Sleep Assessment Questionnaire (GSAQ) were used to assess QoL and sleep quality, respectively.

Results: Adults with undiagnosed respiratory symptoms (N=2857, mean score 57.8, 95%CI 56.9-58.6) reported higher cough scores than age-matched controls (N=231, mean score 17.7, 95%CI 15.6-19.8). Participants found to have asthma (N=265, mean score 61.0, 95%CI 58.2-63.7) and COPD (N=330, mean score 61.8, 95%CI 59.3 to 64.3) had higher cough scores than those with PRISm (N=172, mean score 54.5, 95%CI 51.1-58.0) or normal spirometry (N=2090, mean score 57.0, 95%CI 56.0-58.0). Higher cough scores were associated with decreased QoL (lower SF-36 score, regression coefficient -0.19; 95%CI -0.22 to -0.17, P <0.001), worse sleep quality (higher GSAQ score, regression coefficient 0.16, 95%CI 0.14-0.18, P <0.001), and higher healthcare utilization for respiratory illness (incidence rate ratio 1.007, 95%CI 1.004-1.010, P <0.001).

Conclusions: In adults with undiagnosed respiratory symptoms, cough was most severe in those with undiagnosed asthma or COPD and was independently associated with worse quality of life, impaired sleep quality, and higher healthcare utilization for respiratory illness.

Full text links



[Proceed to details](#)

Cite

17

Curr Med Res Opin

-
-
-

. 2025 Aug 11:1-15.

doi: 10.1080/03007995.2025.2545493. Online ahead of print.

[Prompt initiation of single-inhaler budesonide/glycopyrrolate/formoterol fumarate \(BGF\) following a COPD exacerbation reduces exacerbations and cardiopulmonary risk in patients with COPD: insights from the MITOS EROS + CP Study in the United States](#)

[Michael Pollack](#)¹, [Joseph Tkacz](#)², [Jill Schinkel](#)², [Barnabie Agatep](#)², [Edward Portillo](#)³, [Hayley D Germack](#)⁴, [Michael G Crooks](#)⁵, [Charlie Strange](#)⁶, [Jonathan Marshall](#)⁷, [Hana Mullerova](#)⁸

Affiliations Expand

- PMID: 40785459
- DOI: [10.1080/03007995.2025.2545493](https://doi.org/10.1080/03007995.2025.2545493)

Abstract

Objective: To investigate the association between the timing of single-inhaler triple therapy Budesonide/Glycopyrrolate/Formoterol Fumarate (BGF) initiation following a COPD exacerbation and subsequent COPD exacerbations and non-fatal cardiopulmonary events.

Methods: This was a retrospective analysis of the Inovalon MORE² Registry and Medicare Fee-for-Service claims databases spanning July 1, 2019 to May 31, 2023. Eligible patients with COPD were aged ≥ 40 years, and initiated BGF treatment within 1-year of a qualifying COPD exacerbation (index event) with 12 months of baseline enrollment. Secondary study populations included patients escalating from dual therapy and patients with comorbid asthma. Negative binomial regressions were used to evaluate the adjusted risks for subsequent annualized exacerbations and cardiopulmonary events based on the timing of BGF initiation: prompt (≤ 30 days), delayed (31-180 days), and very delayed (181-365 days).

Results: Among 25,603 patients included, 14.8% were prompt, 37.7% delayed, and 47.5% very delayed initiators. Mean age was 60.3 years and 64.3% were female. Among the 10,630 cardiopulmonary events observed, 63% were cardiovascular-related. During follow-up, prompt initiators had 25.7% (adjIR_D: 0.74 [0.72-0.77]) and 30.6% (adjIR_{VD}: 0.69 [0.67-0.72]) lower risk of subsequent annualized exacerbations compared to delayed and very delayed initiators, respectively. Additionally, prompt initiators had 16.3% (adjIR_D: 0.84 [0.77-0.91]) and 17.5% (adjIR_{VD}: 0.83 [0.77-0.89]) lower risk of cardiopulmonary events, respectively. Similar results were observed for patients escalating from dual therapy and those with asthma.

Conclusions: Prompt initiation of BGF following a COPD exacerbation, including among patients previously managed with dual therapy, was associated with lower annualized rates of cardiopulmonary and exacerbation events.

Keywords: COPD; budesonide/glycopyrrolate/formoterol fumarate; exacerbations; prompt therapy; triple therapy.

Full text links



[Proceed to details](#)

Cite

18

BJOG

-
-

•
. 2025 Aug 11.

doi: 10.1111/1471-0528.18320. Online ahead of print.

Metformin Treatment in PCOS Pregnancies Reduces Maternal Infections and Increases the Risk of Allergies and Eczema in the Offspring: Post Hoc Analyses of Two Randomised Controlled Trials and One Follow-Up Study

Mariell Ryssdal¹, Johanne E Skage¹, Anders H Jarmund¹, Liv Guro E Hanem², Tone S Løvvik^{1,3}, Guro F Giskeødegård⁴, Ann-Charlotte Iversen^{1,3}, Eszter Vanky^{1,3}

Affiliations Expand

• PMID: 40785326

• DOI: [10.1111/1471-0528.18320](https://doi.org/10.1111/1471-0528.18320)

Abstract

Objective: To evaluate the effect of metformin on immunological outcomes in pregnant women with polycystic ovary syndrome (PCOS) and their offspring.

Design: Post hoc analyses of two randomised controlled trials (PregMet and PregMet2) and one follow-up study (PedMet).

Setting: Women followed at multiple hospitals in Norway, Sweden and Iceland, and offspring followed at multiple hospitals in Norway.

Population or sample: Pregnant women with PCOS, randomised to metformin or placebo from the first trimester to delivery, and offspring exposed to metformin or placebo in utero.

Methods: Maternal infections and allergic diseases in offspring were compared using logistic regression. Maternal body mass index (BMI), offspring BMI z-score and maternal infections were evaluated as effect modifiers or mediators.

Main outcome measures: Incidence of maternal infections during pregnancy, delivery, and postpartum, and allergic diseases in offspring at 8-year follow-up.

Results: Altogether 634 women and 145 offspring were included. Women treated with metformin experienced fewer overall infections during pregnancy (OR = 0.68, 95% CI: 0.50-0.93), particularly viral infections (OR = 0.71, 95% CI: 0.51-0.99). Offspring exposed to metformin in utero had a higher incidence of allergies (OR = 4.83, 95% CI: 1.47-21.8) and eczema (OR = 2.42, 95% CI: 1.14-5.33). Maternal BMI did not modify the effect of metformin, and offspring BMI z-score or maternal infections did not mediate the relationship between metformin treatment and increased allergies and eczema in offspring.

Conclusions: Metformin treatment in pregnant women with PCOS reduced maternal infections during pregnancy and increased the incidence of allergies and eczema in offspring at 8-year follow-up.

Trial registration: [ClinicalTrials.gov](https://clinicaltrials.gov)

identifiers: [NCT03259919](#), [NCT00159536](#) and [NCT01587378](#).

Keywords: allergy; asthma; eczema; infections; metformin; polycystic ovary syndrome; pregnancy.

© 2025 The Author(s). *BJOG: An International Journal of Obstetrics and Gynaecology* published by John Wiley & Sons Ltd.

- [47 references](#)

Supplementary info

Associated data, Grants and funding [Expand](#)

Full text links



[Proceed to details](#)

Cite

19

Editorial

Expert Rev Respir Med

-
-
-

. 2025 Aug 11:1-4.

doi: [10.1080/17476348.2025.2546611](https://doi.org/10.1080/17476348.2025.2546611). Online ahead of print.

[Breastfeeding, lung development and asthma](#)

[Sergio Verd](#)^{1,2}

Affiliations [Expand](#)

- PMID: 40785289
- DOI: [10.1080/17476348.2025.2546611](https://doi.org/10.1080/17476348.2025.2546611)

No abstract available

Keywords: Asthma; Mendelian randomization analysis; breastfeeding; children; prevention.

Supplementary info

Publication types [Expand](#)

Full text links



[Proceed to details](#)

Cite

20

Thorax

-
-
-

. 2025 Aug 10:thorax-2024-222570.

doi: 10.1136/thorax-2024-222570. Online ahead of print.

[Nocturnal gastro-oesophageal reflux and pulmonary abnormalities on chest CT in a general population: the Swedish CARDioPulmonary BioImage Study](#)

[Össur Ingi Emilsson](#)^{1,2}, [Andrei Malinovschi](#)³, [Åse Johnsson](#)^{4,5}, [Mirjam Ljunggren](#)⁶, [Anders Blomberg](#)⁷, [Ida Pesonen](#)^{8,9}, [Magnus Sköld](#)^{8,9}, [Zainab Ahmadi](#)¹⁰, [Anna Moberg](#)^{11,12}, [Tomas Hansen](#)¹³

Affiliations [Expand](#)

- PMID: 40784748
- DOI: [10.1136/thorax-2024-222570](#)

Free article

Abstract

Background: Nocturnal gastro-oesophageal reflux (nGER) is common in people with respiratory diseases, but its association with pulmonary abnormalities is not known.

Aim: Investigate the association between nGER and pulmonary abnormalities on chest CT in an adult general population.

Methods: In total, 28 846 individuals from the general population aged 50-64 years completed questionnaires and underwent chest CT, in the Swedish CARDioPulmonary BioImage Study (www.scapis.org). Participants with nGER symptoms on ≥ 1 night per week were defined as having nGER. Chest CT was evaluated for bronchial wall thickening, bronchiectasis, reticular abnormalities,

honeycombing, cysts and ground glass opacities. Ever-smoking, current asthma, inflammatory bowel disease and autoimmune disease were defined as risk factors for pulmonary abnormalities. Analyses were adjusted for sex, age, body mass index, education level and study centre.

Results: The prevalence of nGER was 9.4%. Among participants with risk factors for pulmonary abnormalities (n=4004), having nGER was positively associated with bronchial wall thickening (adjusted OR (aOR) (95% CI): 1.25 (1.07 to 1.48)) and reticular abnormalities (aOR (95% CI): 1.51 (1.04 to 2.17)), but negatively associated with cysts (aOR (95% CI): 0.68 (0.48 to 0.97)). Among participants without risk factors for CT abnormalities (n=2555), nGER did not relate with pulmonary abnormalities.

Conclusions: In a middle-aged general population, nGER was not associated with pulmonary abnormalities on chest CT. However, in the presence of other risk factors for pulmonary abnormalities, nGER was associated with bronchial wall thickening and reticular abnormalities. Persons with nGER and risk factors for pulmonary abnormalities should, therefore, be evaluated for respiratory disease and treated appropriately.

Keywords: Bronchiectasis; Imaging/CT MRI etc; Interstitial Fibrosis.

© Author(s) (or their employer(s)) 2025. Re-use permitted under CC BY. Published by BMJ Group.

Conflict of interest statement

Competing interests: ÖIE reports fees from Boehringer Ingelheim, MSD and AstraZeneca for advisory boards and lectures, unrelated to this publication. IP reports fees from Boehringer Ingelheim for lectures and participation on advisory boards. MS reports research grants from Boehringer Ingelheim for pulmonary fibrosis research, payments for lectures and educational activities related to pulmonary fibrosis, and participation on advisory boards related to pulmonary fibrosis. Other authors have no conflicts of interest related to this work.

Full text links



[Proceed to details](#)

Cite

21

Review

Expert Rev Respir Med

-
-

•

. 2025 Aug 11:1-13.

doi: 10.1080/17476348.2025.2545571. Online ahead of print.

[Mepolizumab for severe eosinophilic asthma](#)

[Maria Kallieri](#)¹, [Andriana I Papaioannou](#)², [Stelios Loukides](#)¹

Affiliations Expand

- PMID: 40782356
- DOI: [10.1080/17476348.2025.2545571](https://doi.org/10.1080/17476348.2025.2545571)

Abstract

Introduction: Severe eosinophilic asthma is a distinct asthma phenotype that is characterized by elevated blood eosinophils, frequent exacerbations and dependence on treatment with systemic corticosteroids. The development of Mepolizumab, a monoclonal antibody that targets Interleukin 5, has significantly transformed the therapeutic approach of patients with severe eosinophilic asthma.

Areas covered: This review explores the clinical development, efficacy, effectiveness and safety profile of mepolizumab. It also discusses emerging evidence on mepolizumab's role in achieving clinical remission and modifying airway remodeling. A literature search was conducted using PubMed database for articles published before June 2025, including randomized controlled trials, observational studies, and mechanistic investigations.

Expert opinion: Personalized medicine is an emerging field in treatment of severe eosinophilic asthma with the development of biologic agents. Mepolizumab has shown significant benefits in patients with severe eosinophilic asthma (reducing asthma exacerbations, improving quality of life and lung function), while remission has emerged as a treatment goal in some patients. The impact of mepolizumab in airway remodeling suggests its use as a disease modifying therapy not just as a symptom controller.

Keywords: Airway remodeling; anti-IL5 treatment; exacerbations; lung function; mepolizumab; remission; severe eosinophilic asthma.

Supplementary info

Publication typesExpand

Full text links



View full text

UNIMORE

[Proceed to details](#)

Cite

J Asthma

-
-
-

. 2025 Aug 14:1-10.

doi: 10.1080/02770903.2025.2539810. Online ahead of print.

[Comparing the effects of two low-dose budesonide suspension nebulization treatments on asthma among young children: a multicenter study](#)

[Pingbo Zhang^{1,2}](#), [Yixiao Bao²](#), [Xiaojian Zhou³](#), [Yanming Lu⁴](#), [Bo Ding⁴](#), [Li Hua⁵](#), [Lili Zhong⁶](#), [Dan Liu⁶](#), [Jing Liu⁷](#), [Deyu Zhao⁸](#), [Zhongping Zhang⁹](#), [Lina Zhen¹⁰](#), [Suping Tang¹¹](#), [Wenhui Jiang¹²](#), [Caifeng Zhang¹²](#), [Zhou Fu¹³](#), [Zehui Ye¹³](#), [Li Dong¹⁴](#), [Rongfang Zhang¹⁵](#), [Xuan Liang¹⁵](#), [Ning Wang¹⁶](#), [Long Zhao¹⁶](#), [Ya Luo¹⁷](#), [Zhaobo Shen¹⁸](#), [Ping Kang¹⁸](#), [Mengli Ren¹⁹](#), [Jie Shao^{1,20}](#)

Affiliations Expand

- PMID: 40736364
- DOI: [10.1080/02770903.2025.2539810](#)

Abstract

Objective: To evaluate the effects of treatment with nebulized budesonide inhalation suspension (BIS) at dosages of 500 µg/day and 250 µg/day on mild to moderate asthma in young children.

Methods: This was a randomized, parallel group, open-label study at 19 Chinese clinical sites. A total of 340 patients (4-7 years) with mild to moderate persistent pediatric asthma were randomly and evenly divided into the 500-µg group (BIS 500 µg/day) and the 250-µg group (BIS 250 µg/day); 323 patients completed the study. The Children-Asthma Control Test (C-ACT), asthma control, Pediatric Asthma Quality of Life Questionnaire (PAQLQ), pulmonary function tests (PFT), additional asthma-related therapy, and adverse effects (AEs) were compared after 1, 3, and 6 months of treatment between groups.

Results: There were no statistically significant differences in C-ACT scores, level of asthma control, PAQLQ scores, PFT parameters, additional medications and AE occurrences from baseline to 6 months post-treatment between the two groups (all $p > 0.05$). Compared with baseline values, both groups showed improvements in C-ACT and PAQLQ scores, the rate of well-controlled asthma, and PFT parameters (all $p < 0.05$). The cumulative number of unplanned outpatient visits (50 vs. 49) and hospitalizations (3 vs. 0) in the 250-µg group was higher than that in the 500-µg group ($p < 0.05$).

Conclusions: The lower dosage of 250 µg/day BIS was found to be as effective as 500 µg/day BIS. For young children with mild to moderate persistent asthma who have well-controlled, a lower dose of BIS treatment can be chosen.

Keywords: Pediatric asthma; budesonide inhalation suspension; low-dose; mesh nebulizer; nebulization.

Full text links



[Proceed to details](#)

Cite

23

Sci Total Environ

-
-
-

. 2025 Aug 15:990:179887.

doi: 10.1016/j.scitotenv.2025.179887. Epub 2025 Jun 16.

[Children's environmental and occupational exposures to pesticides in low- and middle-income countries rural areas - an elephant in the room](#)

[Rafael Buralli](#)¹, [Siti Nurshahida Nazli](#)², [Leonel Cordoba](#)³, [Lesliam Quiros-Alcala](#)⁴, [Carly Hyland](#)⁵, [María Teresa Muñoz-Quezada](#)⁶, [Paulina Farías](#)⁷, [Alexis J Handal](#)⁸

Affiliations Expand

- PMID: 40527261
- DOI: [10.1016/j.scitotenv.2025.179887](https://doi.org/10.1016/j.scitotenv.2025.179887)

Abstract

In rural areas of Low- and Middle-Income Countries, children are regularly exposed to pesticides through various environmental, para-occupational, and occupational pathways, often connected to family-based agricultural activities. Work and living spaces are commonly intertwined, increasing the likelihood of unintentional pesticide exposure among children, including before birth. This commentary explores how such wide-spread exposures to these pervasive chemicals occur - even before birth, and affect critical aspects of child health and development through life. Using the history of Zeca, a child living in rural Brazil whose asthma worsens due to pesticide applications near his home, this discussion paper illustrates how this critical issue is deeply embedded in daily life in many

agricultural communities. However, these risks are frequently overlooked in clinical assessments, health surveillance, and policy responses. We discuss how broader structural conditions contribute to children's exposure to pesticides, including poverty, lack of healthcare access, weak surveillance or enforcement of occupational and environmental protections, and the chemical colonialism. These patterns reflect entrenched social and environmental injustices that disproportionately affect rural children. Thus, we call for a coordinated and systemic response involving stronger regulation, enhanced health surveillance and management, support for safer and more sustainable agricultural practices, and the inclusion of rural communities in decision-making processes. The protection of children from harmful pesticide exposure must be recognized as a public health priority and a matter of social and environmental justice.

Copyright © 2025 Elsevier B.V. All rights reserved.

Conflict of interest statement

Declaration of competing interest The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

Supplementary info

MeSH terms, SubstancesExpand

Full text links



[Proceed to details](#)

Cite

24

J Infect Dis

-
-
-

. 2025 Aug 14;232(2):e193-e202.

doi: 10.1093/infdis/jiae467.

[Genetic Susceptibility to Acute Viral Bronchiolitis](#)

[Anu Pasanen](#)^{1,2,3}, [Minna K Karjalainen](#)^{2,4}, [Matti Korppi](#)^{5,6}, [Mikko Hallman](#)^{1,2,3}, [Mika Rämö](#)^{1,2,3,6}; [Research Project FinnGen](#)

Collaborators, Affiliations Expand

- PMID: 39299705

- PMID: [PMC12349955](#)
- DOI: [10.1093/infdis/jiae467](#)

Abstract

Background: Acute viral bronchiolitis is a major cause of infant hospitalizations worldwide. Childhood bronchiolitis is considered a risk factor for asthma, suggesting shared genetic factors and biological pathways. Genetic risk loci may provide new insights into disease pathogenesis.

Methods: We conducted a genome-wide association study to examine the genetic contributions to bronchiolitis susceptibility in the FinnGen project data. We analyzed 1465 infants hospitalized for bronchiolitis who were <2 years of age and 356 404 individuals without a history of acute lower respiratory infections.

Results: The genome-wide association study identified associations ($P < 5 \times 10^{-8}$) for variants in gasdermin B (GSDMB) and a missense variant in cadherin-related family member 3 (CDHR3). Children with bronchiolitis in infancy were more likely to develop asthma later in life as compared with controls. The 2 associated loci were previously linked to asthma and susceptibility to wheezing illness by causative agents other than respiratory syncytial virus (RSV). The identified loci were associated with overall bronchiolitis, with larger effects in non-RSV than RSV-induced infection.

Conclusions: Our results suggest that genetic variants in CDHR3 and GSDMB modulate susceptibility to bronchiolitis, especially when caused by viruses other than RSV. Severe bronchiolitis in infancy may trigger the development of asthma in genetically susceptible individuals, or it could be a marker of genetic predisposition to asthma.

Keywords: CDHR3; GSDMB; asthma; bronchiolitis; genetic risk factors.

© The Author(s) 2024. Published by Oxford University Press on behalf of Infectious Diseases Society of America.

Conflict of interest statement

Potential conflicts of interest. All authors: No reported conflicts.

Comment in

- [Characterizing the Genetics of Bronchiolitis by Viral Etiology: Is There a Shared Role in Asthma Development?](#)

Snyder BM, Hartert TV. *J Infect Dis.* 2025 Aug 14;232(2):e186-e188. doi: 10.1093/infdis/jiae468. PMID: 39295539 No abstract available.

- [Cited by 2 articles](#)
- [50 references](#)

- [4 figures](#)

Supplementary info

Grants and funding [Expand](#)

Full text links



[Proceed to details](#)

Cite

25

Editorial

J Infect Dis

-
-
-

. 2025 Aug 14;232(2):e186-e188.

doi: [10.1093/infdis/jiae468](https://doi.org/10.1093/infdis/jiae468).

[Characterizing the Genetics of Bronchiolitis by Viral Etiology: Is There a Shared Role in Asthma Development?](#)

[Brittney M Snyder](#)¹, [Tina V Hartert](#)^{1 2}

Affiliations [Expand](#)

- PMID: [39295539](https://pubmed.ncbi.nlm.nih.gov/39295539/)
- DOI: [10.1093/infdis/jiae468](https://doi.org/10.1093/infdis/jiae468)

No abstract available

Keywords: bronchiolitis; childhood asthma; genetics; human rhinovirus; respiratory syncytial virus.

Conflict of interest statement

Potential conflicts of interest. T. V. H. reports grants from the NIH paid to her institution. Personal fees for NIH/NHLBI council member, co-chair of the American Thoracic Society Vaccine and Immunization initiative; Parker B. Francis council of scientific advisors grant reviewer, UpToDate content writer, speaker honorarium from the AAAAI, member data safety and monitoring board for Pfizer. Both authors have submitted the ICMJE Form for Disclosure of Potential Conflicts of Interest.

Conflicts that the editors consider relevant to the content of the manuscript have been disclosed.

Comment on

- [Genetic Susceptibility to Acute Viral Bronchiolitis.](#)

Pasanen A, Karjalainen MK, Korppi M, Hallman M, Rämetsä M; Research Project FinnGen. *J Infect Dis.* 2025 Aug 14;232(2):e193-e202. doi: 10.1093/infdis/jiae467.PMID: 39299705 Free PMC article.

Supplementary info

Publication types [Expand](#)

"rhinitis"[MeSH Terms] OR rhinitis[Text Word]

1

J Allergy Clin Immunol

-
-
-

. 2025 Aug 12:S0091-6749(25)00858-9.

doi: 10.1016/j.jaci.2025.07.030. Online ahead of print.

[COVID-19 infection raises respiratory type-2 inflammatory disease risk, whereas vaccination is protective](#)

[Henning Olbrich](#)¹, [Sophie L Preuß](#)², [Khalaf Kridin](#)³, [Gema Hernandez](#)⁴, [Diamant Thaçi](#)⁵, [Ralf J Ludwig](#)⁶, [Philip Curman](#)⁷

Affiliations [Expand](#)

- PMID: 40812431
- DOI: [10.1016/j.jaci.2025.07.030](#)

Abstract

Background: COVID-19 infection and vaccination have unclear impacts on type-2 inflammatory diseases. Although viral infections can drive immune dysregulation, the extent to which COVID-19 infection and vaccination affect type-2 inflammatory diseases in various organ systems remains underexplored.

Objective: We aimed to assess the risk of new-onset type-2 inflammatory diseases after COVID-19 infection and vaccination.

Methods: We conducted a large-scale retrospective matched cohort study within a United States electronic health records database of over 118 million patients. Three cohorts were defined: individuals with COVID-19 infection (973,794), individuals with COVID-19 vaccination (691,270), and unexposed controls (4,388,409). Propensity-score matching balanced demographic and clinical covariates. We calculated hazard ratios for incident asthma, allergic rhinitis, chronic rhinosinusitis, atopic dermatitis, and eosinophilic esophagitis over a three-month follow-up.

Results: COVID-19 infection significantly increased the risks of asthma (hazard ratio 1.656, 95% confidence interval 1.590-1.725), allergic rhinitis (1.272, 1.214-1.333), and chronic rhinosinusitis (1.744, 1.671-1.821). Risks for atopic dermatitis or eosinophilic esophagitis remained unchanged. In contrast, vaccination lowered the risks of asthma (0.678, 0.636-0.722) and chronic rhinosinusitis (0.799, 0.752-0.850). Direct comparison showed a two- to threefold greater risk of respiratory type-2 inflammatory diseases with infection than with vaccination.

Conclusion: COVID-19 infection is associated with a heightened risk of respiratory type-2 inflammatory diseases, whereas vaccination appears protective.

Clinical implication: COVID-19 vaccination may reduce respiratory complications driven by type-2 inflammation, thereby diminishing disease burden.

Keywords: COVID-19; SARS-CoV-2; allergic rhinitis; asthma; atopic dermatitis; chronic rhinosinusitis; eosinophilic esophagitis; type-2 inflammatory diseases; vaccination.

Copyright © 2025. Published by Elsevier Inc.

Full text links



[Proceed to details](#)

Cite

2

Review

Allergy

-
-
-

. 2025 Aug 13.

doi: 10.1111/all.16666. Online ahead of print.

[Occupational Mite Allergy and Asthma: An EAACI Task Force Report](#)

[Hille Suojalehto](#)¹, [Mohamed F Jeebhay](#)², [Ingrid Sander](#)³, [Santiago Quirce](#)⁴, [Susanne Vrtala](#)⁵, [Jolanta Walusiak-Skorupa](#)⁶, [Andreas L Lopata](#)⁷, [Carmen Vidal](#)⁸, [Monika Raulf](#)³

Affiliations Expand

- PMID: 40799117
- DOI: [10.1111/all.16666](https://doi.org/10.1111/all.16666)

Abstract

Mite sensitization is notable in several occupational settings. Elevated house dust mite concentrations are primarily detected in workplaces where people congregate and are active. Allergy to storage mites and spider mites has commonly been reported in agricultural and various food processing occupations. Rapid expansion of biological pest control has resulted in increased exposure to predatory mites causing sensitization of greenhouse workers. Globally, mite populations in workplaces are likely to change due to climate change. Occupational relevant mites produce a variety of allergens and adjuvants that trigger both innate and adaptive immune responses. Cross-reactivity between allergens occurs due to shared IgE-binding epitopes to different allergens. Occupational allergy to mites typically causes rhinitis and asthma. Challenges of distinguishing the role of occupational exposure to allergens, also present in non-occupational environments, complicate the diagnosis of occupational mite allergy and asthma. Nevertheless, preventive measures to reduce exposure to mite allergens in workplaces are essential in mitigating occupational hazards. Further research is needed to better understand the incidence of occupational mite allergy and asthma. It is essential to identify the risk factors in different occupational settings, assess the impact of climate change on exposure, and determine the relevant allergens and their potential cross-reactivity.

Keywords: allergy; asthma; mites; occupational; rhinitis.

© 2025 The Author(s). Allergy published by European Academy of Allergy and Clinical Immunology and John Wiley & Sons Ltd.

- [130 references](#)

Supplementary info

Publication types, Grants and fundingExpand

Full text links



[Proceed to details](#)

Cite

Review

Int Immunopharmacol

-
-
-

. 2025 Aug 11:164:115334.

doi: 10.1016/j.intimp.2025.115334. Online ahead of print.

[Macrophage polarization and allergic rhinitis: A review](#)

[Man Niu](#)¹, [Huidong Wu](#)¹, [Yanyun Wang](#)¹, [Ruo Chen Li](#)¹, [Yue Zhang](#)¹, [Zihan Xu](#)¹, [Yaxuan Qin](#)¹, [Hongyuan Liu](#)¹, [Jinge Han](#)¹, [Siqi Dong](#)¹, [Weiling Yuan](#)²

Affiliations Expand

- PMID: 40795498
- DOI: [10.1016/j.intimp.2025.115334](#)

Abstract

Allergic rhinitis (AR) is a chronic inflammatory disease of the nasal mucosa mediated by immunoglobulin E (IgE). Its global prevalence continues to rise, posing a significant public health burden. Macrophages (M ϕ), a key component of the innate immune system, regulate AR pathology through phenotypic polarization. Their roles include antigen presentation, modulation of inflammatory microenvironment homeostasis and tissue repair. Previous studies have primarily focused on single signaling pathways or specific cytokines, which is a limitation to a comprehensive understanding of the multidimensional role of macrophages in allergic rhinitis. This review breaks through the limitations of traditional research by systematically integrating the mechanisms of M1/M2 macrophage polarization in AR and the progress in targeted regulation studies. It particularly focuses on exploring regulatory strategies based on targeting macrophage polarization, aiming to provide a theoretical foundation and innovative directions for the clinical diagnosis, treatment, and mechanistic research of AR.

Keywords: Allergic rhinitis; Inflammatory response; Macrophages polarization.

Copyright © 2025 Elsevier B.V. All rights reserved.

Conflict of interest statement

Declaration of competing interest The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

Supplementary info

Publication typesExpand

Full text links



[Proceed to details](#)

Cite

4

AMB Express

-
-
-

. 2025 Aug 12;15(1):116.

doi: 10.1186/s13568-025-01924-3.

[Inflammation biomarkers mediate causal inference of the effect of skin microbiota on the risk of allergic diseases](#)

[Yuting Zhang](#)^{#1}, [Yanjuan Wu](#)^{#1}, [Xiaofen Su](#)^{#1}, [Qiming Gan](#)¹, [Yutong Ding](#)¹, [Jingcun Wang](#)¹, [Xinni Wang](#)¹, [Nuofu Zhang](#)², [Kang Wu](#)³

Affiliations Expand

- PMID: 40794348
- PMCID: [PMC12343437](#)
- DOI: [10.1186/s13568-025-01924-3](#)

Abstract

Alterations in skin microbiota composition have been linked to allergic diseases, but the causal relationship remains unclear. To investigate the causal relationship between skin microbiota, allergic diseases, and inflammation biomarkers using Mendelian randomization (MR). We integrated summary statistics from genome-wide association studies (GWAS) of skin microbiota inflammation biomarkers, and seven allergic diseases. Inverse variance weighting (IVW) served as the primary statistical method, with supplementary analyses using MR-Egger regression, weighted median, and Weighted mode. Sensitivity analyses, including Cochran's Q test, MR-Egger intercept test and MR-PRESSO outlier detection, were conducted to validate and stabilize our findings. Two-step MR analyses were performed to identify potential mediating inflammation biomarkers between skin microbiota and allergic diseases. We identified 43 significant causal relationships between the skin

microbiota and seven allergic diseases: allergic disease as a whole, asthma (adult, pediatric, allergic), allergic conjunctivitis, allergic rhinitis, atopic dermatitis, allergic urticaria and eczema, which included 20 protective and 23 risk causal relationships, respectively. Mediation analysis showed that specific biomarkers, such as C-C motif chemokine 19 and CD40L receptor levels, Interleukin-18 and TNF- β mediated these associations. This MR study provides robust evidence supporting causal relationships between specific skin microbiota taxa and allergic diseases, as well as potential mediating roles of inflammation biomarkers.

Keywords: Allergic diseases; Genetics; Inflammation biomarkers; Mendelian randomization; Skin microbiota.

© 2025. The Author(s).

Conflict of interest statement

Declarations. Ethics approval and consent to participate: Not applicable. Consent for publication: Not applicable. Competing interests: The authors declare no competing interests.

- [63 references](#)
- [3 figures](#)

Supplementary info

Grants and fundingExpand

Full text links



[Proceed to details](#)

Cite

5

Environ Res

-
-
-

. 2025 Aug 15;279(Pt 1):121730.

doi: 10.1016/j.envres.2025.121730. Epub 2025 Apr 29.

[Effects of residential greenness during pregnancy on childhood asthma, rhinitis, eczema, and their comorbidity: findings from the French mother-child cohort Pélagie](#)

[Alan R Patlán-Hernández](#)¹, [Christine Monfort](#)², [Etienne Audureau](#)³, [Marta Cirach](#)⁴, [Ralph Epaud](#)⁵, [Kees de Hoogh](#)⁶, [Sophie Lanone](#)⁷, [Parisa](#)

[Montazeri](#)⁴, [Danielle Vienneau](#)⁶, [Charline Warembourg](#)², [Cécile Chevrier](#)², [Marine Savouré](#)², [Bénédicte Jacquemin](#)⁸

Affiliations Expand

- PMID: 40311892
- DOI: [10.1016/j.envres.2025.121730](https://doi.org/10.1016/j.envres.2025.121730)

Free article

Abstract

Maternal exposure to residential greenness during pregnancy may influence childhood respiratory and allergic diseases development. Yet, evidence is limited and results are not consistent, furthermore most studies focus on urban areas. In a predominantly rural population, we aimed to assess the effect of maternal residential greenness during pregnancy on childhood asthma, rhinitis, eczema, and their comorbidity. We analyzed data from 1325 to 1119 participants in the 6- and 12-year follow-ups of the Pélagie mother-child cohort in Brittany, France. Ever asthma, rhinitis, and eczema were defined using validated questionnaires, and a multimorbidity phenotype was constructed. Greenness was assessed using the Normalized Difference Vegetation Index (NDVI) within a 300m buffer around the residential address. Adjusted logistic regressions per 0.1-unit increase in NDVI were performed, further stratifying by urban and rural areas. At inclusion, 78 % of mothers were non-smokers, 64 % lived in rural areas, and their average age was 30 ± 4 years; 50 % of children were boys. Median NDVI differed significantly between urban (0.45) and rural (0.57) areas ($p < 0.0001$). Asthma, rhinitis, and eczema prevalence were respectively around 10 %, 20 %, and 20 % at both follow-ups. Overall, the NDVI within 300m did not show significant associations at either follow-up, across the whole study population, except for eczema (0.87 (0.76-1.00), $p = 0.05$), and the single-disease category of the multimorbidity phenotype (0.87, (0.76-0.99), $p = 0.03$) at 6 years, where it showed protective associations. Our findings highlight the need for further research, particularly in rural populations, to clarify the relationship between prenatal residential greenness and childhood health outcomes.

Keywords: Asthma; Children; Degree of urbanization; Eczema; Greenness; Rhinitis.

Copyright © 2025 The Authors. Published by Elsevier Inc. All rights reserved.

chronic cough

1

Lung

-
-

-

. 2025 Aug 15;203(1):88.

doi: 10.1007/s00408-025-00842-2.

Modified Tracheobronchoplasty for Chronic Cough Due to Excessive Dynamic Airway Collapse: A Case Series

[Alessandro Gonfiotti¹](#), [Alessandra Sorano¹](#), [Massimo O Jaus²](#), [Giulia Fabietti¹](#), [Luca Voltolini¹](#), [Giovanni A Fontana¹](#), [Federico Lavorini³](#)

Affiliations Expand

- PMID: 40815336
- DOI: [10.1007/s00408-025-00842-2](https://doi.org/10.1007/s00408-025-00842-2)

No abstract available

Conflict of interest statement

Declarations. Conflict of interest: All authors declare no conflict of interest related to this study.

- [11 references](#)

Supplementary info

Publication typesExpand

Full text links



[Proceed to details](#)

Cite

2

BMC Pulm Med

-

-

-

. 2025 Aug 14;25(1):392.

doi: 10.1186/s12890-025-03866-9.

[A case of tracheobronchomegaly misdiagnosed as COPD: case report and literature review](#)

[Sai Yuan](#)^{#1,2}, [Weiran Li](#)^{#1}, [Mao Hua](#)³

Affiliations [Expand](#)

- PMID: 40813709
- DOI: [10.1186/s12890-025-03866-9](https://doi.org/10.1186/s12890-025-03866-9)

Abstract

Background: Tracheobronchomegaly, also known as Mounier-Kuhn syndrome (MKS), is a rare congenital condition characterized by significant dilation of the trachea and main bronchi along with an abnormal wall structure. Diagnosis can be confirmed through computed tomography, pulmonary function tests, and diagnostic bronchoscopy. Currently, there is no curative treatment for MKS; thus, symptomatic and supportive care remain the primary therapeutic approaches. Early diagnosis, effective infection control, and individualized management are crucial for improving patient outcomes.

Methods: This case report describes a middle-aged woman who presented with chronic cough, expectoration, and wheezing. She had been misdiagnosed with chronic obstructive pulmonary disease (COPD) at a local hospital for an extended period and was subsequently referred to our institution for fiberoptic bronchoscopy, which confirmed the diagnosis of MKS. By reviewing the literature via PubMed, we conducted a retrospective analysis of 29 previously reported cases of MKS, including the present case, totaling 30 cases (21 males and 9 females), predominantly middle-aged and elderly individuals.

Conclusions: Based on our literature review, the misdiagnosis rate of MKS remains high, often accompanied by significant diagnostic delays. Additionally, the proportion of secondary MKS cases has increased, challenging the traditional notion that MKS is exclusively congenital. Despite its rarity, clinicians should consider MKS in patients presenting with recurrent lower respiratory tract infections, abnormal tracheobronchial morphology, poor response to antibiotic therapy, or refractory COPD-like symptoms. Early imaging and bronchoscopic evaluations are essential to confirm the diagnosis and prevent delayed treatment.

Keywords: COPD; Mounier-Kuhn syndrome; Relapsing polychondritis; Tracheobronchomalacia; Tracheobronchomegaly.

© 2025. The Author(s).

Conflict of interest statement

Declarations. Ethics approval and consent to participate: Not applicable. This is not a clinical trial, and therefore no registration details are available. Consent for publication: The patient and her family in this case have given written informed consent for her personal or clinical details and for any identifying images to be released in this case. Competing interests: The authors declare no competing interests. Informed consent statement: Written informed consent has been obtained from the patient to publish this case report and any accompanying images. Conflict of interest: The author declares that there is no conflict of interest.

- [38 references](#)

Supplementary info

Grants and fundingExpand

Full text links



[Proceed to details](#)

Cite

3

Am J Speech Lang Pathol

-
-
-

. 2025 Aug 14:1-13.

doi: 10.1044/2025_AJSLP-25-00124. Online ahead of print.

[Internet-Based Behavioral Cough Suppression Therapy for Refractory Chronic Cough: A Randomized Controlled Trial](#)

[Jane R Salois](#)¹, [Kassidi L Heinle](#)¹, [Laurie J Slovarp](#)¹, [Marie E Jetté](#)², [Vinaya Manchaiah](#)^{2,3,4,5,6}, [George Vlaescu](#)⁷, [Gerhard Andersson](#)^{8,9}

Affiliations Expand

- PMID: 40811675
- DOI: [10.1044/2025_AJSLP-25-00124](https://doi.org/10.1044/2025_AJSLP-25-00124)

Abstract

Purpose: The purpose of this study was to assess the efficacy of internet-based behavioral cough suppression therapy (IBCST) and explore users' experiences.

Method: This study involved a prospective, single-blind, randomized controlled trial comparing the efficacy of a 5-week IBCST and healthy lifestyle education control intervention in patients with refractory chronic cough. Additionally, qualitative interviews were conducted and analyzed using grounded theory methodology.

Interventions: IBCST and the healthy lifestyle control included 5 weeks of asynchronous content delivered via video and text on a study-specific website. IBCST emphasized education and cough suppression.

Outcomes: The Leicester Cough Questionnaire (LCQ) and Cough Severity Visual Analog Scale (VAS) were the primary and secondary outcome measures, respectively, and were administered at baseline (T0), 1-week posttreatment (T1), and 1-month posttreatment (T2). Semistructured qualitative interviews were conducted with a subgroup of IBCST participants.

Results: Thirty-nine adults with refractory chronic cough enrolled, and 30 (27 women, three men; $M_{age} = 61$ years) completed the study (18 IBCST, 12 control). IBCST resulted in clinically significant improvements for 72% of participants in LCQ total score at T1 with a mean change of 3.74 ($p = .014$, $\eta_p^2 = .205$) and 76% of participants at T2 with a mean change of 4.1 ($p = .033$, $\eta_p^2 = .163$). VAS changes did not reach the minimum clinically meaningful threshold but trended in that direction for the IBCST group at T1 ($p = .056$, $\eta_p^2 = .128$). Qualitative analysis revealed IBCST participants liked the convenience and quality of treatment and experienced improvements in symptom control.

Conclusion: IBCST was feasible and efficacious and resulted in total LCQ score changes on par with what has been reported for other BCST interventions, paving the way for adaptation to a digital therapeutic.

Full text links



[Proceed to details](#)

Cite

4

Ann Am Thorac Soc

-
-
-

. 2025 Aug 11.

doi: 10.1513/AnnalsATS.202412-1329OC. Online ahead of print.

Cough in Adults with Undiagnosed Respiratory Symptoms

[Sheojung Shin^{1,2}](#), [Jessica Poliwoda³](#), [G A Whitmore⁴](#), [Katherine L Vandemheen⁵](#), [Celine Bergeron^{6,7}](#), [Louis-Philippe Boulet⁸](#), [Andréanne Côté⁹](#), [Stephen K Field¹⁰](#), [Erika Penz¹¹](#), [R Andrew McIvor¹²](#), [Catherine Lemièrè¹³](#), [Samir Gupta¹⁴](#), [Paul Hernandez¹⁵](#), [Irvin Mayers¹⁶](#), [Mohit Bhutani¹⁷](#), [M Diane Lougheed¹⁸](#), [Christopher J Liciskai¹⁹](#), [Tanweer Azher²⁰](#), [Nicole Ezer^{21,22}](#), [Martha Ainslie²³](#), [Tetyana Kendzerska^{24,25}](#), [Gonzalo G Alvarez⁵](#), [Sunita Mulpuru^{26,27}](#), [Shawn D Aaron²⁸](#)

Affiliations Expand

- PMID: 40788604
- DOI: [10.1513/AnnalsATS.202412-1329OC](https://doi.org/10.1513/AnnalsATS.202412-1329OC)

Abstract

Rationale: Cough is a common symptom of undiagnosed respiratory conditions.

Objective: To investigate cough in adults with undiagnosed respiratory symptoms and its association with quality of life (QoL), sleep quality, and healthcare utilization for respiratory illness.

Methods: We used a case-finding strategy to find community-dwelling adults with respiratory symptoms but no previous history of diagnosed lung disease. Pre- and post-bronchodilator spirometry determined if participants met diagnostic criteria for asthma, chronic obstructive pulmonary disease (COPD), preserved ratio impaired spirometry (PRISm), or if they had normal spirometry. Twelve questions from the Asthma Screening Questionnaire, COPD Assessment Test, and the St. George's Respiratory Questionnaire were used to develop a cough score. The 36-Item Short Form Survey (SF-36) and Global Sleep Assessment Questionnaire (GSAQ) were used to assess QoL and sleep quality, respectively.

Results: Adults with undiagnosed respiratory symptoms (N=2857, mean score 57.8, 95%CI 56.9-58.6) reported higher cough scores than age-matched controls (N=231, mean score 17.7, 95%CI 15.6-19.8). Participants found to have asthma (N=265, mean score 61.0, 95%CI 58.2-63.7) and COPD (N=330, mean score 61.8, 95%CI 59.3 to 64.3) had higher cough scores than those with PRISm (N=172, mean score 54.5, 95%CI 51.1-58.0) or normal spirometry (N=2090, mean score 57.0, 95%CI 56.0-58.0). Higher cough scores were associated with decreased QoL (lower SF-36 score, regression coefficient -0.19; 95%CI -0.22 to -0.17, P <0.001), worse sleep quality (higher GSAQ score, regression coefficient 0.16, 95%CI 0.14-0.18, P <0.001), and higher healthcare utilization for respiratory illness (incidence rate ratio 1.007, 95%CI 1.004-1.010, P <0.001).

Conclusions: In adults with undiagnosed respiratory symptoms, cough was most severe in those with undiagnosed asthma or COPD and was independently associated with worse quality of life, impaired sleep quality, and higher healthcare utilization for respiratory illness.

"bronchiectasis"[MeSH Terms] OR bronchiectasis[Text Word]

1

J Patient Exp

-
-
-

. 2025 Aug 12:12:23743735251367077.

doi: 10.1177/23743735251367077. eCollection 2025.

[Optimizing the Journey for Patients With Nontuberculous Mycobacterial \(NTM\) Lung Disease in the United Kingdom](#)

[Fiona McDonald¹](#), [Lorraine Coleman¹](#), [Claire Gillett¹](#), [Shirley Harwood¹](#), [Sally McCann¹](#), [Sarah Minty¹](#), [Tanya Sinnett¹](#), [Behalf Of Ntm Patient Care Uk¹](#)

Affiliations Expand

- PMID: 40809848
- PMCID: [PMC12344231](#)
- DOI: [10.1177/23743735251367077](#)

Abstract

Nontuberculous mycobacterial lung disease (NTM-LD) is a chronic infection with increasing global incidence, which primarily affects individuals with preexisting lung conditions such as bronchiectasis and chronic obstructive pulmonary disease. Despite the availability of clinical guidelines and newly published Standards of Care, variability in healthcare professionals' (HCPs) familiarity with NTM-LD results in delayed diagnoses, inconsistent care, and suboptimal patient outcomes. Based on our own experiences as NTM-LD patients, we highlight key issues in the management of NTM-LD, including diagnostic inefficiencies, variable access to specialized care, mixed experience of empathy, and insufficient information provision. We provide recommendations that we hope will optimize the patient

journey and improve outcomes for individuals with NTM-LD. These include improving HCP education, ensuring the involvement of a multidisciplinary team from the point of diagnosis, enhancing patient participation in decision-making, and promoting access to support networks. The challenges and solutions we propose are globally relevant and highlight the need for clear communication and integrated care pathways. A collaborative, patient-centered approach is crucial to effectively managing this complex disease in both primary and secondary care settings.

Keywords: access to care; clinician-patient relationship; communication; empathy; patient experience; patient perspectives/narratives; respiratory care; shared decision-making.

Plain language summary

Addressing the challenges of living with nontuberculous mycobacterial (NTM) lung disease: ways to improve diagnosis, treatment, and support. Nontuberculous mycobacterial lung disease (NTM-LD) is a serious, long-term lung infection that is becoming more common worldwide. The symptoms of NTM-LD, such as persistent coughing, unintentional weight loss, and extreme tiredness, can cause significant disruption to a person's quality of life. Unfortunately, many general practitioners and hospital medical staff are not familiar with NTM-LD, and this can lead to delays in diagnosis and treatment, which can worsen patients' symptoms and overall health. Some patients may also struggle to access specialist NTM-LD care or find that their healthcare teams do not fully understand the impact of the disease on everyday life. There is also a lack of clear information given to patients about their condition and treatment options, which makes it harder for them to manage their health. In this article, we share our experiences as patients living with NTM-LD and suggest ways that care can be improved. Key recommendations include better education for healthcare teams to help them to recognize NTM-LD early, ensuring that patients have the support of a diverse team of healthcare professionals as soon as they are diagnosed with NTM-LD, and involving patients more in decisions about their treatment and care. We also think it is important that patients are informed about support groups that can help them cope emotionally and manage their condition. By addressing these issues, we aim to improve diagnosis, treatment, and support for NTM-LD patients and ensure they receive the care they need.

© The Author(s) 2025.

Conflict of interest statement

All authors report medical writing and editorial support paid to Axiom Health Ltd by Insmmed Limited for the present manuscript. FM, LC, CG, SMc, and SMi report honoraria for participation in a patient advisory board from Insmmed Limited, and membership of NTM Patient Care UK (nonfinancial). SH and TS report grants from Insmmed Limited paid to NTM Patient Care UK, honorarium for participation in a patient advisory board from Insmmed Limited, and a Trustee position within NTM Patient Care UK (nonfinancial).

- [10 references](#)
- [1 figure](#)

Full text links

[Proceed to details](#)

Cite

2

Thorax

-
-
-

. 2025 Aug 10:thorax-2024-222570.

doi: 10.1136/thorax-2024-222570. Online ahead of print.

[Nocturnal gastro-oesophageal reflux and pulmonary abnormalities on chest CT in a general population: the Swedish CARDioPulmonary Biolmage Study](#)

[Össur Ingi Emilsson](#)^{1,2}, [Andrei Malinovski](#)³, [Åse Johnsson](#)^{4,5}, [Mirjam Ljunggren](#)⁶, [Anders Blomberg](#)⁷, [Ida Pesonen](#)^{8,9}, [Magnus Sköld](#)^{8,9}, [Zainab Ahmadi](#)¹⁰, [Anna Moberg](#)^{11,12}, [Tomas Hansen](#)¹³

Affiliations Expand

- PMID: 40784748
- DOI: [10.1136/thorax-2024-222570](https://doi.org/10.1136/thorax-2024-222570)

Free article

Abstract

Background: Nocturnal gastro-oesophageal reflux (nGER) is common in people with respiratory diseases, but its association with pulmonary abnormalities is not known.

Aim: Investigate the association between nGER and pulmonary abnormalities on chest CT in an adult general population.

Methods: In total, 28 846 individuals from the general population aged 50-64 years completed questionnaires and underwent chest CT, in the Swedish CARDioPulmonary Biolmage Study (www.scapis.org). Participants with nGER symptoms on ≥ 1 night per week were defined as having nGER. Chest CT was evaluated for bronchial wall thickening, bronchiectasis, reticular abnormalities, honeycombing, cysts and ground glass opacities. Ever-smoking, current asthma, inflammatory bowel disease and autoimmune disease were defined as risk factors for pulmonary abnormalities. Analyses were adjusted for sex, age, body mass index, education level and study centre.

Results: The prevalence of nGER was 9.4%. Among participants with risk factors for pulmonary abnormalities (n=4004), having nGER was positively associated with bronchial wall thickening (adjusted OR (aOR) (95% CI): 1.25 (1.07 to 1.48)) and reticular abnormalities (aOR (95% CI): 1.51 (1.04 to 2.17)), but negatively associated with cysts (aOR (95% CI): 0.68 (0.48 to 0.97)). Among participants without risk factors for CT abnormalities (n=2555), nGER did not relate with pulmonary abnormalities.

Conclusions: In a middle-aged general population, nGER was not associated with pulmonary abnormalities on chest CT. However, in the presence of other risk factors for pulmonary abnormalities, nGER was associated with bronchial wall thickening and reticular abnormalities. Persons with nGER and risk factors for pulmonary abnormalities should, therefore, be evaluated for respiratory disease and treated appropriately.

Keywords: Bronchiectasis; Imaging/CT MRI etc; Interstitial Fibrosis.

© Author(s) (or their employer(s)) 2025. Re-use permitted under CC BY. Published by BMJ Group.

Conflict of interest statement

Competing interests: ÖIE reports fees from Boehringer Ingelheim, MSD and AstraZeneca for advisory boards and lectures, unrelated to this publication. IP reports fees from Boehringer Ingelheim for lectures and participation on advisory boards. MS reports research grants from Boehringer Ingelheim for pulmonary fibrosis research, payments for lectures and educational activities related to pulmonary fibrosis, and participation on advisory boards related to pulmonary fibrosis. Other authors have no conflicts of interest related to this work.