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

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NPJ Prim Care Respir Med

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. 2026 May 15.

doi: 10.1038/s41533-026-00523-4. Online ahead of print.

Comparative risk of pneumonia and acute exacerbation between P-CAB and PPI use in patients with COPD and GERD

SooBeen Park [1], Seoung Ju Park [2], Hyuk Soon Choi [3], Hankil Lee [4], Jae Hyun Kim [5 6], Ha-Lim Jeon [7]

Affiliations Expand

- **PMID: 42140971**
- **DOI: 10.1038/s41533-026-00523-4**

Abstract

Potassium-competitive acid blockers (P-CABs) are newer gastric acid suppressants used to treat gastroesophageal reflux disease (GERD), but evidence regarding their respiratory safety compared with proton pump inhibitors (PPIs) in patients with chronic obstructive pulmonary disease (COPD) remains limited. We conducted a target trial emulation study using the Korean National Health Insurance database. Patients aged ≥40 years with COPD who initiated P-CAB or PPI for GERD between 2019 and 2022 were included. Follow-up continued from treatment initiation until the

earliest occurrence of the outcome, treatment discontinuation, switching to another drug class, death, or the end of the study period. The outcome was the occurrence of pneumonia or moderate-to-severe COPD exacerbations. Propensity score matching (1:3) was applied, and hazard ratios (HRs) with 95% confidence intervals (CIs) were estimated using Cox proportional hazards models. Among the 560,987 eligible patients, 4671 P-CAB users and 14,013 PPI users were included after matching. P-CAB was not significantly associated with the risk of respiratory events compared with PPI, but a trend toward lower risks for pneumonia (aHR, 0.76; 95% CI, 0.54-1.07) and severe exacerbations (aHR, 0.60; 95% CI, 0.32-1.14) was observed. In patients with a Charlson Comorbidity Index ≤1, the risk of severe exacerbations was significantly lower (aHR, 0.31; 95% CI, 0.11-0.88). P-CABs showed lower risks of pneumonia and severe exacerbations compared with PPIs, although the differences were not statistically significant. Further long-term studies across diverse patient subgroups are warranted.

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Conflict of interest statement

Competing interests: The authors declare no competing interests.

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2

Clin Interv Aging

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. 2026 May 8:21:597992.

doi: 10.2147/CIA.S597992. eCollection 2026.

Rehospitalisation Patterns in Very Old Adults with Heart Failure Managed Within an Integrated Cardiogeriatric Post-Discharge Care Pathway: The REACT-HF Study

Rémi Esser [1], Marine Larbaneix [1], Alejandro Mondragon [1], Mathieu Co [1], Marlène Esteban [1], Christine Farges [1], Marc Harboun [1], Nicolas Pages [2], Sophie Nisse Durgeat [2], Olivier Maurou [1]

Affiliations Expand

- PMID: 42137614

- PMCID: PMC13168900

- DOI: 10.2147/CIA.S597992

Abstract

Purpose: Very old adults with heart failure (HF) experience high rehospitalisation rates related to multimorbidity, functional vulnerability, and complex care transitions. Empirical evidence on factors associated with rehospitalisation in very old adults with HF managed within integrated post-discharge care pathways remains limited. This study aimed to describe rehospitalisation patterns and associated clinical markers in very old patients with HF managed within an integrated cardiogeriatric post-discharge pathway.

Patients and methods: This retrospective single-centre cohort included patients aged ≥65 years hospitalised for acute HF and enrolled at discharge in an integrated cardiogeriatric pathway combining structured remote monitoring, rapid-access day-hospital services and coordinated outpatient follow-up (April 2023-August 2025). Analyses were restricted to patients who survived the early post-discharge period and had available 12-month follow-up data, in order to assess rehospitalisation status at predefined post-discharge time points. The primary outcome was unplanned HF rehospitalisation at 12 months; secondary outcomes included rehospitalisation at 3 and 6 months, predictors of rehospitalisation and hospital length of stay. Exploratory multivariable logistic regression analyses were performed.

Results: Among 255 very old patients with available 12-month follow-up data (median age 87 years), rehospitalisation rates were 9.8% at 3 months, 16.1% at 6 months and 24.7% at 12 months. Higher loop diuretic dose was associated with rehospitalisation at 3 months. At 6 months, moderate-to-severe mitral regurgitation, higher diuretic dose and absolute iron deficiency were independently associated with rehospitalisation. At 12 months, moderate-to-severe mitral regurgitation, iron deficiency and chronic obstructive pulmonary disease were independently associated. These findings apply to patients who survived the early post-discharge period and had sufficient follow-up data, rather than to an unselected acute HF population.

Conclusion: In very old patients with HF and available longitudinal follow-up, higher loop diuretic dose, iron deficiency, moderate-to-severe mitral regurgitation, and COPD were associated with rehospitalisation status at predefined time horizons. These exploratory findings suggest that routinely available clinical markers may help support risk-stratified follow-up in advanced-age HF populations.

Keywords: heart failure; integrated care; older adults; rehospitalisation.

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Conflict of interest statement

Sophie Nisse Durgeat and Nicolas Pages are employed by NP Medical. All other authors declare that they have no conflicts of interest related to this work.

- 27 references

- 3 figures

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3

Observational Study

Int J Chron Obstruct Pulmon Dis

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. 2026 May 9:21:585037.

doi: 10.2147/COPD.S585037. eCollection 2026.

Comparative Effectiveness and Safety of Fluticasone-Umeclidinium-Vilanterol and Beclomethasone-Glycopyrronium-Formoterol Single-Inhaler Triple Therapies for COPD: Real-World Observational Study

Mathew Cherian [1 2], Sophie Dell'Aniello [2], Samy Suissa [2 3]

Affiliations Expand

- PMID: 42136913

- PMCID: PMC13170600

- DOI: 10.2147/COPD.S585037

Abstract

Purpose: Multiple guidelines recommend single-inhaler triple therapy (SITT) for some patients with COPD. The first two SITTs approved for COPD were beclomethasone-glycopyrronium-formoterol (BEGF, twice daily) and fluticasone-umeclidinium-vilanterol (FUV, once daily). No study has compared the effectiveness and safety of these SITTs on major outcomes.

Patients and methods: We identified a cohort of patients with COPD, 40 years of age or older, from the United Kingdom's Clinical Practice Research Datalink. The patients who initiated treatment with FUV or BEGF were compared on the incidence of moderate or severe COPD exacerbations, and of pneumonia, over one year, after balancing baseline characteristics by propensity score weighting.

Results: The study cohort included 34,825 initiators of FUV and 39,288 initiators of BEGF, well balanced after weighing. The adjusted hazard ratio (HR) of a first moderate or severe exacerbation with FUV compared with BEGF was 0.91 (95% CI: 0.89-0.93), while for severe exacerbation it was 0.92 (95% CI: 0.86-0.97), corresponding to 27.9 fewer subjects with a moderate or severe exacerbation and 1.0 fewer with a severe exacerbation per 100 treated with FUV for one year. The HR of pneumonia requiring hospitalisation, comparing FUV with BEGF, was 1.06 (95% CI 0.99-1.13), over all patients. It was 1.14 (95% CI 1.06-1.24) among those classified as GOLD Group E, and 1.10 (95% CI 1.02-1.19) among those with a blood eosinophil count ≤ 300 cells/μL, corresponding to increases of 1.7 and 1.0 more subjects with a severe pneumonia per 100 treated with FUV for one year, respectively.

Conclusion: In a real-world clinical practice setting of COPD treatment, initiating triple therapy with FUV was associated with a lower incidence of moderate and severe exacerbations than with BEGF. On the other hand, the incidence of a severe pneumonia requiring hospitalisation was higher with FUV among GOLD Group E subjects or those whose blood eosinophil count is not elevated.

Keywords: COPD exacerbations; cohort studies; new-user design; observational study; pneumonia.

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Conflict of interest statement

Samy Suissa attended advisory committee meetings for Atara, Novartis and Panalgo, and received speaking fees from Covis Pharma and Novartis. Mathew Cherian attended advisory board meetings for AstraZeneca, GlaxoSmithKline, and Sanofi and received speaking fees from AstraZeneca and Sanofi. Sophie Dell'Aniello has no conflicts. The authors report no other conflicts of interest in this work.

- 39 references
- 4 figures

Supplementary info

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4

Sci Rep

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. 2026 May 14.

doi: 10.1038/s41598-026-50581-4. Online ahead of print.

Validated prediction model for in hospital mortality in AECOPD with type 2 diabetes

Jie Chen [1], Xiaofeng Zhang [2], Kunhe Liu [3], Wei Zhang [4], Mingmei Zhong [5]

Affiliations Expand

- PMID: 42135369

- DOI: 10.1038/s41598-026-50581-4

Free article

Abstract

Acute exacerbation of chronic obstructive pulmonary disease (AECOPD) frequently coexists with type 2 diabetes mellitus (T2DM) and is associated with substantial short-term mortality. However, patients with AECOPD and metabolic comorbidity represent a clinically heterogeneous subgroup, and admission-based tools with independent validation for early in-hospital mortality risk stratification in this population remain limited. In this multicenter retrospective cohort study, hospitalized patients with AECOPD and concomitant T2DM were consecutively enrolled and divided into a training cohort and an institutionally independent validation cohort from a separate hospital within the same city. Candidate predictors routinely available at admission were evaluated using multivariable logistic regression to develop a parsimonious prediction model for in-hospital mortality. Model performance was assessed in terms of discrimination, calibration, and clinical utility, and compared with established bedside scores, including the quick Sequential Organ Failure Assessment (qSOFA) and BAP-65. Elevated arterial carbon dioxide tension ($PaCO_2$), procalcitonin (PCT), and D-dimer measured early after admission were independently associated with in-hospital mortality. A simplified model incorporating these three variables demonstrated stable discrimination in both the training and validation cohorts, with an area under the receiver operating characteristic curve of approximately 0.79, and showed good calibration. Decision curve analysis indicated higher or non-inferior net clinical benefit across clinically relevant threshold probabilities compared with qSOFA and BAP-65. In hospitalized patients with AECOPD and T2DM, $PaCO_2$, PCT, and D-dimer were independently associated with in-hospital mortality. An admission-based model integrating these markers showed promising performance in multicenter data with independent hospital-based validation within the same city. Further validation in geographically distinct populations is needed before broader generalizability can be assumed.

Keywords: Chronic obstructive pulmonary disease; Mortality; Prediction model; Type 2 diabetes mellitus.

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Conflict of interest statement

Declarations. Competing interests: The authors declare no competing interests. Ethics declarations: The study was conducted with the approval of the relevant institutional ethics committees at the first people's Hospital of Hefei, the Second Affiliated Hospital of Anhui Medical University, and Hefei Binhu Hospital. Given its retrospective nature, a waiver of written informed consent was sought and obtained from each committee.

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nature portfolio UNIMORE

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J Natl Med Assoc

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. 2026 May 14:S0027-9684(26)00070-2.

doi: 10.1016/j.jnma.2026.04.005. Online ahead of print.

Trends in lung cancer- and chronic obstructive pulmonary disease (COPD)-related mortality among older adults in the United States, 1999-2024: A CDC WONDER database analysis

Muhammad Shaheer Bin Faheem [1], Syed Tawassul Hassan [2], Syed Atta Ur Rafe [3], Faheem Feroze [4], Syeda Lyba Onaiz [5]

Affiliations Expand

- PMID: 42135123

- DOI: 10.1016/j.jnma.2026.04.005

Abstract

Background: Lung cancer is the leading cause of death worldwide, and about 40% to 70% of lung cancer patients have chronic obstructive pulmonary disease (COPD). The aim of this study is to analyze lung cancer and COPD-related mortality trends

among older adults in the U.S. and to assess shifts in trends across different divisions of demographics and geographics.

Methods: We assessed CDC WONDER (Centers for Disease Control and Prevention Wide-Ranging Online Data for Epidemiology Research) death certificates on which both lung cancer and COPD were listed as either underlying or contributing cause of death from 1999 to 2024. Age-adjusted mortality rates (AAMRs) per 100,000 and annual percent changes (APCs) were calculated and measured across different demographic and geographic subdivisions.

Results: Overall, 582,373 deaths were recorded with AAMR declining from 58.7 in 1999 to 43.8 in 2024, showing significant falls between 2006-2018 (APC -1.96*; $p < 0.05$) and later from 2021 to 2024 (APC -2.66*; $p < 0.05$). Males (68.1) persistently had higher AAMRs than females (41.1). From races/ ethnicities, the highest AAMR was reported in NH whites (58.3), while non-metropolitan areas (67.2) and the region of the Midwest (60.8) represented the highest rates among geographics.

Conclusion: Although AAMR declined from 1999 to 2024, significant disparities persist, highlighting the need for targeted interventions and resource distributions among males, NH Whites, and non-metropolitan areas in the U.S.

Keywords: Age adjusted mortality rates; CDC Wonder; Chronic obstructive pulmonary disease; Lung cancer; Mortality.

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BMJ Open Respir Res

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. 2026 May 14;13(1):e003815.

doi: 10.1136/bmjresp-2025-003815.

Relationship between quantitative CT and cardiac function in patients with severe COPD exacerbations (ECOPD)

Grace Talor Mussell [1 2], Joseph Kibbler [1], Michael Bennett [3], Tom Wilkinson [3], David Ripley [4], Stephen C Bourke [1], John Steer [5 2]

Affiliations Expand

- PMID: 42134869

- DOI: 10.1136/bmjresp-2025-003815

Free article

Abstract

Introduction: Quantitative assessment of emphysema, gas trapping and airway wall thickness on CT correlates with chronic obstructive pulmonary disease (COPD) disease severity and exacerbation risk. In stable COPD, airway wall thickness is associated with prior myocardial infarction. Cardiac disease is often undiagnosed in COPD, and the risk of cardiac events following hospitalised exacerbations of COPD (ECOPD) is high. CT scans during hospitalised exacerbations may help clinicians identify patients with heart disease.

Methods: As part of the SCATECOPD study (IRAS 277817), patients with ECOPD underwent a detailed cardiac assessment encompassing an ECG, echocardiogram, CT coronary calcium score, and inspiratory and expiratory CT chest. Expiratory gas trapping (Exp%856), emphysema (Insp%950) and airway wall thickness (Pi10) were compared with clinical and cardiac data.

Results: 56 participants were recruited: 33 (58.9%) were female, with a mean (SD) age of 72.5 (6.5) years. The mean forced expiratory volume in 1 s was 50.6% predicted (SD 19.2), consistent with moderate-to-severe COPD.Cardiac assessment identified moderate-severe left ventricular systolic dysfunction (LVSD) in 10.7%, heart failure without moderate-severe LVSD in 25.0% and right heart failure in 17.9%; these were newly diagnosed in 8.9%, 23.2% and 14.3%, respectively. Severe coronary artery disease was found in 43.1%. Airway wall thickness was significantly negatively correlated with left ventricular ejection fraction. Emphysema and gas trapping correlated with spirometric airflow obstruction and showed weaker associations with cardiac dysfunction.

Conclusion: Quantitative CT performed during ECOPD may offer opportunistic insights into cardiac health, particularly through Pi10. Further research is warranted to evaluate its utility as a screening tool in COPD admissions.

Keywords: COPD Exacerbations; COPD Pathology; Imaging/CT MRI etc.

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Conflict of interest statement

Competing interests: None declared.

Supplementary info

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Editorial

World J Pediatr

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. 2026 May 13.

doi: 10.1007/s12519-026-01042-5. Online ahead of print.

Roots of chronic obstructive pulmonary disease: a pediatric problem with adult consequences

Vincenzo Fierro [1], Andrea Ficari [2], Alessandro Fiocchi [1], Carmen Mazzuca [1]

Affiliations Expand

- PMID: 42129080

- DOI: 10.1007/s12519-026-01042-5

No abstract available

Conflict of interest statement

Declarations. Conflict of interest: No financial or non-financial benefits have been received or will be received from any party related directly or indirectly to the subject of this article. The authors have no conflict of interest to declare. Ethical approval: Not applicable.

- 19 references

Supplementary info

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Review

Eur Respir Rev

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. 2026 May 13;35(180):250192.

doi: 10.1183/16000617.0192-2025. Print 2026 Apr.

Integrated care for chronic respiratory disease: a narrative review

Michael C Steiner [1 2 3], Louise Ryan [3], Irene Valero-Sanchez [3 4], Onyeka Umerah [3 4], Thomas J C Ward [5 2]

Affiliations Expand

- PMID: 42128489

- PMCID: PMC13169065

- DOI: 10.1183/16000617.0192-2025

Abstract

Integration of healthcare services for people with chronic respiratory disease (CRD) is proposed as a means to improve the delivery of evidence-based therapies, thereby improving outcomes, experience of care and reducing health inequalities. In this narrative review we define categories of integration interventions, present a structured assessment of the evidence supporting both horizontal and vertical integrated care models and case-finding in CRD, and describe the implications for the implementation and scaling of integrated care programmes in clinical practice. Our findings suggest better coordination of the provision of evidence-based interventions through horizontal integration can improve clinical outcomes in CRDs, including reducing episodes of unscheduled care. Vertical integration provided by different organisational units in healthcare systems can enhance delivery of evidence-based interventions but impact on longer-term outcomes is less clear. The available evidence, whilst providing support for integration, does not conclusively support a specific model of care or organisational structure. Careful attention is required to define components of integrated care interventions. Study duration and choice of outcomes are key to evaluating clinical and cost effectiveness in future trials.

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Conflict of interest statement

Conflict of interest: M.C. Steiner reports grants from Sanofi, support for attending meetings from AstraZeneca, and participation on a data safety monitoring board or advisory board with the MISTER study and the BICS trial. L. Ryan reports payment or honoraria for lectures, presentations, manuscript writing or educational events from AstraZeneca and Chiesi, and support for attending meetings from AstraZeneca and Chiesi. I. Valero–Sanchez reports payment or honoraria for lectures, presentations, manuscript writing or educational events from Sanofi Aventis. O. Umerah reports payment or honoraria for lectures, presentations, manuscript writing or educational events from BMJ Best Practice. T.J.C. Ward reports payment or honoraria for lectures, presentations, manuscript writing or educational events from Chiesi, support for attending meetings from GSK, and leadership or fiduciary role with the British Thoracic Society COPD Specialist Advisory Group.

- 57 references
- 1 figure

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ERJ Open Res

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. 2026 May 11;12(3):01682-2025.

doi: 10.1183/23120541.01682-2025. eCollection 2026 May.

ERS Congress 2025: highlights from the Airway Diseases Assembly

Francesca Cefaloni [1], Sophie Booth [2 3], Charlotte E Healey [4], Despoina Ioannidou [5], Enrico Schiavi [6], Matteo Bonini [4 6], Juan José Nieto-Fontarigo [7 8], Stefania Principe [9], Gert-Jan Braunstahl [10 11], Alexander G Mathioudakis [2 12], Pavol Pobeha [13], Florence Schleich [14], Apostolos Bossios [15 16 17], Augusta Beech [2 3]

Affiliations Expand

- **PMID: 42125485**

- PMCID: PMC13159007

- DOI: 10.1183/23120541.01682-2025

Abstract

Early career members of Assembly 5 summarise the highlights of the 2025 #ERSCongress, presenting the latest advances in asthma, COPD and chronic cough through mechanistic insights, novel biomarkers and emerging therapies https://bit.ly/3NHWlsx.

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Conflict of interest statement

Conflicts of interest: F. Cefaloni, S. Booth, C.E. Healey, D. Ioannidou, E. Schiavi, M. Bonini, S. Principe, P. Pobeha, G-J. Braunstahl and J.J. Nieto-Fontarigo have nothing to declare related to this article. A.G. Mathioudakis reports honoraria from GlaxoSmithKline and Sanofi, and stock options from Healthy Networks, not related to this work. F. Schleich received either grants, consultation fees, honoraria or lecture fees from AstraZeneca, Chiesi, Sanofi, Celltrion, GSK Teva, Celltrion and Advanz; and is the Secretary of Assembly 5 (Airway diseases, asthma, COPD, and chronic cough) of the European Respiratory Society and Chair of the Belgium Respiratory Society. A. Bossios reports institutional fees and honoraria from Chiesi, GSK and AstraZeneca, as well as institutional grants from AstraZeneca, outside the submitted work. A. Beech is a member of the early career mentoring programme of this journal.

- 60 references
- 2 figures

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10

Clin Ther

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. 2026 May 12:S0149-2918(26)00112-8.

doi: 10.1016/j.clinthera.2026.04.009. Online ahead of print.

Switching to a Low Global Warming Potential Propellant in a Pressurized Metered-Dose Inhaler Does Not Affect the Pharmacokinetics of Combined Beclometasone Dipropionate/Formoterol Fumarate

Mafalda Almeida [1], Michela Salvadori [2], Massimo Corradi [3], Thomas De Ridder [4], Nick Praet [4], Isabelle Viaud [1], Guido Varoli [1], Luca Girardello [5], Glauco Cappellini [1], Luca V Viganò [1], Kusum S Mathews [1], Gianluigi Poli [1]

Affiliations Expand

- PMID: 42120272

- DOI: 10.1016/j.clinthera.2026.04.009

Abstract

Purpose: Use of high global warming potential propellants (eg, 1,1,1,2-tetrafluoroethane [HFA-134a]) in pressurized metered-dose inhalers (pMDIs) is being phased down. Extrafine formulation of beclometasone dipropionate (BDP)/formoterol fumarate (FF), approved for the treatment of asthma or chronic obstructive pulmonary disease via HFA-134a propellant pMDI, is being reformulated using the low global warming potential propellant 1,1-difluoroethane (HFA-152a). Two studies compared BDP/FF pharmacokinetics delivered via pMDI using HFA-152a versus HFA-134a.

Methods: Both studies (N = 90 in each) were single-dose (4 actuations), randomized, double-blind, 4-way crossover, in healthy volunteers. The first evaluated bioequivalence of BDP/FF 100/6 µg per actuation (ie, medium strength in terms of BDP), with and without a spacer; the second evaluated BDP/FF 200/6 µg per actuation (high-strength), with and without a spacer. The primary variables were $AUC_{0\text{-}t}$, C_{max}, and T_{max} for BDP, beclometasone-17-monopropionate (active metabolite of BDP), and formoterol, as well as AUC between time 0 and 30 minutes after dose ($AUC_{0\text{-}30\ min}$) for formoterol. Bioequivalence was concluded for C_{max}, $AUC_{0\text{-}t}$, and formoterol $AUC_{0\text{-}30\ min}$ if the 90% CI of the ratio of geometric means for the 2 formulations was contained between 80% and 125%.

Findings: Bioequivalence of the 2 propellants was demonstrated in both studies for BDP, beclometasone-17-monopropionate, and formoterol C_{max} and $AUC_{0\text{-}t}$, as well as for formoterol $AUC_{0\text{-}30\ min}$, with and without the spacer, with no differences between formulations for T_{max}.

Implications: Bioequivalence was formally demonstrated between the BDP/FF HFA-134a and HFA-152a formulations.

Keywords: Inhaled corticosteroids; Long-acting β2-agonists; Lung bioavailability; Total systemic exposure.

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Conflict of interest statement

Declaration of competing interest In addition to the medical writing support disclosed in the acknowledgments, the authors have the following conflicts of interest to disclose. Mafalda Almeida, Michela Salvadori, Isabelle Viaud, Guido Varoli, Glauco Cappellini, Luca V. Viganò, Kusum S. Mathews, and Gianluigi Poli are employees of Chiesi, the sponsor of the studies. Massimo Corradi reports grants from Chiesi to his institution and personal consulting fees from Chiesi, outside the submitted work. Thomas De Ridder and Nick Praet are employees of SGS Belgium, the clinical site that conducted the 2 studies. Luca Girardello was engaged as a consultant by Chiesi at the time the study was conducted.

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Am J Med

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. 2026 May 11:S0002-9343(26)00378-5.

doi: 10.1016/j.amjmed.2026.05.002. Online ahead of print.

Examining Sleep Quality and Mortality Risks in COPD, Asthma, and Asthma-COPD Overlap Patients

Jiankang Wu [1], Rui Zhao [1], Yiming Ma [2], Yan Chen [3]

Affiliations Expand

- **PMID: 42119880**

- **DOI: 10.1016/j.amjmed.2026.05.002**

Abstract

Background: Chronic respiratory diseases, including chronic obstructive pulmonary disease (COPD), asthma, and Asthma-COPD overlap (ACO), contribute to significant health burdens. Understanding patient characteristics, sleep patterns, and mortality factors is critical for improving management.

Methods: Data from the UK Biobank were used to compare the baseline characteristics, sleep patterns, and mortality rates of 14,326 COPD, asthma, and ACO patients. Multivariable logistic and linear regression analyses were conducted to identify factors affecting mortality and sleep.

Results: COPD patients were older, with higher smoking rates and mortality compared to ACO and asthma patients (P < 0.001). Asthma patients had the highest BMI (29.76), while ACO patients showed the highest diabetes prevalence (14.2%) and asthma patients had the highest hypertension prevalence (46.9%) (P < 0.001). Asthma patients exhibited the poorest sleep quality, with higher rates of short sleep duration, insomnia, and daytime dozing compared to COPD and ACO patients (P < 0.001). Multivariable analysis revealed that COPD patients had higher mortality risks compared to ACO patients (P < 0.001), and poor sleep scores and diabetes were significantly associated with increased mortality (P < 0.001). Asthma patients had significantly lower sleep scores than ACO patients (P < 0.001).

Conclusion: ACO patients showed intermediate outcomes, with worse sleep than asthma patients but better than COPD patients. Poor sleep quality, along with diabetes and smoking, was linked to higher mortality. Addressing sleep disturbances may reduce mortality in ACO and COPD patients, warranting further research on targeted interventions.

Keywords: ACO; Asthma; COPD; Mortality; Sleep.

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Conflict of interest statement

Declaration of competing interest The authors (Jiankang Wu, Rui Zhao, Yiming Ma and Yan Chen) declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

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Chest

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. 2026 May 11:S0012-3692(26)00621-5.

doi: 10.1016/j.chest.2026.04.046. Online ahead of print.

Hemodynamic Profile and Clinical Outcomes of Low- and High-Cardiometabolic Phenotypes in Chronic Obstructive Pulmonary Disease: A Cluster Analysis

Esteban Kosak Lopez [1], Jose M Martinez-Manzano [2], Andrew Geller [3], Raul Leguizamon [3], Justin Lam [3], Thitiphan Srikulmontri [3], Michael Vera Ricaurte [3], Maria

Siqueira Tavares de Melo [3], Thomas Stavola [3], John Malin [3], Enrique Pacheco [4], Zurab Azmaiparashvili [3], Kevin Bryan Lo [5]

Affiliations Expand

- PMID: 42119777

- DOI: 10.1016/j.chest.2026.04.046

No abstract available

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Editorial

Respir Care

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. 2026 May 12:19433654261447874.

doi: 10.1177/19433654261447874. Online ahead of print.

Machine Learning for COPD Case Finding: Looking for the Haystack

Umur Hatipoğlu [1]

Affiliations Expand

- PMID: 42117467

- DOI: 10.1177/19433654261447874

No abstract available

Supplementary info

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14

Observational Study

Medicine (Baltimore)

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. 2026 May 8;105(19):e48698.

doi: 10.1097/MD.0000000000048698.

Overuse of inhaled corticosteroids in patients hospitalized for acute exacerbation of chronic obstructive pulmonary disease: Observational real-life data

Esra Arslan Aksu [1], Oğuz Uzun [2], Levent Özdemir [1], Burcu Özdemir [3], Savaş Gegin [3], İlkyaz Işiksungur [2], Betül Kincir [2], Selen Karaoğlanoğlu [4], Emine Serap Yilmaz [4]

Affiliations Expand

- PMID: 42116343
- PMCID: PMC13166782
- DOI: 10.1097/MD.0000000000048698

Abstract

Advances in the understanding of chronic obstructive pulmonary disease (COPD) pathophysiology have prompted continual updates in therapeutic strategies. The role of inhaled corticosteroids (ICS) in COPD treatment has changed over time. This study aimed to identify the high rates of inappropriate use of ICS-containing treatment regimens in daily clinical practice, contrary to guideline recommendations, and to demonstrate the negative consequences of this misuse. Patients who received inpatient treatment for COPD exacerbation were included in this study. The investigation focused on maintenance therapies, ICS use, COPD severity levels, exacerbation severity, and causes of the exacerbations. The relationship between ICS use, doses of ICS used, exacerbation severity, and infection was analyzed. This study analyzed the ICS use status of 233 patients. Of

these, 205 patients were using ICS, and 28 were not. A significant correlation was found between total corticosteroid dose and exacerbation severity. High-dose ICS use was significantly higher in patients with infection as the cause of the exacerbation. When evaluating patients' eosinophil counts and treatment regimens, ICS treatment was found to be prescribed more frequently than recommended. The role of ICS therapy in COPD treatment is clearly stated in the current guidelines. This study, based on real-life data, found a high rate of off-label ICS use that was inconsistent with guideline recommendations. Inappropriate ICS use did not provide additional benefits in treatment management and had negative effects on patients, including significant side effects, such as infection. Clinicians should exercise caution when adding an ICS-containing regimen to their prescriptions.

Keywords: COPD; COPD exacerbation; eosinophil count; overuse inhaled corticosteroids; pneumonia.

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Conflict of interest statement

The authors have no funding and conflicts of interest to disclose.

- 21 references

Supplementary info

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Review

Diabetol Metab Syndr

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. 2026 May 11;18(1):112.

doi: 10.1186/s13098-026-02164-6.

Obesity and respiratory diseases: mechanisms, phenotypes, and clinical implications

Amin R Soliman [1], Amany Abouzeid [2], Hebatallah Hesham Ahmed [3]

Affiliations Expand

- PMID: 42116176

- PMCID: PMC13169587

- DOI: 10.1186/s13098-026-02164-6

Abstract

Background: Obesity has emerged as a global pandemic with profound implications for respiratory health. The complex interplay between excessive adiposity and pulmonary function encompasses mechanical, metabolic, and inflammatory pathways that significantly impact morbidity and mortality.

Objectives: This comprehensive review synthesizes current evidence on obesity-related respiratory disorders, examining pathophysiological mechanisms, clinical phenotypes, epidemiological trends, and therapeutic considerations across the spectrum of respiratory diseases. This review provides a novel integrative framework unifying mechanical, inflammatory, and metabolic mechanisms across all major obesity-related respiratory conditions, with emphasis on clinically actionable phenotyping and emerging pharmacological therapies.

Methods: We conducted a narrative review of peer-reviewed literature (PubMed/MEDLINE, Embase, and Cochrane Database, January 2000 - December 2024, using pre-specified MeSH terms; study selection and quality assessment followed SANRA guidelines focusing on the relationship between obesity and respiratory disorders including asthma, obstructive sleep apnea (OSA), obesity hypoventilation syndrome (OHS), chronic obstructive pulmonary disease (COPD), respiratory infections, and lung cancer.

Results: Obesity profoundly affects respiratory mechanics through a right-shift of the static volume-pressure relationship of the chest wall, reducing FRC and ERV without a true restrictive pattern, altered respiratory muscle function, and systemic inflammation. Asthma prevalence increases with body mass index, demonstrating distinct phenotypes including atopic, insulin-resistant, dyslipidemic, and non-Th2 neutrophilic subtypes. OSA affects 22% of men and 17% of women, with obesity being the principal modifiable risk factor. OHS occurs in 8-20% of obese patients with sleep-disordered breathing, characterized by daytime hypercapnia (arising from impaired neuromuscular ventilatory drive and progressive nocturnal hypoventilation) and increased cardiovascular mortality. Paradoxically, obesity appears protective in advanced COPD by reducing FRC, thereby increasing inspiratory capacity and limiting dynamic pulmonary hyperinflation, and ARDS-the so-called obesity paradox-while conferring increased risk in COVID-19 pneumonitis. In lung cancer, obesity demonstrates complex relationships with risk and prognosis that vary by sex, smoking status, and disease stage.

Conclusions: Obesity-related respiratory disorders represent a multifaceted clinical challenge requiring integrated multidisciplinary approaches. Understanding distinct phenotypes and pathophysiological mechanisms is essential for personalized

therapeutic strategies addressing both weight management and respiratory-specific interventions. Emerging pharmacological therapies including GLP-1 receptor agonists and dual GIP/GLP-1 agonists show particular promise in improving OSA severity and airway inflammation.

Keywords: Adipokines; Asthma phenotypes; COVID-19; GLP-1 receptor agonists; Metabolic syndrome; Obesity; Obesity hypoventilation syndrome; Obesity paradox; Obstructive sleep apnea; Respiratory diseases.

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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.

- 124 references
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Chronic Obstr Pulm Dis

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. 2026 May 9.

doi: 10.15326/jcopdf.2025.0735. Online ahead of print.

Association of Short-Term Pollen Exposure With Lung Function in COPD Patients

James P Healy [1], Wenli Ni [1 2 3], Brent Coull [4], Petros Koutrakis [3], Andrew Synn [2], Nicholas Nassikas [1 2], Mary B Rice [1 2 3]

Affiliations Expand

- PMID: 42114267

- DOI: 10.15326/jcopdf.2025.0735

Free article

Abstract

Background: Environmental exposures such as air pollution are well established triggers for Chronic obstructive pulmonary disease (COPD) exacerbation and impaired lung function. However, the role of aeroallergens, particularly pollen, has not been thoroughly examined in COPD, despite evidence that pollen inhalation can cause airway inflammation. We investigated whether short-term exposure to higher concentrations of ambient pollen is associated with changes in lung function in people with COPD.

Methods: Thirty COPD participants, contributing 1,808 observations, were enrolled in the Study of Pollution and COPD Exacerbation (SPACE) and completed four clinic visits over one year while performing daily spirometry during four 30-day seasonal periods. Ambient total pollen was measured regionally. Associations of short-term pollen exposure (lag 1-7 days and cumulative 3- and 7-day concentration) with FEV_1 and FVC were assessed using distributed lag non-linear models with a Generalized Additive Mixed Model. We tested if inflammatory biomarkers, inhaler medications, asthma history and concurrent exposure ambient pollutants (NO_2, $PM_{2.5}$, O_3) modified associations between pollen exposure and lung function.

Results: Pollen exposure at lag 3 day was associated with lower FEV_1 (-5.5 mL per IQR pollen increase; 95% CI: -9.6, -1.3). Cumulative 3-day pollen exposure was similarly associated with lower FEV_1 (-4.9 mL; 95% CI: -9.6, -0.2). Associations of pollen and FEV1 were greater in those with higher CRP and diagnosis of asthma.

Conclusion: In this longitudinal study of people with COPD, higher short-term exposure to ambient pollen in the preceding 3 days was associated with lower FEV_1. Our findings suggest that aeroallergen exposure may worsen airflow obstruction in people with COPD.

Keywords: COPD; lung function; nitrogen dioxide; pollen.

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Observational Study

Pulmonology

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. 2026 Dec;32(1):2671536.

doi: 10.1080/25310429.2026.2671536. Epub 2026 May 11.

Clinical features and longitudinal assessment in outcomes of chronic obstructive pulmonary disease with biomass smoke exposure history: A prospective study of the RealDTC cohort

Ling Lin [1 2 3 4], Jing Li [5], Tao Li [1 2 3 4], Ping Zhang [1 2 3 4], Qing Song [1 2 3 4], Cong Liu [1 2 3 4], Shanshan Chen [6], Juan Chen [6], Yuqin Zeng [1 2 3 4], Yan Chen [1 2 3 4], Kai Deng [6], Ping Chen [1 2 3 4]

Affiliations Expand

- PMID: 42112598

- DOI: 10.1080/25310429.2026.2671536

Free article

Abstract

Objective: This study aimed to explore clinical characteristics and outcomes among patients with biomass smoke-related chronic obstructive pulmonary disease (BS-COPD), those with cigarette smoke-related COPD (CS-COPD), and those exposed to both (CS+BS-COPD). The outcomes of patients receiving different inhaled drugs was also explored.

Methods: This was a real-world, combined cross-sectional and prospective observational study conducted within the RealDTC cohort. The participants were divided into BS-COPD, CS-COPD, and CS+BS-COPD groups. Study outcomes included symptom improvement, moderate-to-severe exacerbations during 1-year follow-up, and all-cause mortality during the total follow-up period.

Results: Among the 4436 eligible patients, compared with the CS-COPD group, the BS-COPD group had more females, higher CAT scores, fewer low attenuation areas (LAA%>5%), but more airway mucus plugs, higher WA%, and higher dPA/A. The CS+BS-COPD group had a higher proportion of LAA%>5% than BS-COPD group and more patients with mucus plugs than CS-COPD group. In the adjusted model, BS-COPD had a lower risk of moderate-to-severe exacerbations than CS-COPD, with similar mortality. The CS+BS-COPD group had a higher incidence of moderate-to-severe exacerbations than the other two groups. Moreover, BS-COPD group experienced greater symptom improvement than the others. Across all groups, LABA+LAMA or ICS+LABA+LAMA were associated with lower exacerbation risk than LAMA alone.

Conclusions: In this real-world study, BS-COPD patients had less emphysema but greater airway wall thickness and more mucus plugs, along with lower exacerbation risk and greater symptom improvement than CS-COPD patients. Combined

exposure to both biofuels and cigarette smoke was associated with an aggravated exacerbation risk.

Keywords: Chronic obstructive pulmonary disease; biomass smoke exposure history; clinical outcome; computed tomography (CT) features.

Supplementary info

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18

Am J Respir Crit Care Med

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. 2026 May 8:aamag231.

doi: 10.1093/ajrccm/aamag231. Online ahead of print.

A GOLD Science Committee Perspective on Exacerbations and Cardiovascular Risk In COPD

Dave Singh [1 2], Alvar Agustí [3], Jean Bourbeau [4], Fernando J Martinez [5], David M G Halpin [6], Claus F Vogelmeier [7]

Affiliations Expand

- PMID: 42104206

- DOI: 10.1093/ajrccm/aamag231

Abstract

Chronic obstructive pulmonary disease (COPD) and cardiovascular diseases (CVDs) have shared risk factors and mechanisms. CVDs are highly prevalent in COPD patients. Additionally, the risk of suffering a cardiovascular (CV) event is increased following an exacerbation and remains elevated for months afterwards. This link between exacerbations and increased CV risk further highlights the importance of preventing exacerbations. Clinical management during and after exacerbations regarding the prevention of CV events remains to be optimised. CV events occur in patients with COPD who have not previously been diagnosed with CVD. Conventional CV risk tools have historically underestimated the risk of CV events in

patients with COPD. All patients with COPD should be investigated for CVDs and markers of CV risk should be assessed at the time of COPD exacerbations. Improving survival in COPD depends on reducing the risk of exacerbations, particularly severe exacerbations, addressing identified CV risk factors and managing CVDs when identified according to guidelines.

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19

Phys Ther

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doi: 10.1093/ptj/pzag051. Online ahead of print.

Sustaining Physical Activity in Chronic Obstructive Pulmonary Disease: A Qualitative Study of Perspectives on a Personalized Community-Based Physical Activity Program (PICk UP)

Patrícia Rebelo [1 2], Dina Brooks [3 4], Alda Marques [1]

Affiliations Expand

- PMID: 42102177

- DOI: 10.1093/ptj/pzag051

Abstract

Importance: Sustaining pulmonary rehabilitation (PR) benefits in community-dwelling individuals with chronic obstructive pulmonary disease (COPD) is challenging.

Objective: The objective of this study was to explore the experiences of individuals with COPD participating in a Personallzed CommUnity-based Physical Activities program (PICk UP) and to identify which behavioral change techniques supported sustained physical activity.

Design: This was a qualitative pre-post intervention study (NCT04223362 | NCT04711057).

Setting: The study was conducted in a community setting.

Participants: This study recruited individuals with COPD assigned to the PICk UP intervention.

Intervention: Participants enrolled in a 6-month, post-PR, community-based program comprising gym, senior exercise classes, pool exercise classes, or Chi Kung.

Main outcome and measures: Participants' perspectives on impacts of the PICk UP program, motivators, facilitators and barriers to adherence were collected through pre-post focus groups. Data were analyzed using deductive and inductive reflexive thematic analysis. The "capability, opportunity, motivation, behavior" (COM-B) framework was used to identify behavioral change techniques.

Results: Fifteen individuals with COPD participated (14 male, 70 (8) years, FEV1 57.1% (18.1%) predicted). Five main themes emerged, focusing on physical activity choice, barriers, facilitators, effects, and suggestions: (1) one size doesn't fit all; (2) organizational factors and system-level support enabling adherence; (3) it doesn't come easy; (4) a positive feedback cycle sustained physical, psychological and social benefits; and (5) the more, the merrier. The PICk UP intervention supported physical activity through 13 behavioral change techniques, across 5 intervention types (education, persuasion, training, environmental restructuring and enablement), collectively addressing all 6 components influencing behavior.

Conclusions: Individuals with COPD reported lasting PR benefits after the PICk UP and were willing to remain physically active. Participants emphasized the importance of diverse physical activity options and support from peers, health, and fitness professionals.

Relevance: To sustain physical activity beyond PR, interventions should prioritize intersectoral partnerships and embed ongoing social support. These findings underscore PICk UP's effectiveness, positioning it as a promising and replicable model for promoting long-term physical activity in individuals with COPD.

Keywords: Chronic Obstructive; Community Resources; Community integration; Physical Activity; Pulmonary Disease; Qualitative research.

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20

Review

Expert Rev Med Devices

. 2026 May 8.

doi: 10.1080/17434440.2026.2671944. Online ahead of print.

Inspiratory muscle training devices for chronic lung disease management: current evidence and future directions

Rogih Andrawes [1], Sophia Wang [1], Sahar Sohrabipour [1], Ewan C Goligher [1 2], Shaf Keshavjee [1 3 4], W Darlene Reid [2 5 6], Dmitry Rozenberg [1 4 7 8]

Affiliations Expand

- PMID: 42102002

- DOI: 10.1080/17434440.2026.2671944

Abstract

Introduction: Inspiratory muscle training (IMT) is a potential adjunct therapy to improve inspiratory muscle strength and endurance, exercise capacity, health-related quality of life (HRQL) and symptoms in chronic lung diseases. A growing number of IMT devices are commercially available; however, their mechanisms, utilization, and supporting evidence vary.

Areas covered: This narrative review summarizes IMT devices used in chronic lung diseases, including threshold trainers, flow-resistive devices, and isocapnic hyperpnea devices. A PubMed search to February 2026 identified studies that tested commercially available IMT devices in chronic lung disease and described their mechanism, usability and their efficacy or effectiveness. Manufacturer websites also provided device-specific information. Factors that influence IMT outcomes are described including: training intensity, duration, frequency, patient selection, and practical considerations.

Expert opinion: IMT is a feasible intervention that improves inspiratory muscle strength and exercise capacity, commonly improving respiratory symptoms and HRQL. Device type (pressure-threshold versus flow-resistive) and practical factors, including cost, usability, supervision, and feedback capabilities may influence both training load and clinical response. Future directions include perioperative IMT as a prehabilitation strategy, the potential role of respiratory muscle memory, and the development of digital and artificial intelligence-enhanced IMT devices.

Keywords: Respiratory muscles; breathing exercises; exercise therapy; lung diseases; pulmonary disease, obstructive; rehabilitation.

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Editorial

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. 2026 May 14;81(6):522-523.

doi: 10.1136/thorax-2026-224810.

When biomarkers disagree: interpreting *F* eNO and eosinophils across airway disease

Angel Almansa-López [1], Pedro Jose Romero-Palacios [2], Bernardino Alcazar Navarrete [3 2]

Affiliations Expand

- **PMID: 42055912**

- **DOI: 10.1136/thorax-2026-224810**

Free article

No abstract available

Keywords: COPD Pathology; Eosinophil Biology.

Conflict of interest statement

Competing interests: AA-L has nothing to disclose. PJ reports personal fees and non-financial support from GSK, non-financial support from Novartis AG, non-financial support from Boehringer Ingelheim, non-financial support from Chiesi, grants, personal fees and non-financial support from Laboratorios Menarini, personal fees from Esteve, outside the submitted work. BAN reports grants and personal fees from GSK, grants, personal fees and non-financial support from AstraZeneca, personal fees and non-financial support from Boehringer Ingelheim, personal fees and non-financial support from Chiesi, personal fees and non-financial support from CSL, personal fees and non-financial support from Grifols, personal fees from Bial, personal fees from Zambon, personal fees from PulmonX, personal fees from MSD and personal fees from Sanofi, outside the submitted work.

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Review

Vaccine

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. 2026 May 10:81:128560.

doi: 10.1016/j.vaccine.2026.128560. Epub 2026 Apr 17.

Enhancing uptake of respiratory vaccinations in asthma and chronic obstructive pulmonary disease (COPD) patients: a systematic review

Radhika Rani Gulati [1], Fatima Yaqub [2], Anna L Goodman [3]

Affiliations Expand

- **PMID: 42000586**

- DOI: 10.1016/j.vaccine.2026.128560

Abstract

Introduction: Despite influenza, pneumococcal and COVID vaccines being widely recommended for patients with chronic respiratory disease, vaccination rates in this cohort remain low. The aim of this systematic review is to identify interventions which are effective in increasing respiratory vaccination rates in adults with chronic obstructive pulmonary disease (COPD) or asthma.

Methods: The inclusion and exclusion criteria for the study can be found in the PROSPERO protocol (PROSPERO registration no: CRD42025588565). A search was run across four databases (MEDLINE, Embase, CENTRAL and ClinicalTrials.gov) in February 2025, which returned 2537 studies. Eleven studies were deemed to meet the study inclusion/exclusion criteria and these were narratively synthesised: four randomised clinical trials (RCTs), six longitudinal studies and one observational cohort study. Risk of bias was assessed using the Cochrane's Risk of Bias (RoB-V2) and ROBIN-I-V2 tools. Studies were categorised according to the COM-B model of behaviour change.

Results: All 11 studies consisted of COPD populations, with four studies also including asthma patients. Interventions focused on patient education, with/without involvement of a healthcare professional (HCP). Nine of the eleven studies showed a statistically significant improvement in influenza and/or pneumococcal vaccination rate with an intervention. No studies assessing COVID vaccine uptake in this population were suitable for inclusion. Most studies targeted patients' capability to get vaccinated through improving patients' and HCPs' knowledge. Fewer studies focused on social opportunity (e.g. support from other patients/HCPs) or automatic motivation (e.g. reminders).

Discussion: The published literature in this area is currently limited. Most studies are non-randomised and are at high-risk of bias, making meta-analysis not possible. Further research should assess the practicalities (physical opportunity) of vaccination, especially in low-income economies (where most respiratory patients reside) and standardising research methods to allow for future meta-analysis.

Other: There is no funding for this review.

Keywords: Asthma; Behavioural science; COPD; Health promotion; Influenza; Pneumococcal; Public health; Vaccine; Vaccine hesitancy.

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Conflict of interest statement

Declaration of competing interest The authors declare the following financial interests/personal relationships which may be considered as potential competing interests: Oxford University has entered into a partnership with AstraZeneca for further development of ChAdOx1 nCoV-19. Anna Goodman is named as an inventor on a patent covering use of a particular promoter construct that is often used in ChAdOx1-vectored vaccines and is incorporated in the ChAdOx1 nCoV-19 vaccine. She has benefited from royalty income paid to the University of Oxford from sales of

this vaccine by AstraZeneca and its licensees under the University's revenue sharing policy. She may benefit further in the future. The organisation and department in which we work has delivered vaccine trials for commercial sponsors including Jansen, AZ, Moderna, Novavax.

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Editorial

Thorax

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. 2026 May 14;81(6):520-521.

doi: 10.1136/thorax-2025-224688.

Predicting severe COPD exacerbations: are we ready for risk-based care?

Frits M E Franssen [1]

Affiliations Expand

- PMID: 41922175

- DOI: 10.1136/thorax-2025-224688

No abstract available

Keywords: COPD Exacerbations; COPD epidemiology.

Conflict of interest statement

Competing interests: Personal fees for lectures, advisory boards, podcasts and consultancies from AstraZeneca, Chiesi, GSK, Pfizer, Sanofi and Regeneron. Institutional grant from AstraZeneca as well as travel support.

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Editorial

Thorax

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. 2026 May 14;81(6):514-515.

doi: 10.1136/thorax-2025-224687.

LAMA and ICS discontinuation in COPD: run-in to an exacerbation?

Bram van den Borst [1], Wouter Heero van Geffen [2]

Affiliations Expand

- PMID: 41720632

- DOI: 10.1136/thorax-2025-224687

No abstract available

Keywords: COPD Epidemiology; COPD Exacerbations; COPD Exacerbations Mechanisms; COPD Pharmacology.

Conflict of interest statement

Competing interests: BB reports institutional grants by AstraZeneca, GSK, Chiesi and Sanofi. WvG reports to be site investigator for trials run by his department funded by Roche, Pfizer, Novartis, Novocure, MSD, BMS, Taiho.

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Randomized Controlled Trial

Thorax

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. 2026 May 14;81(6):533-540.

doi: 10.1136/thorax-2025-223282.

Disproportionate increase in COPD exacerbation risk for 3 months after discontinuing LAMA or ICS: insights from the FLAME trial

Alexander G Mathioudakis [1 2], Sebastian Bate [3 4], Victoria Chatzimavridou-Grigoriadou [5], Pradeesh Sivapalan [6 7], Jens-Ulrik Stæhr Jensen [6 7], Nawar Diar Bakerly [8], Jørgen Vestbo [9 6], Dave Singh [9 2 10]

Affiliations Expand

- PMID: 41402044

- DOI: 10.1136/thorax-2025-223282

Abstract

Background: In real-world chronic obstructive pulmonary disease (COPD) care, poor adherence often leads to treatment discontinuations. Discontinuing inhaled corticosteroids (ICS) can trigger withdrawal effects transiently increasing exacerbation risk; but evidence for long-acting muscarinic antagonists (LAMA) withdrawal remains limited.

Methods: We performed a post hoc analysis of the 52-week, double-blind, Effect of Indacaterol Glycopyrronium versus Fluticasone Salmeterol on COPD Exacerbations trial that compared long-acting beta-2 agonist (LABA)+LAMA with LABA+ICS in 3362 patients with moderate-to-severe COPD and exacerbation history. Potential withdrawal effects after discontinuing LAMA or ICS were suggested by monthly exacerbation incidence plots during the first quarter of follow-up. Participants were stratified by their baseline use of these therapies, and outcomes were compared between the first and subsequent quarters among those who continued versus discontinued each treatment. Multivariable mixed-effects models assessed

differences in exacerbation rates, with temporal variation in treatment effects interpreted as indicative of withdrawal effects.

Results: Discontinuing LAMA was associated with a marked, transient increase in moderate-to-severe exacerbations during the first versus subsequent quarters (p=0.001; rate ratio up to 2.2 (95% CI 1.2 to 4.1) in the subgroup least influenced by concomitant ICS use). This observation was not confirmed for severe exacerbations, likely due to low event count. In contrast, discontinuing ICS was associated with a significant early rise in severe exacerbations (p=0.023), though the difference for moderate-to-severe events did not reach statistical significance. Importantly, ICS withdrawal effects appeared consistent regardless of baseline blood eosinophil count.

Conclusion: Our findings suggest potent LAMA and ICS treatment withdrawal effects on exacerbations, highlighting the importance of treatment adherence and accounting for withdrawal effects in clinical trials.

Trial registration number: NCT01782326.

Keywords: COPD Exacerbations; COPD Pharmacology.

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Conflict of interest statement

Competing interests: The authors declare no conflicts of interest directly related to this work. SB, VC-G, PS and J-USJ report no conflicts of interest. AGM reports honouraria for presenting from GSK, consulting fees from Sanofi, share options from ChestPal and non-financial support by Verona Pharma, not related to this work. NDB reports honouraria from AstraZeneca, GlaxoSmithKline, Sanofi, Orion, Chiesi, Teva and Boehringer Ingelheim and support for attending meetings from Chiesi, GlaxoSmithKline, AstraZeneca and Sanofi, not related to this work. JV reports consulting fees from GlaxoSmithKline, honouraria from AstraZeneca, Chiesi and GlaxoSmithKline, and participation on advisory board for GlaxoSmithKline, not related to this work. DS reports consulting fees from Adovate, Almirall, Anaveon, Apogee, Arcutis Biotherapeutics, Arrowhead, AstraZeneca, Belenos Biosciences, Bial, Celldex, Chiesi, Cipla, CONNECT Biopharm, Covis, DevPro Biopharma LCC, Elpen, Empirico, EpiEndo, Generate Biomedicines, GlaxoSmithKline, Glenmark, Jasper, Kinaset Therapeutics, KOLON, Kymera, Lupin, Melodia, Menarini, MicroA, OM Pharma, OrientEuroPharma, Recipharm, Revolo, RIGImmune, Roche, Roivant Sciences, Sanofi, Sitryx, Synairgen, Tetherex, UCB, Upstream, Verona Pharma, Winward, Zura Bio, Zymeworks, not related to this work.

Supplementary info

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Thorax

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. 2026 May 14;81(6):581-590.

doi: 10.1136/thorax-2025-223967.

Measurement properties of the sit-to-stand test in community-dwelling people with chronic obstructive pulmonary disease: a COSMIN systematic review

Christopher Farley [1], Anastasia N L Newman [1], Stuart M Phillips [2], Jenna Smith-Turchyn [1], Dina Brooks [3 4]

Affiliations Expand

- PMID: 41386962

- DOI: 10.1136/thorax-2025-223967

Abstract

Background: The sit-to-stand (STS) test can assess physical function in people with chronic obstructive pulmonary disease (COPD); however, there are multiple versions. No study has used current guidelines to assess the measurement properties of the STS tests in people with COPD.

Methods: We conducted a systematic review using current COnsensus-based Standards for the selection of health Measurement INstruments (COSMIN) guidelines. Full text peer-reviewed publications were included if they assessed the measurement properties (validity, reliability and/or responsiveness) of at least one STS test among community-dwelling people with COPD. We searched six databases and imported results into Covidence where title/abstract screening and full text selection was completed independently and in duplicate. Extraction was conducted independently and in duplicate using the COSMIN extraction file. We assessed study risk of bias (very good, adequate, doubtful or inadequate), measurement property quality (sufficient, indeterminate or insufficient) and overall certainty of evidence (high, moderate, low or very low) using the COSMIN recommended tools.

Results: We assessed 2577 titles/abstracts and 102 full texts for inclusion; 30 publications met eligibility. Seven unique STS tests were located with the most common being the 1 min STS test (n=14, 39%), 5-repetition STS test (n=10, 28%) and the 30 s STS test (n=8, 22%). Where assessed, reliability was sufficient for the 1 min, the 5-repetition and the 30 s STS tests. Only the 1 min STS test had high-quality evidence of sufficient construct validity, while the 30 s STS test was the sole test with at least moderate quality evidence of sufficient responsiveness.

Conclusions: The 1 min STS test has the most robust measurement properties for cross-sectional assessments while the 30 s STS test is more robust to assess change.

Keywords: Exercise; Pulmonary Disease, Chronic Obstructive; Pulmonary Rehabilitation.

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Conflict of interest statement

Competing interests: None declared.

Supplementary info

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27

Int J Cancer

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Characteristics and overall survival in patients with T1 melanoma: A nationwide matched cohort study

Ylva Naeser [1 2], Rasmus Mikiver [3 4], Karolin Isaksson [5 6], Mats Lambe [7], Gustav J Ullenhag [1 2]

Affiliations Expand

- **PMID: 41386727**
- **PMCID: PMC12996739**
- **DOI: 10.1002/ijc.70287**

Abstract

Most cutaneous malignant melanomas (CMMs) are thin (≤1.0 mm, stage T1) with an expected 10-year melanoma-specific survival of 93%-97%. The incidence of CMM is higher in groups with high socioeconomic status (SES). We aimed to assess overall survival (OS) and detailed characteristics in individuals with thin CMM as compared to the general population matched on age, sex, and county of residence. Matched cohort study comprising patients diagnosed between 2001 and 2018 with thin CMM (cases) and melanoma-free comparators from the general population. Patients and comparators were identified in the Malignant Melanoma Data Base Sweden. Multivariable Cox regression analyses were applied to compare the mortality risk for cases and comparators with adjustments for SES and comorbidities. We identified 25,843 cases and 127,383 comparators. Cases had higher SES and less comorbidity. No significant differences in OS were found. However, in the T1a subgroup, comprising 16,941 cases, the 5-year OS was significantly better than in comparators (n = 83,510) (92.5% (95% CI 92.1%-93.0%) versus 91.1% (95% CI 90.8%-91.3%), p <.001). The adjusted mortality risk was slightly higher for the whole T1 group (HR 1.05, 95% CI 1.01-1.09), while no difference was found for the T1a subgroup. Deaths attributed to cardiovascular disease, dementia, and chronic obstructive pulmonary disease were less common in CMM patients. Patients diagnosed with thin CMM have an OS similar to or even better than the general population since they are at a lower risk of death from other diseases, likely reflecting socioeconomic and lifestyle factors.

Keywords: cohort studies; comorbidity; melanoma, cutaneous malignant; socioeconomic factors; survival.

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Conflict of interest statement

None of the authors have any competing interests to declare.

- 47 references
- 2 figures

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Multicenter Study

Thorax

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. 2026 May 14;81(6):524-532.

doi: 10.1136/thorax-2025-223921.

Disproportionate impairment in diffusing capacity predicts pulmonary hypertension with an elevated pulmonary vascular resistance in COPD

Aparna Balasubramanian [1], Anna R Hemnes [2], Evan L Brittain [3], Jeffrey Annis [3], Ashraf Fawzy [1], Nirupama Putcha [1], Anil Singh [4], Robert A Wise [1], Nadia N Hansel [1], Catherine Simpson [1], Todd M Kolb [1], Paul M Hassoun [1], Meredith C McCormack [1], Stephen C Mathai [5]

Affiliations Expand

- PMID: 41309285
- PMCID: PMC13098466
- DOI: 10.1136/thorax-2025-223921

Abstract

Background: Current guidelines for the evaluation of chronic obstructive pulmonary disease (COPD) do not recommend screening for pulmonary hypertension (PH), despite the high prevalence and impact on outcomes. A simple screening tool to identify patients with an elevated pulmonary vascular resistance (PVR) is urgently needed, as they may benefit from PH-specific therapy and more urgent referral for lung transplantation.

Research question: We sought to examine whether a ratio of forced expiratory volume in 1 s (FEV_1) to diffusing capacity (DLCO) predicts haemodynamic patterns in COPD.

Study design and methods: Individuals with COPD who underwent right heart catheterisation from two academic medical centres were included. Adjusted multinomial models tested associations between FEV_1/DLCO and haemodynamic patterns. Receiver operating curves were generated to assess the discriminative performance of the FEV_1/DLCO ratio in predicting PH with an elevated PVR.

Results: Approximately 40% of the 411 individuals included had PH with an elevated PVR. For every 0.1 increase in the FEV_1/DLCO ratio, there was a 12-14% increased rate of PH with an elevated PVR compared with No PH. FEV_1/DLCO ratio had moderate discriminative performance (C-statistic 0.68-0.72), which was strengthened when combined in a model with elevated tricuspid regurgitant jet

velocity on echocardiography (C-statistic 0.78-0.82). Above a threshold of 1.4, FEV_1/DLCO demonstrated good specificity (75%) in predicting PH with an elevated PVR.

Interpretation: These findings suggest that disproportionate reductions in DLCO predict PH with an elevated PVR in a COPD population. The FEV_1/DLCO ratio should be considered in the evaluation of PH in COPD.

Keywords: COPD epidemiology; Pulmonary Hypertension.

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

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Heart Lung Circ

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doi: 10.1016/j.hlc.2026.05.001. Online ahead of print.

Characterising Multimorbidity in Adults With Heart Failure: A Latent Class Analysis

Shirin O Hiatt [1], Paula M Meek [2], Bob G Wong [2], Christopher S Lee [3], Quin E Denfeld [4]

Affiliations Expand

- PMID: 42140811

- DOI: 10.1016/j.hlc.2026.05.001

Abstract

Introduction/purpose: Multimorbidity (MM) is highly prevalent in patients with heart failure (HF) and associated with worse outcomes; however, our understanding of the heterogeneity of MM in HF is limited. The purpose of this study was to identify and characterise MM classes among adults with HF.

Methods and results: We conducted a retrospective modified cross-sectional analysis of the combined baseline data repository of adults with New York Heart Association Class I-IV HF enrolled at a single healthcare centre. Comorbidities were assessed with the Charlson Comorbidity Index (CCI), and latent class mixture modeling was used to identify MM classes. Descriptive and comparative statistics

were used to characterise classes. The sample (n=523) was 73% male, with an average age of 58.3±14.0 years. Nearly 92% of the sample had at least one additional comorbidity with hypertension (59%), atrial fibrillation (48%), sleep apnoea/disordered breathing (41%), diabetes (40%), and myocardial infarction (36%) as the most prevalent comorbidities. We identified four distinct MM classes of comorbidity dominance: neurovascular-renal (4.5%; oldest, living alone, highest CCI), obesity-metabolic (31.7%; second-oldest, married/partnered, most financial instability), atrial fibrillation (31.9%; lowest CCI), and early comorbidity (31.9%; youngest, second-most financial instability) in patients with HF, each with differences in characteristics.

Conclusions: We found multiple classes of MM with varying characteristics that may have implications for HF management. Coupled with geriatric cardiology principles related to MM, these findings highlight the need to explore the occurrence of MM, including its effects on patient outcomes, and to provide appropriate person-centred care.

Keywords: Geriatric syndrome; Heart failure; Multimorbidity.

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Conflict of interest statement

Declaration of Competing Interests The authors declare no conflicts of interest associated with this article.

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. 2026 May 8:21:597992.

doi: 10.2147/CIA.S597992. eCollection 2026.

Rehospitalisation Patterns in Very Old Adults with Heart Failure Managed Within an Integrated Cardiogeriatric Post-Discharge Care Pathway: The REACT-HF Study

Rémi Esser [1], Marine Larbaneix [1], Alejandro Mondragon [1], Mathieu Co [1], Marlène Esteban [1], Christine Farges [1], Marc Harboun [1], Nicolas Pages [2], Sophie Nisse Durgeat [2], Olivier Maurou [1]

Affiliations Expand

- **PMID: 42137614**

- **PMCID: PMC13168900**

- **DOI: 10.2147/CIA.S597992**

Abstract

Purpose: Very old adults with heart failure (HF) experience high rehospitalisation rates related to multimorbidity, functional vulnerability, and complex care transitions. Empirical evidence on factors associated with rehospitalisation in very old adults with HF managed within integrated post-discharge care pathways remains limited. This study aimed to describe rehospitalisation patterns and associated clinical markers in very old patients with HF managed within an integrated cardiogeriatric post-discharge pathway.

Patients and methods: This retrospective single-centre cohort included patients aged ≥65 years hospitalised for acute HF and enrolled at discharge in an integrated cardiogeriatric pathway combining structured remote monitoring, rapid-access day-hospital services and coordinated outpatient follow-up (April 2023-August 2025). Analyses were restricted to patients who survived the early post-discharge period and had available 12-month follow-up data, in order to assess rehospitalisation status at predefined post-discharge time points. The primary outcome was unplanned HF rehospitalisation at 12 months; secondary outcomes included rehospitalisation at 3 and 6 months, predictors of rehospitalisation and hospital length of stay. Exploratory multivariable logistic regression analyses were performed.

Results: Among 255 very old patients with available 12-month follow-up data (median age 87 years), rehospitalisation rates were 9.8% at 3 months, 16.1% at 6 months and 24.7% at 12 months. Higher loop diuretic dose was associated with rehospitalisation at 3 months. At 6 months, moderate-to-severe mitral regurgitation, higher diuretic dose and absolute iron deficiency were independently associated with rehospitalisation. At 12 months, moderate-to-severe mitral regurgitation, iron deficiency and chronic obstructive pulmonary disease were independently associated. These findings apply to patients who survived the early post-discharge period and had sufficient follow-up data, rather than to an unselected acute HF population.

Conclusion: In very old patients with HF and available longitudinal follow-up, higher loop diuretic dose, iron deficiency, moderate-to-severe mitral regurgitation, and COPD were associated with rehospitalisation status at predefined time horizons. These exploratory findings suggest that routinely available clinical markers may help support risk-stratified follow-up in advanced-age HF populations.

Keywords: heart failure; integrated care; older adults; rehospitalisation.

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Conflict of interest statement

Sophie Nisse Durgeat and Nicolas Pages are employed by NP Medical. All other authors declare that they have no conflicts of interest related to this work.

- 27 references
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J Med Internet Res

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. 2026 May 14:28:e80302.

doi: 10.2196/80302.

EPOCA Tele-Monitoring System for Older Adults at High Risk of Hospitalization: Budget Impact and Cost-Effectiveness Analysis

Henri Leleu [1], Damien Testa [2], Mireille Dutech [2], Etienne Minvielle [3 4], Elise Cabanes [2]

Affiliations Expand

- **PMID: 42133603**
- **DOI: 10.2196/80302**

Free article

Abstract

Background: France's aging population faces high rates of chronic illness, multimorbidity, and avoidable hospitalizations, placing pressure on an already strained health care system. Remote monitoring systems have shown promise in improving care coordination and reducing acute care use.

Objective: The objective of this study was to assess the cost-effectiveness of the EPOCA remote monitoring system, implemented within the Vigie-Age framework, compared to the standard of care for older adults with multiple chronic conditions.

Methods: Using data from the Vigie-Age Article 51 pilot study (with 722 participants, including 408 participants with long-term follow-up), a cost-utility analysis was conducted over a 10-year lifetime horizon. A Markov model with daily cycles simulated transitions across health states: at home, emergency department visits, hospitalization, and death. Analyses were conducted from both the French National Health Insurance (NHI) and collective perspectives. Direct medical costs, including hospital, outpatient, and intervention costs, were included. Health outcomes were measured in quality-adjusted life years (QALYs). Deterministic and probabilistic sensitivity analyses assessed model robustness.

Results: EPOCA was associated with a reduction in emergency department visits by 54% and in hospitalizations by 46%, cutting the average hospital stay from 55.6 (SD 51.7) to 30.6 (SD 27.8) days. Total costs per patient were €29,165 (EUR €1=US $1.13) with EPOCA and €39,929 for standard of care, representing a €10,764 saving from the collective perspective and a €7,430 saving from the NHI perspective. EPOCA yielded 0.04 additional QALYs and remained cost-saving even at higher program costs. Sensitivity analyses confirmed the robustness of the results. EPOCA had a 90% probability of being dominant and a 95% probability of being cost-effective at a €30,000 per QALY threshold.

Conclusions: On the basis of currently available evidence, EPOCA may be a cost-effective strategy for older patients at high risk of hospitalization. It could reduce health care use while improving outcomes, supporting its integration into national older adult care pathways and reimbursement by the French NHI.

Keywords: budget impact analysis; cost-effectiveness; older adults; patient remote monitoring; polypathology.

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BMC Public Health

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. 2026 May 13.

doi: 10.1186/s12889-026-27719-0. Online ahead of print.

Accelerometer-derived "weekend warrior" physical activity pattern and trajectory of cardio-renal-metabolic multimorbidity: a multi-state analysis in the UK Biobank

Zhouyang Sun [1], Tingyi Jia [1], Meng Li [1], Jiaxin Yu [1], Xinyu Zhang [1], Chenxu Su [1], Yanan Wang [1], Jiaoqiang Chen [1], Puheng You [1], Changgui Kou [#2], Wei Bai [#3]

Affiliations Expand

- PMID: 42129717

- DOI: 10.1186/s12889-026-27719-0

Free article

Abstract

Background: Cardio-renal-metabolic multimorbidity (CRMM), defined as the coexistence of at least two of cardiovascular disease (CVD), type 2 diabetes (T2D), and chronic kidney disease (CKD), poses a major public health challenge. Moderate-to-vigorous physical activity (MVPA) may reduce the risk of these individual diseases, yet studies examining its association with longitudinal disease progression are lacking.

Methods: We analyzed 76,875 UK Biobank participants with valid 7-day wrist-worn accelerometer data (2013-2015). MVPA patterns were categorized as inactive, regularly active, or weekend warrior (WW). Multi-state models were used to characterize longitudinal transitions from a healthy state to first cardio-renal-metabolic disease (FCRMD), subsequent progression to CRMM, and all-cause mortality. Fully adjusted Cox and multi-state models estimated effect sizes, with subgroup and sensitivity analyses assessing robustness.

Results: Over a median follow-up of 8.1 years, 8,495 participants developed FCRMD, 934 progressed to CRMM, and 2,373 died. Compared with inactive participants, regularly active (HR = 0.82, 95% CI: 0.77-0.87) and WW (HR = 0.83, 95% CI: 0.79-0.87) had lower risks of transitioning from healthy to FCRMD and from FCRMD to CRMM (regularly active: HR = 0.75, 95% CI: 0.62-0.91; WW: HR = 0.81, 95% CI: 0.69-0.94), with reduced mortality across other transitions except CRMM-to-death. Protective effects were stronger among women for the transition to FCRMD and among participants without hypertension during subsequent disease progression. Subgroup and sensitivity analyses confirmed robustness.

Conclusions: Both regularly active and weekend warrior patterns of baseline MVPA were associated with lower risks of CRMD onset and progression, particularly during the early stages, underscoring the public health value of MVPA and the importance of early intervention for precision prevention.

Keywords: Accelerometer; Cardio-renal-metabolic multimorbidity; Moderate-to-vigorous physical activity; Multi-state model; Weekend warrior.

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Conflict of interest statement

Declarations. Ethics approval and consent to participate: All participants provided written informed consent. The UKB was approved by the North West Multicenter Research Ethical Committee. Consent for publication: Not applicable. Competing interests: The authors declare no competing interests.

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Nutr Health

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doi: 10.1177/02601060261449373. Online ahead of print.

Binge eating, multimorbidity and sociodemographic characteristics are associated with a high prevalence of depression and anxiety in adults with class II and III obesity

Erika Aparecida Silveira [1,2], Andrea Batista de Sousa Canheta [1], Victor Cordeiro Simão [3], Andrea Toledo de Oliveira Rezende [1], Annelisa Silva E Alves de Carvalho Santos [1], Cesar de Oliveira [2]

Affiliations Expand

- **PMID: 42125853**

- **DOI: 10.1177/02601060261449373**

Abstract

BackgroundObesity increases chronic disease risk and is related to psychological implications like depression and anxiety. However, research has predominantly focused on overweight or class I obesity, leaving a gap concerning severe (class II/III) obesity. The objective of this study was to evaluate the prevalence of anxiety and depression and associated factors in adults with class II/III obesity.MethodsThis

cross-sectional study used baseline data from the DieTBra Clinical Trial. A total of 150 adults (mean age 39.6 ± 8.8 years; 85.3% female) with class II/III obesity were evaluated. Sociodemographic, lifestyle, biochemical variables (iron, 25-hydroxyvitamin D, vitamin B12, homocysteine, C-reactive protein), multimorbidity, and binge eating disorder (BED) were assessed. The hospital anxiety and depression scale and binge eating scale were used. The outcomes analyzed were anxiety symptoms, depression, and their co-occurrence, using multiple Poisson regression with a significance level of 5%.ResultsThe prevalence of depression was 63.3%, anxiety 72.7%, and their co-occurrence was 56.7%. After multivariate analysis, factors associated with anxiety were female sex (p = 0.048), age over 50 (p = 0.029), lower educational level (p = 0.002), and BED (p = 0.003). Factors associated with depression included: female sex (p = 0.006), age over 50 (p = 0.029), age 18-29 (p = 0.043), multimorbidity (p = 0.027), and BED (p = 0.026).ConclusionsWe observed high prevalences of anxiety, depression, and their co-occurrence in adults with class II/III obesity. Independent risk factors included female sex, specific age groups, lower educational level, multimorbidity, and BED. Future longitudinal studies are needed to establish causality, and interventional research should focus on these high-risk subgroups.

Keywords: Nutrition; anxiety; binge eating; depression; obesity.

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Respir Med

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. 2026 May 11:258:108888.

doi: 10.1016/j.rmed.2026.108888. Online ahead of print.

Exploring the bone-vascular axis: AI-augmented chest CT analysis in COPD highlights association between vertebral bone density and arterial calcifications

Viktoria Palm [1], Andreas Wagner [2], Ondrej Havlicek [2], Sam Sedaghat [2], Sebastian Nauck [1], Oyunbileg von Stackelberg [3], Bertram Jobst [4], Franziska C Trudzinski [5], Kathrin Kahnert [6], Jürgen Biederer [7], Hans-Ulrich Kauczor [1], Bettina K Budai [8]; COSYCONET study group

Affiliations Expand

- **PMID: 42119926**

- DOI: 10.1016/j.rmed.2026.108888

Abstract

Objectives: Artificial intelligence (AI) tools enable automated assessment of vertebral bone mineral density (BMD), coronary artery calcification (CAC), and aortic calcification on CT scans, offering multimorbidity analysis in chronic obstructive pulmonary disease (COPD) patients. We aimed to investigate the bone-vascular axis with a focus on COPD severity and inhaled corticosteroid (ICS) use.

Methods: Low-dose chest CTs of 540 patients from the COSYCONET study were analyzed using AI-based tools. Total thoracic calcification (TTC) was defined as the sum of CAC and aortic calcification volumes. The BMD was measured for T12 in Hounsfield units. Group comparisons and correlation analyses were stratified by COPD severity (GOLD 0-2 vs. GOLD 3-4) and ICS treatment. The modification effect was assessed with multivariable and interaction models.

Results: Higher CAC and TTC were significantly associated with increased age, smoking, BMI, and impaired physical function, while gait speed, female sex, and BMD were inversely associated. With no significant difference between GOLD stages, BMD showed a consistent negative correlation with both CAC (ρ = -0.247 and -0.243) and TTC (ρ = -0.286 and -0.304). Interaction analyses revealed no significant modification effect for COPD severity; a marginally significant trend toward a stronger association among ICS users for CAC (β = -0.175, p = 0.042), but no significant effect for TTC.

Conclusion: The decreased vertebral BMD was associated with increased vascular calcification, independent of COPD severity and marginally dependent on ICS therapy. These findings support the concept of "bone-vascular axis", likely driven by shared degenerative mechanisms.

Keywords: Artificial intelligence; Bone density; Chronic obstructive pulmonary disease; Multimorbidity; Vascular calcification.

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Conflict of interest statement

Declaration of competing interest The authors declare the following financial interests/personal relationships which may be considered as potential competing interests: Hans-Ulrich Kauczor reports financial support was provided by Project DEAL. Hans-Ulrich Kauczor reports financial support was provided by PERMED-COPD. Franziska C. Trudzinski reports a relationship with Boehringer Ingelheim that includes: speaking and lecture fees. Franziska C. Trudzinski reports a relationship with GlaxoSmithKline that includes: speaking and lecture fees. Franziska C. Trudzinski reports a relationship with GrifolsNovartis that includes: speaking and lecture fees. Franziska C. Trudzinski reports a relationship with CSL Behring that includes: speaking and lecture fees. Franziska C. Trudzinski reports a relationship with Streamed up that includes: speaking and lecture fees. Franziska C. Trudzinski reports a relationship with RG Gesellschaft für Information and Organisation mbH that includes: speaking and lecture fees. Franziska C. Trudzinski reports a relationship with E&H Knorr Stiftung that includes: funding grants. Hans-Ulrich

Kauczor reports a relationship with Boehringer Ingelheim that includes: speaking and lecture fees. Hans-Ulrich Kauczor reports a relationship with Siemens that includes: speaking and lecture fees. Hans-Ulrich Kauczor reports a relationship with Philips that includes: speaking and lecture fees. Hans-Ulrich Kauczor reports a relationship with Streamed Up that includes: speaking and lecture fees. Hans-Ulrich Kauczor reports a relationship with Boehringer Ingelheim that includes: funding grants. Hans-Ulrich Kauczor reports a relationship with Siemens that includes: funding grants. Hans-Ulrich Kauczor reports a relationship with Philips that includes: funding grants. Hans-Ulrich Kauczor reports a relationship with Contextflow GmbH that includes: board membership. Hans-Ulrich Kauczor reports a relationship with Median that includes: board membership. If there are other authors, they declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

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Eur J Cancer Prev

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. 2026 May 13.

doi: 10.1097/CEJ.0000000000001023. Online ahead of print.

The association between the number of chronic diseases and cancer: the mediating role of frailty

Yuting He [1], Xiaosong Song [2], Yu Zhao [1]

Affiliations Expand

- PMID: 42117376

- DOI: 10.1097/CEJ.0000000000001023

Abstract

Chronic multimorbidity is linked to elevated cancer risk, but the underlying pathways remain unclear. This study aimed to examine the association between the number of chronic diseases and cancer and to assess the potential mediating role of frailty. Data from the 2011 to 2015 China Health and Retirement Longitudinal

Study involving 16 848 participants for cross-sectional analysis and 12 702 for longitudinal follow-up were used. Frailty was assessed using a 32-item frailty index. Multivariable logistic and Cox proportional hazards regressions assessed associations between chronic disease count (0, 1, ≥2) and cancer prevalence/incidence. A mediation analysis quantified frailty's mediating effect. After full adjustment, having two or more chronic diseases was significantly associated with higher cancer prevalence [odds ratio (OR) = 1.94, 95% confidence interval (CI): 1.22-3.08, P = 0.005) and elevated risk of incident cancer (hazard ratio = 1.96, 95% CI:1.17-3.28, P = 0.010). These associations remained consistent across subgroups stratified by demographic characteristics and lifestyle factors. Frailty itself was independently associated with cancer outcomes (prevalence OR = 5.19, incidence hazard ratio = 2.04) and mediated 34.28% of the total effect (β = 0.0007, 95% CI: 0.0004-0.0012, P < 0.0001). An elevated number of chronic diseases is associated with an increased risk of cancer, and frailty itself is a strong independent risk factor for cancer. Importantly, frailty acts as a key mediator. Interventions targeting frailty may help mitigate cancer risk in individuals with chronic multimorbidity.

Keywords: cancers; chronic diseases; frailty; mediation analysis.

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Review

Curr Med Res Opin

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. 2026 May 11:1-17.

doi: 10.1080/03007995.2026.2667509. Online ahead of print.

From survival to healthy aging: reframing HIV care for older adults

Chisom Ogochukwu Ezenwaji [1], Ngozi Asadu [1], Kosy Nneoma Ezenwaji [2], Esther Ugo Alum [3 4]

Affiliations Expand

- **PMID: 42113128**

- **DOI: 10.1080/03007995.2026.2667509**

Abstract

Background: Effective antiretroviral therapy (ART), has transformed HIV into a chronic condition, enabling more people with HIV to reach older age. However, longevity has exposed a growing burden of multimorbidity, frailty, functional decline, polypharmacy, and age-related syndromes that are not adequately addressed by ART-centered care models.

Aim: This review reframes HIV care for older adults by synthesizing evidence on biological aging, multimorbidity, geriatric syndromes, pharmacological challenges, and care-system responses in high-income and low- and middle-income settings.

Method: This narrative review synthesizes current evidence on HIV, aging, and multimorbidity, focusing on biological, clinical, and socio-cultural dimensions. Literature searches were conducted in PubMed, Scopus, and Web of Science up to August 2025 using relevant keywords. Priority was given to large cohort studies, randomized trials, and systematic reviews.

Results: Aging with HIV is driven by chronic immune activation, inflammaging, immunosenescence, mitochondrial dysfunction, epigenetic aging, cumulative ART exposure, and social determinants. These processes contribute to interconnected cardiovascular, metabolic, renal, bone, neurocognitive, malignant, and mental health conditions. Geriatric syndromes such as frailty, sarcopenia, falls, sensory impairment, and polypharmacy further complicate care, with greater challenges in low- and middle-income countries (LMICs) due to infectious comorbidities, limited diagnostics, weak geriatric services, and restricted access to essential medicines.

Conclusion: HIV care must evolve beyond viral suppression to integrated, age-friendly, context-sensitive models that combine ART with multimorbidity screening, medication review, functional assessment, mental health support, and equitable policies for healthy aging.

Keywords: Geriatric syndromes; HIV; geroscience; integrated care models; multimorbidity; polypharmacy.

Supplementary info

Publication typesExpand

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

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NPJ Prim Care Respir Med

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. 2026 May 16.

doi: 10.1038/s41533-026-00524-3. Online ahead of print.

Educating the patient, controlling the disease: a point prevalence evaluation of structured pharmaceutical asthma care in real world settings

Maja Simonoska Crcarevska [1], Zorica Naumovska [2], Beti Zafirova Ivanovska [3], Biljana Bozhinovska [4], Joana Andonoska [4], Sashka Janevska [3], Siân Williams [5], Jaime Correia-de-Sousa [5 6], Katarina Stavrikj [7]

Affiliations Expand

- PMID: 42143037

- DOI: 10.1038/s41533-026-00524-3

Abstract

Asthma control remains suboptimal worldwide, often due to modifiable factors such as incorrect inhaler technique and reliever overuse. Community pharmacists (CPs) are well-positioned to address these gaps through structured patient education. A point prevalence evaluation was conducted in 1247 patients across 127 community pharmacies (11.1% of all pharmacies) in North Macedonia (Dec 2023-Sep 2024). Asthma control was assessed using the Asthma Control Test (ACT), while Asthma Slide Rule (ASR) was used to evaluate short-acting beta-agonists (SABAs) use. Inhaler technique was assessed using device-specific checklists. CPs provided comprehensive care, including adherence support, lifestyle counselling, and monitoring. Poor inhaler technique strongly predicted poor asthma control (ACT: OR = 5.98; ASR: OR = 6.43). Among 127 patients followed, correct technique improved from 71.7% at baseline to 88.8% at the second visit, and among patients who attended all three visits, accuracy increased from ~63% at the first visit to~89% at the second and 98.2% at the third (56 patients). By the third visit, the association between technique and control diminished, reflecting the success of comprehensive pharmaceutical care. These results highlight the critical, multifaceted role of CPs in improving asthma outcomes and support the integration of CP-led comprehensive pharmaceutical care for asthma into national management strategies.

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Conflict of interest statement

Competing interests: The authors declare no competing interests.

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Indian J Pediatr

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. 2026 May 16.

doi: 10.1007/s12098-026-06186-w. Online ahead of print.

Inhaled Corticosteroids Plus Tiotropium Compared to Inhaled Corticosteroids Plus Montelukast in Children with Partly Controlled/Uncontrolled Asthma: A Non-Inferiority Trial - Authors' Reply

Soma Sengupta [1], Ketan Kumar [1], Rashmi Ranjan Das [2]

Affiliations Expand

- PMID: 42141333

- DOI: 10.1007/s12098-026-06186-w

No abstract available

Conflict of interest statement

Declaration. Conflict of Interest: None.

- 3 references

Supplementary info

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Review

Am J Med Sci

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doi: 10.1016/j.amjms.2026.05.004. Online ahead of print.

Allergy and Asthma in the Elderly

Joshua K Walls [1], Gailen D Marshall Jr [2]

Affiliations Expand

- **PMID: 42140557**

- **DOI: 10.1016/j.amjms.2026.05.004**

Abstract

With the increased longevity in modern western society, multiple chronic illnesses that have been historically seen primarily in younger individuals have persisted into middle age and more recently elderly (> 65) individuals. This is particularly relevant to mast cell- and eosinophil-mediated diseases such as allergic sensitization (rhinitis, eczema, gastrointestinal diseases) and asthma. The reasons for this persistence into patients' later years of life are not fully understood but likely involve changes in external environmental influences (e.g. pollution, climate change, altered food sources and dietary habits) and internal environmental influences (e.g. sleep disturbances, decreased physical condition, increased depression, anxiety and stress perception). Optimal approaches to diagnosis demand obtaining an accurate medical history and physical examination in order to link variable clinical presentations to specific allergic (IgE)-mediated diseases. Therapies typically used for younger patients can also be used in elderly patients but with caution regarding potential direct adverse effects due to concomitant medical comorbidities and associated drug-drug interactions.

Keywords: Allergy; allergic rhinitis; asthma; elderly; immune senescence.

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Conflict of interest statement

Declaration of competing interest Neither Joshua K. Walls, MD nor Gailen D. Marshall, Jr., MD PhD have any conflicts relevant to the content of this manuscript.

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Chest

. 2026 May 14:S0012-3692(26)00635-5.

doi: 10.1016/j.chest.2026.05.005. Online ahead of print.

Use of an anti-TSLP agent in patients with asthma and clinically significant bronchiectasis: a case series

Andrea Gramegna [1], Giacomo Maruca [1], Marco Caminati [2], Gianluca Imeri [3], Corrado Pelaia [4], Mirta Cavallini [5], Andrea Mastrototaro [6], Elena Parazzini [7], Dejan Radovanovic [8], Paola Faverio [9], Benedetta Bondi [10], Diego Bagnasco [11], Gianfranco Alicandro [12], Pierachille Santus [8], Michele Mondoni [13], Stefano Aliberti [14], Francesco Blasi [1]

Affiliations Expand

- PMID: 42140482

- DOI: 10.1016/j.chest.2026.05.005

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5

Curr Opin Allergy Clin Immunol

. 2026 May 15.

doi: 10.1097/ACI.0000000000001164. Online ahead of print.

Vascular remodeling in asthma: from mechanisms to precision medicine

Remo Poto [1], Rory Chan [2], Gianluca Lagnese [1], Andrea Portacci [3], Gilda Varricchi [1 4]

Affiliations Expand

- PMID: 42138551

- DOI: 10.1097/ACI.0000000000001164

Abstract

Purpose of review: Angiogenesis and lymphangiogenesis are increasingly recognized as dynamic components of airway remodeling in asthma, with potential contributions to airway wall thickening, edema, ventilation-perfusion mismatch and fixed airflow limitation. This review updates mechanistic and translational evidence from the most recent literature and positions vascular biology within precision medicine and disease-modification frameworks.

Recent findings: Recent integrative concepts place epithelial barrier dysfunction and alarmin programs upstream of structural disease, providing a biologically plausible bridge between chronic airway injury, innate immune activation and endothelial plasticity across asthma endotypes. Advanced imaging is reshaping phenotyping by enabling non-invasive assessment of structure-function relationships, including airway wall abnormalities and vascular/perfusion signatures relevant to longitudinal monitoring. Long-term data on upstream biologic therapy support sustained clinical benefits over years, strengthening the rationale to test whether vascular abnormalities are modifiable endpoints rather than static consequences of past inflammation.

Summary: Vascular remodeling should be considered a clinically meaningful dimension of asthma heterogeneity that may explain persistent impairment despite inflammatory control. Integrating circulating angiogenesis-related mediators with imaging-derived vascular indices could refine risk stratification, inform treatment selection and accelerate a shift from symptom control toward durable disease modification.

Keywords: airway remodeling; angiogenesis; asthma; endothelial dysfunction; precision medicine.

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6

Allergy

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. 2026 May 14.

doi: 10.1111/all.70380. Online ahead of print.

Type-2-Inflammatory-Diseases Share Comorbidities, Molecular Signatures, IL4/IL13 Genetics, and Response to IL4/IL13 Blockade

Jennifer D Hamilton [1], Manuel A R Ferreira [1], Wei Keat Lim [1], Carlo Sidore [1], Matthew F Wipperman [1], Wenzhen Ge [1], Xue Song [1], Changming Xia [1], Julie E Horowitz [1], Andrea T Hooper [1], Sara C Hamon [1], Jennifer Maloney [1], Jamie M Orengo [1], Zhen Chen [1], Stephanie Amato Ricci [1], Bolanle Akinlade [1], Aris Baras [1], Gary Herman [1], Brandy L Bennett [1], George D Yancopoulos [1]

Affiliations Expand

- PMID: 42135900

- DOI: 10.1111/all.70380

Abstract

Background: It has long been appreciated that multiple allergic/atopic conditions (type-2-inflammation-associated diseases, T2IDs) often appear in the same individual, suggesting a shared systemic immune deviation. Emerging molecular and clinical investigations of interleukin (IL)4/IL13 blockade with the fully-human antibody dupilumab suggest that many are driven by over-activation of the IL4/IL13 pathway, manifesting differently in distinct tissues.

Methods and results: We performed comprehensive quantitative analyses using several large, independent datasets (including real-world and clinical trial datasets) to confirm that many T2IDs-including asthma, atopic dermatitis, eosinophilic esophagitis, nasal polyps, prurigo nodularis-are highly interrelated based on co-prevalence, genetic predispositions, and transcriptomic signatures driven by over-activation of the IL4/IL13 pathway. We also summarize extensive clinical trial data showing that these T2IDs also share uniformly impressive clinical responses to dual IL4/IL13 blockade with dupilumab.

Conclusions: While highly consistent with previous data and observations, this is the first systematic comparison of these types of data across multiple T2IDs, using a rigorous quantitative assessment of the largest datasets evaluated to date. Many T2IDs are not only highly interrelated and comorbid, but share transcriptomic signatures and genetic predispositions that suggest they all share over-activation of

the IL4/IL13 pathway as a key causative driver, consistent with and explaining their uniform clinical responsiveness to dual IL4/IL13 blockade. These genetic and transcriptomic signatures may also have utility for identifying other diseases mediated by IL4/IL13 or T2-mediated subpopulations of heterogenous inflammatory diseases.

Keywords: dupilumab; interleukin-13; interleukin-4; type-2-inflammatory-diseases.

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- **99 references**

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7

Am J Respir Crit Care Med

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. 2026 May 14:aamag242.

doi: 10.1093/ajrccm/aamag242. Online ahead of print.

From mild-to-moderate to severe asthma: Risk factors and patient profiles from the NORDSTAR cohort

Susanne Hansen [1 2], Anna von Bülow [1 3], Alexandra Cooper [2], Patrik Sandin [4], Olivia Ernstsson [4 5], Charlotte Suppli Ulrik [6 7], Apostolos Bossios [8 9 10], Hannu Kankaanranta [11 12 1], Christer Janson [1], Bernt Bøgvald Aarli [13 14], Kirk Geale [4], Josephine Hjoberg [15], Sylvia Packham [16 17], Davorka Sekulic [18], Alan Altraja [19 20], Helena Backman [21], Jussi Karjalainen [11 22], Asger Sverrild [1 7], Arja Viinanen [23 24], Dóra Lúdvíksdóttir [25], Maritta Kilpeläinen [23 24], Ole Hilberg [26], Sverre Lehmann [13 14], Thomas Sandström [17], Unnur Bjórnsdóttir [27], Johannes M Schmid [28], Leif Bjermer [29], Vibeke Backer [30], Paula Kauppi [31], Valentyna Yasinska [8 32], Lauri Lehtimäki [11 22], Celeste Porsbjerg [1 7]

Affiliations Expand

- **PMID: 42133832**

- DOI: 10.1093/ajrccm/aamag242

Abstract

Background: The progression from mild-to-moderate to severe asthma remains unclear. This study aimed to assess the risk of progression following the first asthma exacerbation in mild-to-moderate asthma and to identify risk factors and high-risk patient profiles.

Methods: This was an observational cohort study based on Danish data from the NORdic Dataset for aSThmA Research (NORDSTAR) research collaboration platform. Adult patients with mild-to-moderate asthma experiencing their first asthma exacerbation were identified between 2000-2018 and followed prospectively for five years for the development of severe asthma according to ERS/ATS guidelines. Baseline risk factors for progression to severe asthma were assessed using multivariable logistic regression models and risk of progression was evaluated across specific patient profiles.

Results: Among 99,748 patients with mild-to-moderate asthma experiencing the first asthma exacerbation, 4.1% progressed to severe asthma within five years. Risk factors included baseline age 40-49 years [odds ratio (OR): 1.62 (95% CI: 1.49, 1.77), experiencing an exacerbation despite medium dose inhaled corticosteroid (ICS) use [OR: 3.72 (3.39, 4.09)], high use of short-acting beta agonist [OR: 1.76 (1.64, 1.90)], ≥2 respiratory infections [OR: 1.61 (1.49-1.73)], and blood eosinophil counts ≥ 0.6 × 109/L [OR: 1.97 (1.47-2.61)]. A 40-49-year-old patient with late-onset eosinophilic asthma, treated with medium-dose ICS and with recurrent respiratory infections, had a 30.4% five-year risk of progressing to severe asthma.

Conclusion: In patients with mild-to-moderate asthma experiencing their first asthma exacerbation, few patients (4.1%) overall progressed to severe asthma within five years, but specific high-risk patient profiles faced risks of up to 30%. Whether early recognition can modify this risk warrants further investigation.

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8

Indian J Pediatr

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doi: 10.1007/s12098-026-06185-x. Online ahead of print.

Inhaled Corticosteroids Plus Tiotropium Compared to Inhaled Corticosteroids Plus Montelukast in Children with Partly Controlled/Uncontrolled Asthma: A Non-Inferiority Trial - Correspondence

Kalyana Prabhakaran [1], Muthu Chidambaram [2], Jenish Rajma [2]

Affiliations Expand

- PMID: 42133183

- DOI: 10.1007/s12098-026-06185-x

No abstract available

Conflict of interest statement

Declarations. Conflict of Interest: None.

- Cited by 1 article
- 4 references

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9

Review

Allergy

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. 2026 May 14.

doi: 10.1111/all.70388. Online ahead of print.

Is Asthma Remission a New Achievable Goal? A Review of the Current Drug-Related Evidence and Predictors

Fatma Esra Gunaydin [1], Giulia Marcassa [2], Bianca Olivieri [2 3], Gianenrico Senna [2 3], Marco Caminati [2 3]

Affiliations Expand

- PMID: 42132277

- DOI: 10.1111/all.70388

Abstract

Advances in asthma therapies have shown that clinical remission may be an achievable therapeutic goal for patients with asthma. This review discusses the current definitions of remission in asthma, the predictors of remission, airway inflammation/epithelial damage in asthma remission, airway remodeling, paradigms in defining remission and super-responders, remission criteria in severe asthma studies with biologics, and future perspectives. The terminology of asthma remission basically describes a high level of disease control, which includes the absence of symptoms and exacerbations, avoiding the use of oral corticosteroids and stability of lung function with/without continuation of treatment. Predictors associated with spontaneous remission include younger age at asthma onset, milder symptoms at diagnosis, male sex, and higher baseline lung function. Biologic therapies have shown considerable success in achieving remission in asthma; however, predictors of response to these therapies remain heterogeneous and are not consistently defined across studies.

Keywords: airway remodeling; asthma; biologics; remission; severe asthma.

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- 136 references

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BMJ Open

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. 2026 May 13;16(5):e116086.

doi: 10.1136/bmjopen-2025-116086.

Developing and validating an electronic health record-embedded AI model for managing multimorbid hospitalisation risk in patients with chronic RESpiratory disease (AiRES): a study protocol

Wei Ying Tan [1], Tae Yoon Lee [2], Kelvin Bryan Tan [1 3 4], Mariko Siyue Koh [5 6], John A Abisheganaden [3 7], Sean Shao Wei Lam [8], Sanjay H Chotirmall [3 9], Chandra Prakash Yadav [10], Anthony Chau Ang Yii [11], Pei Yee Tiew [3 5 6], Mei Fong Liew [12 13], Qi Sun [1], Wenjia Chen [14]

Affiliations Expand

- PMID: 42128515

- DOI: 10.1136/bmjopen-2025-116086

Free article

Abstract

Background: Chronic respiratory diseases (CRDs), such as asthma and chronic obstructive pulmonary disease (COPD), are heterogeneous conditions with a high multimorbidity burden. However, existing risk assessment instruments prioritise physiological measures while overlooking systemic comorbidities. We aim to develop and validate an electronic health record (EHR)-embedded artificial intelligence (AI) model-AiRES (AI in patients with RESpiratory disease)-to predict the 30-day, 90-day and 180-day risks of all-cause and index-disease hospitalisations. This model represents a first step towards a clinical decision support tool for personalised multimorbidity management in patients with CRD.

Method and analysis: Patients aged ≥18 years with a validated case definition of asthma and COPD will be identified from Singapore health administrative data (2012-2020). Candidate predictors will include age, sex, ethnicity, housing type, and comorbidities, measured across multiple care settings as visit frequency, grouped at quarterly intervals in Year 1 and annually for Years 2 and 3 over a 3-year lookback window. We will predict 30-day, 90-day, and 180-day risks of (1) all-cause and (2) asthma/COPD-specific hospital admissions using up to five randomly selected index dates per individual. Three machine learning algorithms-logistic regression (LR) with Lasso regularisation, eXtreme Gradient Boosting, and Categorical Boosting-will be trained using 10-fold cross-validation (CV) with an ensemble feature selection strategy. The optimal model, selected based on performance and feature importance, will be benchmarked against two reference models: a full LR and a Zero-Inflated Negative Binomial regression with hospitalisation history as the sole predictor. Discrimination and calibration will be assessed using internal-external cluster-based and temporal CV. Clinical utility will be evaluated using decision curve analysis.

Ethics and dissemination: This study obtained ethics approval from the National University of Singapore (NUS-IRB-2024-849). Results will be published in international peer-reviewed journals.

Keywords: Asthma; Hospitalization; Machine Learning; Multimorbidity; Pulmonary Disease, Chronic Obstructive; Risk Assessment.

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Conflict of interest statement

Competing interests: SHC reports grants from the Singapore Ministry of Education and the Singapore Ministry of Health's National Medical Research Council, with payments made to the institution; consulting fees from Boehringer Ingelheim, CSL Behring, Pneumagen, Sanofi, GSK and Zaccha; lecture fees from AstraZeneca, CSL Behring, Boehringer Ingelheim and Chiesi Farmaceutici and participation on a data safety monitoring board or advisory board for Inovio Pharmaceuticals and Imam Abdulrahman Bin Faisal University. MK reports grant support from AstraZeneca, and honoraria for lectures and advisory board meetings paid to her hospital (Singapore General Hospital) from GlaxoSmithKline, AstraZeneca, Novartis, Sanofi, Boehringer Ingelheim and Roche outside the submitted work. JAA reports grants from the Singapore Ministry of Health's National Medical Research Council, with payments made to the institution; speaker or advisory board consulting fees from Pfizer and AstraZeneca. PYT has received honoraria for lecturers and advisory board meetings paid to her hospital from Sanofi, GlaxoSmithKline and AstraZeneca outside the submitted work. MFL has received lecture fees from GSK, AstraZeneca and Sanofi, and serves on the advisory board for Sanofi. ACAY reports grants and honoraria from GlaxoSmithKline, AstraZeneca and Sanofi. CPY served as lead statistician of Pfizer India. WC received honorariums from Sanofi for expert consultant, AstraZeneca and Roche for panel discussions and research funding from Illumina. The rest of the authors declare no conflict of interest.

Supplementary info

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PLoS One

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. 2026 May 13;21(5):e0348878.

doi: 10.1371/journal.pone.0348878. eCollection 2026.

Development of an asthma policy model for Canada: Lifetime Exposures and Asthma outcomes Projection

Tae Yoon Lee [1 2], John Petkau [3], Kate M Johnson [2 4], Stuart E Turvey [5], Amin Adibi [2], Padmaja Subbarao [6], Ainsleigh Hill [2], Mark Ewert [2], Mohsen Sadatsafavi [2]

Affiliations Expand

- PMID: 42127123

- PMCID: PMC13170856

- DOI: 10.1371/journal.pone.0348878

Abstract

Objectives: To address the need for health policy planning focused on early interventions for asthma, we developed the Lifetime Exposures and Asthma outcomes Projection (LEAP), a reference policy model for asthma in Canada.

Methods: Based on a previously developed concept map, we used an open-population microsimulation design to deal with the multidimensionality of risk factors and the need for modelling realistic aspects of adopting health technologies. The model consists of five intertwined modules: demographics, risk factors, asthma occurrence, asthma outcomes, and payoffs. The demographics module was based on sex- and age-specific estimates and projections from national surveys. For the first version of the model, we concentrated on key risk factors from the concept map: age, sex, family history of asthma at birth, and exposure to antibiotics in the first year of life. The distributions of risk factors were estimated from population-based administrative databases and a population-based longitudinal birth cohort. Quantitative evidence synthesis provided estimated parameters for the asthma occurrence and outcomes modules. Costs and utility weights were obtained from the literature. We conducted face validity, calibration, and internal validity assessments.

Results: LEAP is capable of modelling asthma-related health outcomes at the individual level from 2001 onwards. Age-sex stratified demographic projections from the model closely matched projections, while asthma prevalence and control levels matched their respective estimates from the administrative data and estimates from the literature. The LEAP model is publicly accessible as open-source software: https://github.com/tyhlee/LEAP.jl (Julia) and https://resplab.github.io/leap/ (Python).

Conclusions: LEAP is the first reference Canadian asthma policy model that emerged from identified needs for health policy planning for early interventions in asthma. It can provide a unified framework under which different interventions and policies can be consistently compared to identify those with the highest value

proposition. The model needs to be gradually updated to accommodate other risk factors, and its validity should be independently examined.

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Conflict of interest statement

The authors have declared that no competing interests exist.

- 59 references
- 5 figures

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J Epidemiol Glob Health

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. 2026 May 13.

doi: 10.1007/s44197-026-00567-2. Online ahead of print.

The Global Burden of Human Metapneumovirus in High-Risk Adults: A Systematic Literature Review and Meta-Analysis

Kashmira Date [1], Evangelia Antoniou [2], Aleksandra Polkowska-Kramek [2], Philip Zachariah [3], Anna Dorste [3], Jennifer Granda Acaro [3], Lauren Mason [2], Laura Mora [2], Jennifer Eeuwijk [2], Pimnara Peerawaranun [2], Kyla Hayford [4], Bradford D Gessner [5], Harish Nair [6], Elizabeth Begier [7]

Affiliations Expand

- PMID: 42126483

- DOI: 10.1007/s44197-026-00567-2

Free article

Abstract

Background: Human metapneumovirus (hMPV) is an under-recognized cause of severe respiratory illness in high-risk adults. We conducted a systematic review and meta-analysis to quantify hMPV prevalence and clinical outcomes in adults with chronic underlying conditions predisposing them to severe respiratory illness, including the immunocompromised.

Methods: We searched MEDLINE, Embase, and BioRelate (January 2010 to February 2025) for studies of laboratory-confirmed hMPV in adults (≥ 18 years) with high-risk chronic or immunocompromising conditions. We extracted data on hMPV positivity and key outcomes (hospitalization, intensive care unit [ICU] admission, respiratory support, length of stay, and mortality). We performed random-effects meta-analyses for outcomes reported in ≥ 3 studies and assessed study quality using an adapted Joanna Briggs Institute checklist.

Results: We included 72 studies. Among immunocompromised adults with hMPV infection, 55.2% (95% confidence interval [CI], 42.0-67.7%) required hospital admission. Among immunocompromised patients hospitalized with respiratory illness, hMPV was detected in 5.4% (95% CI, 2.7-10.8%). Among patients with cardiovascular disease, 11.4% (95% CI, 8.0-16.1%) tested positive for hMPV. Regarding patients with chronic respiratory conditions, 3.4% (95% CI, 2.4-5.0%) of patients with chronic obstructive pulmonary disease exacerbations and 7.6% (95% CI, 2.5-20.5%) of patients with asthma exacerbations were hMPV-positive. Among hospitalized hMPV-positive high-risk patients, 13.0% (95% CI, 8.8-18.9%) required ICU admission, 43.6% (95% CI, 34.9-52.7%) required supplemental oxygen, and 7.3% (95% CI, 1.2-33.8%) required mechanical ventilation. The mean length of hospital stay was 10.4 days (95% CI, 3.4-17.4%). The pooled case fatality ratio among hospitalized adults with hMPV infection was 2.4% (95% CI, 0.1-35.1%).

Conclusions: hMPV is a substantial cause of severe respiratory illness in high-risk adults. Enhanced detection, surveillance, and preventive strategies are needed to reduce hMPV-associated morbidity in vulnerable populations.

Keywords: Adult; Chronic Disease; Immunocompromised Patient; Metapneumovirus; Prevalence.

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Conflict of interest statement

Declarations. Ethical approval: This study synthesized data from previously published studies and did not involve any human subjects; therefore, institutional ethics approval was not required. Consent for Publication: Not applicable. Competing interests: Kashmira Date, Philip Zachariah, Anna Dorste, Jennifer Granda Acaro, Kyla Hayford, Bradford D. Gessner, and Elizabeth Begier are employees of Pfizer Inc. and may own Pfizer stock. Evangelia Antoniou is a contractor for P95 and which received funding from Pfizer in connection with the development of this manuscript and study; she is also the owner of MetaAnalyses.com, which has held contracts with Pfizer (via Labcorp), BASF, 3 M, ISOPA, and CEFIC. Aleksandra Polkowska-Kramek, Lauren Mason, Laura Mora, Jennifer Eeuwijk, and Pimnara Peerawaranun are employees of P95 Clinical and

Epidemiology Services, which received funding from Pfizer in connection with the development of this manuscript and study. Harish Nair reports grants from the Innovative Medicines Initiative related to the submitted work; grants from WHO, the National Institute for Health Research, Pfizer, and Icosavax; and personal fees from the Gates Foundation, Pfizer, ReViral, GSK, Merck, Icosavax, Sanofi, Novavax, and AbbVie, outside the submitted work.

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. 2026 May 11;12(3):01682-2025.

doi: 10.1183/23120541.01682-2025. eCollection 2026 May.

ERS Congress 2025: highlights from the Airway Diseases Assembly

Francesca Cefaloni [1], Sophie Booth [2 3], Charlotte E Healey [4], Despoina Ioannidou [5], Enrico Schiavi [6], Matteo Bonini [4 6], Juan José Nieto-Fontarigo [7 8], Stefania Principe [9], Gert-Jan Braunstahl [10 11], Alexander G Mathioudakis [2 12], Pavol Pobeha [13], Florence Schleich [14], Apostolos Bossios [15 16 17], Augusta Beech [2 3]

Affiliations Expand

- PMID: 42125485

- PMCID: PMC13159007

- DOI: 10.1183/23120541.01682-2025

Abstract

Early career members of Assembly 5 summarise the highlights of the 2025 #ERSCongress, presenting the latest advances in asthma, COPD and chronic cough through mechanistic insights, novel biomarkers and emerging therapies https://bit.ly/3NHWIsx.

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Conflict of interest statement

Conflicts of interest: F. Cefaloni, S. Booth, C.E. Healey, D. Ioannidou, E. Schiavi, M. Bonini, S. Principe, P. Pobeha, G-J. Braunstahl and J.J. Nieto-Fontarigo have nothing to declare related to this article. A.G. Mathioudakis reports honoraria from GlaxoSmithKline and Sanofi, and stock options from Healthy Networks, not related to this work. F. Schleich received either grants, consultation fees, honoraria or lecture fees from AstraZeneca, Chiesi, Sanofi, Celltrion, GSK Teva, Celltrion and Advanz; and is the Secretary of Assembly 5 (Airway diseases, asthma, COPD, and chronic cough) of the European Respiratory Society and Chair of the Belgium Respiratory Society. A. Bossios reports institutional fees and honoraria from Chiesi, GSK and AstraZeneca, as well as institutional grants from AstraZeneca, outside the submitted work. A. Beech is a member of the early career mentoring programme of this journal.

- **60 references**
- **2 figures**

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Randomized Controlled Trial

Addict Sci Clin Pract

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. 2026 May 12;21(1):45.

doi: 10.1186/s13722-026-00676-0.

Twelve-month smoking cessation outcomes following immediate referral in people who smoke with chronic airway diseases: a randomized study

Dilek Karadoğan [1], Tahsin Gökhan Telatar [2], İlknur Kaya [3], Siahmet Atlı [4], Neslihan Köse Kabil [5], Feride Marım [3], Merve Yumrukuz Şenel [6], Aycan Yüksel [7], Burcu Yalçın [8], Ökkeş Gültekin [9], Merve Erçelik [10], Metin Akgün [11]

Affiliations Expand

- **PMID: 42121293**

- PMCID: PMC13174005

- DOI: 10.1186/s13722-026-00676-0

Abstract

Background: Tobacco cessation support remains underutilized in routine care for patients with airway diseases such as asthma and COPD. In this multicenter randomized trial (NCT05764343, registration date: 2023-03-01), we previously reported that immediately scheduled appointments to smoking cessation clinics improved access and quit rates at 1-week and 3-month follow-ups. The present study evaluated whether these effects were sustained at 12 months.

Methods: This prospective, parallel-arm, multicenter randomized trial included 397 adult people who smoke diagnosed with asthma, COPD, or bronchiectasis. Participants were allocated to either usual support (brief advice only) or immediate support (brief advice plus an appointment scheduled at a smoking cessation clinic). Smoking status was assessed by telephone at 12 months. Self-reported quitters were invited for exhaled carbon monoxide (CO) testing. The primary outcome was continuous abstinence at 12 months, analyzed on an intention-to-treat basis.

Results: Of 397 randomized patients, 330 (83.1%) completed the 12-month follow-up, with similar loss to follow-up between groups. In the intention-to-treat analysis, the 12-month smoking cessation rate was significantly higher in the immediate support group compared with the usual support group (20.7% vs. 11.6%, p = 0.019). Among non-quitters, quit attempts, smoking cessation clinic admission, and pharmacotherapy use were significantly more common in the immediate support group ($p < 0.05$).

Conclusion: Immediate scheduling of smoking cessation clinic appointments resulted in significantly higher 12-month quit rates compared to usual care. These findings support the integration of proactive referral strategies into routine management of patients with chronic airway diseases.

Keywords: Asthma; COPD; Immediate appointment; Randomized trial; Smoking cessation.

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Conflict of interest statement

Declarations. Ethics: The study protocol was approved by the RTEU Clinical Research Ethics Committee (Approval No. 2022/09, Date: 08.11.2022), with additional approval for the 12-month follow-up obtained on May 2, 2024 (Approval No. 2024/95). Competing interests: The authors declare no competing interests.

- 16 references
- 1 figure

Supplementary info

Publication types, MeSH terms, Substances, Grants and fundingExpand

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Cite

15

Am J Med

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. 2026 May 11:S0002-9343(26)00378-5.

doi: 10.1016/j.amjmed.2026.05.002. Online ahead of print.

Examining Sleep Quality and Mortality Risks in COPD, Asthma, and Asthma-COPD Overlap Patients

Jiankang Wu [1], Rui Zhao [1], Yiming Ma [2], Yan Chen [3]

Affiliations Expand

- PMID: 42119880

- DOI: 10.1016/j.amjmed.2026.05.002

Abstract

Background: Chronic respiratory diseases, including chronic obstructive pulmonary disease (COPD), asthma, and Asthma-COPD overlap (ACO), contribute to significant health burdens. Understanding patient characteristics, sleep patterns, and mortality factors is critical for improving management.

Methods: Data from the UK Biobank were used to compare the baseline characteristics, sleep patterns, and mortality rates of 14,326 COPD, asthma, and ACO patients. Multivariable logistic and linear regression analyses were conducted to identify factors affecting mortality and sleep.

Results: COPD patients were older, with higher smoking rates and mortality compared to ACO and asthma patients ($P < 0.001$). Asthma patients had the highest BMI (29.76), while ACO patients showed the highest diabetes prevalence (14.2%) and asthma patients had the highest hypertension prevalence (46.9%) ($P < 0.001$). Asthma patients exhibited the poorest sleep quality, with higher rates of short sleep duration, insomnia, and daytime dozing compared to COPD and ACO patients ($P < 0.001$). Multivariable analysis revealed that COPD patients had higher mortality risks

compared to ACO patients (P < 0.001), and poor sleep scores and diabetes were significantly associated with increased mortality (P < 0.001). Asthma patients had significantly lower sleep scores than ACO patients (P < 0.001).

Conclusion: ACO patients showed intermediate outcomes, with worse sleep than asthma patients but better than COPD patients. Poor sleep quality, along with diabetes and smoking, was linked to higher mortality. Addressing sleep disturbances may reduce mortality in ACO and COPD patients, warranting further research on targeted interventions.

Keywords: ACO; Asthma; COPD; Mortality; Sleep.

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Conflict of interest statement

Declaration of competing interest The authors (Jiankang Wu, Rui Zhao, Yiming Ma and Yan Chen) declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

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Cite

16

Lancet Respir Med

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. 2026 May 12:S2213-2600(26)00087-1.

doi: 10.1016/S2213-2600(26)00087-1. Online ahead of print.

Oxygen saturation thresholds in children with acute respiratory distress (OxyKids): a multicentre, open, parallel-group, randomised clinical trial

Sam Louman [1], Karlijn J van Stralen [2], Gerard H Koppelman [3], Anja A P H Vaessen-Verberne [4], Jolita Bekhof [5], Judith E Bosmans [6], Caroline L H Brackel [7], Arvid W A Kamps [8], Ismé M de Kleer [9], Céline F L Mulder [9], Walter Balemans [10], Mirjam Scheffer-Rath [11], Marianne L Brouwer [12], Marije E van den Beukel [13], Marjolijn D Akkermans [4], Jos W R Twisk [14], Danny Vijsma [15], Esen Doganer [16], Mariëlle W H Pijnenburg [17], Annemie L M Boehmer [18]

Affiliations Expand

- PMID: 42119581

- DOI: 10.1016/S2213-2600(26)00087-1

Abstract

Background: Current peripheral oxygen saturation (SpO_2) thresholds in children admitted to hospital with respiratory distress lack evidence and risk overtreatment and prolonged hospital stay. We assessed whether an SpO_2 threshold of 88% versus 92% could safely reduce length of hospital stay.

Methods: We did a multicentre, open-label, randomised controlled trial in ten general and teaching hospitals in the Netherlands. Children (aged 6 weeks-12 years) requiring oxygen therapy for bronchiolitis, lower respiratory tract infection, or acute viral-induced wheeze were randomly assigned (1:1), stratified by centre and age group, to an 88% (intervention) or 92% (control) SpO_2 threshold. SpO_2 measurement and delivery of oxygen (via low-flow or high-flow nasal cannula or face mask) used standard equipment and protocols available on the participating general paediatric wards. All other treatments (such as bronchodilators, corticosteroids, feeding) followed local protocols. Masking for the study was precluded due to device regulation requirements. The primary outcome was time from admission to meeting predefined discharge criteria, analysed in the intention-to-treat population. Harms and adverse events were analysed in the intention-to-treat population. Missing primary outcome data were imputed using the latest of either discharge time minus the mean discharge-criteria-to-discharge interval or the last known criterion time. Missing covariates were handled via multiple imputation (20 datasets, Rubin's Rules). This trial was registered in the EU Clinical Trials Register (EUCTR 2023-504817-56) and ClinicalTrials.gov (NCT06016244) and is completed.

Findings: Between Sep 5, 2023, and Dec 4, 2024, 2114 patients were assessed for eligibility, 512 were excluded (425 did not meet inclusion criteria and 87 did not require oxygen therapy) and 1602 met the inclusion criteria. A further 1036 patients were excluded and 566 were randomly assigned (282 to the 88% SpO_2 group and 284 to the 92% SpO_2 group). 278 participants were included in the intention-to-treat analysis for the 88% group and 279 were included in the analysis for the 92% group. 317 (57%) of the 557 participants were male and 240 (43%) were female. The mean overall age of the cohort was 2·0 (SD 2·4) years, and 437 (91%) of 480 participants who provided ethnicity data were Dutch. Median time to meeting discharge criteria was 27·6 h [IQR 15·1-52·7] in the 88% group versus 46·6 h [24·2-85·1] in the 92% group (adjusted geometric mean ratio (GMR) of 0·64 (95% CI 0·55-0·74; p<0·0001); adjusted absolute difference of 16·8 h (95% CI 12·1-20·8; p<0·0001). Median hospital stay was 39·8 h [IQR 22·0-67·2] versus 60·8 h [38·5-95·8] (adjusted difference 17·6 h [95% CI 12·5-22·6]; p<0·0001). Oxygen therapy was started less often and duration was significantly shorter (adjusted GMR 0·64 [95% CI 0·52-0·77] p<0·0001); in the 88% group. Serious adverse events, post-discharge health-care visits within 28 days, recovery time, and parental anxiety did not statistically differ between groups.

Interpretation: Our findings suggest that an 88% SpO_2 threshold in children aged 6 weeks-12 years with acute respiratory illness in general paediatric care reduces treatment burden by reducing hospital stay duration and oxygen therapy across a broad range of respiratory diagnoses, without evidence of short-term harm.

Funding: ZonMw, The Dutch Foundation for Asthma Prevention, the Spaarne Gasthuis and Amphia Hospital Research Funds, and the Dutch General Paediatrics Research Network of the Dutch Association for Paediatrics.

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Conflict of interest statement

Declaration of interests GHK reports grants or contracts from the Netherlands Lung Foundation, TEVA the Netherlands, Zon-MW (VICI grant), European Union (H2020), GSK, and Ombion CTTP Growth Fund the Netherlands, Vertex, and Ubbo Emmius Foundation; consulting fees from AstraZeneca and Pure IMS; payment or honoraria for lectures, presentations, speakers' bureaus, manuscript writing, or educational events from Sanofi, Boehringer Ingelheim, ExquAIro, European Respiratory Society, and AstraZeneca; and is Chair of the ExquAIro foundation, outside of the submitted work. MEvdB is a member of the board of Dutch Paediatric Pulmonologists of the Dutch Association for Paediatrics. MS-R is an unpaid member of the SPIN committee. WB receives an annual fee as course director of the "basic asthma course" for paediatric trainees. MWHP reports grants from the Netherlands Lung Foundation ZonMw; consulting fees from Sanofi, and data monitoring committee work for Novartis outside of the submitted work; and is past head of the paediatric assembly and chair elect of the educational council of the European Respiratory Society. All other authors declare no competing interests.

Supplementary info

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17

Eur J Pediatr

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. 2026 May 12;185(6):384.

doi: 10.1007/s00431-026-07032-z.

Long-term ambient temperature and asthma severity and hospitalization in children: a population-based study

Firdian Makrufardi [# 1 2 3], Hsiao-Chi Chuang [# 4 5 6 7 8], Yuan-Chien Lin [9], Kin-Fai Ho [10], Kian Fan Chung [8], Marc Chadeau-Hyam [11 12], Desy Rusmawatiningtyas [2], Eggi Arguni [2], Indah Kartika Murni [2], Sheng-Chieh Lin [13 14]

Affiliations Expand

- PMID: 42118377

- DOI: 10.1007/s00431-026-07032-z

Abstract

To estimate the risk projection of temperature on pediatric asthma severity and hospitalization under four Shared Socioeconomic Pathways (SSPs) possible future climate scenarios using the Intergovernmental Panel on Climate Change (IPCC) model. A retrospective study was conducted involving 102,160 pediatric asthma patients from the Taipei Medical University Clinical Research Database (TMUCRD). We utilized global climate model (GCM) outputs to project future temperature for each subject from optimistic (SSP126) to pessimistic (SSP585) projections. A multinomial logistic regression was used to examine the odds ratio of pediatric asthma severity and hospitalization. A 1 °C increase in 1-year, 5-year, and 10-year average temperatures was associated with 1.004-fold (95% CI: 1.003-1.005) and 1.332-fold (95% CI: 1.327-1.338), 1.004-fold (95% CI: 1.002-1.005) and 1.303-fold (95% CI: 1.298-1.308), and 1.005-fold (95% CI: 1.004-1.006) and 1.282-fold (95% CI: 1.278-1.287) increase in the OR for mild persistent and hospitalization of pediatric asthma. We observed a non-linear association between temperature under SSP126, SSP245, SSP370 and SSP585 with moderate persistent pediatric asthma and pediatric asthma hospitalization, with the highest OR increases observed in 2033 at 33.4% and 32.3%, 27.6% and 32.3%, 29.1% and 32.4%, and 27.2% and 32.3%, respectively. Conclusion: Projected future temperature changes as a result of climate change may be associated with a possible increase in pediatric asthma severity and hospitalization in the coming years, with an expected increase of 8.0% and 2.5% per 1 °C increase, respectively. Pediatric asthma patients may be more susceptible to poorer outcomes under climate change in the future. What is Known: • Rising temperatures have been linked to increased asthma severity and hospitalization. • Climate change worsening pediatric asthma outcomes and increasing the healthcare burden. What is New: • Long-term exposure to rising ambient temperatures and $PM_{2.5}$ is significantly associated with increased odds of moderate and severe persistent asthma in children. • Theoretical projections linking multiple climate model scenarios (SSP126-SSP585) with future pediatric asthma burden.

Keywords: Asthma; Climate change; Extreme weather; Pediatric; Thermal.

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Conflict of interest statement

Declarations. Ethics approval: The study procedures followed an approved protocol authorized by the Taipei Medical University Joint Institutional Review Board (TMU-JIRB No N202307036). The study was in accordance with the Declaration of Helsinki.

Consent to participate: Not applicable. Consent for publication: Not applicable. Competing interest: The authors declare that they have no conflicts of interest.

- **39 references**

Supplementary info

MeSH termsExpand

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18

Review

Diabetol Metab Syndr

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. 2026 May 11;18(1):112.

doi: 10.1186/s13098-026-02164-6.

Obesity and respiratory diseases: mechanisms, phenotypes, and clinical implications

Amin R Soliman [1], Amany Abouzeid [2], Hebatallah Hesham Ahmed [3]

Affiliations Expand

- **PMID: 42116176**

- **PMCID: PMC13169587**

- **DOI: 10.1186/s13098-026-02164-6**

Abstract

Background: Obesity has emerged as a global pandemic with profound implications for respiratory health. The complex interplay between excessive adiposity and pulmonary function encompasses mechanical, metabolic, and inflammatory pathways that significantly impact morbidity and mortality.

Objectives: This comprehensive review synthesizes current evidence on obesity-related respiratory disorders, examining pathophysiological mechanisms, clinical phenotypes, epidemiological trends, and therapeutic considerations across the spectrum of respiratory diseases. This review provides a novel integrative framework unifying mechanical, inflammatory, and metabolic mechanisms across all major obesity-related respiratory conditions, with emphasis on clinically actionable phenotyping and emerging pharmacological therapies.

Methods: We conducted a narrative review of peer-reviewed literature (PubMed/MEDLINE, Embase, and Cochrane Database, January 2000 - December 2024, using pre-specified MeSH terms; study selection and quality assessment followed SANRA guidelines focusing on the relationship between obesity and respiratory disorders including asthma, obstructive sleep apnea (OSA), obesity hypoventilation syndrome (OHS), chronic obstructive pulmonary disease (COPD), respiratory infections, and lung cancer.

Results: Obesity profoundly affects respiratory mechanics through a right-shift of the static volume-pressure relationship of the chest wall, reducing FRC and ERV without a true restrictive pattern, altered respiratory muscle function, and systemic inflammation. Asthma prevalence increases with body mass index, demonstrating distinct phenotypes including atopic, insulin-resistant, dyslipidemic, and non-Th2 neutrophilic subtypes. OSA affects 22% of men and 17% of women, with obesity being the principal modifiable risk factor. OHS occurs in 8-20% of obese patients with sleep-disordered breathing, characterized by daytime hypercapnia (arising from impaired neuromuscular ventilatory drive and progressive nocturnal hypoventilation) and increased cardiovascular mortality. Paradoxically, obesity appears protective in advanced COPD by reducing FRC, thereby increasing inspiratory capacity and limiting dynamic pulmonary hyperinflation, and ARDS-the so-called obesity paradox-while conferring increased risk in COVID-19 pneumonitis. In lung cancer, obesity demonstrates complex relationships with risk and prognosis that vary by sex, smoking status, and disease stage.

Conclusions: Obesity-related respiratory disorders represent a multifaceted clinical challenge requiring integrated multidisciplinary approaches. Understanding distinct phenotypes and pathophysiological mechanisms is essential for personalized therapeutic strategies addressing both weight management and respiratory-specific interventions. Emerging pharmacological therapies including GLP-1 receptor agonists and dual GIP/GLP-1 agonists show particular promise in improving OSA severity and airway inflammation.

Keywords: Adipokines; Asthma phenotypes; COVID-19; GLP-1 receptor agonists; Metabolic syndrome; Obesity; Obesity hypoventilation syndrome; Obesity paradox; Obstructive sleep apnea; Respiratory diseases.

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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.

- **124 references**

- 3 figures

Supplementary info

Publication typesExpand

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19

J Allergy Clin Immunol Pract

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. 2026 May 9:S2213-2198(26)00402-2.

doi: 10.1016/j.jaip.2026.04.032. Online ahead of print.

Recognizing and Addressing Treatable Traits in Patients with Chronic Rhinosinusitis with Nasal Polyposis: Can We Do Better?

Philippe Gevaert [1], Lars-Olaf Cardell [2], Marjolein Cornet [3], Katie M Phillips [4], Sanna Toppila-Salmi [5], Johan Steineger [6]

Affiliations Expand

- PMID: 42114621

- DOI: 10.1016/j.jaip.2026.04.032

Abstract

Despite a rising awareness of the treatable traits of chronic rhinosinusitis with nasal polyposis (CRSwNP), gaps in the recognition and management of these traits remain. The present article summarizes the findings of a scientific discussion involving an international panel of ENT specialists, allergists and pulmonologists, aiming to bridge different perspectives to promote collaborative care. The discussion highlights the complexity of CRSwNP and its multiple treatable traits, as well as the current challenges in assessing and treating these traits. The authors share clinical experience and best practice, underscoring the need for a standardized, evidence-based management approach centered around the individual patient's concerns and medical needs. They outline a management approach that extends beyond sinonasal disease, encompassing a wide spectrum of treatable traits, from common CRSwNP-associated comorbidities such as asthma

and allergies, to systemic inflammation, environmental triggers, infections, pain, and behavioral and psychosocial factors. Additionally, the article discusses methods to enhance both patient and physician understanding of treatable traits and their impact on disease severity and recurrence, ultimately aiming to improve clinical outcomes for those suffering from CRSwNP.

Keywords: chronic rhinosinusitis; comorbidities; personalized care; recurrence; treatable traits.

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20

Chronic Obstr Pulm Dis

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. 2026 May 9.

doi: 10.15326/jcopdf.2025.0735. Online ahead of print.

Association of Short-Term Pollen Exposure With Lung Function in COPD Patients

James P Healy [1], Wenli Ni [1 2 3], Brent Coull [4], Petros Koutrakis [3], Andrew Synn [2], Nicholas Nassikas [1 2], Mary B Rice [1 2 3]

Affiliations Expand

- PMID: 42114267

- DOI: 10.15326/jcopdf.2025.0735

Free article

Abstract

Background: Environmental exposures such as air pollution are well established triggers for Chronic obstructive pulmonary disease (COPD) exacerbation and impaired lung function. However, the role of aeroallergens, particularly pollen, has not been thoroughly examined in COPD, despite evidence that pollen inhalation can cause airway inflammation. We investigated whether short-term exposure to higher concentrations of ambient pollen is associated with changes in lung function in people with COPD.

Methods: Thirty COPD participants, contributing 1,808 observations, were enrolled in the Study of Pollution and COPD Exacerbation (SPACE) and completed four clinic visits over one year while performing daily spirometry during four 30-day seasonal periods. Ambient total pollen was measured regionally. Associations of short-term pollen exposure (lag 1-7 days and cumulative 3- and 7-day concentration) with FEV_1 and FVC were assessed using distributed lag non-linear models with a Generalized Additive Mixed Model. We tested if inflammatory biomarkers, inhaler medications, asthma history and concurrent exposure ambient pollutants (NO_2, $PM_{2.5}$, O_3) modified associations between pollen exposure and lung function.

Results: Pollen exposure at lag 3 day was associated with lower FEV_1 (-5.5 mL per IQR pollen increase; 95% CI: -9.6, -1.3). Cumulative 3-day pollen exposure was similarly associated with lower FEV_1 (-4.9 mL; 95% CI: -9.6, -0.2). Associations of pollen and FEV1 were greater in those with higher CRP and diagnosis of asthma.

Conclusion: In this longitudinal study of people with COPD, higher short-term exposure to ambient pollen in the preceding 3 days was associated with lower FEV_1. Our findings suggest that aeroallergen exposure may worsen airflow obstruction in people with COPD.

Keywords: COPD; lung function; nitrogen dioxide; pollen.

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Paediatr Perinat Epidemiol

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. 2026 May 8.

doi: 10.1111/ppe.70150. Online ahead of print.

RSV and Childhood Asthma: Cause, Consequence or a Question of Design?

Anthony J Gilding [1 2], Cristina Longo [1 2]

Affiliations Expand

- **PMID: 42104566**

- DOI: 10.1111/ppe.70150

No abstract available

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Full text links

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Cite

22

Thorax

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. 2026 May 8:thorax-2025-224234.

doi: 10.1136/thorax-2025-224234. Online ahead of print.

Never say die: making a death from asthma a never event

Dominick Shaw [1], Katie Pink [2], P Jane McDowell [3 4], Tom Fardon [5]

Affiliations Expand

- **PMID: 42103471**

- **DOI: 10.1136/thorax-2025-224234**

No abstract available

Keywords: Asthma; Asthma Epidemiology; Asthma in primary care; Paediatric asthma.

Conflict of interest statement

Competing interests: None declared.

Full text links

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23

J Asthma

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. 2026 May 14:1-10.

doi: 10.1080/02770903.2026.2666092. Online ahead of print.

Real-world effects of asthma biologics on blood eosinophil levels: data from the CHRONICLE study

Warner W Carr [1], Dennis K Ledford [2], Bradley E Chipps [3], Njira L Lugogo [4], Andrew W Lindsley [5], Joseph D Spahn [6], Christopher S Ambrose [7]

Affiliations Expand

- PMID: 42041127

- DOI: 10.1080/02770903.2026.2666092

Abstract

Objective: High blood eosinophil counts (BECs) are associated with increased asthma exacerbation risk. Studies show anti-IL-5/5R biologics meaningfully reduce BEC; however, there are limited data describing the real-world effects of anti-IgE and anti-IL-4R biologics on BECs. This analysis aimed to describe BECs before and after initiation of different biologics in a real-world cohort of patients with severe asthma (SA).

Methods: CHRONICLE (NCT03373045) was an observational study of subspecialist-treated adults with SA in the US receiving biologics or maintenance systemic corticosteroids or whose disease was persistently uncontrolled on high-dosage inhaled corticosteroids and additional controllers. This analysis included patients enrolled between February 2018 and November 2023 who initiated omalizumab, mepolizumab, benralizumab, or dupilumab treatment. Patients' highest BECs in the 12 months before, 2 to <12 months after, and ≥12 months after biologic initiation were evaluated.

Results: In total, 323 of the 3912 enrolled patients met the inclusion criteria, of whom 61 received omalizumab, 80 received mepolizumab, 118 received benralizumab, and 64 received dupilumab. Patients treated with anti-IL-5/5R biologics (mepolizumab, benralizumab) had higher pretreatment BECs that were reduced at both 2 to <12 months and ≥12 months following initiation. Conversely, patients treated with anti-IL-4R (dupilumab) or anti-IgE (omalizumab) biologics had lower pretreatment BECs that were slightly reduced 2 to <12 months following initiation but increased ≥12 months following initiation.

Conclusion: Among US subspecialist-treated patients with SA, those treated with biologics that do not block or reduce IL-5/5R may experience an increase in BEC over time.

Keywords: Severe asthma; biologics; eosinophils; hypereosinophilia; real world.

Full text links

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24

Review

Vaccine

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. 2026 May 10:81:128560.

doi: 10.1016/j.vaccine.2026.128560. Epub 2026 Apr 17.

Enhancing uptake of respiratory vaccinations in asthma and chronic obstructive pulmonary disease (COPD) patients: a systematic review

Radhika Rani Gulati [1], Fatima Yaqub [2], Anna L Goodman [3]

Affiliations Expand

- **PMID: 42000586**

- **DOI: 10.1016/j.vaccine.2026.128560**

Abstract

Introduction: Despite influenza, pneumococcal and COVID vaccines being widely recommended for patients with chronic respiratory disease, vaccination rates in this cohort remain low. The aim of this systematic review is to identify interventions which are effective in increasing respiratory vaccination rates in adults with chronic obstructive pulmonary disease (COPD) or asthma.

Methods: The inclusion and exclusion criteria for the study can be found in the PROSPERO protocol (PROSPERO registration no: CRD42025588565). A search was run across four databases (MEDLINE, Embase, CENTRAL and ClinicalTrials.gov) in February 2025, which returned 2537 studies. Eleven studies were deemed to meet the study inclusion/exclusion criteria and these were narratively synthesised: four randomised clinical trials (RCTs), six longitudinal studies and one observational cohort study. Risk of bias was assessed using the Cochrane's Risk of Bias (RoB-V2)

and ROBIN-I-V2 tools. Studies were categorised according to the COM-B model of behaviour change.

Results: All 11 studies consisted of COPD populations, with four studies also including asthma patients. Interventions focused on patient education, with/without involvement of a healthcare professional (HCP). Nine of the eleven studies showed a statistically significant improvement in influenza and/or pneumococcal vaccination rate with an intervention. No studies assessing COVID vaccine uptake in this population were suitable for inclusion. Most studies targeted patients' capability to get vaccinated through improving patients' and HCPs' knowledge. Fewer studies focused on social opportunity (e.g. support from other patients/HCPs) or automatic motivation (e.g. reminders).

Discussion: The published literature in this area is currently limited. Most studies are non-randomised and are at high-risk of bias, making meta-analysis not possible. Further research should assess the practicalities (physical opportunity) of vaccination, especially in low-income economies (where most respiratory patients reside) and standardising research methods to allow for future meta-analysis.

Other: There is no funding for this review.

Keywords: Asthma; Behavioural science; COPD; Health promotion; Influenza; Pneumococcal; Public health; Vaccine; Vaccine hesitancy.

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Conflict of interest statement

Declaration of competing interest The authors declare the following financial interests/personal relationships which may be considered as potential competing interests: Oxford University has entered into a partnership with AstraZeneca for further development of ChAdOx1 nCoV-19. Anna Goodman is named as an inventor on a patent covering use of a particular promoter construct that is often used in ChAdOx1-vectored vaccines and is incorporated in the ChAdOx1 nCoV-19 vaccine. She has benefited from royalty income paid to the University of Oxford from sales of this vaccine by AstraZeneca and its licensees under the University's revenue sharing policy. She may benefit further in the future. The organisation and department in which we work has delivered vaccine trials for commercial sponsors including Jansen, AZ, Moderna, Novavax.

Supplementary info

Publication types, MeSH terms, SubstancesExpand

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

1

Review

Am J Med Sci

. 2026 May 14:S0002-9629(26)00186-2.

doi: 10.1016/j.amjms.2026.05.004. Online ahead of print.

Allergy and Asthma in the Elderly

Joshua K Walls [1], Gailen D Marshall Jr [2]

Affiliations Expand

- PMID: 42140557

- DOI: 10.1016/j.amjms.2026.05.004

Abstract

With the increased longevity in modern western society, multiple chronic illnesses that have been historically seen primarily in younger individuals have persisted into middle age and more recently elderly (> 65) individuals. This is particularly relevant to mast cell- and eosinophil-mediated diseases such as allergic sensitization (rhinitis, eczema, gastrointestinal diseases) and asthma. The reasons for this persistence into patients' later years of life are not fully understood but likely involve changes in external environmental influences (e.g. pollution, climate change, altered food sources and dietary habits) and internal environmental influences (e.g. sleep disturbances, decreased physical condition, increased depression, anxiety and stress perception). Optimal approaches to diagnosis demand obtaining an accurate medical history and physical examination in order to link variable clinical presentations to specific allergic (IgE)-mediated diseases. Therapies typically used for younger patients can also be used in elderly patients but with caution regarding potential direct adverse effects due to concomitant medical comorbidities and associated drug-drug interactions.

Keywords: Allergy; allergic rhinitis; asthma; elderly; immune senescence.

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Conflict of interest statement

Declaration of competing interest Neither Joshua K. Walls, MD nor Gailen D. Marshall, Jr., MD PhD have any conflicts relevant to the content of this manuscript.

Supplementary info

Publication typesExpand

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2

JAMA Otolaryngol Head Neck Surg

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. 2026 May 14:e260839.

doi: 10.1001/jamaoto.2026.0839. Online ahead of print.

Concordance Between an Adaptive Sino-Nasal Outcome Test and Imaging Results in Chronic Rhinosinusitis

Selena K Zhang [1], Anthony A Prince [1], Carleton Eduardo Corrales [1], Ayako Stanlie [2], Sana Alkhatib [3], Jay F Piccirillo [4 5], Ahmed Elkoumi [6], Jennifer J Shin [1 3 7]

Affiliations Expand

- PMID: 42133355

- PMCID: PMC13177194 (available on 2027-05-14)

- DOI: 10.1001/jamaoto.2026.0839

Abstract

Importance: Chronic rhinosinusitis (CRS) is a highly prevalent, multifactorial, inflammatory condition commonly assessed using the 22-item Sino-Nasal Outcome Test (SNOT-22). SNOT-22 has been characterized by observed discordance between its subjective outcomes and objective imaging results, a known potential feature of instruments validated for clinical research. Improved concordance between patient-reported outcomes and diagnostic tests may enhance synergy between research and daily clinical queries.

Objective: To determine whether the findings of a novel adaptive SNOT instrument are associated with results of Lund-Mackay computed tomography (LMCT).

Design, setting, and participants: This diagnostic study evaluated performance for both the standard static instrument (current standard) and a novel adaptive SNOT instrument compared with LMCT results for consecutive patients at tertiary care and community sites in Massachusetts from May 2020 to March 2025. Data were analyzed from March to July 2025.

Exposures: The standard static SNOT-22 or a novel adaptive version of the SNOT instrument and sinonasal LMCT-quantified imaging results; secondarily, endoscopy scores and allergy-related diagnostics were assessed.

Main outcomes and measures: Associations between the static or adaptive SNOT instrument scores and LMCT results were assessed and compared via ordinal regression. Clinical probabilities were calculated.

Results: The factor analysis included 3661 patient respondents (mean [SD] age, 50 [17] years; 2468 females [67%] and 1224 males [33%]); 417 patients had imaging performed. Internal consistency within the unidimensional SNOT nasal domain was high (Cronbach α, 0.915; 95% CI, >0.91). Standard static SNOT nasal domain and overall scores (SNOT-22, -25, -26, and -29) were not measurably associated with LMCT. Adaptive SNOT scores based on item response theory data and guideline definitions demonstrated associations with LMCT, particularly for the nasal domain (odds ratio [OR], 3.75; 95% CI, 1.90-7.40) and also when ear, sleep, psychological, productivity, and allergy domains were incorporated. Adaptive allergy-focused testing was inversely associated with LMCT (OR, 0.47; 95% CI, 0.25-0.88), suggesting adaptive testing can differentiate between CRS and allergic rhinitis. Results for endoscopy scores were similar. Adaptive nasal scores had increasing probabilities of LMCT greater than 5.

Conclusions and relevance: In this diagnostic study, the novel adaptive SNOT instrument established an association between subjective patient-reported symptoms and objective imaging results, a characteristic distinct from traditional static testing. An adaptive approach may reduce the questions posed and discriminate between CRS and allergy diagnoses.

Conflict of interest statement

Conflict of Interest Disclosures: Dr Prince reported consulting fees for RubiconMD outside the submitted work. Dr Corrales reported serving as Senior Clinical and Translational Adviser for the DBOTO Global Clinical Trial for Regeneron Pharmaceuticals outside the submitted work. Dr Shin reported receiving book royalties from Evidence-Based Otolaryngology and Otolaryngology Prep and Practice and funding from the American Academy of the Otolaryngology−Head and Neck Surgery Foundation, the Brigham Care Redesign Program Award, and the Schlager Family Innovations Fund Award. Dr Piccirillo reported royalty payments from Washington University for licensing the SNOT, NOSE-HHT, and SNORE-25 instruments; compensation from Emory University for participating on the Georgia CTSA Research Education Program External Advisory Committee; compensation for serving as the Director of the TL1 Clinical Research Training Program at Washington University (funded by the National Center for Advancing Translational Sciences of the National Institutes of Health, TL1TR002344); compensation for serving as Director of the Otolaryngology R25 Mentored Research Pathway at Washington University (R25DC020706); and compensation for role of Co-Director of the Neely National Physician-Scientist Mentorship Network (R25DC021131). No other disclosures were reported.

- **78 references**

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JAMA Otolaryngology–Head & Neck Surgery
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JAMA Otolaryngol Head Neck Surg

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Validation of an Adaptive Sinonasal Outcome Test

Selena K Zhang [1], Sapideh Gilani [2], Ayako Stanlie [3], Jay F Piccirillo [4 5], Anthony Prince [1 6], Carleton Eduardo Corrales [1 6], Allen Zhou [6], Sana Alkhatib [1], Jennifer J Shin [1 6 7]

Affiliations Expand

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Abstract

Importance: The Sino-Nasal Outcome Test (SNOT) is used worldwide to assess chronic rhinosinusitis (CRS). An adaptive form of this instrument has established concordance between subjective patient-reported outcomes and objective imaging findings, but its broader psychometric properties have yet to be evaluated.

Objective: To evaluate whether the adaptive SNOT can function as a validated instrument.

Design, setting, and participants: This validation diagnostic study of internal consistency, reliability, responsiveness, and convergent and discriminant validity of an adaptive SNOT instrument included consecutive patients 15 years and older who prospectively completed the adaptive SNOT, including factor analysis on 1072 responses. Computed tomography (CT) imaging of the sinuses was performed in 70 patients. Data were collected from January 2024 to August 2025, and data were analyzed from August to September 2025.

Exposures: CRS and allergy-related symptoms as well as secondary ear, sleep, psychological, and productivity domains were assessed through completion of the adaptive SNOT instrument. Lund-Mackay CT scores (LMCT) were calculated to measure objective disease severity in sinus imaging, while Patient-Reported Outcomes Measurement Information System scores were used to assess general health.

Main outcomes and measures: Factor analysis and internal consistency were assessed. Adaptive SNOT scores in patients with LMCT scores less than 5 or 5 and greater were evaluated via differences in means and effect sizes. Convergent validity was evaluated with Spearman ρ. Intrarater reliability was evaluated with Cohen κ, Spearman ρ, and intraclass correlation coefficient.

Results: Of 1072 included patients, 782 (72.9%) were female, and the mean (SD) age was 54 (21) years. The adaptive SNOT nasal domain and all-domain scores clearly distinguished between patients with LMCT scores of 5 and greater and those with LMCT scores less than 5 (nasal domain score: difference in means, 0.33; 95% CI, 0.03-0.63; Cohen d = 0.80; all-domain score: difference in means, 3.04; 95% CI, 0.02-6.05; Cohen d = 0.57). Adaptive SNOT scores also demonstrated associations with physical, mental, social, and global health (associations ranged from low to strong). Intrarater reliability was substantial for both the nasal domain alone (Cohen κ range, 0.72-0.74) and across all domains (Cohen κ range, 0.73-0.75). Additionally, the adaptive SNOT nasal and all-domain scores were responsive to change and improved among patients who received CRS treatment with medication or surgery from a mean score of 9.12 (95% CI, 6.37-11.87) to 2.47 (95% CI, 0.89-4.05) (Cohen d = 0.76).

Conclusions and relevance: Findings of this validation diagnostic study support the validation of the adaptive SNOT instrument for assessing CRS-related and allergic rhinitis-related symptoms in clinical and research settings.

Conflict of interest statement

Conflict of Interest Disclosures: Dr Piccirillo reports patents for the Sino-Nasal Outcome Test, Nasal Outcome Score for Epistaxis in Hereditary Hemorrhagic Telangiectasia, and Symptoms of Nocturnal Obstruction and Related Events–25 with royalties paid from Washington University; received compensation from Emory University for participating on the Georgia CTSA Research Education Program External Advisory Committee; receives compensation for serving as the Director of the TL1 Clinical Research Training Program at Washington University, funded by the National Center for Advancing Translational Sciences of the National Institutes of Health; receives compensation as Director of the Otolaryngology R25 Mentored Research Pathway at Washington University; and receives compensation as Co-Director of the Neely National Physician-Scientist Mentorship Network. Dr Prince reports personal fees from Rubicon MD and Deerfield Intelligence outside the submitted work. Dr Corrales reports serving as a senior clinical and translational advisor for the DBOTO clinical trial for Regeneron outside the submitted work. Dr Shin reports royalties for books paid by Springer International and Plural Publishing outside the submitted work. No other disclosures were reported.

- **85 references**

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Review

Otolaryngol Clin North Am

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Nasal Obstruction

Uma S Ramaswamy [1], Mark A Fadel [2]

Affiliations Expand

- PMID: 42128759

- DOI: 10.1016/j.otc.2026.03.007

Abstract

There are 2 types of pediatric nasal obstruction: anatomic and physiologic. Anatomic obstruction may be corrected surgically, whereas physiologic obstruction is best managed medically. There are those cases in which surgical correction of anatomic obstruction can enhance the efficacy of topical therapies when managing physiologic obstruction. This article aims to discuss causes and management of pediatric nasal obstruction.

Keywords: Allergy; Climate change; Nasal endoscopy; Nasal obstruction; Rhinitis.

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Conflict of interest statement

Disclosure U.S. Ramaswamy serves on the Scientific Advisory Board of Sanofi-Regeneron, makers of dupilumab. The other author has no conflicts to disclose.

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Ann Otol Rhinol Laryngol

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. 2026 May 9:34894261449672.

doi: 10.1177/00034894261449672. Online ahead of print.

The Effect of Radiofrequency Ablation of Posterior Nasal Nerves on Inflammatory Cytokines, Peak Nasal Inspiratory Flow, and Subjective Symptom Scores in Chronic Rhinitis: A Prospective Clinical Trial

David Z Allen [1], Elena E Skaribas [2], Ashwini Bandi [2], Sameer Siddiqui [2], Panayiotis Kontoyiannis [2], Jerril Jacob [2], Ella Hawes [2], Sun Hua [3], Kunal Shetty [1], William Yao [1], Martin J Citardi [1], Amber U Luong [1]

Affiliations Expand

- PMID: 42105251

- DOI: 10.1177/00034894261449672

Abstract

Background: Chronic rhinitis (CR) is inflammation of the nasal mucosa, causing a multitude of symptoms. Temperature-controlled radiofrequency neurolysis (RFN) of the posterior nasal nerve (PNN) is a treatment for CR. In allergic rhinitis (AR), Type 2 cytokines are drivers of symptom severity. This study explores whether RFN's symptomatic improvements are linked to changes in nasal airflow and local cytokine levels.

Methods: This prospective, single-arm study was conducted at the Texas Sinus Institute at The University of Texas Health Science Center at Houston. Patients with ≥6 months of CR symptoms, a reflective total nasal symptom score (rTNSS) ≥6, and refractory to medical management were included. Follow-ups occurred at 4 and 12 weeks, with the primary endpoint at 12 weeks. Symptom improvement, peak nasal inspiratory flow (PNIF) and cytokine changes were assessed.

Results: Seventeen patients were enrolled with 15 patients undergoing the treatment. The procedure was well tolerated with no major adverse events. The

rTNSS improved from a median of 7.5 to 4 at 12 weeks (*P* < .01). Median NOSE scores improved from 52.5 to 17.5 at week 12 (*P* < .05). Minimal clinically important differences (MCID) were achieved by 67% of patients for rTNSS and 50% for NOSE. There were no significant changes in PNIF. Patient-level change in IL-10 was significantly associated with improvement in NOSE score (*r* = -.70, *P* = .011).

Conclusions: RFN of the PNN is a safe, effective in-office treatment for CR. While PNIF and group-level cytokines were not consistent indicators of improvement, the correlation between IL-10 and symptom relief suggests a potential link between neural ablation and the local mucosal microenvironment. This investigation shows the feasibility of cytokine monitoring to further investigate the mechanisms of rhinitis treatment.

Keywords: chronic rhinitis; cytokines; posterior nasal nerve; radiofrequency ablation; rhinitis; rhinorrhea.

chronic cough

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Chest

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. 2026 May 14:S0012-3692(26)00636-7.

doi: 10.1016/j.chest.2026.05.006. Online ahead of print.

Moving Beyond Responders: A post-hoc Analysis Identifying Criteria for Chronic Cough Control

Mustafaa Wahab [1], Elena Kum [2], Nermin Diab [3], Danica Brister [4], Ana Oliveira [5], Wafa Hassan [2], Sue Beaudin [1], Catie Stevens [1], Jennifer Wattie [1], Lesley Wiltshire [1], Karen Howie [1], Kieran Killian [1], Roma Sehmi [6], Gail M Gauvreau [1], Paul M O'Byrne [6], Imran Satia [7]

Affiliations Expand

- PMID: 42140485

- DOI: 10.1016/j.chest.2026.05.006

Abstract

Background: Minimally important differences (MIDs) often define treatment response in refractory chronic cough (RCC). However, MIDs represent the smallest change in an

outcome that patients perceive as important and do not indicate whether cough has improved to a level that would be considered adequately controlled. Defining criteria for cough control may therefore provide a complementary benchmark for evaluating treatment success.

Research question: How can cough control be defined using thresholds anchored to patient-perceived sufficiency, and what proportion of patients achieve this state following treatment?

Study design and methods: PROCOUGH was a prospective, single-centre observational cohort study conducted at McMaster University. Patients were treated according to ERS guidelines with pre- and post-treatment assessments. Post-hoc analyses based on the 90% upper limit of scores among patients reporting Global Rating of Change Scale (GROC 6-7) and a treatment response question, "Is your cough sufficiently controlled that no additional treatment is required" were used to derive criteria for cough control. Patients not meeting cough control criteria were classified as RCC.

Results: 100 patients completed follow-up (58±14 yrs; 58% female; median cough duration 7 yrs). Controlled cough (ConCC) was defined as post-treatment 24-h cough frequency (CF) ≤10 coughs/h, Cough Severity VAS(CS-VAS) ≤30 mm, and Leicester Cough Questionnaire (LCQ) ≥16. Post-treatment, 26% met all 3 criteria, while 74% had RCC. Using two PROs alone, 32% met ConCC criteria. Individually, LCQ, CS-VAS, and CF criteria were met by 36%, 44%, and 50% respectively.

Interpretation: We derived patient-anchored criteria for cough control incorporating objective and subjective outcomes: 24-h cough frequency ≤10 coughs/h, cough severity VAS ≤30 mm, and LCQ ≥16. When these composite thresholds were applied to define controlled chronic cough, only 26% of patients achieved cough control despite substantially higher proportions meeting individual responder criteria. This discrepancy underscores the need for improved treatments and outcome definitions that capture patient-perceived cough control.

Keywords: Chronic cough; Controlled chronic cough; Cough frequency; Patient-reported outcomes; Refractory chronic cough.

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. 2026 May 11;12(3):01682-2025.

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ERS Congress 2025: highlights from the Airway Diseases Assembly

Francesca Cefaloni [1], Sophie Booth [2 3], Charlotte E Healey [4], Despoina Ioannidou [5], Enrico Schiavi [6], Matteo Bonini [4 6], Juan José Nieto-Fontarigo [7 8], Stefania Principe [9], Gert-Jan Braunstahl [10 11], Alexander G Mathioudakis [2 12], Pavol Pobeha [13], Florence Schleich [14], Apostolos Bossios [15 16 17], Augusta Beech [2 3]

Affiliations Expand

- PMID: 42125485

- PMCID: PMC13159007

- DOI: 10.1183/23120541.01682-2025

Abstract

Early career members of Assembly 5 summarise the highlights of the 2025 #ERSCongress, presenting the latest advances in asthma, COPD and chronic cough through mechanistic insights, novel biomarkers and emerging therapies https://bit.ly/3NHWlsx.

Copyright ©The authors 2026.

Conflict of interest statement

Conflicts of interest: F. Cefaloni, S. Booth, C.E. Healey, D. Ioannidou, E. Schiavi, M. Bonini, S. Principe, P. Pobeha, G-J. Braunstahl and J.J. Nieto-Fontarigo have nothing to declare related to this article. A.G. Mathioudakis reports honoraria from GlaxoSmithKline and Sanofi, and stock options from Healthy Networks, not related to this work. F. Schleich received either grants, consultation fees, honoraria or lecture fees from AstraZeneca, Chiesi, Sanofi, Celltrion, GSK Teva, Celltrion and Advanz; and is the Secretary of Assembly 5 (Airway diseases, asthma, COPD, and chronic cough) of the European Respiratory Society and Chair of the Belgium Respiratory Society. A. Bossios reports institutional fees and honoraria from Chiesi, GSK and AstraZeneca, as well as institutional grants from AstraZeneca, outside the submitted work. A. Beech is a member of the early career mentoring programme of this journal.

- 60 references
- 2 figures

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Published Erratum

Cureus

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. 2026 May 8;18(5):c430.

doi: 10.7759/cureus.c430. eCollection 2026 May.

Correction: Nonasthmatic Eosinophilic Bronchitis: An Overlooked Cause of Chronic Cough in Children

Badar Al Dhouyani [1], Ahmed Abushahin [1], Mutasim Abu-Hasan [1]

Affiliations Expand

- PMID: 42112425
- PMCID: PMC13156925
- DOI: 10.7759/cureus.c430

Abstract

[This corrects the article DOI: 10.7759/cureus.107552.].

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Conflict of interest statement

No competing interests declared.

Erratum for

- Nonasthmatic Eosinophilic Bronchitis: An Overlooked Cause of Chronic Cough in Children.

Al Dhouyani B, Abushahin A, Abu-Hasan M.Cureus. 2026 Apr 22;18(4):e107552. doi: 10.7759/cureus.107552. eCollection 2026 Apr.PMID: 42110010 **Free PMC article.**

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Observational Study

Lung

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. 2026 May 8;204(1):29.

doi: 10.1007/s00408-026-00892-0.

Burden of Chronic Cough and Refractory/Unexplained Chronic Cough in South Korea: A Multicenter, Observational Study (CHORUS)

Ji-Su Shim [1], Min-Hye Kim [1], Sung-Yoon Kang [2], Ji-Ho Lee [3], Eun-Jung Jo [4], Byung-Jae Lee [5], Sang-Heon Cho [6], JeeEun Jang [7], Woo-Jung Song [8]

Affiliations Expand

- PMID: 42101672

- PMCID: PMC13156121

- DOI: 10.1007/s00408-026-00892-0

Abstract

Purpose: Refractory or unexplained chronic cough (RUCC) represents an unmet clinical need. This study aimed to explore the components constituting the disease burden in patients with RUCC by comparing clinical features, healthcare use, and patient-reported outcomes with those of chronic cough (CC) of recent onset (< 1 year).

Methods: A total of 200 individuals were prospectively enrolled from seven referral clinics in South Korea, including 100 with RUCC and 100 with CC of recent onset (< 1 year). Data were obtained through structured interviews and medical record reviews. Measures included general and cough-specific quality-of-life, mood, cough hypersensitivity symptoms, work productivity, and healthcare utilization.

Results: Individuals with RUCC were significantly older than those with CC (57.5 ± 15.1 vs. 48.9 ± 17.6 years) and had markedly longer cough duration (median 80 vs. 4 months). The RUCC group demonstrated higher out-of-pocket costs, more healthcare facility visits, and greater numbers of diagnostic tests and prescribed medications. However, cough-specific and general health-related quality of life scores showed no significant differences. Correlation analysis revealed comparable but stronger associations between cough-specific quality-of-life and general health outcomes in RUCC than in CC.

Conclusion: RUCC imposes a substantial and multidimensional burden that extends beyond symptom severity. Chronicity, healthcare complexity, and psychosocial impact appear to be central features. Future evaluation tools should incorporate time and lived experience to more accurately capture the true burden of chronic cough.

Keywords: Chronic cough; Disease burden; Refractory cough; Unexplained cough.

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Conflict of interest statement

Declarations. Conflict of interest: WJS declares grants from MSD, Daewoong Pharmaceutical, and AstraZeneca, consulting fees from Merck, Bellus, AstraZeneca, Shionogi, and GSK, and lecture fees from Thermo Fischer/Immunotek, Celltrion, Merck, AstraZeneca, GSK, Sanofi, and Novartis. Other authors have no potential conflicts of interest to disclose. Ethical Approval: The study was approved by the Institutional Review Board (IRB No. 2021-07-046) for each participating hospital and written informed consent forparticipation was obtained from all study subjects.

- 51 references

Supplementary info

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5

Review

Environ Res

. 2026 May 15:297:124108.

doi: 10.1016/j.envres.2026.124108. Epub 2026 Feb 26.

Association between air pollution and chronic cough: Evidence from a systematic review and meta-analysis of observational studies

Hyejun Kim [1], Kefang Lai [2], Tariq Cisse [3], Xiaolin Wei [4], Erjia Ge [5]

Affiliations Expand

- PMID: 41763474

- DOI: 10.1016/j.envres.2026.124108

Abstract

Background: Chronic cough is a common and debilitating respiratory symptom, yet its association with air pollution remains insufficiently understood.

Methods: We conducted a systematic review and meta-analysis of observational studies evaluating the association between air pollution and chronic cough. Searches of Medline, Embase, Scopus, and GeoBase were completed up to February 14, 2025. Studies were eligible if they reported quantitative associations between air pollution and exposures and chronic cough outcomes. Two reviewers independently screened studies, assessed quality, and extracted data. Random-effects models were used to estimate pooled odds ratios (ORs) with 95% confidence intervals.

Results: Of 1250 articles screened, 53 studies were reviewed, and eight were included in meta-analysis. Pooled ORs per 10 μg/m^3 increase in exposure were 1.10 (95% CI: 0.99-1.22) for $PM_{2.5}$ and 1.04 (95% CI: 1.02-1.06) for NO_2. Heterogeneity was low to moderate (I^2: 18.9% for $PM_{2.5}$; I^2: 0.0% for NO_2), and there was no evidence of publication bias (Egger's test p = 0.98 and 0.47, respectively). Stratified analyses revealed stronger associations in adults and males. Evidence on progression from chronic cough to more severe respiratory conditions was limited, highlighting a critical gap for evidence-informed clinical follow-up and public guidance to prevent progression.

Conclusion: Our findings highlight that chronic cough is an overlooked consequence of air pollution exposure and emphasize the need for health care professionals to consider environmental factors when managing persistent cough. Strengthening air quality control and early detection strategies could help reduce the respiratory disease burden.

Keywords: Air pollution; Chronic cough; Environmental exposure; Meta-analysis.

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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 types, MeSH terms, Substances

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

1

Chest

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. 2026 May 14:S0012-3692(26)00635-5.

doi: 10.1016/j.chest.2026.05.005. Online ahead of print.

Use of an anti-TSLP agent in patients with asthma and clinically significant bronchiectasis: a case series

Andrea Gramegna [1], Giacomo Maruca [1], Marco Caminati [2], Gianluca Imeri [3], Corrado Pelaia [4], Mirta Cavallini [5], Andrea Mastrototaro [6], Elena Parazzini [7], Dejan

Radovanovic [8], Paola Faverio [9], Benedetta Bondi [10], Diego Bagnasco [11], Gianfranco Alicandro [12], Pierachille Santus [8], Michele Mondoni [13], Stefano Aliberti [14], Francesco Blasi [1]

Affiliations Expand

- PMID: 42140482

- DOI: 10.1016/j.chest.2026.05.005

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. 2026 May 14:2502796.

doi: 10.1183/13993003.02796-2025. Online ahead of print.

Nasal nitric oxide combined with clinical features for preliminary screening of primary ciliary dyskinesia in bronchiectasis

Shunlian Hu [1 2 3 4], Xiyue Shen [1 2 4], Jiayi Wang [2 3 4], Haiwen Lu [3], Yang Liu [1], Shuyi Gu [3], Ai Ge [3], Jiawei Yang [3], Bei Mao [3], Felix C Ringshausen [5 6], Amelia Shoemark [7 8], Jin-Fu Xu [9 2]

Affiliations Expand

- PMID: 42134984

- DOI: 10.1183/13993003.02796-2025

Abstract

Rationale: Primary ciliary dyskinesia (PCD), an underdiagnosed genetic disorder characterised by dysfunctional cilia, is a known cause of bronchiectasis.

Objectives: To prospectively identify PCD among patients with bronchiectasis using nasal nitric oxide (nNO) and clinical features, and to characterize genetic features.

Methods: This cross-sectional study enrolled adolescent and adult patients with bronchiectasis from the BE-China registry at Shanghai Pulmonary Hospital. Individuals with either strong clinical suspicion or nNO ≤77 nl·min^{-1} received a structured diagnostic work-up, including transmission electron microscopy and whole exome sequencing. Diagnoses followed the 2025 ERS/ATS PCD diagnostic guidelines.

Results: Among 373 patients with bronchiectasis, 27 (7.4%) were in the PCD group (14 "Confirmed PCD" and 13 "PCD Highly Likely"). nNO showed high screening accuracy (sensitivity 84.8%, specificity 97.1%). Patients with PCD were younger and had earlier bronchiectasis onset. Age-adjusted regression analysis showed independent associations between PCD and lower BMI (regression coefficient [RC] -1.5; 95% CI -2.9 to -0.1), FEV_1 % predicted (RC -18.4; 95% CI -28.3 to -8.6), FVC % predicted (RC -11.3; 95% CI -19.5 to -3.0), and FEV_1/FVC (RC -10.3; 95% CI -16.9 to -3.8). Strong associations were observed with rhinosinusitis (OR 25.3; 95% CI 8.8 to 92.1) and *P.aeruginosa* infection (OR 8.5; 95% CI 3.2 to 25.7). Situs in*versus* occurred in 25.9% of patients with PCD. *DNAH11* was the most common pathogenic gene.

Conclusions: Patients with PCD had more severe disease, reinforcing the need for structured screening in patients with bronchiectasis. nNO combined with clinical features is an effective and reliable screening strategy for PCD in bronchiectasis.

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Eur J Pediatr

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. 2026 May 14;185(6):392.

doi: 10.1007/s00431-026-07068-1.

Structural lung assessment in children with primary ciliary dyskinesia: evaluation with the SPEC scoring system

Gamze Akca Dinç [1], Ezgi Yağız Ertuna [2], Satı Özkan Tabakçı [3], Işıl Bilgiç [3], Meltem Kürtül Çakar [3], Ayyüce Ünlü [3], Hande Yetişgin [3], Çelebi Yıldırım [3], Dilber Ademhan Tural [3 4], Sanem Eryılmaz Polat [3], Gökçen Dilşa Tuğcu [3], Avni Merter Keçeli [2], Ahmet Sığırcı [2], Güzin Cinel [3 4]

Affiliations Expand

- **PMID: 42133077**

- **DOI: 10.1007/s00431-026-07068-1**

Abstract

Primary ciliary dyskinesia (PCD) is a rare genetic disorder that may result in progressive lung damage. The Specific PCD Evaluation by CT (SPEC) scoring system has been specifically used in PCD patients since 2024. This study aimed to evaluate the SPEC score in children with PCD. This retrospective, cross-sectional, single-center study included 47 children with confirmed or highly likely PCD who underwent thin-section thoracic computed tomography (CT). Pediatric radiologists evaluated CT scans using SPEC, Bhalla, and modified Brody scoring systems. We analyzed pulmonary function tests performed within 3 months of CT. We compared its performance with established scoring systems. The median age at CT was 8 years (Q1-Q3: 5.5-13.0). SPEC scores ranged from 0 to 51 (median 29). All three CT scoring systems showed strong intercorrelations; the SPEC-modified Brody correlation was ρ = 0.894 (p < 0.001), and the SPEC-Bhalla correlation was ρ = - 0.838 (p < 0.001). SPEC scores showed strong negative correlations with FEV_1 z-score (ρ = - 0.748, p < 0.001) and FVC z-score (ρ = - 0.722, p < 0.001) and positively correlated with age (ρ = 0.425, p = 0.003). SPEC scoring showed bronchiectasis predominantly in the lower and middle lobes, with the left lower lobe most frequently affected (68.1%). Conlsuions: The SPEC scoring system is valid for assessing structural lung disease in children with PCD. Strong correlations with pulmonary function and established CT scoring systems support its clinical utility. SPEC may help guide treatment decisions and serve as an outcome measure in pediatric PCD trials. What is Known: • Bhalla and modified Brody CT scoring systems were developed for cystic fibrosis and may not fully capture PCD-specific findings. • SPEC, introduced in 2024 as the first PCD-specific CT scoring system, has limited pediatric data. • Structural lung damage in PCD is progressive and may precede spirometric decline. What is New: • This study provides an independent pediatric application cohort for the SPEC scoring system, outside the development study. • SPEC scores correlated strongly with pulmonary function parameters. • SPEC can guide clinical decisions and serve as an outcome measure in the pediatric PCD population.

Keywords: Bronchiectasis; CT scoring; Children; Primary ciliary dyskinesia; Pulmonary function; SPEC score.

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Conflict of interest statement

Declarations. Ethical approval: The study was approved by the local institutional review board (Approval No: 1–25-2016) and conducted in accordance with the Helsinki Declaration on Human Rights. Competing interests: The authors declare no competing interests.

- **29 references**

Supplementary info

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ERJ Open Res

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. 2026 May 11;12(3):01360-2025.

doi: 10.1183/23120541.01360-2025. eCollection 2026 May.

Bronchiectasis in Italy: an analysis of the EMBARC registry

Stefano Aliberti [1 2], Andrea Gramegna [3 4], Edoardo Simonetta [1], Alessandro De Angelis [1 2], Mattia Nigro [1 2], Anna Stainer [1 2], Francesco Amati [1 2], Salvatore Battaglia [5], Giovanni Sotgiu [6], Federico Dente [7], Paola Faverio [8 9], Oriol Sibila [10], Michal Shteinberg [11 12], Montserrat Vendrell [13], Katerina Dimakou [14], Adelina Amorim [15], Eva Polverino [16], Sermin Borekci [17], Eleanor Gerada [18], Jennifer Pollock [19], Kara Robertson [19], Veronica Polelli [1 2], Martina Santambrogio [3 4], Mariangela Retucci [3], Donatella Nobile [20], James D Chalmers [19], Francesco Blasi [3 4]

Affiliations Expand

- PMID: 42125482

- PMCID: PMC13158980

- DOI: 10.1183/23120541.01360-2025

Abstract

Background: Bronchiectasis is a complex disease with geographical variability in its presentation and management. Despite the growing contribution of international registries, real-world data on the Italian bronchiectasis population remain limited. The objective of the present study was to describe the demographic, clinical, microbiological, functional and treatment characteristics of Italian patients with

bronchiectasis and to compare them with those of patients from other Southern European countries.

Methods: This was a secondary analysis of adults from 18 Italian centres included in the European Multicentre Bronchiectasis Audit and Research Collaboration (EMBARC) registry, with comparisons made to patients in Spain, Greece, Portugal, Turkey, Israel and Malta (Southern European countries). Demographics, comorbidities, exacerbation history, spirometry, microbiology and treatment patterns were evaluated.

Results: Among 1657 Italian patients, the majority were female (70.5%) with a median age of 65 years, with high rates of idiopathic bronchiectasis (55.4%) and preserved lung function. Compared with other Southern European countries (n=2638), Italian patients had lower disease severity (median Bronchiectasis Severity Index: 6 *versus* 7; p<0.001), less frequent isolation of *Pseudomonas aeruginosa*, and lower prevalence of daily sputum production and purulence, despite identical quality of life (median Quality of Life Questionnaire-Bronchiectasis Respiratory Symptom Score: 70.4 in both groups). Treatment patterns differed, with lower use of inhaled antibiotics (1.1% *versus* 13.1%) and macrolides (6.0% *versus* 14.3%), but more widespread use of airway clearance (48.4% *versus* 35.9%) among patients from Italy *versus* other Southern European countries.

Conclusions: These findings may reflect earlier referral, diagnostic preferences or structural differences in care delivery in Italy compared with other Southern European countries. This work lays the foundation for tailored national strategies and future longitudinal studies. The largest bronchiectasis cohort ever studied in Italy reveals unique clinical traits and highlights key differences from other Southern European countries, and provides real-world data to shape better care models and guide future research.

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Conflict of interest statement

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Reversible Rituximab-Induced Bronchiectasis: A Pediatric Case Report and Literature Review

Nasser AlHarbi [1], Ahmed AlEidan [2], Masheal A AlZanbagi [2]

Affiliations Expand

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Abstract

BACKGROUND Rituximab (RTX) is a chimeric IgG monoclonal antibody directed against the CD20 antigen expressed on normal and malignant B cells. It is used for treating a variety of neoplastic, autoinflammatory, and autoimmune pathologies, including disorders occurring in the pediatric population. It has been proven that rituximab can induce pulmonary complications including interstitial lung disease,

bronchiectasis and pulmonary toxicities, predominantly in adults. By describing this case, we aim to raise awareness among pediatricians given the limited literature on rituximab-induced bronchiectasis in pediatrics, aiding in early recognition for better outcomes. CASE REPORT We present the case of a 12-year-old girl with relapsing steroid-dependent nephrotic syndrome who was diagnosed at age 6 years. When rituximab was introduced, remission was achieved. A year later, she developed a persistent wet cough. Initial imaging suggested pneumonia, and subsequent admissions revealed recurrent respiratory infections. Workup showed hypogammaglobulinemia, attributed to rituximab-induced humoral immunosuppression. High-resolution computed tomography (HRCT) revealed segmental atelectasis and bronchiectatic changes. Pulmonology testing diagnosed chronic suppurative lung disease, likely secondary to immunosuppression. Rituximab was discontinued, and the patient was started on azithromycin and airway clearance therapy. Intravenous immunoglobulin (IVIG) was initiated due to persistent hypogammaglobulinemia. Repeated HRCT showed complete resolution of bronchiectasis, with minimal residual scarring. CONCLUSIONS While it is a more common complication in adults, it is important to recognize rituximab as a culprit in pediatric patients with respiratory symptoms after prolonged use for various indications. Prompt recognition and intervention are crucial for mitigating further lung damage and perhaps full recovery. Pediatricians are encouraged to monitor for rituximab-induced pulmonary complications, particularly in naive lungs.

Conflict of interest statement

Conflict of interest: None declared

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