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

Observational Study

Lung

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. 2026 Aug 29;204(1):63.

doi: 10.1007/s00408-026-00930-x.

[Optimizing Inhaled Corticosteroid Prescribing in COPD: Evaluating the Impact of Eosinophil Testing on Clinical Outcomes](#)

[Jared Hester](#)¹, [David Whipkey](#)¹, [James Ferrell](#)^{2,3}

Affiliations Expand

- PMID: 42667442
- DOI: [10.1007/s00408-026-00930-x](#)

Abstract

Purpose: Inhaled corticosteroids (ICS) are recommended for select patients with chronic obstructive pulmonary disease (COPD) based on exacerbation history and blood eosinophil counts. Prior studies suggest that ICS are frequently prescribed outside of guideline-based criteria, and eosinophil testing is inconsistently performed in clinical practice. This study evaluated adherence to Global Initiative for Chronic Obstructive Lung Disease (GOLD) eosinophil criteria for ICS prescribing and associated clinical outcomes.

Methods: This retrospective observational cohort study included adults with COPD receiving care within Cleveland Clinic outpatient practices in Ohio who were newly initiated on an ICS-containing regimen between January 1, 2021, and July 31, 2023. Patients were classified based on whether ICS prescribing aligned with GOLD eosinophil criteria. Outcomes included adherence to GOLD eosinophil recommendations for ICS use, pneumonia incidence, ICS de-escalation, and predictors of prescribing outside guideline-based criteria.

Results: A total of 688 patients were included. Most patients received ICS outside of GOLD eosinophil criteria (589/688, 86%). Baseline eosinophil testing was performed in 102 patients (15%). Pneumonia incidence was similar among patients prescribed ICS outside versus within guideline-based criteria (15% vs. 16%, $p = 0.686$). ICS de-escalation was uncommon overall (7%) and occurred at similar rates between groups. A history of prior exacerbations was associated with prescribing within guideline-based indications.

Conclusion: ICS prescribing frequently occurred outside of GOLD eosinophil criteria, with limited utilization of eosinophil testing in clinical practice. Clinical outcomes were similar regardless of guideline alignment, and ICS de-escalation was infrequent. These findings highlight opportunities to improve integration of eosinophil-guided decision-making into COPD management.

Keywords: Chronic obstructive pulmonary disease; De-escalation; Eosinophils; Guideline adherence; Inhaled corticosteroids; Pneumonia.

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Conflict of interest statement

Declarations. Conflict of interest: The authors have no relevant financial or non-financial interests to disclose. **Ethical Approval:** This study was reviewed by the Cleveland Clinic Institutional Review Board and determined to be exempt from full review (IRB No. 25–919). **Consent to Participate:** Not applicable. **Consent for Publication:** Not applicable.

- [16 references](#)

Supplementary info

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Cite

2

Am Surg

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. 2026 Aug 29:31348261484513.

doi: 10.1177/00031348261484513. Online ahead of print.

Predictive Value of Preoperative Chest Computed Tomography-Measured Diaphragm Thickness Combined With Pulmonary Function for Postoperative Pulmonary Complications After Anatomic Lung Resection in Elderly Patients With Clinical Stage I Non-Small Cell Lung Cancer

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Affiliations Expand

- PMID: 42667245
- DOI: [10.1177/00031348261484513](https://doi.org/10.1177/00031348261484513)

Abstract

BackgroundPostoperative pulmonary complications (PPCs) remain a major cause of adverse recovery after lung resection in elderly patients with early-stage non-small cell lung cancer (NSCLC). This study evaluated the predictive value of preoperative chest computed tomography (CT)-measured diaphragm thickness combined with pulmonary function for PPCs after anatomic lung resection.**Methods**In this single-center retrospective study, 248 patients aged 65 years or older with clinical stage I NSCLC who underwent lobectomy or segmentectomy between January 1, 2020 and December 31, 2025 were included. Preoperative CT-measured diaphragm thickness, pulmonary function indices, perioperative variables, and PPCs occurring within 30 days after surgery or during hospitalization were analyzed. Multivariable logistic regression and receiver operating characteristic analyses were performed.**Results**PPCs occurred in 54 of 248 patients (21.8%). Multivariable analysis showed that chronic obstructive pulmonary disease (odds ratio [OR], 2.29; 95% CI, 1.12-4.69; $P = .023$) and longer operative time (OR per 10-min increase, 1.13; 95% CI, 1.04-1.23; $P = .004$) were associated with increased PPC risk, whereas greater mean bilateral diaphragm thickness (OR per 0.1-mm increase, 0.88; 95% CI, 0.81-0.96; $P = .004$) and higher FEV1%pred (OR, 0.96; 95% CI, 0.93-0.99; $P = .009$) were protective. The area under the curve was 0.791 for mean bilateral diaphragm thickness, 0.752 for FEV1%pred, and 0.842 for the combined model; the bootstrap-corrected AUC was 0.829.**Conclusion**Preoperative CT-measured mean bilateral diaphragm thickness and FEV1%pred independently predicted PPCs after anatomic lung resection in elderly patients with clinical stage I NSCLC. Their combination provided improved predictive performance for preoperative risk stratification.

Keywords: diaphragm thickness; non-small cell lung cancer; postoperative pulmonary complications; pulmonary function.

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Cite

3

Review

Int J Chron Obstruct Pulmon Dis

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. 2026 Aug 24:21:632653.

doi: 10.2147/COPD.S632653. eCollection 2026.

[Comparative Efficacy and Safety of Inhaled Maintenance Therapy Strategies for Quality of Life in COPD: A Systematic Review and Bayesian Network Meta-Analysis](#)

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Affiliations Expand

- PMID: 42666989
- PMCID: [PMC13523876](#)
- DOI: [10.2147/COPD.S632653](#)

Abstract

Background: Inhaled maintenance therapies are central to the long-term management of chronic obstructive pulmonary disease (COPD), but their comparative effects on health-related quality of life across the treatment-escalation pathway remain unclear. This systematic review and Bayesian network meta-analysis compared major inhaled treatment strategies using change in St. George's Respiratory Questionnaire (SGRQ) total score as the primary outcome, with exploratory assessment of safety.

Methods: PubMed, Embase, Cochrane Library, Web of Science, and Scopus were searched from inception to May 21, 2025, with supplementary citation tracking and ClinicalTrials.gov screening. Randomized controlled trials in stable COPD comparing placebo, long-acting muscarinic antagonists (LAMA), long-acting beta-2 agonists (LABA), inhaled corticosteroid plus LABA (ICS+LABA), LABA plus LAMA (LABA+LAMA), or triple therapy were included. Bayesian random-effects network

meta-analysis was performed. Transcriptomic analyses were conducted only as exploratory mechanistic contextualization and were not treated as primary clinical endpoints.

Results: Fourteen randomized trials were included. Triple therapy showed the greatest improvement in SGRQ total score versus placebo (mean difference [MD] -3.99; 95% credible interval [CrI] -5.86 to -2.16) and ranked highest by surface under the cumulative ranking curve. Compared with LABA+LAMA, triple therapy was associated with greater improvement in SGRQ total score (MD -1.42; 95% CrI -2.62 to -0.16), whereas differences among other active regimens were generally small. In connected safety networks, no clear differences versus placebo were observed for adverse events, serious adverse events, discontinuation due to adverse events, or death. Direct meta-analysis of four trials showed increased pneumonia risk with triple therapy versus LABA+LAMA (odds ratio 1.50; 95% confidence interval 1.16-1.93).

Conclusion: Triple therapy was associated with the greatest average improvement in SGRQ total score in stable COPD, but its incremental benefit over dual bronchodilation was modest and below the conventional SGRQ minimal clinically important difference. Treatment escalation should therefore be individualized, balancing potential quality-of-life gains against pneumonia risk with ICS-containing regimens.

Registration: PROSPERO CRD420261407792.

Keywords: COPD; inhaled therapy; network meta-analysis; quality of life.

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Conflict of interest statement

The authors declare that they have no competing interests.

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

Supplementary info

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Cite

4

Intern Emerg Med

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. 2026 Aug 28.

doi: 10.1007/s11739-026-04512-w. Online ahead of print.

Cigarette smoking history, e-cigarette use, and Long COVID: a population-based analysis

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Affiliations Expand

• PMID: 42663928

• DOI: [10.1007/s11739-026-04512-w](https://doi.org/10.1007/s11739-026-04512-w)

Abstract

Long COVID imposes a substantial public health burden following the SARS-CoV-2 pandemic, yet the contribution of electronic cigarette (e-cigarette) use, alone or alongside cigarette smoking, remains inadequately characterized in population-representative data. We conducted a cross-sectional analysis of 9274 adults aged 16 years and older from the pooled 2023-2024 Scottish Health Survey, a nationally representative household survey. Cigarette smoking and e-cigarette use were classified into seven mutually exclusive categories, and the outcome was survey-defined self-reported Long COVID, based on symptoms persisting for more than four weeks after first having COVID-19. Survey-weighted logistic regression was used to estimate crude and adjusted odds ratios, with adjustment for survey year, age group, sex, area deprivation, ethnicity, alcohol use, and educational attainment. Overall, 7.4% of adults reported Long COVID. Compared with never cigarette/e-cigarette users, adjusted odds were higher among former cigarette smokers currently using neither product (adjusted odds ratio 1.40, 95% confidence interval 1.12-1.76) and among former smokers currently using e-cigarettes exclusively (1.56, 1.09-2.24). No statistically detectable associations were observed among former e-cigarette users who had never smoked, current e-cigarette users who had never smoked, exclusive current cigarette smokers, or dual users. The two elevated associations persisted after additional adjustment for asthma, chronic obstructive pulmonary disease, diabetes, and cardiovascular disease. The observed pattern may reflect previous cigarette exposure, health-related smoking cessation or switching, reverse causation, and residual selection or confounding; the cross-sectional design does not permit an independent contribution of e-cigarette use to be determined.

Keywords: Cigarette smoking; Dual use; E-cigarettes; Epidemiology; Long COVID; Scottish Health Survey; Vaping.

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Conflict of interest statement

Declarations. Conflict of interest: Yusuff Adebayo Adebisi and Anas Ali Alhur declare that they have no conflict of interest. Yusuff Adebayo Adebisi previously

received funding from Knowledge-Action-Change (KAC), which was supported by Global Action to End Smoking (GA), but has no current funding relationship. Ethical approval and consent to participate: This study is a secondary analysis of anonymized data from the Scottish Health Survey, which received ethical approval for the original data collection from the relevant research ethics committees. All participants provided informed consent at the time of data collection. As this study involved analysis of existing de-identified data, no separate ethical approval was required. The study was performed in accordance with the ethical standards as laid down in the 1964 Declaration of Helsinki and its later amendments or comparable ethical standards. Human and animal rights: This research did not involve any new data collection from human participants or animals. Consent for publication: Not applicable.

- [22 references](#)

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Cite

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Ann Am Thorac Soc

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. 2026 Aug 28:aaog264.

doi: 10.1093/annalsats/aaog264. Online ahead of print.

[Fall-related injuries in long-term oxygen therapy: Incidence and predictive factors](#)

[Filip Björklund](#)¹, [Andreas Palm](#)², [Josefin Sundh](#)³, [Magnus Ekström](#)^{1 4}

Affiliations Expand

- PMID: 42663560
- DOI: [10.1093/annalsats/aaog264](#)

Abstract

Introduction: Fall-related injuries are a common cause of morbidity and impaired quality of life among patients with severe respiratory disease. Use of long-term oxygen therapy (LTOT) may be associated with a further increased risk.

Methods: This was a longitudinal study of patients starting LTOT between 2006 and 2023 in the Swedish DISCOVERY cohort. Rates of healthcare contact due to three types of fall-related injuries (distal radius fracture, hip fracture, and skull trauma) were compared to those of age- and sex-matched population controls using nationwide registries. For patients on LTOT, pre-identified potentially predictive factors were analyzed against a composite outcome of any fall-related injury using Cox and Fine-Gray regression, independently, adjusting for age, sex and Charlson Comorbidity Index (CCI), and in a joint model adjusting for all predictive factors.

Results: A total 16,915 patients with LTOT (mean age 76±9 years, 57% female, 63% underlying COPD) and an equal number of matched controls were included. Compared with controls, LTOT patients had increased overall rates of both hospitalizations (15.5 vs 7.3 per 100 patient-years) and outpatient (16.9 vs 13.6 per 100 patient-years) healthcare contacts due to fall-related injuries, driven by hip fractures and skull trauma, whereas distal radius fractures were more common among patients without LTOT. The strongest independent predictive factors for fall-related injury during LTOT were history of previous fall-related injury (HR1.8; 95% confidence interval 1.7-2.0) and increased CCI. The overall predictive capability of the model was poor (C-statistic 0.65).

Conclusion: Patients on LTOT have a high rate of health care contacts due to hip fractures and skull trauma, but whether this increase is caused by use of oxygen equipment or underlying frailty remains unknown. While individual falls were difficult to predict, indicators such as previous fall injury and comorbidities, may inform optimized follow-up and interventions aimed at mitigating risk.

Keywords: LTOT; fall injury; fractures.

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Cite

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Eur Heart J

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[Personalized evaluation of NT-proBNP and clinical characteristics in suspected heart failure: the PRECISE-HF study](#)

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Affiliations Expand

- PMID: 42663089
- DOI: [10.1093/eurheartj/ehag686](https://doi.org/10.1093/eurheartj/ehag686)

Abstract

Background and aims: N-terminal pro-B-type natriuretic peptide (NT-proBNP) is recommended to guide echocardiography referral in community-based patients with suspected heart failure (HF), but diagnostic performance is influenced by individual characteristics including age, ethnicity, kidney function, cardiac rhythm, and body mass index (BMI). An individualised probabilistic approach may have superior diagnostic performance to guideline-recommended universal thresholds. This study aimed to develop and validate the PRECISE-HF model to provide probabilistic rule-out and rule-in thresholds based on NT-proBNP and relevant clinical characteristics.

Methods: Cohort study performed from January 1, 2018 to March 31, 2025, using primary care data from the Clinical Practice Research Datalink (CPRD), broadly representative of the UK population. Patients were included if they had an NT-proBNP measured due to clinical suspicion of HF with no known history of HF. HF diagnosis was recorded as a primary care diagnosis or HF hospitalisation within 12 months of NT-proBNP measurement. Using XGBoost machine learning, the probability of HF was modelled incorporating NT-proBNP alongside age, sex, ethnicity, estimated glomerular filtration rate, BMI, systolic blood pressure, anaemia, loop diuretic prescription and history of atrial fibrillation, diabetes, myocardial infarction and chronic obstructive pulmonary disease. Rule-out and rule-in thresholds were identified based on $\geq 90\%$ sensitivity and specificity, respectively, and compared to current European Society of Cardiology (ESC) recommendations. External validation was performed in the REVOLUTION-HF Swedish cohort.

Results: Overall, 535 583 patients were included, randomly split into derivation (n=374 909) and internal validation (n=160 674) cohorts. A HF diagnosis was recorded in 10% of the validation cohort. The PRECISE-HF model demonstrated excellent discrimination (area under the receiver operating characteristic curve [AUROC] 0.896) and calibration (Brier score 0.061). The rule-out threshold had a sensitivity of 90.1% and a negative predictive value of 98.5%, ruling out 64.8% of patients. The rule-in threshold ruled in 16.1% with a specificity of 90.0% and a positive predictive value of 44.1%. Compared to the ESC thresholds, PRECISE-HF13 ruled out 144 additional patients per 1000 at the expense of three missed diagnoses, with 73 fewer false positives per 1000 at rule-in. In external validation, the model retained good discrimination (AUROC 0.757) and calibration (Brier score 0.163).

Conclusions: The PRECISE-HF model, integrating multiple clinical characteristics with NT-proBNP, demonstrated superior diagnostic performance compared with universal rule-out and age-adjusted rule-in thresholds in community-based patients with suspected HF. This individualised approach may enable earlier confirmatory testing and initiation of disease-modifying treatment in those most likely to have HF.

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Comment

Eur Respir J

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. 2026 Aug 27;68(2):2601274.

doi: 10.1183/13993003.01274-2026. Print 2026 Aug.

[Preventing mucus plugs in COPD: a potential role for erdosteine](#)

[Peter M A Calverley](#)¹

Affiliations Expand

- PMID: 42660616
- PMCID: [PMC13519833](#)
- DOI: [10.1183/13993003.01274-2026](#)

Abstract

Mucus plugging is an important component of clinical deterioration in COPD. Erdosteine, a muco-active agent used early in the evolution of COPD, reduces exacerbations and may slow plug development. <https://bit.ly/4ePJlf9>

Conflict of interest statement

Conflict of interest: P.M.A. Calverley reports consultancy fees from Sanofi Regeneron, Edmond Pharma and Phillips Respironics, payment or honoraria for lectures, presentations, manuscript writing or educational events from Edmond Pharma and GSK, and participation on a data safety monitoring board or advisory board with Novartis and Genentech.

Comment on

- [The pathobiology and treatment of mucus plugs in asthma and COPD: state of the art.](#)

Fahy JV. Eur Respir J. 2026 May 21;67(5):2502358. doi: 10.1183/13993003.02358-2025. Print 2026 May. PMID: 41713949 Review.

- [8 references](#)

Supplementary info

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8

Comment

Eur Respir J

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. 2026 Aug 27;68(2):2601006.

doi: 10.1183/13993003.01006-2026. Print 2026 Aug.

[GOLD stage 1 COPD requires precise intervention based on disease progression](#)

[Fan Wu](#)^{1 2}, [Qi Wan](#)^{1 3 2}, [Xiaohui Wu](#)^{1 2}, [Kunning Zhou](#)^{1 2}, [Junfeng Lin](#)^{1 2}, [Yumin Zhou](#)^{1 3}, [Nanshan Zhong](#)^{1 3}, [Pixin Ran](#)^{4 3}

Affiliations Expand

- PMID: 42660615
- DOI: [10.1183/13993003.01006-2026](#)

No abstract available

Conflict of interest statement

Conflict of interest: The authors have no potential conflicts of interest to disclose.

Comment on

- [GOLD stage 1 COPD pharmacotherapy: big questions, few answers.](#)

O'Brien H, McCarthy C, Franciosi AN. Eur Respir J. 2026 Jun 18;67(6):2501948. doi: 10.1183/13993003.01948-2025. Print 2026 Jun. PMID: 42025305 Review. No abstract available.

- [Pharmacotherapy is indicated and beneficial in patients with symptomatic GOLD stage 1 COPD.](#)

Freund O, Bar-Shai A, Aaron SD. Eur Respir J. 2026 Jun 18;67(6):2600417. doi: 10.1183/13993003.00417-2026. Print 2026 Jun. PMID: 42025307 No abstract available.

Supplementary info

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9

Eur Respir J

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. 2026 Aug 27;68(2):26E6802.

doi: 10.1183/13993003.E6802-2026. Print 2026 Aug.

[ERJ Podcast August 2026: Fentanyl or morphine for persistent dyspnoea in COPD](#)

No authors listed

- PMID: 42660612
- DOI: [10.1183/13993003.E6802-2026](#)

No abstract available

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[Proceed to details](#)

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10

Eur Respir J

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. 2026 Aug 27:2600950.

doi: 10.1183/13993003.00950-2026. Online ahead of print.

[Expression of HDAC2 and HDAC8 in the airways of COPD patients is associated with responsiveness to ICS: insights from the HISTORIC study](#)

[Eleni Papakonstantinou](#)¹, [Marta Nowak](#)², [Spasenija Savic Prince](#)³, [Daniel Soriano](#)¹, [Leticia Grize](#)¹, [Björn Christian Frye](#)¹, [Sebastian Fährndrich](#)¹, [Viktor H Koelzer](#)^{2,3}, [Daiana Stolz](#)¹

Affiliations Expand

- PMID: 42660606
- DOI: [10.1183/13993003.00950-2026](#)

No abstract available

Supplementary info

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11

Semin Respir Crit Care Med

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. 2026 Aug 27.

doi: 10.1055/a-2946-5854. Online ahead of print.

[Use of Oxygen in the Emergency Department](#)

[Riccardo Guglielmi](#)¹, [Antonio Campanella](#)², [Jesús Villar](#)^{3 4 5 6}, [Carlos Ferrando](#)^{7 8}

Affiliations Expand

- PMID: 42660530
- DOI: [10.1055/a-2946-5854](#)

Abstract

Oxygen is one of the most frequently used treatments in the emergency department (ED), but it should be prescribed and reassessed as an active therapy rather than left as a harmless default. Acute hypoxemia may reflect ventilation-perfusion mismatch, shunt, hypoventilation, impaired oxygen transport, circulatory failure, or a combination of these mechanisms. For this reason, the response to oxygen, the choice of device, and the need for escalation depend less on the SpO₂ value alone than on the physiology behind it. Current evidence has moved practice away from liberal oxygen administration and toward titration to predefined targets, aiming to correct clinically important hypoxemia while avoiding unnecessary hyperoxemia. Most acutely ill adults should receive oxygen when they are hypoxemic or clinically unstable, whereas patients at risk of hypercapnic respiratory failure, especially those with COPD exacerbation, require controlled oxygen therapy and early blood gas assessment. Conventional devices remain appropriate for many patients, but their performance varies with inspiratory demand, flow, mask fit, and entrainment of room air. High-flow nasal oxygen can improve comfort, humidification, oxygen delivery, dead-space washout, and work of breathing in selected patients with acute hypoxemic respiratory failure, but preserved saturation must not delay escalation when respiratory distress, shock, altered mental status, or worsening gas exchange suggests treatment failure. Good oxygen practice in the ED means knowing when to start oxygen, how to titrate it, when to stop it, and when oxygen is not sufficient.

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Conflict of interest statement

The authors declare that they have no conflict of interest.

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Cite

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. 2026 Aug 28:16:04215.

doi: 10.7189/jogh.16.04215.

Age-dependent health risks of smoking: greater harm associated with initiation before alveolar maturation (age 24)

Ziyi Liu ^{#1 2 3 4}, **Zhiqi Zhao** ^{#1 2 3 4}, **Yutong Xiao** ⁵, **Ruoyan Xiong** ^{1 2 3 4}, **Huiru Zheng** ^{1 2 3 4}, **Yifan Liu** ^{1 2 3 4}, **Qixuan Huang** ^{1 2 3 4}, **Rui Zhao** ^{1 2 3 4}, **Junxia Yan** ⁶, **Yan Chen** ^{1 2 3 4}, **Huihui Zeng** ^{1 2 3 4}

Affiliations Expand

- PMID: 42659031
- PMCID: [PMC13521492](#)
- DOI: [10.7189/jogh.16.04215](#)

Abstract

Background: Smoking during the alveolar developmental stage (ADS) (≤ 24 years) may increase cardiopulmonary disease risk beyond the effects of cumulative exposure, but these interactions remain unclear. We aimed to determine whether smoking initiation during ADS modifies the associations between cumulative smoking exposure and cardiopulmonary disease, multimorbidity, and all-cause mortality.

Methods: We analysed 15,077 participants from the US National Health and Nutrition Examination Survey and two UK Biobank cohorts: 121,852 individuals in the disease cohort and 136,528 in the mortality cohort. Multivariable logistic regression and Cox proportional hazards models examined associations of smoking initiation timing (≤ 24 vs. > 24 years), cumulative exposure (> 20 vs. ≤ 20 pack-years), and their interaction with chronic obstructive pulmonary disease (COPD), cardiovascular disease, all-cause mortality, and multimorbidity. We assessed both multiplicative and additive interactions. We also evaluated an ordinal exposure score combining initiation timing and pack-years. Zero-inflated negative binomial regression quantified comorbidity burden, and stratified analyses assessed the effects of smoking cessation duration.

Results: Smoking initiation in the ADS amplified smoking-related disease risk. For COPD, ADS initiators with high cumulative exposure had a greater risk (hazard ratio

(HR) = 3.45; 95% confidence interval (CI) = 3.29, 3.62) than post-ADS initiators with high exposure (HR = 2.33; 95% CI = 1.91, 2.83; P for multiplicative interaction <0.001). Additive interaction was also observed, with a relative excess risk due to interaction of 0.43 (95% CI = 0.08, 0.79) and an attributable proportion of 0.16 (95% CI = 0.02, 0.29). Each one-point increase in the exposure score was associated with higher COPD risk (HR = 2.29; 95% CI = 2.20, 2.38) and mortality (HR = 1.39; 95% CI = 1.36, 1.43), with 82.1% of COPD burden attributable to score ≥ 1 exposure. High exposure was associated with a larger reduction in comorbidity-free probability among ADS initiators (OR = 0.55) than post-ADS initiators (OR = 0.65) (P for interaction <0.001). Smoking cessation reduced COPD and mortality risks in both groups, with greater relative reductions among ADS initiators.

Conclusions: Smoking initiation during ADS, combined with greater cumulative exposure, is associated with increased risks of COPD, cardiovascular morbidity, multimorbidity, and all-cause mortality. Incorporating developmental timing may improve smoking-related risk stratification.

Keywords: COPD; NHANES; UK Biobank; alveolar development stage.

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Conflict of interest statement

Disclosure of interest: The authors completed the ICMJE Disclosure of Interest Form (available upon request from the corresponding author) and disclose no relevant interests

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

Supplementary info

MeSH termsExpand

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Cite

13

Respirology

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. 2026 Aug 27.

doi: 10.1002/resp.70300. Online ahead of print.

Inhaled Corticosteroid Escalation After a Single Moderate Exacerbation in COPD: Differential Benefit by Exacerbation Subtype

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Affiliations Expand

- PMID: 42657955
- DOI: [10.1002/resp.70300](https://doi.org/10.1002/resp.70300)

Abstract

Background and objective: In chronic obstructive pulmonary disease (COPD), evidence supporting escalation to inhaled corticosteroid (ICS)-containing therapy after single moderate exacerbation in patients receiving dual bronchodilator therapy remains inconsistent. We aimed to evaluate whether the clinical benefit of ICS escalation differs according to the treatment phenotype of moderate exacerbations.

Methods: Using the Korean National Health Insurance Service database, we identified ICS-naïve patients with COPD initiating long-acting muscarinic antagonist (LAMA)/long-acting β 2-agonist (LABA) therapy. Sequential target trial emulations were conducted among patients who experienced one moderate exacerbation while on LAMA/LABA. Exacerbations were classified as antibiotic-treated (without systemic corticosteroids) or systemic corticosteroid-treated (with or without antibiotics). Outcomes were compared between ICS escalation and LAMA/LABA continuation groups using propensity score matching.

Results: Among 94,938 patients who initiated LAMA/LABA therapy, treatment persistence remained high, with over 60% maintaining dual therapy at 6 years, despite a marked decline in exacerbation-free survival. In matched analyses, ICS escalation after single antibiotic-treated exacerbations was not associated with reduced subsequent exacerbation risk. In contrast, among patients with steroid-treated moderate exacerbations, continuation of LAMA/LABA was associated with a higher risk of exacerbations (HR 1.18, 95% CI 1.12-1.23), compared with escalation to ICS-containing therapy. Findings were consistent across subgroups defined by exacerbation history.

Conclusion: In this large real-world COPD cohort, the benefit of ICS escalation after single moderate exacerbation varied by exacerbation treatment phenotype. Steroid-treated events were associated with a reduced subsequent exacerbation with ICS escalation, whereas antibiotic-treated events did not confer additional benefit from ICS, supporting a more precise approach to ICS escalation beyond exacerbation frequency alone.

Keywords: COPD; bronchodilator; exacerbation; inhaled corticosteroids.

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- [44 references](#)

Supplementary info

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Cite

14

Open Heart

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. 2026 Aug 26;13(2):e004340.

doi: 10.1136/openhrt-2026-004340.

[Multimorbidity burden and hospitalisation outcomes in heart failure: a retrospective cohort study using Indonesian national health insurance claims data \(2019-2024\)](#)

[Gita Yolanda](#)¹, [Arditya Damarkusuma](#)^{2 3}

Affiliations Expand

- PMID: 42648742
- DOI: [10.1136/openhrt-2026-004340](#)

Free article

Abstract

Background: The expansion of universal health coverage (UHC) in many low- and middle-income countries (LMICs) has occurred alongside a growing burden of chronic disease and multimorbidity. Heart failure (HF) frequently coexists with multimorbidity, which is associated with worse hospitalisation outcomes. However, most evidence on multimorbidity and HF hospitalisation outcomes originates from older populations in high-income countries and nationally representative evidence from LMIC settings remains limited. We aimed to characterise multimorbidity burden among patients hospitalised with HF, evaluate associations with length of stay (LOS) and readmission and identify individual comorbidities associated with these outcomes.

Methods: We conducted a population-based retrospective cohort study using nationally representative, probability-weighted administrative claims from Badan Penyelenggara Jaminan Sosial Kesehatan, Indonesia's national health insurance

programme (2019-2024). Adults (≥ 18 years) hospitalised with HF as the primary diagnosis were included. 12 prespecified comorbidities were ascertained from all available claims. Multimorbidity was defined as the number of comorbidities beyond HF. Outcomes were LOS and 30-day and 90-day HF-specific readmissions, analysed using survey-weighted linear and logistic regression adjusted for age and sex.

Results: Among 9018 patients contributing 12 461 HF episodes (mean age 59.8 ± 13.1 years; 51.4% male), multimorbidity was present in 72.4%. Each additional comorbidity was associated with longer LOS (β 0.13 days; 95% CI 0.03 to 0.22), higher 30-day readmission odds (OR 1.22; 95% CI 1.07 to 1.38) and higher 90-day readmission odds (OR 1.27; 95% CI 1.14 to 1.42). Distinct comorbidity patterns were observed across outcomes: anaemia showed the strongest association with prolonged LOS, whereas ischaemic heart disease, chronic kidney disease, chronic obstructive pulmonary disease and valvular disease were associated with readmission.

Conclusions: Multimorbidity is highly prevalent among patients hospitalised with HF in Indonesia and is associated with adverse hospitalisation outcomes. Both multimorbidity burden and specific comorbidities were associated with these outcomes, suggesting a need for health systems that better account for multimorbidity.

Keywords: Delivery of Health Care; Epidemiology; Health Services; Heart Failure; Outcome Assessment, Health Care.

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Conflict of interest statement

Competing interests: None declared.

Supplementary info

MeSH termsExpand

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Cite

15

Eur Radiol

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. 2026 Aug 26.

doi: 10.1007/s00330-026-12831-x. Online ahead of print.

Uncovering underdiagnosed emphysema: comparative assessment using clinical CT and micro-CT

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Affiliations Expand

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- DOI: [10.1007/s00330-026-12831-x](https://doi.org/10.1007/s00330-026-12831-x)

Abstract

Objectives: Objective quantification of emphysema on clinical computed tomography (CT) in patients with chronic obstructive pulmonary disease (COPD) relies primarily on the percentage of low attenuation area (LAA). However, this approach is limited by spatial resolution, potentially leading to underestimation of subtle disease. The mean linear intercept (MLI) is a well-established histological marker of airspace enlargement. We developed an automated micro-CT-based approach to quantify the MLI that is less labour-intensive than existing methods. Micro-CT MLI was systematically compared with clinical CT LAA and histological MLI.

Materials and methods: The study included 89 patients with different disease severities, including never-smokers (n = 15), ever-smokers (n = 9), pre-COPD (n = 19), mild COPD (GOLD I/II, n = 18/12), and severe COPD (GOLD III/IV, n = 3/13). All patients underwent spirometry, clinical CT before surgery, and at least 4 tissue cores per explanted lung specimen were scanned with micro-CT and used for the MLI computation. Histological validation was performed in a representative subset of patients (n = 29).

Results: MLI computed on histology was correlated with micro-CT-based MLI (r = 0.84, p < 0.001). A similar correlation (r = 0.83, p < 0.001) was found between the LAA on clinical CT and the average MLI of a patient on micro-CT. However, 30% of patients with non-elevated LAA ($\leq 5\%$) exhibited elevated MLI on micro-CT, indicating underdiagnosed emphysema on clinical CT. The prevalence of undetected cases was the highest among ever-smokers (22%), pre-COPD patients (26%), and patients with mild COPD (23%).

Conclusion: Micro-CT enables sensitive quantitative detection of subtle emphysematous changes, revealing important limitations of current clinical CT-based diagnostics.

Key points: Question Is LAA-based emphysema thresholding on clinical CT able to accurately detect mild emphysema? Findings Emphysematous changes were detected in 30% of patients without emphysema on clinical CT, particularly among ever-smokers, pre-COPD, and mild COPD patients. Clinical relevance Micro-CT exposes early emphysematous changes undetectable on clinical CT, enabling refined COPD phenotyping and advancing diagnostic development.

Keywords: COPD; Computed tomography; Emphysema; Mean linear intercept; Micro-CT.

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Conflict of interest statement

Compliance with ethical standards. Guarantor: The scientific guarantor of this publication is Stijn Verleden. **Conflict of interest:** The authors of this manuscript declare relationships with Chiesi, AstraZeneca and Genentech. These relationships had no impact on the contents of this paper. **Statistics and biometry:** No complex statistical methods were necessary for this paper. **Informed consent:** Written informed consent was obtained from all patients in this study. **Ethical approval:** Institutional Review Board approval was obtained from the ethical committee of UA/UZA (EDGE 001693). **Study subjects or cohorts overlap:** Thirty-eight patients in this study have been previously reported in Verleden et al [45]. <https://doi.org/10.1164/rccm.202301-0132OC> . **Methodology:** Retrospective Cross-sectional study Observational Performed at one institution

- [57 references](#)

Supplementary info

Grants and fundingExpand

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Cite

16

Expert Rev Respir Med

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. 2026 Aug 27:1-13.

doi: 10.1080/17476348.2026.2725279. Online ahead of print.

[Early-life respiratory infections and their association with chronic lung disease: an expert perspective](#)

[Susanna Esposito](#)¹, [Valentina Fainardi](#)¹, [Nicola Principi](#)²

Affiliations Expand

- PMID: 42644711

- DOI: [10.1080/17476348.2026.2725279](https://doi.org/10.1080/17476348.2026.2725279)

Abstract

Introduction: Early-life respiratory infections may disrupt lung development during critical fetal, neonatal, and infant windows, when alveolarization, airway and vascular maturation, and immune programming remain active, potentially causing effects beyond the acute illness.

Areas covered: This narrative review examines prenatal and postnatal respiratory infections and long-term respiratory outcomes, with emphasis on chorioamnionitis, fetal inflammatory responses, bronchopulmonary dysplasia, respiratory syncytial virus, and other pathogens. Literature was identified through targeted searches of biomedical databases and reference lists using terms related to early-life infection, lung development, bronchopulmonary dysplasia, wheeze, asthma, lung function, COPD, and respiratory mortality. Priority was given to systematic reviews, meta-analyses, longitudinal cohorts, mechanistic studies, and relevant reports. Proposed pathways include impaired alveolar and vascular growth, epithelial injury, immune dysregulation, trained immunity, airway remodeling, and reduced peak lung function. Epidemiological evidence linking early lower respiratory tract infection with recurrent wheeze, asthma, impaired lung function, COPD-like trajectories, and respiratory mortality is appraised.

Expert opinion: Early respiratory infections likely contribute to chronic morbidity through interactions among pathogen, timing, host susceptibility, prematurity, and environmental exposures. Causality remains difficult to establish. Newly available respiratory syncytial virus prevention strategies may clarify whether preventing severe infection improves long-term lung health. Standardized outcomes and longitudinal follow-up are essential.

Keywords: Early-life respiratory infections; asthma; bronchopulmonary dysplasia; chronic obstructive pulmonary disease; lung development; respiratory syncytial virus.

Full text links



[Proceed to details](#)

Cite

17

Infect Control Hosp Epidemiol

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. 2026 Aug 26:1-7.

doi: 10.1017/ice.2026.10521. Online ahead of print.

[Effect of a procalcitonin protocol with active antimicrobial stewardship pharmacist feedback on antibiotic use in acute exacerbations of chronic obstructive pulmonary disease: a pragmatic interrupted time series study](#)

[Matthew Labreche](#)¹, [Alexa Molina](#)¹, [Anthony Chase Palisch](#)², [Kala Mehta](#)³, [Bradley Frazee](#)⁴

Affiliations Expand

- PMID: 42642859
- DOI: [10.1017/ice.2026.10521](#)

Abstract

Objective: Evaluate the influence of a procalcitonin (PCT) protocol and the incremental impact of a focused antimicrobial stewardship pharmacist intervention on antimicrobial exposure and hospital length of stay in acute exacerbations of chronic obstructive pulmonary disease (AECOPD).

Design: Prospective, observational, interrupted time series.

Setting: Safety-net teaching hospital in Oakland, California.

Methods: We compared the care and outcomes of inpatients with non-severe AECOPD during three periods: *Baseline Phase* (before PCT testing), *Intervention Phase I* (after introduction of PCT testing and education) and *Intervention Phase II* (PCT testing and education plus an antimicrobial stewardship intervention to promote adherence). The primary study outcome was antibiotic exposure measured as mean antibiotic days per AECOPD episode.

Results: 341 total admissions were included, 134 in the Baseline Phase, 121 in Intervention Phase I and 86 in Intervention Phase II. Patient comorbidities were well balanced. Mean (SD) total antibiotic days decreased across the study from 4.7(3.8) to 3.5 (3.2) to 2.1(2.7) days in the Baseline Phase, Intervention Phase I and Intervention Phase II, respectively ($P < .001$). Median (IQR) hospital lengths of stay decreased from 3.7(2.6-5.2) to 2.8 (1.5-5.2) to 1.5(0.3-4.1) days ($P = .003$). Inclusion in Intervention Phase II was the strongest predictor of total antibiotic days (IRR = 0.45, 95% CI [0.64-0.83]) and hospital length of stay (IRR = 0.68, 95% CI [0.53-0.88]). All cause 30-day readmission rates were similar across the study (16%, 21%, and 21%; p -trend 0.16).

Conclusions: Reductions in antimicrobial exposure and hospital length of stay achieved with PCT testing alone improved further with addition of a focused antibiotic stewardship pharmacist intervention.

Full text links



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Cite

Editorial

Thorax

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. 2026 Aug 25:thorax-2026-225548.

doi: 10.1136/thorax-2026-225548. Online ahead of print.

[Mucus plugs in COPD: another reason for not losing weight?](#)

[Jørgen Vestbo](#) ^{1,2}

Affiliations Expand

- PMID: 42642225
- DOI: [10.1136/thorax-2026-225548](#)

No abstract available

Keywords: COPD epidemiology.

Conflict of interest statement

Competing interests: None declared.

Supplementary info

Publication typesExpand

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Cite

Br J Sports Med

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. 2026 Aug 25:bjsports-2026-112300.

doi: 10.1136/bjsports-2026-112300. Online ahead of print.

[Innovative exercise for extrapulmonary benefits in chronic obstructive pulmonary disease: feasibility, physiological responses and methodology \(PhD Academy Award\)](#)

[Johan Jakobsson](#)¹

Affiliations Expand

- PMID: 42642223
- DOI: [10.1136/bjsports-2026-112300](#)

No abstract available

Keywords: Exercise; Exercise Therapy; Physical Therapy; Rehabilitation.

Conflict of interest statement

Competing interests: None declared.

Full text links



[Proceed to details](#)

Cite

20

Respir Med

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. 2026 Aug 25:109128.

doi: 10.1016/j.rmed.2026.109128. Online ahead of print.

[Prolonged smoking duration is independently associated with mortality in former smokers with COPD regardless of pack-years](#)

[Hyun Woo Lee](#)¹, [Deog Kyeom Kim](#)¹, [Soo-Jung Um](#)², [Seoung Ju Park](#)³, [Min Kwang Byun](#)⁴, [Hye Yun Park](#)⁵, [Yong Hyun Kim](#)⁶, [Hyeon-Kyoung Koo](#)⁷, [Kwang Ha Yoo](#)⁸, [Seong Yong Lim](#)⁹

Affiliations Expand

- PMID: 42641996

- DOI: [10.1016/j.rmed.2026.109128](https://doi.org/10.1016/j.rmed.2026.109128)

Abstract

Background: Smoking exposure has been quantified using pack-years, which integrates smoking intensity and duration. However, pack-years may not fully capture the prognostic impact of prolonged exposure. We aimed to compare the prognostic value of smoking duration and cumulative smoking intensity for mortality risk stratification in patients with chronic obstructive pulmonary disease (COPD).

Methods: We analyzed data from the Korea COPD Subtype Study, an ongoing prospective multicenter cohort ([NCT02800499](https://clinicaltrials.gov/ct2/show/study/NCT02800499)). Smoking exposure was categorized using thresholds of 40 pack-years and 40 years of smoking duration. The primary outcome was all-cause mortality and the secondary outcome was cause-specific mortality.

Results: Among 2,166 patients with COPD, 210 deaths occurred over a median follow-up of 7 years. Smoking duration ≥ 40 years was associated with increased all-cause mortality risk regardless of cumulative smoking intensity. Compared with patients with <40 pack-years and smoking duration <40 years, those with <40 pack-years but smoking duration ≥ 40 years had higher all-cause mortality risk (adjusted hazard ratio [aHR]=1.66; 95% confidence interval [CI]=1.01-2.73). Similarly, patients with ≥ 40 pack-years and smoking duration ≥ 40 years had increased all-cause mortality risk (aHR=1.58; 95% CI=1.15-2.16). In contrast, ≥ 40 pack-years without prolonged smoking duration was not associated with all-cause mortality. In cause-specific mortality analyses, Prolonged smoking duration was also associated with increased cardiovascular and cancer-related mortality.

Conclusions: Smoking duration was more strongly associated with mortality risk than cumulative smoking intensity alone and may provide additional prognostic information beyond pack-years for mortality risk stratification in patients with COPD.

Keywords: Chronic obstructive pulmonary disease; Mortality; Pack-years; Prognostic indicator; Smoking duration.

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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: Kwang Ha Yoo reports financial support was provided by Korea National Institute of Health. 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.

Full text links



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Cite

21

PLoS One

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. 2026 Aug 25;21(8):e0353482.

doi: 10.1371/journal.pone.0353482. eCollection 2026.

[The relation between physical activity and cardiac autonomic dysfunction in patients with chronic obstructive pulmonary disease](#)

[Fien Hermans](#)^{1,2}, [Eva Arents](#)¹, [Astrid Blondeel](#)², [Wim Janssens](#)^{3,4}, [Nina Cardinaels](#)⁵, [Patrick Calders](#)¹, [Thierry Troosters](#)², [Eric Derom](#)⁵, [Heleen Demeyer](#)^{1,2}

Affiliations [Expand](#)

- PMID: 42640910
- PMCID: [PMC13505929](#)
- DOI: [10.1371/journal.pone.0353482](#)

Abstract

Background: Cardiac autonomic dysfunction is common in patients with chronic obstructive pulmonary disease (COPD). Although exercise training improves cardiac autonomic function, the effects of changing physical activity on cardiac autonomic function remain unknown.

Objective: This study aimed to (1) investigate the association between cardiac autonomic function, exercise capacity and physical activity cross-sectionally and (2) relate changes in physical activity, as a result of a 6-month coaching program, to changes in cardiac autonomic function.

Methods: Autonomic function was assessed objectively using the Polar H10 sensor, measuring (1) resting heart rate during sleep; (2) heart rate variability (SDNN, RMSSD, LF/HF ratio and SD2/SD1 ratio) during sleep and (3) heart rate recovery following the 6-minute walking test (6MWT), and subjectively using the COMPASS 31 questionnaire at baseline and 6-months follow-up. Physical activity (steps per day and movement intensity during walking) was measured using accelerometry. Cross-sectional and longitudinal associations were evaluated.

Results: In 36 patients with COPD (69% male, mean $\pm$ SD age 69 ± 7 years, FEV1 $53 \pm 13\%$ pred, 28% taking β -blockers), baseline cross-sectional analyses showed weak to moderate associations between heart rate recovery and movement intensity during walking ($r_s = 0.45$) and distance covered during 6MWT ($r_s = 0.55$). Longitudinal analyses over 6-months follow-up showed that changes in daily step count were inversely associated with changes in resting heart rate ($r_s = -0.48$), LF/HF ratio ($r_s = -0.35$) and SD2/SD1 ratio ($r_s = -0.28$) and that changes in movement intensity during walking were inversely associated with changes in SD2/SD1 ratio ($r_s = -0.51$) in patients not taking β -blockers.

Conclusion: Weak cross-sectional associations were observed between certain parameters of cardiac autonomic function, exercise capacity and physical activity. Increasing the amount of physical activity showed a weak relation with lowering resting heart rate over 6 months in patients not taking influencing medication.

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Conflict of interest statement

The authors have declared that no competing interests exist.

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

Supplementary info

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Cite

22

Editorial

ERJ Open Res

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. 2026 Aug 24;12(4):00621-2026.

doi: 10.1183/23120541.00621-2026. eCollection 2026 Jul.

[Type 2 inflammation, bronchiectasis and clinical trials: expanding from MAHALE](#)

[B Shoshana Zha](#)¹, [Stephanie A Christenson](#)¹

Affiliations [Expand](#)

- PMID: 42638998
- PMCID: [PMC13501440](#)
- DOI: [10.1183/23120541.00621-2026](#)

Abstract

MAHALE marks an important advance in bronchiectasis precision medicine as the first large trial to target T2 inflammation. Future considerations should include choice of target, precision phenoendotyping and multidimensional stratification. <https://bit.ly/4wIKYYT>.

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Conflict of interest statement

Conflict of interest: B.S. Zha reports consulting fees from Insmed, Genentech and Boehringer Ingelheim; clinical trial site principal investigator support from Insmed, Boehringer Ingelheim and AstraZeneca; and research funding from the Cystic Fibrosis Foundation, American Thoracic Society and National Institutes of Health, all outside the submitted work. S.A. Christenson reports consulting fees from Sanofi, AstraZeneca, AbbVie, Apogee Therapeutics and Genentech; and research funding from the National Institutes of Health, American Lung Association, COPD Foundation, Department of Defense and Uniquity Bio, outside the submitted work.

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

Supplementary info

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Cite

23

Eur J Intern Med

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. 2026 Aug 24:107156.

doi: 10.1016/j.ejim.2026.107156. Online ahead of print.

Steroid-sparing biologics in severe asthma and chronic obstructive pulmonary disease: a systematic review, cross-disease meta-analysis, and translational estimate of corticosteroid-related harm prevented

Pier-Valerio Mari¹, Lorenzo Carriera², Angelo Coppola³, Davide Onofrio Fontana⁴, Simone Ielo⁵, Alberto Ricci⁶, Veronica Ojetti⁷, Umberto Semenzato⁸, Francesco Menzella⁹, Stefano Baglioni¹⁰, Cecilia Becattini¹¹, Eugenio De Corso¹²

Affiliations Expand

- PMID: 42637632
- DOI: [10.1016/j.ejim.2026.107156](https://doi.org/10.1016/j.ejim.2026.107156)

Abstract

Background: Oral corticosteroids (OCS) remain widely used in uncontrolled severe asthma and frequently exacerbating chronic obstructive pulmonary disease (COPD), but cumulative exposure is associated with dose-dependent cardiovascular, metabolic, skeletal and infectious harm. Type-2 biologics may reduce OCS burden, although their clinical impact across asthma and COPD remains incompletely defined.

Methods: We conducted a PRISMA 2020 systematic review of MEDLINE, Embase, Cochrane Central Register. Eligible studies were randomized, placebo-controlled trials of monoclonal antibodies in adults with OCS-dependent severe asthma or moderate-to-severe COPD with documented OCS exposure. Risk of bias was assessed using RoB 2. Random-effects models estimated the odds ratio (OR) for achieving ≥50% maintenance OCS reduction in asthma and the rate ratio (RR) for moderate-to-severe exacerbations in both diseases, with disease as a pre-specified moderator. A translational module applied the 42% cumulative OCS reduction observed in the BOREAS/NOTUS COPD severe-exacerbation subgroup to dose-response hazard ratios from six pharmacoepidemiologic cohorts to estimate OCS-attributable adverse-event NNTs.

Results: Twenty-three studies were included. In severe asthma, biologics increased the odds of ≥50% maintenance OCS reduction (OR 2.99, 95% CI 2.11-4.25; I²=0%; four trials, n = 615). Exacerbation reduction favoured biologics in both diseases, but was greater in asthma than COPD (asthma RR 0.38, 95% CI 0.23-0.65; COPD RR 0.78, 95% CI 0.69-0.88; p = 0.0001). In COPD, translated NNTs were lowest for serious infection, pneumonia and osteoporotic fracture.

Conclusions: Biologics provide robust OCS sparing in severe asthma and smaller but significant exacerbation reduction in COPD, with potential downstream harm reduction in high-burden COPD.

Keywords: Biologic therapy; Chronic obstructive pulmonary disease; Meta-analysis; Oral corticosteroids; Severe asthma; Steroid-sparing.

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Conflict of interest statement

Declaration of competing interest None.

Full text links



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Cite

24

Review

Respir Med

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. 2026 Aug 24:109126.

doi: 10.1016/j.rmed.2026.109126. Online ahead of print.

[COPD and Osteoporosis: Epidemiology, Pathophysiology, Clinical Impact, and Management Strategies: A Narrative Review](#)

[Rohit Kondamede](#)¹, [Siri Kolliputi](#)², [Narasaiah Kolliputi](#)³

Affiliations Expand

- PMID: 42636992
- DOI: [10.1016/j.rmed.2026.109126](#)

Abstract

Background: Chronic obstructive pulmonary disease (COPD) and osteoporosis are highly prevalent chronic conditions that frequently co-occur, yet their comorbid relationship remains systematically underrecognized in clinical practice.

Approximately 38% of COPD patients have confirmed osteoporosis, yet fewer than 20% receive bone-protective pharmacotherapy.

Objective: To synthesize current evidence on the epidemiology, shared pathophysiological mechanisms, clinical consequences, and integrated management strategies for COPD-associated osteoporosis.

Methods: A narrative review was conducted through systematic searching of PubMed and MEDLINE (through December 2024) using the terms 'COPD,' 'osteoporosis,' 'bone mineral density,' 'fracture risk,' and 'corticosteroids.' Peer-reviewed original research, systematic reviews, meta-analyses, and clinical guidelines were included. Non-peer-reviewed sources were excluded.

Results: Shared mechanisms underlying COPD-associated osteoporosis include chronic systemic inflammation (elevated IL-6, TNF- α), corticosteroid-induced bone loss, sarcopenia, vitamin D deficiency, and overlapping risk factors including smoking, advanced age, and low BMI. Osteoporotic fractures, particularly vertebral and hip, independently increase all-cause mortality, worsen pulmonary mechanics, accelerate functional decline, and generate direct healthcare costs exceeding \$17 billion annually in the United States (a general US osteoporotic-fracture cost estimate, not specific to COPD). Despite this burden, screening rates are low and treatment is substantially underutilized.

Conclusions: Osteoporosis in COPD represents a modifiable comorbidity with major and measurable clinical impact. Proactive DXA-based screening, individualized pharmacotherapy with bisphosphonates or denosumab, pulmonary rehabilitation, and multidisciplinary coordinated care are evidence-supported strategies that remain underimplemented. Updating COPD clinical guidelines to mandate systematic bone health assessment is an urgent priority.

Keywords: COPD; DXA screening; bisphosphonates; bone mineral density; corticosteroids; fracture risk; multidisciplinary care; osteoporosis; pulmonary rehabilitation; systemic inflammation.

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Conflict of interest statement

Declaration of Competing Interest All authors declare no conflicts of interest relevant to this manuscript.

Supplementary info

Publication typesExpand

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Cite

Ann Am Thorac Soc

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. 2026 Aug 24:aaog258.

doi: 10.1093/annalsats/aaog258. Online ahead of print.

Epidemiology and Outcomes of Bronchiectasis in Alberta, Canada: A 15-Year Population-Based Study

Ranjani Somayaji^{1 2 3 4 5}, Jason E Black², Tara A Whitten⁶, Mackenzie W Gutierrez^{1 4 5}, Jack Burke-Gaffney⁴, Ryan Cooper⁷, Julie Jarand^{1 3}, Richard Leigh^{1 3 5}, Maeve Smith⁷, Christina S Thornton^{1 3 4 5}

Affiliations Expand

- PMID: 42635536
- DOI: [10.1093/annalsats/aaog258](https://doi.org/10.1093/annalsats/aaog258)

Free article

Abstract

Rationale: Bronchiectasis is a chronic, progressive airway disease with rising global prevalence. However, no population-based epidemiologic study of adult bronchiectasis has been published from Canada, leaving the national burden, outcomes, and costs undefined.

Objectives: To determine the incidence, prevalence, mortality, health care utilization, and direct health care costs of bronchiectasis among adults in Alberta, overall and by airway disease phenotype.

Methods: We conducted a population-based retrospective cohort study (2010-2025) using linked Alberta provincial administrative health datasets. Adults (≥18 years) with bronchiectasis were identified using validated ICD-9/10 codes (ICD-10-CA J47; ICD-9 494), excluding cystic fibrosis. Patients were stratified by co-existing COPD or asthma. We estimated incidence, prevalence, health-care utilization, mortality, and direct health-care costs overall and by phenotype.

Results: We identified 12,169 adults with bronchiectasis (median age 65 years; 56% female). Prevalence increased to 311.6 per 100,000 adults in 2024, more than double that in 2010, while annual incidence remained stable at 25.1 (95% CI 24.4-25.7) per 100,000 adults. After age- and sex-standardization to the 2021 Canadian reference population, the standardized average annual incidence was 29.6 and the standardized 2024 prevalence was 433.2 (95% CI 426.3-440.2) per 100,000 adults. Bronchiectasis with comorbid COPD (27%) had the most severe outcomes, including high mortality (55% during follow-up; 17% within one year), the highest hospitalization rate (0.62 per person-year), and the greatest lifetime health-care

costs (mean ~\$88,400 CAD). Bronchiectasis with comorbid asthma (13%) occurred in younger, predominantly female patients and was marked by frequent exacerbations (44%) but lower mortality (16%). Overall, patients experienced 0.42 hospital admissions per person-year and mean 5-year direct health-care costs exceeded \$36,000 CAD per patient.

Conclusions: In this first Canadian population-based study of adult bronchiectasis, prevalence more than doubled over 15 years despite stable incidence, indicating a growing chronic respiratory disease burden. Bronchiectasis was associated with substantial mortality, acute care use and direct health-care costs, with especially poor outcomes among those with COPD overlap. These findings provide foundational Canadian data to inform disease recognition with phenotype-specific management and future health-system planning.

Keywords: Bronchiectasis; Epidemiology; Exacerbations.

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Cite

26

ESC Heart Fail

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. 2026 Aug 24:xvag222.

doi: 10.1093/eschf/xvag222. Online ahead of print.

[Interpreting Prognostic Asymmetry in Heart Failure-COPD Overlap](#)

[Huijuan Cheng](#)^{1,2}, [Zhe Zhang](#)², [Feng Lu](#)¹

Affiliations Expand

- PMID: 42634973
- DOI: [10.1093/eschf/xvag222](#)

Free article

No abstract available

Keywords: chronic obstructive pulmonary disease; dyspnoea; heart failure; mortality; selection bias.

Full text links



[Proceed to details](#)

Cite

27

Nicotine Tob Res

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. 2026 Aug 24;28(9):1555-1563.

doi: 10.1093/ntr/ntag080.

[The impact of Shanghai's comprehensive smoke-free legislation on hospital admission and mortality rates for chronic obstructive pulmonary disease: an interrupted time series analysis](#)

[Lihang Sun](#)¹, [Dan Qin](#)², [De Chen](#)³, [Huiting Yu](#)⁴, [Ying Shi](#)¹, [Yafei Hu](#)³, [Jingrong Gao](#)³, [Chenchen Xie](#)³, [Xin Chen](#)⁴, [Haiyin Wang](#)¹

Affiliations Expand

- PMID: 41967483
- PMCID: [PMC13500350](#)
- DOI: [10.1093/ntr/ntag080](#)

Abstract

Introduction: Smoking and secondhand smoke pose major global health risks, contributing to chronic obstructive pulmonary disease (COPD). Evidence on the health impact of Shanghai's smoke-free legislation is limited. This study assesses the effects of Shanghai's smoke-free legislation on COPD hospital admission and mortality rates.

Methods: Chronic obstructive pulmonary disease hospital admissions and deaths from July 2013 to December 2019 were analyzed using interrupted time series. Adjustments were made for demographics, weather, PM2.5, and seasonality.

Results: A total of 358 941 COPD hospital admissions and 56 824 deaths were recorded. After implementation of the legislation, there was no evidence of a short-term reduction in either COPD hospital admissions or mortality among adults aged ≥ 35 years. Both COPD hospital admissions and mortality showed downward trends over the longer term, although these overall changes were not statistically significant. Subgroup analysis revealed a modest but statistically significant long-term decline in admissions among adults aged 35-64 years ($\beta = -0.06$, $P < .05$), while no statistically significant short-term mortality change was observed among adults aged ≥ 65 years. Age-standardized analyses and Poisson and negative binomial sensitivity models yielded similar admission trends and broadly consistent long-term mortality patterns.

Conclusions: The implementation of the legislation was associated with a long-term downward trend in COPD-related hospital admissions and mortality, but the overall impact to date appears to be limited. Sustained implementation of stringent tobacco control policies is therefore recommended, alongside further improvement and expansion of existing measures to strengthen enforcement and broaden interventions, especially for outdoor smoking, to achieve greater health benefits.

Implications: This study provides empirical evidence that Shanghai's comprehensive smoke-free legislation was not associated with a detectable short-term reduction in either COPD hospital admissions or mortality. However, both outcomes showed downward trends over the longer term, with reductions in hospital admissions appearing more pronounced among older adults, underscoring that the health benefits of smoke-free policies may accrue gradually through sustained implementation. Strengthening enforcement, expanding smoke-free areas, and integrating complementary public health interventions-such as smoking cessation support and stricter outdoor smoking regulations-could enhance the long-term effectiveness of tobacco control policies. These findings highlight the need for continuous evaluation and policy refinement to maximize public health benefits and reduce the overall burden of COPD in urban populations.

Keywords: chronic obstructive pulmonary disease; smoke-free legislation; smoking/harm reduction; tobacco control; tobacco-related disease.

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Conflict of interest statement

All authors declare that they have no competing interests.

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

Supplementary info

MeSH terms, Substances, Grants and funding[Expand](#)

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

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Diabetes Res Clin Pract

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. 2026 Aug 27:240:113530.

doi: 10.1016/j.diabres.2026.113530. Online ahead of print.

[Trends in comorbidities and multimorbidity among adults with recently diagnosed diabetes: United States, 1999-2023](#)

[Stephen Onufrak¹](#), [Ibrahim Zaganjor²](#), [Daesung Choi²](#), [Sola Han²](#), [Christopher S Holliday²](#), [Meda E Pavkov²](#)

Affiliations Expand

- PMID: 42660201
- DOI: [10.1016/j.diabres.2026.113530](https://doi.org/10.1016/j.diabres.2026.113530)

Abstract

Aims: Comorbidities are common at diabetes onset and may influence long-term outcomes. We examined national trends in the prevalence, number, and multimorbidity patterns among U.S. adults with newly ascertained diabetes, distinguishing concordant metabolic risk factors, concordant vascular diseases, and discordant conditions.

Methods: We analyzed National Health and Nutrition Examination Survey data (1999-August 2023) for adults (≥ 20 years) with newly ascertained diabetes (diagnosed at the survey or ≤ 2 years prior; $n = 4,243$). Age-adjusted prevalence of 13 comorbidities, mean comorbidity count, and multimorbidity patterns were estimated across three periods. Trends were assessed using logistic and linear regression and pattern distributions using chi-square tests.

Results: Obesity increased from 58.3% (1999-2006) to 71.0% (2015-2023) ($p = 0.0003$); Chronic lung disease rose from 15.4% to 22.8% ($p = 0.007$). Chronic kidney disease ($\sim 30\%$) and cardiovascular disease (11.8%-14.1%) were stable. Arthritis ($\sim 40\%$), sleep disorders (29.2%-38.5%), and dental caries ($\sim 30\%$) were common but stable. The mean comorbidity count increased from 4.25 to 4.51 ($p = 0.038$), with greater overlap of concordant and discordant conditions ($p = 0.008$).

Conclusions: From 1999 to 2023, obesity, chronic lung disease, and total number of comorbidities increased among adults with new diabetes. Multimorbidity patterns

increasingly encompassed both concordant and discordant conditions, potentially complicating management and worsening outcomes.

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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.

Full text links



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Cite

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Review

Lancet Diabetes Endocrinol

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. 2026 Aug 27:S2213-8587(26)00186-5.

doi: 10.1016/S2213-8587(26)00186-5. Online ahead of print.

[From adiposity to multisystem morbidity: the case for weight loss as disease modification](#)

[Naveed Sattar](#)¹, [Lyn D Ferguson](#)², [Matthew M Y Lee](#)²

Affiliations Expand

- PMID: 42660161
- DOI: [10.1016/S2213-8587\(26\)00186-5](#)

Abstract

Obesity (ie, excess adiposity) is a major driver of multisystem morbidity, spanning musculoskeletal (eg, osteoarthritis), metabolic (eg, type 2 diabetes), cardiovascular (eg, heart failure), mental health (eg, depression), respiratory (eg, obstructive sleep apnoea), and gastrointestinal and hepatic (eg, metabolic dysfunction-associated steatotic liver disease) disorders. However, the extent to which weight-loss

interventions can prevent or modify these conditions varies considerably. In this Review, we synthesise evidence from epidemiological studies, genetic analyses (including Mendelian randomisation), observational weight-change studies, and randomised trials, using a triangulation framework to assess causal links between adiposity and common diseases. Although robust trial evidence supports weight loss as a disease-modifying strategy in some conditions, including but not limited to type 2 diabetes and heart failure with preserved ejection fraction, many other conditions, including musculoskeletal, respiratory, cardiovascular, and mental health disorders, remain under-investigated. Incretin-based therapies, in particular the glucagon-like peptide 1 receptor agonist semaglutide and the dual glucagon-like peptide 1 and glucose-dependent insulinotropic polypeptide receptor agonist tirzepatide, now achieve average weight losses of approximately 14-20% in people without diabetes and have generated the first large-scale randomised evidence of disease modification across several of these conditions. We highlight key gaps and propose priorities for future trials, including the need for studies across different disease stages, incorporation of mechanistic and mediation analyses, and evaluation of the impact on disease outcomes of varying magnitudes of weight loss with differing agents. Future research should also consider multimorbidity, individualised treatment targets, and long-term outcomes-including potential legacy effects. Addressing global access gaps and conducting trials in diverse populations will be essential to inform scalable and equitable obesity care.

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Conflict of interest statement

Declaration of interests NS has consulted for and received speaker honoraria from AbbVie, Amgen, AstraZeneca, Boehringer Ingelheim, Carmot Therapeutics, Eli Lilly, Gan & Lee, GlaxoSmithKline, Hanmi Pharmaceuticals, Kailera, Mass Medicines, Menarini-Ricerche, Metsera, Novo Nordisk, Pfizer, Regeneron, Roche, UCB Pharma, and Verdiva Bio; and received grant support paid to his University from AstraZeneca, Boehringer Ingelheim, Novartis, and Roche outside the submitted work. LDF reports speaker fees from Janssen and UCB and consultancy and conference travel support from Sanofi. MMYL has received research grants through his institution, the University of Glasgow, from AstraZeneca, Boehringer Ingelheim, and Roche Diagnostics; serves on Trial Steering Committees for Amgen and Cytokinetics; and Clinical Endpoint Committees for AstraZeneca, Bayer, and GlaxoSmithKline.

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. 2026 Aug 28:16:04215.

doi: 10.7189/jogh.16.04215.

Age-dependent health risks of smoking: greater harm associated with initiation before alveolar maturation (age 24)

Ziyi Liu ^{#1 2 3 4}, **Zhiqi Zhao** ^{#1 2 3 4}, **Yutong Xiao** ⁵, **Ruoyan Xiong** ^{1 2 3 4}, **Huiru Zheng** ^{1 2 3 4}, **Yifan Liu** ^{1 2 3 4}, **Qixuan Huang** ^{1 2 3 4}, **Rui Zhao** ^{1 2 3 4}, **Junxia Yan** ⁶, **Yan Chen** ^{1 2 3 4}, **Huihui Zeng** ^{1 2 3 4}

Affiliations Expand

- PMID: 42659031
- PMCID: [PMC13521492](#)
- DOI: [10.7189/jogh.16.04215](#)

Abstract

Background: Smoking during the alveolar developmental stage (ADS) (≤ 24 years) may increase cardiopulmonary disease risk beyond the effects of cumulative exposure, but these interactions remain unclear. We aimed to determine whether smoking initiation during ADS modifies the associations between cumulative smoking exposure and cardiopulmonary disease, multimorbidity, and all-cause mortality.

Methods: We analysed 15,077 participants from the US National Health and Nutrition Examination Survey and two UK Biobank cohorts: 121,852 individuals in the disease cohort and 136,528 in the mortality cohort. Multivariable logistic regression and Cox proportional hazards models examined associations of smoking initiation timing (≤ 24 vs. > 24 years), cumulative exposure (> 20 vs. ≤ 20 pack-years), and their interaction with chronic obstructive pulmonary disease (COPD), cardiovascular disease, all-cause mortality, and multimorbidity. We assessed both multiplicative and additive interactions. We also evaluated an ordinal exposure score combining initiation timing and pack-years. Zero-inflated negative binomial regression quantified comorbidity burden, and stratified analyses assessed the effects of smoking cessation duration.

Results: Smoking initiation in the ADS amplified smoking-related disease risk. For COPD, ADS initiators with high cumulative exposure had a greater risk (hazard ratio (HR) = 3.45; 95% confidence interval (CI) = 3.29, 3.62) than post-ADS initiators with high exposure (HR = 2.33; 95% CI = 1.91, 2.83; P for multiplicative interaction

<0.001). Additive interaction was also observed, with a relative excess risk due to interaction of 0.43 (95% CI = 0.08, 0.79) and an attributable proportion of 0.16 (95% CI = 0.02, 0.29). Each one-point increase in the exposure score was associated with higher COPD risk (HR = 2.29; 95% CI = 2.20, 2.38) and mortality (HR = 1.39; 95% CI = 1.36, 1.43), with 82.1% of COPD burden attributable to score ≥ 1 exposure. High exposure was associated with a larger reduction in comorbidity-free probability among ADS initiators (OR = 0.55) than post-ADS initiators (OR = 0.65) (P for interaction <0.001). Smoking cessation reduced COPD and mortality risks in both groups, with greater relative reductions among ADS initiators.

Conclusions: Smoking initiation during ADS, combined with greater cumulative exposure, is associated with increased risks of COPD, cardiovascular morbidity, multimorbidity, and all-cause mortality. Incorporating developmental timing may improve smoking-related risk stratification.

Keywords: COPD; NHANES; UK Biobank; alveolar development stage.

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Conflict of interest statement

Disclosure of interest: The authors completed the ICMJE Disclosure of Interest Form (available upon request from the corresponding author) and disclose no relevant interests

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

Supplementary info

MeSH termsExpand

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Cite

4

Dement Neuropsychol

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. 2026 Aug 24:20:e20250471.

doi: 10.1590/1980-5764-DN-2025-0471. eCollection 2026.

[Association of diabetes, hypertension and obesity with cognitive impairment in adults](#)

[Sara Beatriz Raimann](#)¹, [Nathalia Avila Dimer](#)¹, [Bárbara Niegia Garcia de Goulart](#)²

Affiliations Expand

- PMID: 42657445
- PMCID: [PMC13516651](#)
- DOI: [10.1590/1980-5764-DN-2025-0471](#)

Abstract

in [English, Portuguese](#)

Cognitive impairment (CI) is prevalent in aging and affects the functionality and autonomy of individuals. Previous studies have demonstrated its association with metabolic diseases such as diabetes *mellitus* (DM), systemic arterial hypertension (SAH), hypercholesterolemia, and obesity. Still, the synergic association of these comorbidities in the Brazilian population has not yet been explored. Elucidating the magnitude of the relationship between metabolic diseases and CI informs the planning of more effective health care and attention strategies.

Objective: To investigate the association between DM, SAH, hypercholesterolemia and obesity and CI in adults aged 50 years or older.

Methods: Cross-sectional population-based study using data from the second wave of the Brazilian longitudinal study of aging - ELSI-Brazil (2019). A total of 6,449 participants with complete data on the variables of interest and who responded directly to the survey were included in the analysis. CI was defined using standardized test z-scores. Exposures were identified through self-reported medical diagnoses and waist circumference measurements.

Results: The combination of DM, hypertension, and obesity was associated with a 4% increase in the prevalence of CI. With the addition of hypercholesterolemia, this increase reached 10%. The isolated or combined presence of only two of these conditions was not associated with significant differences.

Conclusion: Among people aged 50 and over, CI is more prevalent in those with multiple metabolic alterations. In a scenario of aging and high burden of chronic diseases, the findings reinforce the urgency of integrated prevention and control strategies to contain CI.

Keywords: Aging; Cognition; Metabolic Diseases; Multimorbidity..

Conflict of interest statement

Disclosure: The authors report no conflicts of interest.

- [25 references](#)

- [1 figure](#)

Full text links



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Cite

5

Eur J Gen Pract

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. 2026 Dec;32(1):2721007.

doi: 10.1080/13814788.2026.2721007. Epub 2026 Aug 26.

[Understanding competencies to manage multimorbidity in primary care: A focus group study with professionals and patients](#)

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Affiliations Expand

- PMID: 42647104
- PMCID: [PMC13520867](#)
- DOI: [10.1080/13814788.2026.2721007](#)

Abstract

Background: Chronic conditions often occur as multimorbidity, where patients experience multiple chronic conditions simultaneously. Many developed countries have implemented disease management programmes (DMP) in primary care to address these complex needs, but their success largely depends on the competencies of healthcare professionals. Equipping primary care professionals with the competencies required for person-centred integrated care (PC-IC) is therefore essential.

Aim: This study aims to 1(1) identify the competencies primary care professionals consider essential for providing PC-IC to patients with chronic conditions and multimorbidity and examine their alignment with patient preferences, and 2(2) explore professionals' training needs.

Methods: This qualitative study used focus group interviews to explore perspectives on PC-IC. A convenience sample included 14 primary care professionals (general practitioners and practice nurses) and a purposive sample included 10 patients with one or more chronic conditions.

Results: Primary care professionals identified person-centred attitudes, communication skills and interprofessional collaboration as essential competencies for delivering person-centred integrated care. Patients similarly valued being heard, understood, and actively involved in decision-making, while additionally emphasising continuity and coordinated care. Professionals also emphasised ongoing training, reflective practice groups, case discussions, and practical communication tools as important for developing these competencies.

Conclusions: Successful implementation of PC-IC requires more than disease-specific expertise. It depends on individual competencies, effective interprofessional collaboration, and organisational conditions that support coordinated, person-centred care. Ongoing professional development may help strengthen these competencies in primary care.

Keywords: Person-centred integrated care; chronic disease; competencies; interprofessional collaboration; primary care.

Plain language summary

Patients and healthcare professionals highlighted different priorities for successful person-centred integrated care: patients valued continuity and a designated point of contact, while professionals emphasised competencies and collaboration. Successful person-centred integrated care requires not only individual competencies but also organisational conditions that enable coordinated and continuous care. Ongoing training, reflection, and shared learning were valued by healthcare professionals as important for strengthening competencies, including among experienced professionals.

Conflict of interest statement

The authors report no conflicts of interest. The authors alone are responsible for the content and writing of the paper.

- [30 references](#)

Supplementary info

MeSH termsExpand

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Cite

6

J Gen Fam Med

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. 2026 Aug 25;27(5):e70170.

doi: 10.1002/jgf2.70170. eCollection 2026 Sep.

Multimorbidity Among Patients Receiving Home Care in Japan: Prevalence, Levels, and Association With Emergency Home Visits

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Affiliations Expand

- PMID: 42643934
- PMCID: [PMC13504458](#)
- DOI: [10.1002/jgf2.70170](#)

Abstract

Background: Despite its clinical importance in primary care, the prevalence and levels of multimorbidity among patients receiving home-based medical care remain poorly characterized, and its potential impact on emergency home visits is unclear. This study described the prevalence and levels of multimorbidity among patients receiving physician-led home care in Japan and examined the association between multimorbidity level and emergency home visits.

Methods: A multicenter cross-sectional study was conducted in 2024 using physician-completed questionnaires derived from medical records. Multimorbidity was defined as the presence of two or more chronic conditions. Based on prior literature, multimorbidity level was categorized as low (2-3 conditions), medium (4-5 conditions), or high (≥ 6 conditions). The primary outcome was the occurrence of an emergency home visit within the preceding month.

Results: Among 506 included patients, 94.7% met criteria for multimorbidity, and 13.2% required an emergency home visit. In multivariable generalized linear mixed-effects models with a logit link, higher multimorbidity levels were independently associated with increased odds of emergency home visits, with adjusted odds ratios of 2.16 (95% CI, 1.09-4.31) for the medium-level group and 2.72 (95% CI, 1.19-6.19) for the high-level group compared with the low-level group.

Conclusions: Multimorbidity was highly prevalent among Japanese patients receiving home care, exceeding prior domestic estimates while aligning with international reports. Higher levels of multimorbidity were associated with an increased likelihood of emergency home visits, suggesting that assessment of

multimorbidity level may, if confirmed in future studies, inform risk stratification and policy planning for home-based care services.

Trial registration: UMIN000056282.

Keywords: home care services; homebound persons; house calls; multimorbidity; multiple chronic conditions; primary health care.

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Conflict of interest statement

The authors declare no conflicts of interest.

- [36 references](#)

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Cite

7

JMIR Ment Health

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. 2026 Aug 25:13:e99143.

doi: 10.2196/99143.

[When Markets Shape AI Mental Health Self-Management Tools: Consequences for Serious Mental Illness](#)

[Lucy Smith](#)^{#1}, [Yousef Yousef](#)^{#1}, [Piotr Wasilewski](#)^{#1}, [Hajira Dambha-Miller](#)^{#1}

Affiliations Expand

- PMID: 42641123
- PMCID: [PMC13505970](#)
- DOI: [10.2196/99143](#)

Abstract

AI-enabled self-management health tools are increasingly promoted within health care policy as part of digital self-management models for mental health care. However, development is concentrated on scalable, low-intensity interventions for common conditions, such as anxiety and depression, rather than on populations with the greatest clinical need, such as those with serious mental illness (SMI). This includes schizophrenia-spectrum and bipolar disorders, which remain comparatively underserved, despite experiencing a disproportionate burden of morbidity and service use. However, the clinical features of SMI-comprising fluctuating symptoms, multimorbidity, and elevated risk-may limit the suitability of low-intensity AI-driven self-management tools designed for mild-to-moderate conditions. In this Viewpoint, we argue that the scarcity of AI-enabled self-management tools for SMI reflects a structural feature of current innovation systems rather than one of technical infeasibility alone. Market incentives, regulatory pathways, and fragmented research pipelines favor low-risk, high-volume populations, thereby limiting development for clinically complex groups. Addressing this unevenness is essential and will require upstream intervention, including targeted public funding, improved data infrastructure, and administrative frameworks that support safe innovation in high-risk populations. Embedding equity for SMI as a primary design requirement will be necessary to ensure that AI-driven mental health tools do not reinforce current inequalities.

Keywords: AI; artificial intelligence; clinical decision support systems; digital mental health; digital tools; health equity; mental health; serious mental illness.

© Lucy Smith, Yousef Yousef, Piotr Wasilewski, Hajira Dambha-Miller. Originally published in JMIR Mental Health (<https://mental.jmir.org>).

Conflict of interest statement

Conflicts of Interest: None declared.

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

Supplementary info

MeSH terms[Expand](#)

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Cite

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Can J Psychiatry

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. 2026 Aug 25:7067437261479115.

doi: 10.1177/07067437261479115. Online ahead of print.

Chronic Health Conditions and Substance Use Among Canadian Youth: A Nationally Representative Study: Problèmes de santé chroniques et usage de substances chez les jeunes Canadiens : étude représentative à l'échelle nationale

Mark A Ferro¹, Alex Luther¹, Danielle Fearon², Joel A Dubin^{1,3}, Laura Duncan⁴, Scott T Leatherdale¹, Dillon T Browne⁵, Ian Colman⁶

Affiliations Expand

- PMID: 42640726
- PMCID: [PMC13506985](#)
- DOI: [10.1177/07067437261479115](#)

Abstract

in [English, French](#)

BackgroundThis study compared prevalence of youth substance use by gender and type of chronic health condition (CHC); estimated gender-stratified odds of substance use across CHCs; and, contrasted effect sizes across CHCs and genders.**Methods**Data come from 13,580 youth 12 to 17 years in the 2019 Canadian Health Survey on Children and Youth (48.7% girls). CHC was categorized as none (38.4%), physical only (39.8%), mental only (2.7%), neurodevelopmental only (6.7%), and multiple CHCs (MCHC; 12.4%). Multiple CHCs was defined as having ≥1 physical condition and ≥1 mental or neurodevelopmental condition. Youth self-reported alcohol, tobacco, e-cigarette, and cannabis use and gender identity (boy/girl; sparse data prevented inclusion of gender-diverse).**Results**Overall, 29.4% of youth used ≥1 substance. Girls were more likely to be occasional or regular consumers of alcohol (26.4% vs. 24.3%; $P < 0.01$), but boys were more likely to be frequent e-cigarette (7.2% vs. 5.2%; $P < 0.01$) and cannabis users (3.0% vs. 1.8%; $P < 0.01$). Prevalence was lowest for youth with no CHC or physical only and highest for youth with mental only or MCHC. Among girls, all CHCs were associated with increased odds of substance use (vs. no CHC; OR = 1.3 to 14.6; $P < 0.05$); whereas for boys, odds of substance use were increased among mental only, neurodevelopmental only, and MCHC (OR = 1.3 to 6.0; $P < 0.05$). Effect sizes for MCHC were typically significantly larger compared to physical only, but not when compared to mental or neurodevelopmental only. Effect sizes were also significantly larger for mental only compared to physical only. Associations between CHCs and substance use were typically larger for girls compared to boys.**Conclusions**Youth with CHCs, especially mental only, neurodevelopmental only, or MCHC are more likely to report substance use. Gender differences exist; magnitudes of association are larger for girls compared to boys.

Keywords: adolescent; chronic disease; gender; morbidity; multimorbidity; substance use.

Conflict of interest statement

Dr. Ferro serves on the editorial board of The Canadian Journal of Psychiatry. The remaining authors declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

- [64 references](#)

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Cite

9

J Asthma

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. 2026 Aug 25:1-13.

doi: 10.1080/02770903.2026.2721173. Online ahead of print.

[Real-world patient characteristics and treatment patterns in severe asthma: a retrospective cohort study from Poland \(POLSAR\)](#)

[Ewa Leszczyńska¹](#), [Szymon Drygala¹](#), [Tomasz Szostek¹](#), [Piotr Kuna²](#)

Affiliations Expand

- PMID: 42615845
- DOI: [10.1080/02770903.2026.2721173](#)

Free article

Abstract

Objective: Severe asthma (SA) is a heterogeneous, high-burden disease requiring intensified treatment and substantial healthcare resource use. However, real-world characterization of patients managed under restricted biologic access remains limited in Poland. This study described clinical and demographic characteristics of adults with SA in Polish specialist care.

Methods: This non-interventional, retrospective cohort study used anonymized data from the Polish Severe Asthma Registry (POLSAR), within the International Severe Asthma Registry (ISAR). Adults enrolled at a tertiary specialist center between August 2013 and December 2024 were included. Baseline characteristics were assessed during the 12 months preceding ISAR enrollment.

Results: Overall, 503 adults were analyzed; 63.2% were female, mean age was 54 years, and mean asthma duration was 19.4 years. Disease control was poor: 97.2% were uncontrolled by GINA ($n = 72$), and 82.7% had ACQ ≥ 1.5 ($n = 139$). Mean FEV₁ was 65.8% predicted, with 39.9% $< 60\%$ ($n = 193$). Exacerbation burden was substantial (mean 3.1/year; 31.5% ≥ 4 , $n = 238$). Type 2 inflammatory features predominated, with BEC ≥ 350 cells/ μ L in 64.0% ($n = 283$), total immunoglobulin E (IgE) ≥ 75 kU/L in 74.3% ($n = 191$), and combined biomarker elevation in 61.0% ($n = 136$). Multimorbidity was frequent (≥ 3 comorbidities in 46.1%), particularly chronic rhinosinusitis, allergic rhinitis, and nasal polyposis. Long-term oral corticosteroids use occurred in 42.7% ($n = 259$). Biologic therapy was initiated in 96.4%, most commonly anti-IgE.

Conclusions: Adults entering biologic pathways in this setting represent a highly selected, clinically advanced SA population with poor control, impaired lung function, frequent exacerbations, corticosteroid burden, type 2 inflammation, and multimorbidity consistent with unified airway disease.

Keywords: International Severe Asthma Registry (ISAR); Severe asthma; biologic therapy; exacerbations; polish cohort; real-world evidence.

Plain language summary

This study provides one of the first comprehensive real-world characterizations of adults with severe asthma (SA) managed under the Polish national biologic reimbursement framework. The analysis is based on data from the Polish Severe Asthma Registry (POLSAR) within the International Severe Asthma Registry (ISAR), reflecting routine specialist clinical practice. Patients entering biologic pathways represented a highly selected and clinically advanced population with poor disease control, impaired lung function, frequent exacerbations, multimorbidity, and substantial corticosteroid burden. The findings highlight how restrictive biologic access criteria may influence patient profiles and treatment pathways in SA care. The study provides clinically relevant real-world evidence supporting optimization of referral pathways, treatment escalation strategies, and biologic access policies in SA.

Full text links



[Proceed to details](#)

Cite

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Review

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. 2026 Aug 27;33(Supplement_3):iii44-iii51.

doi: 10.1093/eurjpc/zwaf194.

[Hypertension management in the elderly and the very elderly](#)

[Luigina Guasti](#)^{1,2}, [Giuseppe Derosa](#)³, [Stefano Fumagalli](#)⁴, [Marc Ferrini](#)⁵, [Riccardo Asteggiano](#)^{1,6}

Affiliations Expand

- PMID: 40986689
- DOI: [10.1093/eurjpc/zwaf194](#)

Free article

Abstract

Hypertension increases with age, with a very high prevalence in older patients. Since hypertension is a major contributor of cardiovascular diseases, this condition accounts for the majority of stroke and a relevant number of coronary artery disease cases in the older adults. Ageing is associated with frailty and multi-morbidity, often associated with poly-pharmacy, which may complicate the management of hypertension. Specific diseases like diabetes and Parkinson disease associated with autonomic dysfunctions, and the frail condition, should be carefully considered in order to avoid orthostatic hypotension. Aortic stenosis, cardiac hypertrophy, heart failure, reduced glomerular filtration rate, arrhythmias such as atrial fibrillation, obstructive coronaropathies, and cerebral vascular lesions constitute haemodynamic challenges and may be associated with increased adverse effects during anti-hypertensive treatments. Moreover, specific drugs and drug-drug interactions are associated with side-effects particularly deleterious in the older patients. The worsening of the state of health and the increase in the degree of frailty can result either as a consequence of target organ damage related to hypertension or caused by anti-hypertensive drugs. Therefore, in the older adults, a careful assessment of the individual risk/benefit profile and a personalized view of the patient are necessary to establish the appropriate blood pressure targets and the appropriate treatments.

Keywords: Elderly; Frailty; Hypertension; Older adults; Orthostatic hypotension.

Plain language summary

Hypertension remains one of the major risk factors for cardiovascular diseases even in older adults. A tailored treatment aimed at achieving the appropriate targets

is needed, taking into considerations of age, multi-morbidity, frailty, and orthostatic hypotension.

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Conflict of interest statement

Conflict of interest: none declared.

Supplementary info

Publication types, MeSH terms, SubstancesExpand

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

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Ther Adv Gastroenterol

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. 2026 Aug 28:19:17562848261470325.

doi: 10.1177/17562848261470325. eCollection 2026.

[Prevalence of dysphagia and eosinophilic esophagitis in patients with inflammatory bowel disease or type 2 inflammation: a cross-sectional multicenter screening study](#)

[Martin Bäuerle](#)^{1,2,3}, [Jurij Maurer](#)^{1,4}, [Jagoda Pokryszka](#)¹, [Gottfried Novacek](#)¹, [Christian Primas](#)¹, [Lili Kazemi-Shirazi](#)¹, [Stefanie Dabsch](#)¹, [Adrian Frick](#)¹, [Walter Reinisch](#)¹, [Clemens Dejaco](#)¹, [Michael Trauner](#)¹, [Slagjana Stoshikj](#)⁵, [Christine Bangert](#)⁶, [Sven Schneider](#)⁷, [Stefan Wöhrl](#)⁸, [Philipp Schreiner](#)⁹

Affiliations Expand

- PMID: 42668855
- PMCID: [PMC13525285](#)
- DOI: [10.1177/17562848261470325](#)

Abstract

Background: Eosinophilic esophagitis (EoE) is a chronic, type-2 inflammation-driven disease causing dysphagia. Although patients with other type-2 inflammatory diseases (type-2 ID) or inflammatory bowel disease (IBD) may have an increased

risk of EoE, there is limited information about the prevalence of EoE in these specific populations.

Objectives: This study aims to assess the prevalence of clinically relevant dysphagia as well as underlying EoE in patients with type-2 ID or IBD.

Design: This is a cross-sectional, multicenter study of patients with type-2 ID (asthma, rhinosinusitis with polyposis nasi, allergic rhinitis, atopic dermatitis, Immunoglobulin E (IgE)-mediated food allergies) or IBD from the Medical University of Vienna and Floridsdorf Allergy Center.

Methods: Patients were screened for esophageal dysphagia using the Brief Esophageal Dysphagia Questionnaire (BEDQ). Relevant dysphagia was defined as a BEDQ score ≥ 4 , or having a history of bolus impaction or emergency department visit due to dysphagia within the past year. Endoscopy with esophageal biopsies was offered to all patients with relevant dysphagia to screen for EoE.

Results: A total of 687 patients (45.9% female, median age 45 years, 53.9% with IBD, 48.5% with a type 2 ID) were screened. Overall, 8.9% ($n = 61$) reported relevant dysphagia. Endoscopy with biopsies was performed in 22 patients, and 18 patients had undergone endoscopy the year prior to the study. In total, 6 newly diagnosed cases of EoE were observed, while 7 patients had a known history of EoE, resulting in an overall prevalence of 13 patients (1.9%). Patients with any type-2 ID had numerically more EoE (2.7%) than patients with IBD (1.9%).

Conclusion: While the prevalence of dysphagia among patients with type-2 ID and IBD may not exceed that of the general population, the prevalence of EoE in these populations may be higher than previously recognized.

Keywords: dysphagia; eosinophilic esophagitis; inflammatory bowel disease (IBD); type-2 inflammatory disease.

Plain language summary

Prevalence of dysphagia and eosinophilic esophagitis in patients with inflammatory bowel disease or type 2 inflammation—a cross-sectional multicenter screening study Eosinophilic esophagitis (EoE) is a chronic, type-2 inflammation-driven disease causing dysphagia. Although patients with other type-2 inflammatory diseases or inflammatory bowel disease may have an increased risk of EoE, there is limited information about the real prevalence in these specific populations. We therefore screened 687 patients with type-2 inflammatory diseases (asthma, rhinosinusitis with polyposis nasi, allergic rhinitis, atopic dermatitis, IgE-mediated food allergies) or inflammatory bowel disease for esophageal dysphagia using a validated questionnaire. Therefore, 61 patients (8.9%) with clinically relevant dysphagia were offered endoscopy with esophageal biopsies. In total, six newly diagnosed cases of EoE were observed, while seven patients had a known history of EoE, resulting in an overall prevalence of 13 patients (1.9%).

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Conflict of interest statement

P.S. received consulting fees from AbbVie, Falk Pharma, Janssen-Cilag, Takeda, Alfasigma, Pfizer, Sanofi-Aventis, AstraZeneca. G.N. received lecture

fees/consultant fees/advisory board member fees from AbbVie, Merck Sharp & Dohme, Takeda, Janssen-Cilag, Pfizer, Gilead, Galapagos/Alfasigma, Ferring, Vifor, AstroPharma, Falk, Bristol Myers Squibb, Arena Pharmaceuticals, and Amgen. S.W. received consulting fees from Novartis, Sanofi, ThermoFisher Scientific. A.F. received travel support from Takeda, Amgen, Johnson & Johnson, and AbbVie. C.B. has been a clinical trial investigator for Almirall, Pfizer, AbbVie, Eli Lilly and Company, Galderma, LEO Pharma, Novartis, and Sanofi Genzyme, and an advisory board member, consultant, and/or invited lecturer for Pfizer, AbbVie, ALK, Almirall, Eli Lilly and Company, Incyte, LEO Pharma, A. Menarini Pharma, Schuelke & Mayr GmbH, Galderma, Novartis, and Sanofi Genzyme. SS reports grants, payment for lectures, and participation on advisory boards from Sanofi, AstraZeneca, and GSK. M.T.: received grant support from Albireo, Alnylam, Cymabay, Falk, Genentech, Gilead, Intercept, MSD, Takeda and UltraGenyx, honoraria for consulting from AbbVie, Albireo, Agomab, Boehringer Ingelheim, BiomX, Chemomab, Dexoligo Therapeutics, Falk, Genfit, Gilead, GSK, Hightide, Intercept, Ipsen, Janssen, Mirum; MSD, Novartis, Phenex, Pliant, ProQR Therapeutics, Regulus, Siemens and Shire, speaker fees from Albireo, Boehringer Ingelheim, Bristol-Myers Squibb, Falk, Gilead, Ipsen, Intercept, MSD and Madrigal, as well as travel support from AbbVie, Falk, Gilead, Janssen and Intercept, Ipsen and Janssen. He is also a co-inventor of patents on the medical use of 24-norursodeoxycholic acid filed by the Medical University of Graz. W.R. has served as a speaker, consultant, advisory board member, and/or received research funding from AbbVie, Amgen, AOP Orphan, Arena, Astellas, AstraZeneca, Bioclinica, Boehringer Ingelheim, Bristol Myers Squibb, Calyx, Celgene, Celltrion, Dr Falk, Ferring, Galapagos, Gatehouse, Genentech, Gilead, Grünenthal, ICON, InDex, Inova, Janssen, Landos, Lilly, Medahead, MedImmune, Microbiotica, Mitsubishi Tanabe, MSD, Novartis, OMass, Otsuka, Parexel, Peri Consulting, Pharmacosmos, Pfizer, Protagonist, Provention, Quell, Roche, Sandoz, Sanofi, Seres, SetPoint Medical, Shire, Sigmoid, Sublimity, Takeda, Teva, Therakos, Theravance, and Zealand.

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Cite

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Acta Paediatr

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. 2026 Aug 28.

doi: 10.1111/apa.70731. Online ahead of print.

[Frequency, Burden and Pathogens of Acute Respiratory Illness in Very Preterm Infants During Infancy](#)

[Patricia De Gouveia Belinelo¹](#), [Nada Townsi^{1,2}](#), [Naomi R Hemy¹](#), [Chisha T Sikazwe^{3,4}](#), [David W Smith^{2,3}](#), [Benjamin Stoecklin^{5,6}](#), [J Jane Pillow^{6,7}](#), [Graham L Hall^{1,8}](#), [Ingrid A Laing^{2,4,9}](#), [Shannon J Simpson^{1,8}](#)

Affiliations Expand

- PMID: 42665881
- DOI: [10.1111/apa.70731](#)

Abstract

Aim: To describe the frequency, burden, and pathogen profile of acute respiratory illnesses (ARIs) in very preterm infants during the first year after neonatal intensive care unit (NICU) discharge.

Methods: Very preterm infants were followed prospectively (August 2015-January 2017) with monthly assessments of symptoms, medication use, and healthcare utilisation. Parent-reported ARIs triggered additional clinical follow-up. Nasal swabs were collected monthly and during ARIs and tested for respiratory pathogens using real-time PCR.

Results: Of 125 eligible infants, 99 (79.2%) were enrolled, and 89 completed the 12-month follow-up. All infants experienced at least one ARI during the first year. Male sex was associated with increased risk of wheezy lower respiratory tract illness (LRTI) (RR 1.61), hospitalisation (RR 3.89), and asthma medication use (RR 5.89). NICU discharge during summer was associated with higher ARI rates (RR 1.33) and hospitalisation (RR 2.54). Rhinovirus was most frequently detected (13.5% of monthly swabs; 43.8% of ARI swabs), whereas respiratory syncytial predominated in emergency department presentations and hospital admissions (18.8% and 20.0%, respectively).

Conclusions: Very preterm infants experienced substantial respiratory morbidity during the first year after NICU discharge. These findings highlight the need for improved preventive and post-discharge strategies in this high-risk population.

Keywords: bronchopulmonary dysplasia; prematurity-associated lung disease; respiratory morbidity; respiratory pathogens.

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- [35 references](#)

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Cite

3

Review

Respir Res

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. 2026 Aug 28;27(1):334.

doi: 10.1186/s12931-026-03869-y.

[Alarmins differentially modulate airway contraction and relaxation of human small airways](#)

[Joshua L Kennedy](#)¹, [Dana N Frederick](#)¹, [Reynold A Panettieri Jr](#)², [Cynthia J Koziol-White](#)³

Affiliations Expand

- PMID: 42665812
- DOI: [10.1186/s12931-026-03869-y](#)

Abstract

Alarmins, including Thymic Stromal Lymphopoietin (TSLP) and Interleukins 33 and 25 (IL-33 and IL-25), contribute to the pathophysiology of allergic and nonallergic asthma by evoking exacerbations in response to allergens, viruses, and environmental irritants (as reviewed in [1]). Current evidence shows that inhibiting alarmins reduces symptoms and exacerbations in obstructive lung diseases, including asthma [1]. Preclinical work has largely focused on alarmins' role in modulating airway inflammation, but far less is known about how alarmins regulate airway tone (contraction and relaxation). We posit that IL-33, TSLP, and IL-25 exert distinct effects on airway contraction and relaxation in airways from non-diseased subjects and those with asthma.

Keywords: Airway constriction; Airway dilation; Alarmins; Asthma; Bronchodilator.

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Conflict of interest statement

Declarations. Ethics approval and consent to participate: Lung tissue from which hPCLS were derived were from deidentified tissue donors received through partnerships with the National Disease Research Interchange, the International Institute for the Advancement of Medicine, and the Arkansas Regional Organ

Recovery Agency were not considered human subjects research by UAMS and Rutgers institutional review boards and are considered IRB exempt. Consent for publication: Not applicable. Competing interests: The authors declare no competing interests.

- [12 references](#)

Supplementary info

Publication types, MeSH terms, Substances, Grants and fundingExpand

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Cite

4

Review

Curr Allergy Asthma Rep

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. 2026 Aug 29;26(1):46.

doi: 10.1007/s11882-026-01289-y.

[Airway Diseases and Occupational Exposures in Poultry Industry Workers: A Comprehensive Review](#)

[Margaret Hutson](#)¹, [Kristina L Bailey](#)^{2 3}

Affiliations Expand

- PMID: 42665724
- DOI: [10.1007/s11882-026-01289-y](#)

Abstract

Purpose of review: The rapid expansion of the poultry industry has significantly increased the demand for poultry meat and related products due to improvements in efficiency and cost-effectiveness. However, this rapid global commercialization has led to an increase in occupational asthma and chronic obstructive lung disease in poultry workers. Exposure to a complex mixture of organic and inorganic

compounds, fumes, microorganisms, and particulate matter found in poultry barns has been linked to airway disease in workers. These airborne contaminants include allergens such as feathers, mites, feed dust, molds, ammonia, and bacterial endotoxins, which contribute to airway inflammation, hypersensitivity, and chronic lung damage. Workers may experience symptoms ranging from wheezing and chest tightness to chronic cough and dyspnea, which can progress to clinically significant respiratory conditions if unrecognized and unmanaged.

Recent findings: In attempts to minimize these effects, best practices and strategies to reduce these pollutants are actively being researched and implemented. The role of healthcare providers is pivotal in early identification of at-risk workers, thorough occupational history-taking, appropriate diagnostic evaluation, and tailored management to prevent disease progression and improve outcomes. This review highlights the critical need for ongoing surveillance, preventive measures, and education to protect respiratory health in this vulnerable occupational group.

Keywords: Airway Diseases; Asthma; Chronic Obstructive Pulmonary Disease (COPD); Occupational Respiratory Disease; Organic Dust Exposure; Poultry Industry.

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Conflict of interest statement

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

- [101 references](#)

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Cite

5

Ann Allergy Asthma Immunol

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. 2026 Aug 28:S1081-1206(26)00417-5.

doi: 10.1016/j.anai.2026.08.016. Online ahead of print.

Sustained clinical remission over 24 months with tezepelumab in real-world severe uncontrolled asthma

[Francesco Menzella](#)¹, [Corrado Pelaia](#)², [Maria Rita Marchi](#)³, [Laura Ventura](#)⁴, [Michele Mondoni](#)⁵, [Elena Parazzini](#)⁵, [Rory Chan](#)⁶, [Michela Bortoli](#)³, [Francesco Liberati](#)⁷, [Chiara Lupia](#)², [Lorenzo Corsi](#)⁷, [Andrea Ballarin](#)⁷, [Cristina Albrici](#)⁵, [Giulia Carone](#)⁵, [Giulio Albano](#)³, [Tommaso Pianigiani](#)⁸, [Paolo Cameli](#)⁸

Affiliations Expand

- PMID: 42665130
- DOI: [10.1016/j.anai.2026.08.016](https://doi.org/10.1016/j.anai.2026.08.016)

No abstract available

Keywords: Biologic therapies; Clinical remission; Oral corticosteroids; Real-world evidence; Severe asthma; TSLP; Tezepelumab; Type 2 inflammation.

Full text links



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Cite

6

Review

Respir Med

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. 2026 Aug 28:109124.

doi: 10.1016/j.rmed.2026.109124. Online ahead of print.

Differential Diagnosis of Asthma and COPD: Established and Emerging Biomarkers and Technologies

[Joan Cabot](#)¹, [Xavier Busquets](#)¹, [Joan B Soriano](#)²

Affiliations Expand

- PMID: 42665061

- DOI: [10.1016/j.rmed.2026.109124](https://doi.org/10.1016/j.rmed.2026.109124)

Abstract

Asthma and chronic obstructive pulmonary disease (COPD) represent the two most prevalent chronic respiratory conditions worldwide, affecting hundreds of millions of individuals and imposing substantial morbidity and mortality. Despite their distinct biological mechanisms, these diseases frequently exhibit overlapping clinical features-including dyspnea, cough, and wheezing-that complicate differential diagnosis, particularly in smoking adults, older patients, and those with mild or fluctuating airflow obstruction. Spirometry remains the cornerstone of diagnostic evaluation, yet its limitations, including dependence on patient effort, reduced sensitivity for early disease, and inability to fully capture small airways involvement, contribute to persistent underdiagnosis and overdiagnosis in clinical practice. This review examines current diagnostic approaches for asthma and COPD, their inherent limitations, and the emerging biomarkers and functional technologies that may improve diagnostic precision. Established biomarkers, including blood eosinophils, fractional exhaled nitric oxide (FeNO), and induced sputum analysis, provide complementary information that refines clinical characterization but lack sufficient disease specificity for standalone use. Novel approaches, including lipidomics, metabolomics, and extracellular vesicle profiling, demonstrate potential for identifying disease-specific molecular signatures and biologically distinct phenotypes, particularly in asthma-COPD overlap. Concurrently, new functional tools-including novel spirometric indices such as Parameter D or FEV3/FEV6, respiratory oscillometry, and artificial intelligence-driven tidal breathing analysis-are enabling more sensitive, effort-independent, and multidimensional assessment of airway disease. The integration of these clinical, functional, inflammatory, and molecular approaches supports a transition toward multimodal diagnostic frameworks that may substantially improve the recognition and differential diagnosis of asthma and COPD, particularly in challenging clinical scenarios and early disease states.

Keywords: COPD; STARD; asthma; biomarkers; spirometry.

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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: JBS has received pharmaceutical company grants from 2022 to 2026 from Chiesi, GSK, Linde and Novartis via Hospital Universitario de La Princesa. Participated in speaking activities, advisory committees, and consultancies from 2022 to 2026 sponsored by Air Liquide, Almirall, AstraZeneca, Boehringer Ingelheim, CHEST, Chiesi, CNPT, ERS, FTH, Gebro, Grifols, GSK, IHME, Laminar Pharma, Linde, Lipopharma, Menarini, Mundipharma, Novartis, OMS/WHO, Pfizer, ResApp, RiRL, ROVI, SEPAR, SAPIO, Seqirus, WHO EUR, Takeda and Zambon. Finally, JBS declares never received, directly or indirectly, any funding from tobacco manufacturers or their affiliates. JC and XB declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this article.

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Pulm Ther

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. 2026 Aug 28.

doi: 10.1007/s41030-026-00379-6. Online ahead of print.

[Incidence of New Malignancies in Severe Asthma: Comparison of Real-World Patients Treated with Benralizumab, Other Biologics, or Non-biologics](#)

[Eileen O Dareng](#)¹, [Trung N Tran](#)², [Hannah Urbanski](#)³, [Ryan Finch](#)⁴, [Ulrika Emerath](#)⁵, [Yulia Kurdyukova](#)⁵, [Maria L Jison](#)⁶, [Lila Bahadori](#)⁶, [Andrew Menzies-Gow](#)⁷, [Eileen Wang](#)^{8,9}, [Elisabeth H Bel](#)¹⁰, [Luis Perez de Llano](#)¹¹, [Benjamin Emmanuel](#)², [Lynda Olinger](#)^{12,13}

Affiliations Expand

- PMID: 42663965
- DOI: [10.1007/s41030-026-00379-6](#)

Abstract

Introduction: Clinical trials report no increased malignancy risk with benralizumab in severe asthma; however, trial populations are highly selective. To better define real-world safety, malignancy risk was compared among patients treated with benralizumab, other (non-benralizumab) biologics, or non-biologic therapies.

Methods: Data from adults with severe asthma accrued to the International Severe Asthma Registry (ISAR) and a United States severe asthma registry (CHRONICLE) between 1 November 2017, and 31 December 2023, were analyzed. Cohorts were defined by exposure to benralizumab, other asthma biologics, and non-exposure to biologic therapies. First new-onset malignancies were assessed. Incidence per 1000 person-years (PY) and adjusted incidence rate ratios (aIRR) were estimated with an inverse probability-weighted Poisson model, with propensity scores incorporating demographics, comorbidities, baseline asthma medication, systemic steroid use,

and relevant medical history, with residual adjustment for age, sex, body mass index, region, and smoking.

Results: Among 12,493 patients, 43,434.8 PY were accrued (benralizumab, 7749.1 PY; other biologics, 21,054.1 PY; non-biologics, 14,631.6 PY), with a median (range) follow-up of 3.3 (0-6.2) years across cohorts. Seventy-five patients reported new malignancies: benralizumab, 17 (0.7%); other biologics, 34 (0.6%); and non-biologics, 24 (0.5%). Weighted, fully adjusted incidence rates were 1.3 versus 1.1 per 1000 PY for benralizumab versus other biologics (aIRR 1.2, 95% CI 0.79-1.81) and 1.8 versus 1.7 per 1000 PY for benralizumab versus non-biologics (aIRR 1.1, 95% CI 0.70-1.59).

Conclusions: This large observational study with up to 6 years of follow-up found no increased malignancy risk with benralizumab versus other therapies in patients with severe asthma.

Keywords: Benralizumab; Biologics; Malignancy; Real-world; Severe asthma.

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Conflict of interest statement

Declarations. Conflict of Interest: Eileen O. Dareng, Trung N. Tran, Ryan Finch, Ulrika Emerath, Yulia Kurdyukova, Maria L. Jison, Lila Bahadori, Andrew Menzies-Gow, and Benjamin Emmanuel are employed by AstraZeneca and may own stock or stock options. Lynda Olinger was contracted by AstraZeneca at the time of study. Hannah Urbanski was an employee of AstraZeneca at the time of the study. Eileen Wang has received honoraria from AstraZeneca, GlaxoSmithKline, Amgen, and Genentech. Elisabeth H. Bel has received funding from AstraZeneca. Luis Perez de Llano received grant/research support from AstraZeneca, Chiesi, Sanofi, Menarini; honoraria for speaker's bureau from AstraZeneca, GSK, Sanofi, FAES; honoraria for advisory boards from AstraZeneca, Sanofi, GSK, Chiesi, FAES; and non-financial support from AstraZeneca, GSK, Sanofi, GEBRO. Current affiliation details for Elisabeth H. Bel: Department of Medical Decision Making, Leiden University Medical Center, Leiden, Netherlands. **Ethical Approval:** This study was conducted in accordance with International Society for Pharmacoepidemiology (ISPE; 2015) Guidelines for Good Epidemiology Practices and applicable regulatory requirements, including European Medicines Agency (EMA) Guideline on Good Pharmacovigilance Practices: Module VIII – Post-Authorization Safety Studies (EMA, 2016). The individual registries involved in ISAR all received Institutional Review Board (IRB) or Ethics Committee approval for data collection. All data collection sites in ISAR obtained regulatory agreement in compliance with specific data transfer laws, country-specific legislation, and relevant ethical boards and organizations. The ISAR database has ethical approval from the Anonymous Data Ethics Protocols and Transparency (ADEPT) committee (ADEPT0218) and is registered with the European Union Electronic Register of Post-Authorization studies (ENCEPP/DSPP/23720). Patients participating in ISAR provided informed consent. The CHRONICLE registry also received IRB approval (Advarra, Columbia, MD, 3 November 2017). Patients participating in CHRONICLE had to provide written informed consent to participate. ISAR is operated by Optimum Patient Care (OPC) and co-funded by OPC and AstraZeneca. As authors from AstraZeneca participated in this study and the study was approved by the ISAR Steering Committee, no additional permissions were needed to access and analyze the data. The

CHRONICLE severe asthma registry was sponsored by AstraZeneca; as authors from AstraZeneca participated in this study, no additional permissions were needed to access and analyze the data.

- [42 references](#)

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Cite

8

Review

J Intensive Care Med

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. 2026 Aug 27:8850666261466238.

doi: 10.1177/08850666261466238. Online ahead of print.

[Acute Severe Asthma in the Intensive Care Unit: From Bronchodilators to Extracorporeal Membrane Oxygenation](#)

[Parisa Abedi](#)¹, [Geoffrey Chupp](#)², [Gabriella Wilson](#)², [Sandra Zaeh](#)², [Astha Chichra](#)²

Affiliations Expand

- PMID: 42661321
- DOI: [10.1177/08850666261466238](#)

Abstract

Acute severe asthma exacerbations are life-threatening critical care emergencies characterized by profound airflow obstruction, respiratory acidosis, and risk for cardiopulmonary arrest. For the purposes of this review, the term 'acute severe asthma' is used to encompass what has variably been described as near-fatal asthma, status asthmaticus, and life-threatening asthma in the literature. Early recognition of impending respiratory failure, timely intubation and a stepwise approach to supportive interventions are critically important to minimize the risk of mortality and optimize outcomes. Initial treatment focuses on prompt initiation of medical therapies to stabilize ventilation and prevent progression to respiratory failure. If intubated, ventilatory strategies aimed at reducing dynamic hyperinflation

and auto-PEEP with permissive hypercapnia need to be considered. When conventional management fails or when barotrauma risk, acid base derangements or hypoxemia become life-threatening, venovenous extracorporeal membrane oxygenation (VV-ECMO) can be utilized as a bridge to recovery. Given its invasiveness, careful patient selection for VV-ECMO is essential. This review provides an overview of: 1) the pathophysiology of acute severe asthma exacerbations, 2) expert guidelines and 3) consensus on best practices for the optimal use of standard and adjunctive pharmacologic treatments and mechanical ventilation strategies, and 4) patient selection criteria for and the emerging role of VV-ECMO for the treatment of acute severe asthma.

Keywords: ECMO; asthma exacerbation; respiratory failure; severe asthma; status asthmaticus.

Supplementary info

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Cite

9

Nat Commun

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. 2026 Aug 28;17(1):9226.

doi: 10.1038/s41467-026-76948-9.

[CD97/ADGRE5 attenuates the induction of adaptive type 2 immune responses in allergic asthma](#)

[Gabriela Aust](#) ^{#1 2}, [Anna-Lena Hoh](#) ^{#1}, [Jehan Alladina](#) ^{3 4}, [Neal P Smith](#) ⁴, [Florian Höhna](#) ^{1 5}, [Bingyu Wang](#) ⁵, [Christiane Kerner](#) ¹, [Marita Wagner](#) ^{5 6}, [Knut Krohn](#) ⁷, [Arkadiusz Pierzchalski](#) ⁵, [Nele Häussler](#) ¹, [Alexandra Chloe Villani](#) ⁴, [Joselyn L Cho](#) ⁸, [Benjamin D Medoff](#) ^{3 4}, [Ana C Zenclussen](#) ^{5 9}, [Matthias Steinert](#) ¹, [Jörg Hamann](#) ¹⁰, [Marianne Quaas](#) ^{#1 11}, [Tobias Polte](#) ^{#12 13 14}

Affiliations Expand

- PMID: 42660929
- PMCID: [PMC13522487](#)

- DOI: [10.1038/s41467-026-76948-9](https://doi.org/10.1038/s41467-026-76948-9)

Abstract

Allergic asthma results from an uncontrolled type 2 immune response to inhaled allergens. Here, we investigate the function of CD97/ADGRE5, expressed in mouse and human immune and lung epithelial cells, in this disease. Female Cd97^{-/-} mice exhibit an exacerbated asthmatic phenotype across multiple models, primarily due to CD97 loss on immune cells. A single CD97 antibody treatment before allergen sensitization worsens allergic responses, highlighting a role for CD97 in early immune regulation. Post-sensitization, Cd97^{-/-} mice display higher frequencies of lung conventional type 2 and monocyte-derived dendritic cells (DCs). Allergen-pulsed Cd97^{-/-} bone marrow-derived DCs are more activated, promote enhanced proliferation and type 2 cytokine secretion by CD4⁺ OT-II cells, and induce stronger airway inflammation. Consistently, ADGRE5 expression is reduced in airway mucosa-derived mononuclear phagocyte subsets in human asthmatics after allergen-induced exacerbation. These results identify CD97 as an important regulator of DC-driven type 2 allergic responses and a potential target in asthma.

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Conflict of interest statement

Competing interests: The authors declare no competing interests.

- [71 references](#)
- [8 figures](#)

Supplementary info

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Cite

10

Editorial

Eur Respir J

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. 2026 Aug 27;68(2):2601038.

doi: 10.1183/13993003.01038-2026. Print 2026 Aug.

Attacking asthma - viruses and azithromycin: connecting the mechanistic dots

Vanessa M McDonald^{1 2 3}, **Peter G Gibson**^{1 2 3}

Affiliations Expand

- PMID: 42660614
- DOI: [10.1183/13993003.01038-2026](https://doi.org/10.1183/13993003.01038-2026)

No abstract available

Conflict of interest statement

Conflict of interest: V.M. McDonald has received honoraria for advisory boards and educational lectures from GSK, AstraZeneca and Sanofi in the past 3 years, has received research funds from the Australian National Health and Medical Research Council, the Medical Research Futures Fund, and GSK, and is president elect of the Thoracic Society of Australia and New Zealand. P.G. Gibson has received honoraria for advisory boards and educational lectures from GSK, AstraZeneca, Orion, Aer Therapeutics and Sanofi in the past 3 years, and has received research funds from the Australian National Health and Medical Research Council, the Medical Research Futures Fund, and GSK.

Comment on

- [**Azithromycin enhances epithelial antiviral immunity in uncontrolled asthma: results from the AZIMUNE randomised controlled trial.**](#)

Ghanizada M, Malm Tillgren S, Menzel M, Praeger-Jahnsen L, Said NM, Ditlev S, Sverrild A, Porsbjerg C, Uller L, Lapperre T; AZIMUNE Study Group. Eur Respir J. 2026 Aug 27;68(2):2502441. doi: 10.1183/13993003.02441-2025. Print 2026 Aug. PMID: 42097684 Free PMC article. Clinical Trial.

Supplementary info

Publication typesExpand

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Cite

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Respir Med

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. 2026 Aug 27:109127.

doi: 10.1016/j.rmed.2026.109127. Online ahead of print.

Adherence To Inhaled Treatment Is Associated With Better Disease Control And Quality Of Life In Mild-To-Moderate Asthma

Nicola Scichilone¹, Giulia Genduso², Diego Bagnasco³, Alessandro Barone⁴, Salvatore Battaglia², Alida Benfante², Benedetta Bondi³, Matteo Bonini⁵, Luisa Brussino⁶, Giovanna Elisiana Carpagnano⁷, Cristiano Caruso⁸, Francesca Cefaloni⁹, Miriam De Francesco¹⁰, Stefano Del Giacco¹¹, Alessandro Farsi¹², Sebastian Ferri¹³, Laura Franceschini¹², Manuela Latorre¹⁰, Francesca Puggioni¹⁴, Vitaliano Nicola Quaranta⁶, Erminia Ridolo⁴, Pierachille Santus¹⁵, Fabio Selvi⁹, Paolo Serra¹⁶, Antonio Spanevello¹⁷, Alessandra Tomasello², Martina Zappa¹⁸, Francesco Blasi¹⁹, Pierluigi Paggiaro²⁰, Giorgio Walter Canonica¹⁴, Fulvio Braidò³

Affiliations Expand

- PMID: 42660367
- DOI: [10.1016/j.rmed.2026.109127](https://doi.org/10.1016/j.rmed.2026.109127)

Abstract

Background: Asthma is a common chronic disease worldwide, with most patients presenting with mild to moderate forms. Poor adherence to inhaled therapy is a recognized determinant of worse outcomes in chronic respiratory diseases. The aim of this study was to evaluate adherence to inhaled medications in a large cohort of adults with mild to moderate asthma and identify factors associated with suboptimal adherence.

Methods: This cross-sectional real-world study analyzed data from the Mild-Moderate Asthma Network of Italy (MANI) database. Adult patients (≥18 years) with a confirmed diagnosis of asthma according to Global Initiative for Asthma (GINA) criteria were eligible. Data from the first visit in which the Test of Adherence to Inhalers (TAI) questionnaire was available were extracted. Patient-reported outcomes included the Asthma Control Test (ACT), the Asthma Quality of Life Questionnaire (AQLQ), and TAI adherence categories. Patients were classified into three classes according to TAI score as follows: adherents (score ≥50), intermediate adherents (score 46-49), and non-adherents (score <46).

Results: A total of 832 patients were included. Adherent patients were older than intermediate and non-adherent subjects ($p < 0.001$). Current smoking was less frequent among adherent patients (11% vs 16%). Type 2 diabetes and anxiety were more prevalent among non-adherent individuals (5.3% vs 0.8% and 1.8%, $p = 0.014$; 10.7% vs 7.1% and 3.8%, $p = 0.003$, respectively). Higher adherence levels were associated with better asthma control ($\chi^2(2) = 47.706$, $p < 0.001$) and quality of life ($\chi^2(2) = 42.068$, $p < 0.001$).

Conclusion: In adults with mild to moderate asthma, better adherence to inhaled therapy is associated with improved disease control and quality of life. Demographic factors, smoking status, and comorbidities may influence adherence behaviors. Routine assessment of adherence and targeted interventions addressing modifiable barriers may improve outcomes in this large asthma population.

Keywords: Asthma; Asthma Control; Inhaled Therapy; Medication Adherence; Mild-to-Moderate Asthma.

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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.

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12

J Allergy Clin Immunol Pract

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. 2026 Aug 27:S2213-2198(26)00711-7.

doi: 10.1016/j.jaip.2026.08.025. Online ahead of print.

[Long-term prognosis of work-related asthma after specific inhalation challenge](#)

[Hille Suojalehto](#)¹, [Jussi Lantto](#)², [Ollipekka Kailari](#)³, [Johanna Vanhatalo](#)⁴, [Toni Jämsänen](#)⁵, [Johanna Joensuu](#)⁶, [Pauliina Toivio](#)⁷, [Irmeli Lindström](#)⁸

Affiliations Expand

- PMID: 42660225
- DOI: [10.1016/j.jaip.2026.08.025](#)

Abstract

Background: Few studies have assessed the long-term prognosis of work-related asthma (WRA).

Objective: We evaluated outcomes in WRA patients after specific inhalation challenge (SIC), including remission rates and factors associated with poor outcomes. Cases with positive SIC were diagnosed as occupational asthma.

Methods: A follow-up questionnaire was sent to 618 WRA patients. Difficult-to-treat asthma was defined as poor symptom control, ≥ 2 asthma exacerbations or ≥ 1 serious exacerbation within a year despite treatment with GINA step 4-5 asthma medication. Clinical asthma remission off-treatment was defined as no symptoms, exacerbations or medication within a year.

Results: Altogether 274 (44%) WRA patients responded a median of 8.5 years after SIC; 110 had positive and 164 negative SIC reaction. Among responders, 216 (79%) reported no current exposure to the suspected causal agent, and 173 (75%) of working-aged patients reported being in work life. Seventy (67%) SIC positive and 75 (47%) SIC negative patients had changed their occupations ($p=0.002$). Eighty-seven (32%) had difficult-to-treat asthma and 12 (4%) had clinical asthma remission off-treatment, with no significant differences between SIC positive and negative groups. Factors predicting difficult-to-treat asthma at follow-up included age ≥ 45.8 years (adjusted OR 2.10, 95% CI 1.19-3.70), Asthma control test score < 20 (OR 2.02, 1.13-3.61), GINA step 4-5 medication (OR 3.10, 1.68-5.71), and difficult-to-treat asthma (OR 5.73, 2.66 - 12.35) at diagnosis.

Conclusion: Long-term outcomes are largely comparable in WRA patients regardless of SIC results. Clinical asthma remission is rare. The patients with poorly controlled asthma at diagnosis require close follow-up and support.

Keywords: Difficult-to-treat asthma; occupational asthma; prognosis; specific inhalation challenge; work-exacerbated asthma; work-related asthma.

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13

Review

Allergy

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. 2026 Aug 27.

doi: 10.1111/all.70468. Online ahead of print.

[Targeting Airway Remodeling in Severe Asthma: Is There a Window of Opportunity for Biologic Therapy Predicting Effects Using Causal Artificial Intelligence?](#)

[Sebastiano Gangemi](#)¹, [Sara Manti](#)², [Johann Christian Virchow](#)³, [Giorgio Walter Canonica](#)^{4 5}

Affiliations Expand

- PMID: 42657969
- DOI: [10.1111/all.70468](#)

Abstract

Airway remodeling is increasingly recognized as a major determinant of asthma progression, fixed airflow limitation, and long-term morbidity, particularly in severe disease. Although biologic therapies have transformed outcomes by reducing exacerbations and systemic corticosteroid exposure, their potential to modify structural airway trajectories-and whether a time-sensitive "window of opportunity" exists-remains uncertain. Here, we provide a progressive landscape integrating mechanistic remodeling pathways with measurable structural readouts (biopsy-derived indices and quantitative imaging) and emerging digital biomarkers derived from connected respiratory technologies. We propose an operational framework linking mechanism → biomarker → remodeling readout → timing decision, and we outline a 1-, 3-, and 5-year research roadmap in which advanced artificial intelligence (AI) methods (multimodal learning, causal inference, federated learning, and digital-twin architectures) evolve in parallel with wearable and smart-inhaler ecosystems. This landscape aims to standardize endpoints, sharpen trial design, and accelerate a shift from symptom control toward credible disease modification in severe asthma.

Keywords: airway remodeling; causal inference; digital biomarkers; disease modification; severe asthma.

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- [95 references](#)

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14

Allergy

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. 2026 Aug 26.

doi: 10.1111/all.70491. Online ahead of print.

Mepolizumab Modifies Blood Eosinophil Proteome and Transcriptome in Severe Eosinophilic Asthma

Pablo Miguéns-Suárez^{1 2}, Sara Vázquez-Mera^{1 2 3}, Laura Martelo-Vidal^{1 2}, Marina Blanco Aparicio⁴, Uxío Calvo Álvarez⁵, Coral González Fernández⁶, Mar Mosteiro Añón⁷, Dolores Corbacho Abelaira⁸, Tamara Hermida Valverde⁹, Christian Calvo Henríquez¹⁰, Susana B Bravo¹¹, Lena Uller³, Juan J Nieto-Fontarigo^{1 2 12}, Francisco J Salgado^{1 2 12}, Francisco J González-Barcala^{1 5 13}

Affiliations Expand

- PMID: 42655930
- DOI: [10.1111/all.70491](https://doi.org/10.1111/all.70491)

Abstract

Background: Mepolizumab, an anti-IL5 monoclonal antibody, effectively reduces exacerbations and improves disease control in severe eosinophilic asthma (SEA). While this treatment rapidly decreases blood eosinophil counts, some patients continue to experience asthma symptoms, suggesting that other features beyond eosinophil number contribute to disease persistence. In this work, we aim to characterize the molecular and functional signature of circulating eosinophils in SEA in response to mepolizumab therapy.

Methods: We performed proteomic (LC-MS/MS) and targeted transcriptomic (Nanostring) analyses on isolated blood eosinophils from healthy individuals and SEA patients at baseline and after 4, 16 and 32 weeks of treatment with mepolizumab. Western blot was used to validate selected genes and proteins.

Results: Eosinophils from healthy donors and post-treatment SEA patients exhibit lower levels of proteins related to cytoskeleton (e.g., GSN, DBNL, ARPC2 and ARPC3), suggesting a lower potential for migration and tissue extravasation. Several proteins (e.g., EPX and NCF2) and genes (e.g., CCL23 and SOCS3) directly involved in eosinophil effector functions, including ROS generation and degranulation, were significantly downregulated after mepolizumab treatment. The downregulation of GSN (actin-binding protein), NCF2 (subunit of the NADPH oxidase complex) and EPX (eosinophil-specific granule protein), was further validated by western blot.

Conclusions: Our multi-omic analysis suggests that mepolizumab reduces the migratory capacity and effector-related molecular signatures of circulating

eosinophils in SEA patients. Selected proteins, including GSN, NCF2 and EPX, may serve as candidate biomarkers for monitoring response to therapy.

Keywords: biological therapy; biomarkers; gene expression profiling; inflammation; proteomics.

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- [51 references](#)

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15

Allergy

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. 2026 Aug 26.

doi: 10.1111/all.70499. Online ahead of print.

[Revisiting Platelet-Activating Factor in Asthma: An Exploratory Metabolomics Analysis of PAF C-18:1 and Type 2 Inflammation](#)

[Noeul Kang¹](#), [Young Jin Pyung²](#), [Deog Kyeom Kim³](#), [Cheol-Heui Yun²](#), [Hyun Woo Lee³](#)

Affiliations Expand

- PMID: 42647091
- DOI: [10.1111/all.70499](#)

No abstract available

Supplementary info

Publication types, Grants and fundingExpand

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Cite

16

Expert Rev Respir Med

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. 2026 Aug 27:1-13.

doi: 10.1080/17476348.2026.2725279. Online ahead of print.

[Early-life respiratory infections and their association with chronic lung disease: an expert perspective](#)

[Susanna Esposito](#)¹, [Valentina Fainardi](#)¹, [Nicola Principi](#)²

Affiliations Expand

- PMID: 42644711
- DOI: [10.1080/17476348.2026.2725279](https://doi.org/10.1080/17476348.2026.2725279)

Abstract

Introduction: Early-life respiratory infections may disrupt lung development during critical fetal, neonatal, and infant windows, when alveolarization, airway and vascular maturation, and immune programming remain active, potentially causing effects beyond the acute illness.

Areas covered: This narrative review examines prenatal and postnatal respiratory infections and long-term respiratory outcomes, with emphasis on chorioamnionitis, fetal inflammatory responses, bronchopulmonary dysplasia, respiratory syncytial virus, and other pathogens. Literature was identified through targeted searches of biomedical databases and reference lists using terms related to early-life infection, lung development, bronchopulmonary dysplasia, wheeze, asthma, lung function, COPD, and respiratory mortality. Priority was given to systematic reviews, meta-analyses, longitudinal cohorts, mechanistic studies, and relevant reports. Proposed pathways include impaired alveolar and vascular growth, epithelial injury, immune dysregulation, trained immunity, airway remodeling, and reduced peak lung function. Epidemiological evidence linking early lower respiratory tract infection with recurrent wheeze, asthma, impaired lung function, COPD-like trajectories, and respiratory mortality is appraised.

Expert opinion: Early respiratory infections likely contribute to chronic morbidity through interactions among pathogen, timing, host susceptibility, prematurity, and

environmental exposures. Causality remains difficult to establish. Newly available respiratory syncytial virus prevention strategies may clarify whether preventing severe infection improves long-term lung health. Standardized outcomes and longitudinal follow-up are essential.

Keywords: Early-life respiratory infections; asthma; bronchopulmonary dysplasia; chronic obstructive pulmonary disease; lung development; respiratory syncytial virus.

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Cite

17

Expert Opin Biol Ther

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. 2026 Aug 26:1-16.

doi: 10.1080/14712598.2026.2719891. Online ahead of print.

[Dupilumab versus omalizumab in chronic rhinosinusitis with nasal polyps and asthma: a plain language summary](#)

[Eugenio De Corso](#)¹, [Hannah Jaffee](#)², [Xander Bertels](#)³, [Victor Gascon Moreno](#)⁴, [Mitchell Silva](#)⁵

Affiliations Expand

- PMID: 42644458
- DOI: [10.1080/14712598.2026.2719891](https://doi.org/10.1080/14712598.2026.2719891)

Free article

No abstract available

Keywords: Plain language summary; asthma; chronic rhinosinusitis with nasal polyps; dupilumab; omalizumab; quality of life; symptoms.

Plain language summary

What is this summary about? People with chronic rhinosinusitis with nasal polyps (CRSwNP) have symptoms like a stuffy and runny nose, difficulty breathing through their nose, and loss of sense of smell. This negatively affects their quality

of life. People with asthma have symptoms in their lower airways like coughing, wheezing, shortness of breath, and tightness in the chest. Around two out of every three people with CRSwNP also have asthma and are more likely to have severe nasal symptoms. Dupilumab and omalizumab are two medicines that are approved for treatment of CRSwNP and asthma. Severe CRSwNP is when the symptoms do not get better with nasal steroids or other treatments. EVEREST was a clinical study that assessed how well dupilumab works compared with omalizumab to improve symptoms for people with severe CRSwNP and asthma. What were the main results of the EVEREST study? Six months of dupilumab treatment improved people's sense of smell, nasal congestion, and overall symptoms more than omalizumab. The nasal polyps of people who took dupilumab shrank more than in people who took omalizumab. Dupilumab improved lung function and quality of life more than omalizumab. What do the results of the EVEREST study mean? In patients with severe CRSwNP and coexisting asthma, dupilumab improved symptoms and other measures of CRSwNP (in the upper airways) over 6 months compared with omalizumab. Additional findings suggested that dupilumab could potentially improve asthma symptoms (lower airways) in a population with CRSwNP and asthma compared with omalizumab. This supports the practice that the nose, sinuses, and lungs should be treated together as part of one airway system. Similar numbers of patients had side effects with each medicine. This is the first time that dupilumab and omalizumab have been directly compared in a clinical study of people who have both CRSwNP and asthma. Clinical trial number: [NCT04998604](https://clinicaltrials.gov/ct2/show/study/NCT04998604) (Phase 4 EVEREST study).

Supplementary info

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Cite

18

Review

J Allergy Clin Immunol Pract

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. 2026 Aug 25:S2213-2198(26)00701-4.

doi: 10.1016/j.jaip.2026.08.021. Online ahead of print.

Identifying and addressing problematic studies in allergy and asthma research: a commentary

[Alexandro W L Chu¹](#), [Gordon H Guyatt²](#), [Jason W Busse³](#), [Romina Brignardello-Petersen⁴](#), [Xiajing Chu⁵](#), [Daniel G Rayner⁶](#), [Paul Oykhman⁷](#), [Vanessa Wong⁷](#), [Yetiani Roldan⁷](#), [Diane R Baker⁸](#), [Leonard B Bacharier⁹](#), [Lisa A Beck¹⁰](#), [Moshe Ben-Shoshan¹¹](#), [Bradley Chipps¹²](#), [Flavia Hoyte¹³](#), [Elliot Israel¹⁴](#), [David M Lang¹⁵](#), [Sameer K Mathur¹⁶](#), [Sharmilee M Nyenhuis¹⁷](#), [Paul M O'Byrne¹⁸](#), [Eric T Oliver¹⁹](#), [John Oppenheimer²⁰](#), [Tamara T Perry²¹](#), [Katherine Rivera-Spoljaric²²](#), [Sarbjit S Saini¹⁹](#), [Javed Sheikh²³](#), [Kaharu Sumino²²](#), [Susan Wasserman¹⁸](#), [Elissa M Abrams²⁴](#), [Aikaterini Anagnostou²⁵](#), [Jonathan A Bernstein²⁶](#), [Anne K Ellis²⁷](#), [David B K Golden¹⁹](#), [Caroline C Horner²⁸](#), [Dennis K Ledford²⁹](#), [Jay Lieberman³⁰](#), [Giselle Mosnaim³¹](#), [Matthew A Rank³²](#), [Marcus Shaker³³](#), [Julie Wang³⁴](#), [David A Khan³⁵](#), [Derek K Chu³⁶](#)

Affiliations Expand

- PMID: 42641984
- DOI: [10.1016/j.jaip.2026.08.021](https://doi.org/10.1016/j.jaip.2026.08.021)

Abstract

Randomized controlled trials (RCTs) underpin evidence-based medicine, but a growing proportion of trials contain implausible, inaccurate, or fabricated data. When such studies are incorporated into systematic reviews, they distort effects estimates, inflate evidence certainty, and can mislead the guideline recommendations that the reviews aim to inform. Within eight recent American Academy of Allergy, Asthma & Immunology (AAAAI) and American College of Allergy, Asthma and Immunology (ACAAI) Joint Task Force on Practice Parameters (JTFPP) systematic reviews, 17% of trials published between 2021-2024 were problematic, and in a network meta-analysis of antihistamines for chronic urticaria, 39% of recent trials were excluded due to implausible data, statistical anomalies, and discrepancies between protocols and the final publication. The proliferation of generative AI further facilitates the ability to produce superficially credible, but flawed reports. Standardized tools have been developed to offer systematic approaches to detecting problematic trials, but robust safeguards such as verifiable ethics approval, prospective protocol registration, and adherence to structure reporting guidelines remain essential. As part of efforts to ensure quality research, the JTFPP will continue to update our systematic reviews to remove problematic trials as they are identified. We believe that this approach will promote the development of trustworthy guideline recommendations.

Keywords: GRADE; asthma; evidence-based medicine; generative artificial intelligence; guideline; meta-analysis; problematic trials; randomized controlled trial; research integrity; systematic review; urticaria.

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Cite

19

Lancet Respir Med

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. 2026 Aug 25:S2213-2600(26)00255-9.

doi: 10.1016/S2213-2600(26)00255-9. Online ahead of print.

[Identifying the residual unmet need in severe asthma](#)

[Jessica Gates](#)¹, [Joanne E Kavanagh](#)², [Grainne d'Ancona](#)³, [Jaideep Dhariwal](#)³, [Alexandra M Nanzer](#)¹, [David J Jackson](#)⁴

Affiliations Expand

- PMID: 42641640
- DOI: [10.1016/S2213-2600\(26\)00255-9](#)

No abstract available

Conflict of interest statement

Gd'A reports honoraria for lectures from AstraZeneca, GSK, and Sanofi. DJJ reports research grants from AstraZeneca and GSK; consulting fees from AstraZeneca, GSK, Windward Bio, and Upstream Bio; and payments or honoraria for lectures and educational events from AstraZeneca and GSK. JG, JEK, JD, and AMN report no competing interests.

Supplementary info

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. 2026 Aug 25:aamag441.

doi: 10.1093/ajrccm/aamag441. Online ahead of print.

[Impact of a Large-Scale Mold Intervention in Public Housing on Asthma Emergency Department Visits](#)

[Nina M Flores](#)^{1,2}, [Joan A Casey](#)³, [Stephanie Lovinsky-Desir](#)^{1,4}, [Ariel Spira-Cohen](#)⁵, [Sybille Louis](#)⁶, [Sarah Walters](#)⁷, [Maureen Little](#)⁵, [Jungang Zou](#)⁸, [Kara E Rudolph](#)⁹, [Diana Hernández](#)^{10,11}, [Qixuan Chen](#)⁸, [Matthew S Perzanowski](#)¹

Affiliations Expand

- PMID: 42640496
- DOI: [10.1093/ajrccm/aamag441](#)

Abstract

Rationale: Over 300,000 predominantly Black, Hispanic, and low-income NYC residents live in New York City Housing Authority (NYCHA) buildings. For decades, NYCHA residents have experienced both frequent mold complaints and substantial asthma burden. In 2019, NYCHA implemented 'Mold Busters,' an evidence-based, authority-wide program to reduce mold in their buildings.

Objectives: To test the hypothesis that the 'Mold Busters' intervention reduced asthma-related emergency department (ED) visits for NYCHA residents.

Methods: We obtained 2016-2023, building-level asthma-related ED visit data among NYCHA residents and a 'Mold Busters' unexposed group living in proximate, non-NYCHA lower-income census tracts. We assessed the impact of 'Mold Busters' using doubly robust differences-in-differences analyses. We incorporated mold report, extreme precipitation, building, and neighborhood data to assess intervention efficacy.

Measurements and main results: 'Mold Busters' was associated with an average annual reduction of 7.2 (95% CI: -9.6, -4.8) asthma-related ED visits per 1,000 residents, translating to 2,200 fewer annual visits from 2022-2023 (19% lower than expected). Mold reports decreased post-'Mold Busters,' but still increased following extreme precipitation events. Among buildings with the largest decreases in mold reports post-intervention, reductions in visit rates were as large as 12.0 (-16.9, -7.0) per 1,000 residents. Results were stronger among adults than children and in spring and winter months than in other months.

Conclusions: To our knowledge, this is the first large-scale observational study to demonstrate that a city-wide mold intervention in public housing substantially reduced asthma ED visits. Housing interventions on asthma triggers could play a critical role in reducing longstanding asthma disparities.

Subject categories: 2.11, 1.15, 6.01, 6.20, 1.17.

Keywords: Asthma; Environmental Remediation; Housing; Indoor Air Pollution; Mold.

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21

ERJ Open Res

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. 2026 Aug 24;12(4):00191-2026.

doi: 10.1183/23120541.00191-2026. eCollection 2026 Jul.

[Airway epithelial transcriptional response to daily high-dose inhaled corticosteroids in asthma](#)

[Mandy Menzel](#)^{1 2 3 4}, [Laurits Frøssing](#)², [Asger Sverrild](#)^{2 4}, [Lena Uller](#)¹, [Celeste Porsbjerg](#)^{2 4}, [Morten Hvidtfeldt](#)²

Affiliations Expand

- PMID: 42639399
- PMCID: [PMC13501452](#)
- DOI: [10.1183/23120541.00191-2026](#)

Abstract

Rationale: Inhaled corticosteroids are the cornerstone of asthma treatment, yet the epithelial pathways mediating their anti-inflammatory effects and their relationship

to clinical traits remain incompletely understood. The objective of the present study was to investigate airway epithelial transcriptomic changes in steroid-free patients with asthma following treatment with high-dose inhaled corticosteroids.

Methods: Bronchial brushings from 20 steroid-free patients with asthma were obtained during bronchoscopy before and after 6 weeks of high-dose budesonide treatment, and mRNA-sequencing was performed. Airway epithelial gene expression was analysed by weighted gene co-expression network analysis (WGCNA) to identify gene networks and profiles associated with inhaled corticosteroid treatment response.

Results: Four steroid-response clusters were identified; one metabolic cluster related to oxidative phosphorylation, which was upregulated, and three immunological clusters associated with T-cell activation and immune cell and mast cell responses, where gene expression was downregulated following inhaled corticosteroid treatment.

Conclusions: In steroid-free patients with asthma, inhaled corticosteroids modulate airway epithelial gene networks by enhancing oxidative phosphorylation and suppressing immune and mast cell pathways. Baseline clinical traits predicted the strength of these responses, suggesting potential biomarkers for stratifying treatment with inhaled corticosteroids in asthma.

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Conflict of interest statement

Conflict of interest: The authors declare no conflict of interest.

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

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22

ERJ Open Res

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. 2026 Aug 24;12(4):01399-2025.

doi: 10.1183/23120541.01399-2025. eCollection 2026 Jul.

Nurse-led care for children with asthma in primary care: results of a randomised controlled trial

Sara Bousema¹, Arthur M Bohnen¹, Dimitris Rizopoulos², Mariëlle W Pijnenburg³, Patrick J E Bindels¹, Gijs Elshout¹

Affiliations Expand

- PMID: 42639026
- PMCID: [PMC13501438](#)
- DOI: [10.1183/23120541.01399-2025](#)

Abstract

Background: Asthma is the most common chronic illness among children in primary care, causing a significant burden. While nurse-led care has proven effective in secondary and tertiary care, its impact in primary care remains unclear. The aim of the present study was to evaluate the effectiveness of protocolled nurse-led care (PC) *versus* usual care (UC) on asthma control in children with asthma in primary care.

Methods: This was a cluster randomised controlled trial with 18 months' follow-up including children aged 6-12 years with asthma in primary care. Children prescribed inhaled corticosteroids (ICS) at least once, or at least two short-acting β -agonist (SABA) prescriptions, or had at least one SABA prescription combined with an International Classification of Primary Care code for asthma or bronchial spasm within the past year were eligible for inclusion. Clusters were randomised to PC or UC. The primary outcome was change in Childhood Asthma Control Test (C-ACT) scores. Secondary outcomes included uncontrolled asthma rates, quality of life, exacerbations, spirometry and care satisfaction.

Results: 49 practices enrolled 90 patients (63.3% male, mean age 9.6 years, median C-ACT 23 (interquartile range 5.0)). 51 children received PC and 39 UC. C-ACT scores were consistently higher in the PC group, with significant differences at 6 (p=0.044), 12 (p=0.031) and 18 months (p=0.045). Median nurse review visits were 2 (range 0-6) per child.

Conclusion: PC significantly improves asthma control in children aged 6-12 years in primary care, with a feasible number of nurse visits.

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Conflict of interest statement

Conflict of interest: The authors have nothing to disclose.

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

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Cite

23

Eur J Intern Med

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. 2026 Aug 24:107156.

doi: 10.1016/j.ejim.2026.107156. Online ahead of print.

[Steroid-sparing biologics in severe asthma and chronic obstructive pulmonary disease: a systematic review, cross-disease meta-analysis, and translational estimate of corticosteroid-related harm prevented](#)

[Pier-Valerio Mari](#)¹, [Lorenzo Carriera](#)², [Angelo Coppola](#)³, [Davide Onofrio Fontana](#)⁴, [Simone Ielo](#)⁵, [Alberto Ricci](#)⁶, [Veronica Ojetti](#)⁷, [Umberto Semenzato](#)⁸, [Francesco Menzella](#)⁹, [Stefano Baglioni](#)¹⁰, [Cecilia Becattini](#)¹¹, [Eugenio De Corso](#)¹²

Affiliations Expand

- PMID: 42637632
- DOI: [10.1016/j.ejim.2026.107156](#)

Abstract

Background: Oral corticosteroids (OCS) remain widely used in uncontrolled severe asthma and frequently exacerbating chronic obstructive pulmonary disease (COPD), but cumulative exposure is associated with dose-dependent cardiovascular, metabolic, skeletal and infectious harm. Type-2 biologics may reduce OCS burden, although their clinical impact across asthma and COPD remains incompletely defined.

Methods: We conducted a PRISMA 2020 systematic review of MEDLINE, Embase, Cochrane Central Register. Eligible studies were randomized, placebo-controlled trials of monoclonal antibodies in adults with OCS-dependent severe asthma or moderate-to-severe COPD with documented OCS exposure. Risk of bias was assessed using RoB 2. Random-effects models estimated the odds ratio (OR) for achieving $\geq 50\%$ maintenance OCS reduction in asthma and the rate ratio (RR) for moderate-to-severe exacerbations in both diseases, with disease as a pre-specified moderator. A translational module applied the 42% cumulative OCS reduction

observed in the BOREAS/NOTUS COPD severe-exacerbation subgroup to dose-response hazard ratios from six pharmacoepidemiologic cohorts to estimate OCS-attributable adverse-event NNTs.

Results: Twenty-three studies were included. In severe asthma, biologics increased the odds of $\geq 50\%$ maintenance OCS reduction (OR 2.99, 95% CI 2.11-4.25; $I^2=0\%$; four trials, $n = 615$). Exacerbation reduction favoured biologics in both diseases, but was greater in asthma than COPD (asthma RR 0.38, 95% CI 0.23-0.65; COPD RR 0.78, 95% CI 0.69-0.88; $p = 0.0001$). In COPD, translated NNTs were lowest for serious infection, pneumonia and osteoporotic fracture.

Conclusions: Biologics provide robust OCS sparing in severe asthma and smaller but significant exacerbation reduction in COPD, with potential downstream harm reduction in high-burden COPD.

Keywords: Biologic therapy; Chronic obstructive pulmonary disease; Meta-analysis; Oral corticosteroids; Severe asthma; Steroid-sparing.

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Conflict of interest statement

Declaration of competing interest None.

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Cite

24

Editorial

J Allergy Clin Immunol

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. 2026 Aug 24:S0091-6749(26)00591-9.

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[Macrolides: An Old Antibiotic with New Ambitions in Asthma](#)

[Merritt L Fajt¹](#)

Affiliations Expand

- PMID: 42637151

- DOI: [10.1016/j.jaci.2026.08.010](https://doi.org/10.1016/j.jaci.2026.08.010)

No abstract available

Keywords: Anti-inflammatory therapy; Asthma exacerbations; Macrolides; Severe asthma; Systematic review and meta-analysis.

Supplementary info

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Cite

25

Review

J Allergy Clin Immunol Pract

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. 2026 Aug 24:S2213-2198(26)00700-2.

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[Identifying and using a credible network meta-analysis in allergy, asthma, and immunology: a clinician's guide](#)

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Affiliations Expand

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Abstract

Network meta-analyses (NMA) are an increasingly popular method in allergy, asthma, and immunology to inform comparative effectiveness among competing treatment options. They enable comparisons among treatments when no direct comparisons (i.e., head-to-head randomized control trials) exist and strengthen inferences among direct comparisons by incorporating data from indirect comparisons. To inform optimal decision-making, allergy, asthma, and immunology clinicians, peer-reviewers, journal editors, and policymakers must understand the fundamentals of how to assess NMA credibility. Through worked examples supporting AAAAI/ACAAI Task Force on Practice Parameters guidelines, we summarize the process of conducting an NMA and how to interpret results to inform clinical decision-making.

Keywords: multiple comparisons; network meta-analysis; systematic review.

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26

J Autoimmun

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[Rheumatoid factor is associated with systemic relapse in eosinophilic granulomatosis with polyangiitis](#)

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Affiliations Expand

- PMID: 42636651
- DOI: [10.1016/j.jaut.2026.103613](#)

Abstract

Systemic relapse remains a major cause of morbidity in eosinophilic granulomatosis with polyangiitis (EGPA), but widely available prognostic markers are lacking. We retrospectively assessed 83 EGPA patients with rheumatoid factor (RF) tested at diagnosis. Systemic relapse was defined as new or worsening systemic disease activity and treatment escalation, excluding isolated asthma and rhinosinusitis exacerbations. RF-positive patients (45.8%) had higher C-reactive protein levels, more frequent mononeuritis multiplex, and more frequent systemic relapses (39.5% vs. 2.2%, $q = 0.002$). In the penalised Cox analysis, RF positivity was associated with shorter time to systemic relapse (HR 10.05, 95% CI 2.43-92.57; $p < 0.001$) and remained associated after adjustment for MPO-ANCA and treatment intensity. RF positivity may support closer surveillance in EGPA.

Keywords: Eosinophilic granulomatosis with polyangiitis; Prognostic biomarkers; Rheumatoid factor; Risk stratification; Systemic relapse.

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Conflict of interest statement

Declaration of competing interests 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.

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27

Review

Pulm Ther

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[Bridging the Knowledge Gap: Transforming COPD Management Through Lessons from Asthma](#)

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Affiliations Expand

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- DOI: [10.1007/s41030-026-00376-9](https://doi.org/10.1007/s41030-026-00376-9)

Free article

Abstract

Introduction: Advances in asthma immunopathology and the integration of biologic therapies have reshaped clinical practice, and in turn have impacted diagnosis, phenotyping, monitoring, and care organization. Given the persistent burden of chronic obstructive pulmonary disease (COPD), transferring these strategies may facilitate the implementation of precision medicine in COPD. The BRIDGE project, an educational initiative involving seven pulmonologists, aimed to identify key learnings from asthma that could support the incorporation of immunological insights and biologics into the management of COPD.

Methods: The expert panel conducted a structured review of current approaches to severe asthma, including biomarker-guided diagnosis, endotyping, treatment evaluation frameworks, and specialized clinical pathways. Through consensus-based discussions, the group analyzed which elements were adaptable to COPD and proposed recommendations to support their implementation.

Results: Experts agreed that several core principles of asthma management could significantly improve COPD care. Comprehensive phenotyping, supported by biomarkers such as blood eosinophils, FeNO, and IgE, along with computed tomography (CT) imaging to characterize mucus plugging and emphysema, was identified as essential. Treatment optimization should shift toward quantifiable therapeutic objectives, emphasizing exacerbations, corticosteroid use, dyspnea, and physical activity. Structured follow-up must rely on objective exacerbation recording, rescue medication use, lung function, and functional capacity. Organizational improvements should mirror the asthma model, including the development of specialized units, decentralization of biologic administration, and enhanced, multidisciplinary coordination. The remaining gaps include the need for standardized CT protocols, consensus definitions of uncontrolled exacerbator phenotypes, and a national registry to generate real-world evidence on biologics.

Conclusions: Experience gained from biologic therapy in asthma provides a robust framework for advancing precision medicine in COPD. Adopting rigorous diagnostic, therapeutic, and organizational strategies will facilitate the effective introduction of biologics and improve outcomes for patients with uncontrolled COPD despite conventional therapies.

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Conflict of interest statement

Declarations. Conflict of interest: Javier de Miguel-Díez has received grants and honoraria from Abbott, AstraZeneca, BIAL, Boehringer Ingelheim, Chiesi, FAES, Gebro, GSK, Janssen, Menarini, Novartis, Sanofi, Roche, Teva, Pfizer, and Zambón. Francisco Javier Callejas-González has received grants and honoraria from Astra

Zeneca, Gebro Pharma, GlaxoSmithKline, and Bial. Chiesi, Grifols, Sanofi Genzyme and Menarini. Cruz González-Villaescusa has received grants and honoraria from AstraZeneca, BIAL, Boehringer Ingelheim, Chiesi, FAES, Gebro, GSK, Menarini, Pari, Sanofi, Teva, Pfizer, and Zambón. Borja G. Cosío has received grants, travel support and speaker fees from AstraZeneca, BIAL, Chiesi, FAES, Gebro, GSK, Menarini, Sanofi, and Teva. Salud Santos has received grants, travel support and speaker fees from Ambú, AstraZeneca, BIAL, Chiesi, Gebro, GSK, Menarini, MSD, and Sanofi. Marina Blanco-Aparicio has received honoraria from AstraZeneca, Sanofi-Regeneron, GSK, Chiesi, BIAL, Vertex, Teva, Carlos Cabrera has received grants and honoraria from Astra Zeneca, Gebro Pharma, GlaxoSmithKline, Bial, Chiesi, Grifols, Sanofi Genzyme, Zambon, and Menarini. Sanofi has funded the BRIDGE project, and members of the steering committee have received honoraria for their contribution to the project, excluding this publication. The steering committee entirely drives the direction and content of the project. Ethical Approval: This article is based on previously conducted studies and does not contain any new studies with human participants or animals performed by any of the authors.

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28

Ann Am Thorac Soc

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. 2026 Aug 24:aaog258.

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[Epidemiology and Outcomes of Bronchiectasis in Alberta, Canada: A 15-Year Population-Based Study](#)

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Affiliations Expand

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- DOI: [10.1093/annalsats/aaoag258](https://doi.org/10.1093/annalsats/aaoag258)

Free article

Abstract

Rationale: Bronchiectasis is a chronic, progressive airway disease with rising global prevalence. However, no population-based epidemiologic study of adult bronchiectasis has been published from Canada, leaving the national burden, outcomes, and costs undefined.

Objectives: To determine the incidence, prevalence, mortality, health care utilization, and direct health care costs of bronchiectasis among adults in Alberta, overall and by airway disease phenotype.

Methods: We conducted a population-based retrospective cohort study (2010-2025) using linked Alberta provincial administrative health datasets. Adults (≥ 18 years) with bronchiectasis were identified using validated ICD-9/10 codes (ICD-10-CA J47; ICD-9 494), excluding cystic fibrosis. Patients were stratified by co-existing COPD or asthma. We estimated incidence, prevalence, health-care utilization, mortality, and direct health-care costs overall and by phenotype.

Results: We identified 12,169 adults with bronchiectasis (median age 65 years; 56% female). Prevalence increased to 311.6 per 100,000 adults in 2024, more than double that in 2010, while annual incidence remained stable at 25.1 (95% CI 24.4-25.7) per 100,000 adults. After age- and sex-standardization to the 2021 Canadian reference population, the standardized average annual incidence was 29.6 and the standardized 2024 prevalence was 433.2 (95% CI 426.3-440.2) per 100,000 adults. Bronchiectasis with comorbid COPD (27%) had the most severe outcomes, including high mortality (55% during follow-up; 17% within one year), the highest hospitalization rate (0.62 per person-year), and the greatest lifetime health-care costs (mean $\sim$ \$88,400 CAD). Bronchiectasis with comorbid asthma (13%) occurred in younger, predominantly female patients and was marked by frequent exacerbations (44%) but lower mortality (16%). Overall, patients experienced 0.42 hospital admissions per person-year and mean 5-year direct health-care costs exceeded \$36,000 CAD per patient.

Conclusions: In this first Canadian population-based study of adult bronchiectasis, prevalence more than doubled over 15 years despite stable incidence, indicating a growing chronic respiratory disease burden. Bronchiectasis was associated with substantial mortality, acute care use and direct health-care costs, with especially poor outcomes among those with COPD overlap. These findings provide foundational Canadian data to inform disease recognition with phenotype-specific management and future health-system planning.

Keywords: Bronchiectasis; Epidemiology; Exacerbations.

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29

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doi: 10.1111/cea.70421. Online ahead of print.

[Sitting Time and Physical Activity Correlate With Asthma Exacerbations in Adults: A Cross-Sectional Study From the Australasian Severe Asthma Network](#)

[Chang Yong Wang](#)^{1 2 3}, [Ji Wang](#)^{1 2 3}, [Peng Gao](#)⁴, [Wei Jie Zhang](#)⁵, [Min Xie](#)⁶, [Gang Liu](#)⁷, [Ling Qin](#)⁸, [Zhi Hong Chen](#)^{9 10}, [Dan Liu](#)^{1 2 3}, [Jie Zhang](#)⁴, [Feng Ming Luo](#)^{1 2 3}, [Wei Min Li](#)^{1 2 11}, [Gang Wang](#)^{1 2 3}, [Lisa G Wood](#)^{12 13 14}

Affiliations Expand

- PMID: 42633981
- DOI: [10.1111/cea.70421](#)

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30

Review

J Asthma

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. 2026 Aug 27:1-14.

doi: 10.1080/02770903.2026.2721176. Online ahead of print.

T2-low asthma: mechanistic pathways, biomarkers, and emerging therapeutic strategies

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Affiliations Expand

- PMID: 42619443
- DOI: [10.1080/02770903.2026.2721176](https://doi.org/10.1080/02770903.2026.2721176)

Abstract

Objective: To synthesize current definitions, mechanistic pathways, biomarker limitations, and evidence-graded therapeutic strategies for T2-low asthma as a heterogeneous clinical and translational construct.

This narrative review searched PubMed/MEDLINE, Embase, the Cochrane Library, and reference lists of key articles from database inception to June 2026. Peer-reviewed human studies, randomized trials, post hoc analyses, systematic reviews, meta-analyses, guidelines, severe-asthma registries, biomarker cohorts, and mechanistic asthma studies were prioritized. Preclinical studies were used only when human evidence was limited and were interpreted as hypothesis-generating.

Results: T2-low asthma is usually defined by low eosinophils, low fractional exhaled nitric oxide, and limited evidence of canonical type 2 inflammation, but this remains an exclusionary definition. The construct includes neutrophilic, paucigranulocytic, obesity-associated, exposure-related, infection-linked, bronchiectasis-overlap, and remodeling-dominant presentations. Candidate pathways include Th1/Th17 signaling, CXCL8/CXCR2-mediated neutrophil recruitment, inflammasome activation, IL-6-associated immunometabolic inflammation, epithelial alarmins, dysbiosis, and small-airway dysfunction. No positive biomarker currently identifies treatment-responsive T2-low asthma in routine practice. Management relies on diagnostic confirmation, optimized inhaled therapy, repeated phenotyping, treatable-traits care, and selected add-on options including tezepelumab, azithromycin, or bronchial thermoplasty in appropriate patients. A total of 63 references were synthesized in this review.

Conclusions: T2-low asthma is clinically important but mechanistically diverse. Progress requires validated positive biomarkers, harmonized phenotyping, and biomarker-enriched trials that test therapies in coherent subgroups without overstating readiness for routine care.

Keywords: IL-6; Non-eosinophilic inflammation; T2-low asthma; airway remodeling; alarmins; biomarkers; inflammasome; neutrophilic inflammation; paucigranulocytic asthma; severe asthma.

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Cite

31

J Asthma

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. 2026 Aug 25:1-13.

doi: 10.1080/02770903.2026.2721173. Online ahead of print.

[Real-world patient characteristics and treatment patterns in severe asthma: a retrospective cohort study from Poland \(POLSAR\)](#)

[Ewa Leszczyńska¹](#), [Szymon Drygała¹](#), [Tomasz Szostek¹](#), [Piotr Kuna²](#)

Affiliations Expand

- PMID: 42615845
- DOI: [10.1080/02770903.2026.2721173](#)

Free article

Abstract

Objective: Severe asthma (SA) is a heterogeneous, high-burden disease requiring intensified treatment and substantial healthcare resource use. However, real-world characterization of patients managed under restricted biologic access remains limited in Poland. This study described clinical and demographic characteristics of adults with SA in Polish specialist care.

Methods: This non-interventional, retrospective cohort study used anonymized data from the Polish Severe Asthma Registry (POLSAR), within the International Severe Asthma Registry (ISAR). Adults enrolled at a tertiary specialist center between

August 2013 and December 2024 were included. Baseline characteristics were assessed during the 12 months preceding ISAR enrollment.

Results: Overall, 503 adults were analyzed; 63.2% were female, mean age was 54 years, and mean asthma duration was 19.4 years. Disease control was poor: 97.2% were uncontrolled by GINA ($n = 72$), and 82.7% had ACQ ≥ 1.5 ($n = 139$). Mean FEV₁ was 65.8% predicted, with 39.9% $< 60\%$ ($n = 193$). Exacerbation burden was substantial (mean 3.1/year; 31.5% ≥ 4 , $n = 238$). Type 2 inflammatory features predominated, with BEC ≥ 350 cells/ μ L in 64.0% ($n = 283$), total immunoglobulin E (IgE) ≥ 75 kU/L in 74.3% ($n = 191$), and combined biomarker elevation in 61.0% ($n = 136$). Multimorbidity was frequent (≥ 3 comorbidities in 46.1%), particularly chronic rhinosinusitis, allergic rhinitis, and nasal polyposis. Long-term oral corticosteroids use occurred in 42.7% ($n = 259$). Biologic therapy was initiated in 96.4%, most commonly anti-IgE.

Conclusions: Adults entering biologic pathways in this setting represent a highly selected, clinically advanced SA population with poor control, impaired lung function, frequent exacerbations, corticosteroid burden, type 2 inflammation, and multimorbidity consistent with unified airway disease.

Keywords: International Severe Asthma Registry (ISAR); Severe asthma; biologic therapy; exacerbations; polish cohort; real-world evidence.

Plain language summary

This study provides one of the first comprehensive real-world characterizations of adults with severe asthma (SA) managed under the Polish national biologic reimbursement framework. The analysis is based on data from the Polish Severe Asthma Registry (POLSAR) within the International Severe Asthma Registry (ISAR), reflecting routine specialist clinical practice. Patients entering biologic pathways represented a highly selected and clinically advanced population with poor disease control, impaired lung function, frequent exacerbations, multimorbidity, and substantial corticosteroid burden. The findings highlight how restrictive biologic access criteria may influence patient profiles and treatment pathways in SA care. The study provides clinically relevant real-world evidence supporting optimization of referral pathways, treatment escalation strategies, and biologic access policies in SA.

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Cite

32

Review

J Asthma

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. 2026 Aug 25:1-12.

doi: 10.1080/02770903.2026.2721170. Online ahead of print.

Eosinophilic inflammation in severe asthma: Pathophysiology, clinical identification, and therapeutic implications

Miguel Jiménez-Gómez¹, Carlos Almonacid-Sánchez², Marina Blanco-Aparicio³, Hemily Izaquirre-Flores⁴, Mariana Muñoz-Esquerre⁵, Gerardo Pérez-Chica⁶, Juan Luis García-Rivero⁷, Alicia Padilla-Galo⁸, José Gregorio Soto-Campos⁹

Affiliations Expand

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Abstract

Objective: To provide a clinically grounded and pathobiological review of eosinophilic inflammation in severe asthma, addressing mechanisms, diagnostic interpretation, and implications for biologic therapy selection.

Methods: Narrative review of guidelines, pivotal phase 2-3 randomized controlled trials, meta-analyses, registry data, and key translational studies evaluating eosinophils, type 2 (T2) inflammation, and targeted biologic therapies in severe asthma and eosinophilic chronic obstructive pulmonary disease. Publications were selected based on clinical relevance, methodological rigor, and impact on contemporary severe asthma management. Evidence was critically appraised and integrated with expert clinical perspective. No predefined systematic protocol or formal risk-of-bias assessment was undertaken.

Results: Eosinophils are central effector cells in T2-high severe asthma, contributing to airway inflammation, epithelial injury, mucus plugging, and remodeling. Interleukin (IL)-5 is the principal regulator of eosinophil maturation and survival, while IL-4, IL-13, and epithelial alarmins modulate tissue recruitment and amplification of inflammation. Blood eosinophil count (BEC) remains the most accessible biomarker in practice; however, its interpretation requires contextualization, considering corticosteroid exposure, biological variability, age at onset, and comorbidities. No single biomarker fully reflects airway eosinophilia, supporting a multidimensional assessment integrating clinical phenotype, longitudinal biomarkers, imaging, lung function, and therapeutic response. Biologics have transformed outcomes, with greater efficacy generally observed at higher BEC levels.

Conclusion: Eosinophilia should be interpreted as a contextual biomarker within a comprehensive clinical framework. Precision phenotyping is essential to optimize biologic selection and advance toward sustained disease control and clinical remission in severe asthma.

Keywords: Severe asthma; biologic therapy; eosinophilic inflammation; precision medicine; tissue eosinophilia.

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Cite

33

Review

J Asthma

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. 2026 Aug 25:1-19.

doi: 10.1080/02770903.2026.2721181. Online ahead of print.

[Microbiome-driven precision medicine in asthma: Roles of targeted therapies and artificial intelligence](#)

[Sanjukta Dasgupta](#)¹, [Suraja Parida](#)¹

Affiliations Expand

- PMID: 42613688
- DOI: [10.1080/02770903.2026.2721181](#)

Abstract

Objective: To evaluate current evidence on airway and gut microbiome alterations in asthma pathogenesis, inflammatory heterogeneity, and therapeutic response, and to examine microbiome-targeted interventions and artificial intelligence (AI)-based approaches for precision asthma medicine.

Methods: A structured narrative review was conducted using PubMed, Scopus, and Google Scholar to identify key literature published from 2015 to 2026, supplemented by landmark studies where appropriate. The review focused on microbiome dysbiosis, host-microbe interactions, inflammatory endotypes, microbiome-targeted interventions, biologic therapies, and AI- and machine-learning-based approaches relevant to precision asthma care.

Results: Asthma-associated microbiome alterations were linked to disease heterogeneity, inflammatory endotypes, exacerbation risk, and treatment response, although evidence remained largely associative. Airway dysbiosis, particularly enrichment of *Haemophilus*, *Moraxella*, and *Neisseria*, was associated with neutrophilic inflammation and exacerbation-prone disease. Gut microbiota and short-chain fatty acid-producing bacteria were implicated in immune regulation through the gut-lung axis. Probiotics, prebiotics, synbiotics, postbiotics, engineered microbial consortia, and bacteriophages showed promise but remain investigational. Biologics targeting IgE, IL-5/IL-5R, IL-4R α , and TSLP improved outcomes in selected patients, but microbiome-based response predictors remain unvalidated. AI/ML integrating microbiome, multi-omic, clinical, and environmental data showed potential for endotype classification, exacerbation prediction, biomarker discovery, and treatment-response prediction, but require robust validation.

Conclusion: The airway and gut microbiomes offer promising biomarkers and therapeutic targets for precision asthma care. Integration of multi-omic, clinical, and environmental data with AI may improve patient stratification and therapeutic decision-making, but standardized methodologies and large prospective, multicenter, externally validated studies are needed before routine clinical implementation.

Keywords: Asthma; airway microbiome; artificial intelligence; gut–lung axis; microbiome dysbiosis; precision medicine.

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34

JCI Insight

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. 2026 Jul 30;11(16):e202442.

doi: 10.1172/jci.insight.202442. eCollection 2026 Aug 24.

Aberrant mucin expression and keratinization distinguishing severe from mild asthma revealed by interpretable machine learning

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Affiliations Expand

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- PMCID: [PMC13502186](#)
- DOI: [10.1172/jci.insight.202442](#)

Abstract

Type 2 (T2) immune cells dominate the airways of patients with mild-moderate asthma (MMA) with a more complex type 1 (T1)-T2 mixed immune response evident in treatment-refractory severe asthma (SA). We hypothesized that comparing the transcriptomes of the airway epithelium of patients with SA and MMA would reveal molecular signatures associated with more severe disease in the context of a complex immune response. Using our interpretable machine learning tool, SLIDE, meaningful latent factors (context-specific gene co-expression networks) were revealed that distinguished SA from MMA. Unexpectedly, an aberrant high expression of normally host-protective, membrane-tethered, and IFN-inducible mucins, MUC1 and MUC4, was identified in SA. Gene networks in the significant latent factors discriminating SA from MMA corresponded to enrichment of a keratinization program in SA airways. Keratinization was marked by increased expression of the stress keratin KRT16, signifying squamous metaplasia suggesting adaptive reprogramming of the airway epithelium in response to chronic stress. These mucins and KRT16 were inversely associated with lung function in 2 separate asthma cohorts. Imaging of endobronchial biopsies revealed significantly higher KRT16 protein expression in SA compared with MMA that strongly correlated with MUC1 protein expression. Our study identifies dysregulated host-protective and maladaptive repair responses in SA distinguishing from MMA.

Keywords: Asthma; Immunology; Pulmonology.

Conflict of interest statement

The authors report the following potential conflicts of interest: SLK, SEW, RR, MG, AR, AV and JD have a provisional patent application pending titled “METHOD TO BLOCK INCREASED EXPRESION OF MUCIN 1, STRESS KERATINS, AND LOSS OF

LUNG FUNCTION IN SEVERE ASTHMA BY TARGETING GALNT5 AND/OR GALNT6.”
MC has received grants from American Lung Association, Apogee Therapeutics, Apreo Health, AstraZeneca, Celldex, Connect BioPharma, Enveda, Expedition Therapeutics, Gala Therapeutics, Genentech, GlaxoSmithKline, Kinaset Therapeutics, Kinaset, Kymera, NIH, Nacion, Patient-Centered Outcomes Research Institute (PCORI), Pfizer, Pulmatrix, Sanofi-Aventis, Shionogi, Teva and Regeneron; has received consulting fees from Admin Physicians World, Allakos, Amgen, Apogee, Apreo Health, AstraZeneca, Blueprint Medicines, Citrus Health, Connect BioPharma, Enveda, Evommune, Genentech, Generate:Biomedicines, GlaxoSmithKline, Genzyme, Iqvia, ITA Group, Johnson & Johnson, Kymera, Meetings by Design, Novartis, Pfizer, Pioneering Medicines, Polarean, Regeneron, Sanofi-Aventis, Syneos, Teva, Uniquity Bio, Upstream Bio, and VIDA; has received honoraria for presentations from Amgen, AstraZeneca, Med Learning Group, Regeneron, and Sanofi-Aventis; and has stock in Aer Therapeutics. JD receives consulting fees from and has stock options in Seromyx. The following companies provided financial support for study activities at the Coordinating and Clinical Centers: Amgen, AstraZeneca, Boehringer-Ingelheim, Genentech, GlaxoSmithKline, Sanofi–Genzyme–Regeneron, and TEVA. These companies had no role in study design or data analysis, and the only restriction on the funds was that they be used to support the SARP initiative; as SARP site PIs, PGW, MC, KS, NJ, LCD, BG, ERB, DAM, WCM, EI, BDL, DM, SE and SEW benefited from this support.

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

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35

Randomized Controlled Trial

Eur Respir J

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. 2026 Aug 27;68(2):2502441.

doi: 10.1183/13993003.02441-2025. Print 2026 Aug.

[Azithromycin enhances epithelial antiviral immunity in uncontrolled asthma: results from the AZIMUNE randomised controlled trial](#)

[Muzhda Ghanizada](#)¹, [Sofia Malm Tillgren](#)², [Mandy Menzel](#)², [Louis Praeger-Jahnsen](#)³, [Nihaya Mahmoud Said](#)⁴, [Sisse Ditlev](#)³, [Asger Sverrild](#)^{4 5}, [Celeste Porsbjerg](#)⁴, [Lena Uller](#)^{2 6}, [Therese Lapperre](#)^{4 7 8 6}, [AZIMUNE Study Group](#)

Affiliations Expand

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- PMCID: [PMC13519834](#)
- DOI: [10.1183/13993003.02441-2025](#)

Abstract

Background: Viral respiratory infections are the leading trigger of asthma exacerbations, and impaired epithelial type I and III interferon (IFN) responses may contribute to more severe exacerbations. Azithromycin reduces exacerbations clinically, but its effects on epithelial antiviral immunity remain unclear. This study investigated whether azithromycin treatment enhances airway epithelial antiviral responses and modulates alarmin concentrations in patients with uncontrolled asthma.

Methods: In the investigator-initiated, double-blind, placebo-controlled AZIMUNE trial, 40 adults with uncontrolled asthma were randomised (1:1) to azithromycin (500 mg three times per week) or placebo (identical regimen) for 12 weeks. Bronchial epithelial cells were obtained *via* bronchoscopy at baseline and after week 12, and cultured and infected *ex vivo* with rhinovirus. Protein levels of IFN- β , IFN- λ , alarmins (interleukin (IL)-33 and thymic stromal lymphopoietin (TSLP)) and pro-inflammatory cytokines were quantified.

Results: Azithromycin significantly increased rhinovirus-induced concentrations of IFN- β ($p=0.047$) and IFN- λ ($p=0.013$) in the azithromycin group ($n=16$) compared with baseline, whereas no change was seen in the placebo group ($n=16$). Azithromycin treatment also reduced IL-33 concentrations ($p=0.001$), while TSLP levels were unaffected. Clinical outcomes improved numerically in the azithromycin group, but differences *versus* placebo were not statistically significant.

Conclusions: Azithromycin enhances epithelial antiviral immunity and attenuates IL-33 concentrations in response to rhinoviral infection in asthma. The dual immunomodulatory effect of azithromycin supports its role as adjunctive therapy to prevent virus-induced exacerbations.

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Conflict of interest statement

Conflict of interest: A. Sverrild received advisory board honoraria from AstraZeneca, GSK and Sanofi. C. Porsbjerg received lecture fees from AstraZeneca,

GSK, Novartis, Teva, Sanofi and Chiesi, and participated in a data safety monitoring board or advisory board for AstraZeneca, Novartis, Teva, Sanofi and ALK. L. Uller received lecture fees and unrestricted research grants from AstraZeneca. T. Lapperre received unrestricted research grants from Chiesi, Belgian Health Care Knowledge Centre (KCE) and Antwerp University, lecture fees from AstraZeneca, GSK, Sanofi and Chiesi, travel support for attending scientific conferences from Sanofi, AstraZeneca and the Respiratory Effectiveness Group, and participated on a data safety monitoring board or advisory board for AstraZeneca, Sanofi and GSK. The other authors declare no potential conflicts of interest.

Comment in

- [Attacking asthma - viruses and azithromycin: connecting the mechanistic dots.](#)

McDonald VM, Gibson PG. Eur Respir J. 2026 Aug 27;68(2):2601038. doi: 10.1183/13993003.01038-2026. Print 2026 Aug. PMID: 42660614 No abstract available.

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

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

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Ther Adv Gastroenterol

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. 2026 Aug 28:19:17562848261470325.

doi: 10.1177/17562848261470325. eCollection 2026.

[Prevalence of dysphagia and eosinophilic esophagitis in patients with inflammatory bowel disease or type 2 inflammation: a cross-sectional multicenter screening study](#)

[Martin Bäuerle](#)^{1,2,3}, [Jurij Maurer](#)^{1,4}, [Jagoda Pokryszka](#)¹, [Gottfried Novacek](#)¹, [Christian Primas](#)¹, [Lili Kazemi-Shirazi](#)¹, [Stefanie Dabsch](#)¹, [Adrian Frick](#)¹, [Walter Reinisch](#)¹, [Clemens Dejaco](#)¹, [Michael Trauner](#)¹, [Slagjana Stoshiki](#)⁵, [Christine Bangert](#)⁶, [Sven Schneider](#)⁷, [Stefan Wöhrl](#)⁸, [Philipp Schreiner](#)⁹

Affiliations Expand

- PMID: 42668855

- PMCID: [PMC13525285](#)
- DOI: [10.1177/17562848261470325](#)

Abstract

Background: Eosinophilic esophagitis (EoE) is a chronic, type-2 inflammation-driven disease causing dysphagia. Although patients with other type-2 inflammatory diseases (type-2 ID) or inflammatory bowel disease (IBD) may have an increased risk of EoE, there is limited information about the prevalence of EoE in these specific populations.

Objectives: This study aims to assess the prevalence of clinically relevant dysphagia as well as underlying EoE in patients with type-2 ID or IBD.

Design: This is a cross-sectional, multicenter study of patients with type-2 ID (asthma, rhinosinusitis with polyposis nasi, allergic rhinitis, atopic dermatitis, Immunoglobulin E (IgE)-mediated food allergies) or IBD from the Medical University of Vienna and Floridsdorf Allergy Center.

Methods: Patients were screened for esophageal dysphagia using the Brief Esophageal Dysphagia Questionnaire (BEDQ). Relevant dysphagia was defined as a BEDQ score ≥ 4 , or having a history of bolus impaction or emergency department visit due to dysphagia within the past year. Endoscopy with esophageal biopsies was offered to all patients with relevant dysphagia to screen for EoE.

Results: A total of 687 patients (45.9% female, median age 45 years, 53.9% with IBD, 48.5% with a type 2 ID) were screened. Overall, 8.9% ($n = 61$) reported relevant dysphagia. Endoscopy with biopsies was performed in 22 patients, and 18 patients had undergone endoscopy the year prior to the study. In total, 6 newly diagnosed cases of EoE were observed, while 7 patients had a known history of EoE, resulting in an overall prevalence of 13 patients (1.9%). Patients with any type-2 ID had numerically more EoE (2.7%) than patients with IBD (1.9%).

Conclusion: While the prevalence of dysphagia among patients with type-2 ID and IBD may not exceed that of the general population, the prevalence of EoE in these populations may be higher than previously recognized.

Keywords: dysphagia; eosinophilic esophagitis; inflammatory bowel disease (IBD); type-2 inflammatory disease.

Plain language summary

Prevalence of dysphagia and eosinophilic esophagitis in patients with inflammatory bowel disease or type 2 inflammation—a cross-sectional multicenter screening study Eosinophilic esophagitis (EoE) is a chronic, type-2 inflammation-driven disease causing dysphagia. Although patients with other type-2 inflammatory diseases or inflammatory bowel disease may have an increased risk of EoE, there is limited information about the real prevalence in these specific populations. We therefore screened 687 patients with type-2 inflammatory diseases (asthma, rhinosinusitis with polyposis nasi, allergic rhinitis, atopic dermatitis, IgE-mediated

food allergies) or inflammatory bowel disease for esophageal dysphagia using a validated questionnaire. Therefore, 61 patients (8.9%) with clinically relevant dysphagia were offered endoscopy with esophageal biopsies. In total, six newly diagnosed cases of EoE were observed, while seven patients had a known history of EoE, resulting in an overall prevalence of 13 patients (1.9%).

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Conflict of interest statement

P.S. received consulting fees from AbbVie, Falk Pharma, Janssen-Cilag, Takeda, Alfasigma, Pfizer, Sanofi-Aventis, AstraZeneca. G.N. received lecture fees/consultant fees/advisory board member fees from AbbVie, Merck Sharp & Dohme, Takeda, Janssen-Cilag, Pfizer, Gilead, Galapagos/Alfasigma, Ferring, Vifor, AstroPharma, Falk, Bristol Myers Squibb, Arena Pharmaceuticals, and Amgen. S.W. received consulting fees from Novartis, Sanofi, ThermoFisher Scientific. A.F. received travel support from Takeda, Amgen, Johnson & Johnson, and AbbVie. C.B. has been a clinical trial investigator for Almirall, Pfizer, AbbVie, Eli Lilly and Company, Galderma, LEO Pharma, Novartis, and Sanofi Genzyme, and an advisory board member, consultant, and/or invited lecturer for Pfizer, AbbVie, ALK, Almirall, Eli Lilly and Company, Incyte, LEO Pharma, A. Menarini Pharma, Schuelke & Mayr GmbH, Galderma, Novartis, and Sanofi Genzyme. SS reports grants, payment for lectures, and participation on advisory boards from Sanofi, AstraZeneca, and GSK. M.T.: received grant support from Albireo, Alnylam, Cymabay, Falk, Genentech, Gilead, Intercept, MSD, Takeda and UltraGenyx, honoraria for consulting from AbbVie, Albireo, Agomab, Boehringer Ingelheim, BiomX, Chemomab, Dexoligo Therapeutics, Falk, Genfit, Gilead, GSK, Hightide, Intercept, Ipsen, Janssen, Mirum; MSD, Novartis, Phenex, Pliant, ProQR Therapeutics, Regulus, Siemens and Shire, speaker fees from Albireo, Boehringer Ingelheim, Bristol-Myers Squibb, Falk, Gilead, Ipsen, Intercept, MSD and Madrigal, as well as travel support from AbbVie, Falk, Gilead, Janssen and Intercept, Ipsen and Janssen. He is also a co-inventor of patents on the medical use of 24-norursodeoxycholic acid filed by the Medical University of Graz. W.R. has served as a speaker, consultant, advisory board member, and/or received research funding from AbbVie, Amgen, AOP Orphan, Arena, Astellas, AstraZeneca, Bioclinica, Boehringer Ingelheim, Bristol Myers Squibb, Calyx, Celgene, Celltrion, Dr Falk, Ferring, Galapagos, Gatehouse, Genentech, Gilead, Grünenthal, ICON, InDex, Inova, Janssen, Landos, Lilly, Medahead, MedImmune, Microbiotica, Mitsubishi Tanabe, MSD, Novartis, OMass, Otsuka, Parexel, Peri Consulting, Pharmacosmos, Pfizer, Protagonist, Provention, Quell, Roche, Sandoz, Sanofi, Seres, SetPoint Medical, Shire, Sigmoid, Sublimity, Takeda, Teva, Therakos, Theravance, and Zealand.

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Review

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. 2026 Aug 27:10.1002/wjo2.70114.

doi: 10.1002/wjo2.70114. Online ahead of print.

Safety, Efficacy, and Mechanism of Action of Budesonide in Rhinitis and Rhinosinusitis: A Systematic Review

David W Kennedy¹, Lei Cheng^{2 3}, De-Yun Wang⁴

Affiliations Expand

- PMID: 42662515
- PMCID: [PMC13519927](#)
- DOI: [10.1002/wjo2.70114](#)

Abstract

Objective: Budesonide is a corticosteroid with unique pharmacokinetic and pharmacodynamic properties that has been a frontline treatment for patients with allergic rhinitis (AR) and chronic rhinosinusitis (CRS) since the 1990s. As research on budesonide continues to produce new insights, our aim was to synthesize recent investigations and provide up-to-date information on safety, clinical, and mechanism of action (MOA) outcomes.

Data sources: Searches were restricted to PubMed from 2014/01/01 to 2025/02/26. Clinical investigations in the primary therapeutic area of rhinitis, sinusitis, or rhinosinusitis with adult patients receiving budesonide were included.

Review methods: Results were screened, and findings from eligible articles were assessed for safety, efficacy, and/or MOA outcomes.

Results: Overall, 31 articles were included. CRS was the primary indication in 19 studies and rhinitis in 12 (predominantly AR). Six studies investigated hypothalamic-pituitary-adrenal (HPA) axis suppression, and 2 studies assessed intraocular pressure; budesonide did not adversely affect either outcome, even with long-term, high-dose, high-volume nasal irrigations. Twelve studies of budesonide monotherapy generally showed improved efficacy outcomes. Eight studies of budesonide combination therapies, predominantly in patients with moderate-to-severe AR, generally showed improved efficacy versus budesonide monotherapy. MOA data were reported across seven studies, with anti-inflammatory alterations

observed across the nasal mucosa, nasal secretions, nasal polyps, and peripheral blood after budesonide treatment.

Conclusions: Safety outcomes were favorable across various budesonide delivery systems, including high-dose, high-volume nasal irrigations, with no evidence of HPA axis suppression after long-term budesonide use. Budesonide demonstrated consistent efficacy that was underpinned by MOA data on its potent anti-inflammatory effects.

Keywords: hypothalamic–pituitary–adrenal axis; inflammation; intranasal corticosteroid; moderate-to-severe; sinusitis.

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Conflict of interest statement

David W. Kennedy received financial compensation from Kenvue as a consultant during article conceptualization. He has served as a consultant for Aerin Medical, GSK, Kenvue, Regeneron, and Sanofi and receives royalties from Medtronic. David W. Kennedy and Lei Cheng are members of the World Journal of Otorhinolaryngology – Head & Neck Surgery (WJOHNS) editorial board and are not involved in the peer review process of this article. The other authors declare no conflicts of interest.

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3

Dig Dis Sci

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. 2026 Aug 28.

doi: 10.1007/s10620-026-10190-7. Online ahead of print.

Irritable Bowel Syndrome and Allergic Diseases: A Nationwide Study of 1.5 Million Adolescents

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Affiliations Expand

- PMID: 42661130
- DOI: [10.1007/s10620-026-10190-7](https://doi.org/10.1007/s10620-026-10190-7)

Abstract

Background: Recent evidence suggests an increased prevalence of irritable bowel syndrome (IBS) among individuals with allergic diseases, and several biological mechanisms have been proposed. This study aims to investigate the association between IBS and allergic diseases in a large nationwide cohort of adolescents.

Methods: This cross-sectional nationwide study included Israeli adolescents aged 16-20 years who underwent medical assessment before military service. The military database was used to identify individuals with allergic diseases (asthma, allergic rhinitis, atopic dermatitis, or ocular atopic disease) and IBS between 1998 and 2018. Logistic regression models adjusted for sociodemographic factors were applied.

Results: Of the 1,538,864 adolescents (42% women; mean age, 17.2 ± 0.5 years) included in the study, 189,806 (12.3%) were diagnosed with allergic diseases and 8,134 (0.5%) with IBS. Overall, 25.4% of adolescents with IBS had at least one concurrent allergic disease. The prevalence of IBS among adolescents with allergic diseases was 1.1%, corresponding to an adjusted OR of 2.2 (95% CI 2.1-2.4). This association remained consistent across socioeconomic groups and across all allergic diseases examined.

Conclusion: Allergic diseases in adolescents are associated with higher rates of concurrent IBS. These findings strengthen existing epidemiological evidence linking IBS and allergic diseases in adolescents and warrant further mechanistic and longitudinal studies.

Keywords: Adolescents; Cross-sectional studies; Epidemiology; Hypersensitivity; Irritable bowel syndrome; Socioeconomic factors.

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Conflict of interest statement

Declarations. Conflict of interest: The authors do not have any financial or non-financial interests that are directly or indirectly related to the work submitted for publication. Ethical approval: The study received approval from the IDF Medical Corps Review Board that waived the requirement for informed consent since the anonymity of all participants was upheld through the study. Consent to participate: Waived by the institutional review board. Consent to publish: Not applicable.

- [41 references](#)

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4

Review

Am J Rhinol Allergy

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. 2026 Aug 27:19458924261480410.

doi: 10.1177/19458924261480410. Online ahead of print.

[Radiofrequency Ablation Versus Cryoablation of the Posterior Nasal Nerve for Chronic Rhinitis: A Meta-Analysis and Systematic Review](#)

[Tim A Mose](#)¹, [Prem C Patel](#)¹, [Jonathan A L Gelfond](#)², [Megana Challa](#)¹, [Matthew Y Liu](#)¹, [Matt Hayward](#)³, [Philip G Chen](#)¹

Affiliations Expand

- PMID: 42658221
- DOI: [10.1177/19458924261480410](#)

Abstract

BackgroundPosterior nasal nerve (PNN) ablation has demonstrated efficacy for chronic rhinitis, although differences between radiofrequency ablation (RFA) and cryoablation (CA) remain unclear. This meta-analysis aims to indirectly compare long-term efficacy and safety between these modalities.**Methods**A search for studies reporting efficacy or adverse events (AEs) of RFA or CA was conducted using 5 health science databases in January 2026. Meta-regression calculated change in the Total Nasal Symptom Score (TNSS), TNSS subscores, and the Rhinoconjunctivitis Quality of Life Questionnaire (RQLQ). Fisher's exact test compared overall and specific AE incidences.**Results**This meta-analysis includes 12 studies and a total of 859 patients. Mean change for TNSS surpassed minimal clinically important threshold for both modalities at all follow-up time points. RFA demonstrated significantly greater improvement than CA at 30 days (0.63, 95% CI:

0.02-1.26, $P = .045$) until 365 days (0.60, 95% CI: 0.00-1.20, $P = .049$). TSS subscores showed significant differences in favor of RFA over CA, for nasal itching (0.41, 95% CI: 0.23-0.58, $P < .001$) beginning at 30 days and sneezing (0.21, 95% CI: 0.03-0.39, $P = .022$) beginning at 90 days. RQLQ improvement at 90 days favored RFA over CA (0.19, 95% CI: 0.00-0.37, $P = .047$). RFA demonstrated lower AE incidence (5.3% vs 29.4%, $P < .001$). Specifically, CA had a higher incidence of headache and oral/palatal numbness events. **Conclusions** Both treatment modalities effectively reduce symptoms, although RFA demonstrated greater quality of life improvement and symptom relief, particularly for nasal itching and sneezing. While both modalities demonstrated low AE burden, RFA was generally associated with fewer AEs. Direct prospective comparisons are warranted.

Keywords: adverse events; complications; cryosurgery; intervention; neurolysis; procedure; quality of life; rhinorrhea; temperature-controlled; treatment outcome.

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5

Allergy

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. 2026 Aug 27.

doi: 10.1111/all.70498. Online ahead of print.

[Need to Assess On-Demand Versus Continuous Treatment in Allergic Rhinitis in ARIA-EAACI Guidelines](#)

[Jean Bousquet](#)^{1,2}, [Bernardo Sousa-Pinto](#)^{3,4}, [Maria J Torres](#)⁵, [Mario Morais-Almeida](#)⁶, [Ludger Klimek](#)^{7,8}, [Giorgio Ciprandi](#)⁹, [Robert Naclerio](#)¹⁰, [Torsten Zuberbier](#)^{1,2}

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- PMID: 42657508
- DOI: [10.1111/all.70498](https://doi.org/10.1111/all.70498)

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Lancet Reg Health West Pac

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doi: 10.1016/j.lanwpc.2026.101969. eCollection 2026 Sep.

[Efficacy, safety, and pharmacokinetics of pumecitinib nasal spray for moderate-to-severe seasonal allergic rhinitis: a multicentre, double-blind, randomised, placebo-controlled, phase 2 trial](#)

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Affiliations Expand

- PMID: 42656228
- PMCID: [PMC13506314](#)
- DOI: [10.1016/j.lanwpc.2026.101969](#)

Abstract

Background: Seasonal allergic rhinitis (SAR) is a pollen-triggered condition causing nasal inflammation and quality of life impairment. Pumecitinib, a topical Janus kinase (JAK) inhibitor may modulate allergic inflammation. We evaluated the

efficacy, safety, and pharmacokinetics of pumecitinib nasal spray administered over a 14-day period during the pollen season in patients with moderate-to-severe seasonal allergic rhinitis (SAR).

Methods: This phase 2, randomised, double-blind, placebo-controlled, parallel-group study was carried out at 20 centres in China. Adults aged 18-65 years with moderate-to-severe SAR were randomised 1:1:1:1 to receive placebo or pumecitinib nasal spray at doses of 0.2 mg, 1.2 mg, or 2.0 mg administered twice daily for 14 days. The primary efficacy endpoint was the mean change from baseline in daily reflective total nasal symptom score (rTNSS) over 14 days. The secondary endpoints included reflective total ocular symptoms (rTOSS), individual nasal and ocular symptoms, and rhinoconjunctivitis quality of life questionnaire (RQLQ) scores. This study is registered with chictr.org.cn, ChiCTR2400081767, and is completed.

Findings: Between March 20 and June 5, 2024, 169 patients were randomly assigned and 168 received treatment (92 male, 76 female) and were included in the full analysis set. Both the 1.2 mg and 2.0 mg doses of pumecitinib demonstrated significant improvements compared with placebo in the mean change from baseline in the daily rTNSS over 14 days (least-squares [LS] mean difference -1.2 [95% CI -2.2 to -0.2], $p = 0.021$, and -1.2 [-2.2 to -0.2], $p = 0.018$, respectively). These two dosage groups significantly improved rTOSS, individual nasal and ocular symptoms, and RQLQ scores compared to the placebo group. Treatment-emergent adverse events (TEAEs) occurred in 15% (0.2 mg), 33% (1.2 mg), 21% (2.0 mg), and 24% (placebo) of patients; most were mild, with no clear dose-response relationship.

Interpretation: Pumecitinib 1.2 mg and 2.0 mg twice daily significantly alleviated nasal and ocular symptoms and improved quality of life in moderate-to-severe SAR, with a favourable safety profile during 14-day treatment. This provides proof of concept for topical JAK inhibition in SAR, warranting larger trials.

Funding: PrimeGenX Therapeutics Co., Ltd.

Keywords: Janus kinase inhibitor; Nasal symptom; Ocular symptom; Pumecitinib; Seasonal allergic rhinitis.

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Conflict of interest statement

All authors declare that they have no competing interests, except where explicitly disclosed. LZ has been an advisory board member for Keymed and GSK. LZ has received clinical trial funding from Keymed, AZ, GSK, Genrix, PrimeGenX, Sanofi and Chia Tai Tianging. DD is an employee of PrimeGenX Therapeutics Co., Ltd. QG is an employee of PrimeGenX Therapeutics Co., Ltd. YL is an employee of PrimeGenX Therapeutics Co., Ltd.

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7

Int Forum Allergy Rhinol

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. 2026 Aug 26.

doi: 10.1002/alr.70256. Online ahead of print.

[Biologics Adoption in CRSwNP and the Associated Decline in Endoscopic Sinus Surgery: A Longitudinal Claims Database Study](#)

[Stephanie Shintani Smith](#)^{1,2}, [Sam L Kaefer](#)³, [Harsh Duvvuru](#)³, [Robert C Kern](#)¹, [Brent A Senior](#)⁴, [Vijay R Ramakrishnan](#)³

Affiliations Expand

- PMID: 42643130
- DOI: [10.1002/alr.70256](#)

Abstract

Background: Biologic treatments were introduced for chronic rhinosinusitis with nasal polyps (CRSwNP) in 2019. Treatment algorithms for medically refractory CRSwNP remain open, with patients choosing among surgery, biologics, or both. Real-world utilization of surgery and biologics remains incompletely characterized.

Objective: The aim of the study is to evaluate temporal trends in endoscopic sinus surgery (ESS) and biologic utilization in relation to 2019 Food and Drug Administration approval of biologics for CRSwNP.

Methods: Retrospective study of CRSwNP ESS and biologic prescription rates, patient demographics, and comorbidities within the Merative MarketScan Research database (2016-2024). Quarterly and annual trends were evaluated by regression and interrupted time series analyses.

Results: A total of 59,953 CRSwNP patients were included. Annual ESS rates declined, whereas biologic prescriptions increased markedly from 2016 to 2024. Dupilumab dominated among biologic alternatives. Interrupted time series analysis demonstrated a sharp decline in ESS rates with the 2019 introduction of biologics for CRSwNP, whereas biologic use grew continuously across 2016-2024 with a large increase in 2019-2020. Combination ESS and biologic treatment is growing but remains relatively infrequent. Patients receiving biologics were older and suffered

from type 2 inflammatory comorbidities, such as asthma and allergic rhinitis (p<0.001 for both).

Conclusion: In CRSwNP, biologic treatment has increased significantly in recent years, particularly in older patients or those with type 2 inflammatory comorbidities. Overall ESS utilization in CRSwNP has declined, and combination ESS and biologics are an emerging phenomenon. These figures reveal the extent of evolution in CRSwNP treatment induced by targeted medical therapies in real-world practice and serve as a foundation for healthcare utilization discussions.

Keywords: biologics; chronic rhinosinusitis; dupilumab; endoscopic sinus surgery; mepolizumab; nasal polyp; nasal polyposis; omalizumab; type 2 inflammation.

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8

Eur Arch Otorhinolaryngol

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. 2026 Aug 26.

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[Effects of intranasal antihistaminic and corticosteroid therapies on olfactory dysfunction in adults with perennial allergic rhinitis: a prospective comparative study](#)

[Ayşe Enise Göker¹](#), [Elif Aksungur²](#), [Cem Çelik³](#), [Uğur Uygan⁴](#), [Gülpembe Bozkurt¹](#), [Ayça Başkadem Yilmazer¹](#), [Maide Hacer Alagöz⁵](#)

Affiliations Expand

- PMID: 42642529

- DOI: [10.1007/s00405-026-10574-5](https://doi.org/10.1007/s00405-026-10574-5)

Abstract

Objective: To compare the effects of commonly used intranasal therapies on olfactory dysfunction in adults with perennial allergic rhinitis using objective psychophysical testing.

Methods: This prospective study included 90 adults with perennial allergic rhinitis and objectively confirmed hyposmia. Patients were allocated into three treatment groups: intranasal azelastine monotherapy, intranasal azelastine plus mometasone furoate combination therapy, and intranasal mometasone furoate monotherapy. Treatments were administered for one month. Olfactory function was assessed before and after treatment using the Sniffin' Sticks test (threshold, discrimination, identification, and composite TDI score). Nasal obstruction was evaluated using the Nasal Obstruction Symptom Evaluation (NOSE) scale. Between-group comparisons of treatment-related change scores and supportive within-group analyses were performed using non-parametric statistical tests.

Results: Ninety patients were included, with 30 patients in each treatment group. The mean ages were 29.43 ± 10.58 years in the azelastine group, 29.13 ± 8.79 years in the azelastine plus mometasone furoate group, and 29.90 ± 6.33 years in the mometasone furoate group. Baseline TDI scores were 29.10 ± 1.45 , 28.37 ± 2.83 , and 27.70 ± 2.34 , respectively. Mean Δ TDI was -3.33 ± 4.14 in the azelastine group, 9.13 ± 4.35 in the combination group, and 11.90 ± 3.82 in the mometasone furoate group, with a significant between-group difference ($p < 0.001$).

Conclusion: In adults with perennial allergic rhinitis and objectively confirmed hyposmia, intranasal corticosteroid-containing regimens were associated with greater improvement in olfactory function than azelastine monotherapy. These findings suggest that intranasal corticosteroid-containing regimens may be preferable when olfactory dysfunction accompanies perennial allergic rhinitis. However, given the non-randomized and open-label design of the study, the results should be interpreted with caution.

Keywords: Allergic rhinitis; Hyposmia; Intranasal antihistamines; Intranasal corticosteroids; Olfactory dysfunction; Sniffin' Sticks.

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Conflict of interest statement

Declarations. Ethics: This study was approved by University of Health Sciences Prof.Dr.Cemil Taşcıoğlu City Hospital Ethic Committee (Protocol. no: 1950) **Financial disclosure statement:** None of the authors have any competing interests. This research did not receive any specific grant from funding agencies in the public, commercial, or not-for-profit sectors.

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chronic cough

Chest

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. 2026 Aug 29:S0012-3692(26)06525-6.

doi: 10.1016/j.chest.2026.08.030. Online ahead of print.

Efficacy and safety of gabapentin for treatment of cough in idiopathic pulmonary fibrosis: a randomized, double-blinded, placebo-controlled clinical trial

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Affiliations Expand

- PMID: 42668062
- DOI: [10.1016/j.chest.2026.08.030](https://doi.org/10.1016/j.chest.2026.08.030)

Abstract

Background: Cough is common in idiopathic pulmonary fibrosis (IPF) and substantially impairs quality of life, but effective treatment options are limited. Gabapentin reduces cough in refractory chronic cough, but its efficacy and safety in IPF-related cough are uncertain.

Research question: Does gabapentin improve cough in patients with IPF?

Study design and methods: This study was a randomized, double-blind, placebo-controlled clinical trial conducted at Tongji Hospital, Tongji University. Patients diagnosed with IPF according to the ATS/ERS/JRS/ALAT guidelines, with chronic cough lasting for more than 8 weeks and a cough visual analog scale (VAS) score ≥ 40 mm, were included. Participants were randomly assigned in a 1:1 ratio to receive either gabapentin or placebo. Gabapentin was titrated to a maximum of 900 mg/d during 12 weeks of treatment, followed by a 4-week post-treatment follow-up. The primary endpoint was the cough relief rate at T4 (end of treatment), defined as the proportion of participants achieving a reduction of at least 50% in total Cough Symptom Score (CSS) from baseline. Safety was assessed in all participants who received at least one dose of study treatment.

Results: Between May 1, 2021, and December 31, 2024, 72 participants were screened, of whom 68 were randomized to gabapentin or placebo. Five participants withdrew prior to study completion. At T4, the cough relief rate was higher with gabapentin than with placebo (73.5% vs 26.5%), with a placebo-adjusted absolute difference of 47.1 percentage points (95% CI, 26.1-68.0; $P < 0.001$). During treatment, adverse events occurred in 32.4% of participants receiving gabapentin and 8.8%

receiving placebo. The most common adverse events in the gabapentin group were drowsiness, fatigue, and dizziness.

Interpretation: Gabapentin demonstrated significant efficacy with an acceptable safety profile in treating cough in IPF. These findings support gabapentin as a potential treatment option for IPF-related cough.

Clinical trial registration: The study was registered with the Chinese Clinical Trial Registry (ChiCTR2100045202).

Keywords: chronic cough; gabapentin; idiopathic pulmonary fibrosis; treatment.

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2

Review

Curr Allergy Asthma Rep

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. 2026 Aug 29;26(1):46.

doi: 10.1007/s11882-026-01289-y.

[Airway Diseases and Occupational Exposures in Poultry Industry Workers: A Comprehensive Review](#)

[Margaret Hutson](#)¹, [Kristina L Bailey](#)^{2 3}

Affiliations Expand

- PMID: 42665724
- DOI: [10.1007/s11882-026-01289-y](#)

Abstract

Purpose of review: The rapid expansion of the poultry industry has significantly increased the demand for poultry meat and related products due to improvements in efficiency and cost-effectiveness. However, this rapid global commercialization

has led to an increase in occupational asthma and chronic obstructive lung disease in poultry workers. Exposure to a complex mixture of organic and inorganic compounds, fumes, microorganisms, and particulate matter found in poultry barns has been linked to airway disease in workers. These airborne contaminants include allergens such as feathers, mites, feed dust, molds, ammonia, and bacterial endotoxins, which contribute to airway inflammation, hypersensitivity, and chronic lung damage. Workers may experience symptoms ranging from wheezing and chest tightness to chronic cough and dyspnea, which can progress to clinically significant respiratory conditions if unrecognized and unmanaged.

Recent findings: In attempts to minimize these effects, best practices and strategies to reduce these pollutants are actively being researched and implemented. The role of healthcare providers is pivotal in early identification of at-risk workers, thorough occupational history-taking, appropriate diagnostic evaluation, and tailored management to prevent disease progression and improve outcomes. This review highlights the critical need for ongoing surveillance, preventive measures, and education to protect respiratory health in this vulnerable occupational group.

Keywords: Airway Diseases; Asthma; Chronic Obstructive Pulmonary Disease (COPD); Occupational Respiratory Disease; Organic Dust Exposure; Poultry Industry.

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Conflict of interest statement

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

- [101 references](#)

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3

Review

Respir Med

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. 2026 Aug 28:109124.

doi: 10.1016/j.rmed.2026.109124. Online ahead of print.

Differential Diagnosis of Asthma and COPD: Established and Emerging Biomarkers and Technologies

Joan Cabot¹, Xavier Busquets¹, Joan B Soriano²

Affiliations Expand

- PMID: 42665061
- DOI: [10.1016/j.rmed.2026.109124](https://doi.org/10.1016/j.rmed.2026.109124)

Abstract

Asthma and chronic obstructive pulmonary disease (COPD) represent the two most prevalent chronic respiratory conditions worldwide, affecting hundreds of millions of individuals and imposing substantial morbidity and mortality. Despite their distinct biological mechanisms, these diseases frequently exhibit overlapping clinical features-including dyspnea, cough, and wheezing-that complicate differential diagnosis, particularly in smoking adults, older patients, and those with mild or fluctuating airflow obstruction. Spirometry remains the cornerstone of diagnostic evaluation, yet its limitations, including dependence on patient effort, reduced sensitivity for early disease, and inability to fully capture small airways involvement, contribute to persistent underdiagnosis and overdiagnosis in clinical practice. This review examines current diagnostic approaches for asthma and COPD, their inherent limitations, and the emerging biomarkers and functional technologies that may improve diagnostic precision. Established biomarkers, including blood eosinophils, fractional exhaled nitric oxide (FeNO), and induced sputum analysis, provide complementary information that refines clinical characterization but lack sufficient disease specificity for standalone use. Novel approaches, including lipidomics, metabolomics, and extracellular vesicle profiling, demonstrate potential for identifying disease-specific molecular signatures and biologically distinct phenotypes, particularly in asthma-COPD overlap. Concurrently, new functional tools-including novel spirometric indices such as Parameter D or FEV3/FEV6, respiratory oscillometry, and artificial intelligence-driven tidal breathing analysis-are enabling more sensitive, effort-independent, and multidimensional assessment of airway disease. The integration of these clinical, functional, inflammatory, and molecular approaches supports a transition toward multimodal diagnostic frameworks that may substantially improve the recognition and differential diagnosis of asthma and COPD, particularly in challenging clinical scenarios and early disease states.

Keywords: COPD; STARD; asthma; biomarkers; spirometry.

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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: JBS has received pharmaceutical company grants from 2022 to 2026 from Chiesi, GSK, Linde and Novartis via Hospital Universitario de La Princesa. Participated in speaking activities, advisory committees, and consultancies from 2022 to 2026 sponsored by Air Liquide, Almirall, AstraZeneca, Boehringer Ingelheim, CHEST, Chiesi, CNPT, ERS, FTH, Gebro, Grifols, GSK, IHME, Laminar Pharma, Linde, Lipopharma, Menarini, Mundipharma, Novartis, OMS/WHO, Pfizer, ResApp, RiRL, ROVI, SEPAR, SAPIO, Seqirus, WHO EUR, Takeda and Zambon. Finally, JBS declares never received, directly or indirectly, any funding from tobacco manufacturers or their affiliates. JC and XB declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this article.

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4

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. 2026 Aug 24;12(4):00279-2026.

doi: 10.1183/23120541.00279-2026. eCollection 2026 Jul.

[Prospective study to evaluate the effectiveness of guideline-based therapy for chronic cough and refractory chronic cough: PROCOUGH](#)

[Mustafaa Wahab](#)¹, [Elena Kum](#)^{1 2}, [Nermin Diab](#)³, [Danica Brister](#)⁴, [Ana Oliveira](#)^{5 6}, [Wafa Hassan](#)^{1 2}, [Sue Beaudin](#)¹, [Catie Stevens](#)¹, [Jennifer Wattie](#)¹, [Lesley Wiltshire](#)¹, [Karen Howie](#)¹, [Kieran Killian](#)¹, [Kimberley Holt](#)⁷, [Gordon Guyatt](#)^{1 2}, [Roma Sehmi](#)^{1 8}, [Gail M Gauvreau](#)¹, [Jaclyn A Smith](#)⁷, [Paul M O'Byrne](#)^{1 8}, [Imran Satia](#)^{1 2 7 8}

Affiliations Expand

- PMID: 42639446
- PMCID: [PMC13501472](#)

- DOI: [10.1183/23120541.00279-2026](https://doi.org/10.1183/23120541.00279-2026)

Abstract

Aim: Chronic cough is a common and burdensome condition with limited licensed therapies. Current guidelines recommend identifying treatable traits and using off-label therapies based largely on small clinical trials, but the real-world effectiveness of this approach remains unclear. This study aimed to evaluate the effectiveness of guideline-based therapies on objective and patient-reported outcomes in patients with chronic cough attending a tertiary cough clinic.

Methods: PROCOUGH was a prospective, single-centre, observational cohort study conducted at McMaster University Medical Centre (December 2021 to May 2025). Adults with chronic cough (>8 weeks) underwent comprehensive assessment, including lung function testing, airway inflammation measures, sputum cytology and 24-h cough monitoring (VitaloJAK™), alongside patient-reported outcomes. Patients were treated according to European Respiratory Society guideline recommendations, with all assessments repeated after a treatment trial. The primary outcome was change in 24-h cough frequency. Secondary outcomes included Leicester Cough Questionnaire (LCQ) and Cough severity visual analogue scale (CS-VAS). Responder analyses were based on ≥30% cough frequency reduction, ≥30 mm CS-VAS improvement and ≥1.3-point LCQ increase.

Results: 100 patients completed follow-up (mean±sd age 58.1±14.0 years; 58% female; median cough duration 7 years). Treatment resulted in a 54% reduction in 24-h cough frequency (95% CI 42.0-62.9%), a 20.2-mm decrease in CS-VAS (95% CI -26.2- -14.2) and a 3.4-point increase in LCQ (95% CI 2.6-4.2). Individually, 56%, 36% and 64% met cough frequency, CS-VAS and LCQ responder criteria, respectively, but only 14% met all three. Despite treatment, 71% reported insufficient cough control.

Conclusion: Guideline-based therapy improves objective and subjective cough outcomes; however, most patients fail to achieve satisfactory symptom control, highlighting a substantial unmet need for effective treatments for refractory unexplained chronic cough.

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Conflict of interest statement

Conflict of interest: M. Wahab, E. Kum, W. Hassan, S. Beaudin, C. Stevens, J. Wattie, K. Howie, L. Wiltshire, K. Killian, K. Holt and G. Guyatt report no conflicts of interest. N. Diab was supported by the Canadian Asthma, Allergy, and Immunology Foundation, Sanofi Genzyme, Canada, and the Canadian Lung Association—Canadian Institutes of Health Research Fellowship awards; and reports payment or honoraria for lectures, presentations, manuscript writing or educational events from AstraZeneca and Sanofi-Regeneron, outside the submitted work. D. Brister reports consultancy fees from Khure Health; payment or honoraria for lectures, presentations, manuscript writing or educational events from AstraZeneca, GSK and Sanofi-Regeneron; support for attending meetings from GSK; participation on a data safety monitoring board or advisory board with GSK and Sanofi; and is a participating member of the Chronic Cough Working Group. A. Oliveira is an associate editor of this journal. R. Sehmi received grants from AstraZeneca,

Biohaven, Third Harmonics Bio and Jasper; consultancy fees from AstraZeneca and Areteia Therapeutics Inc.; and payment or honoraria for lectures, presentations, manuscript writing or educational events from AstraZeneca and GSK. G.M. Gauvreau reports research funding from AstraZeneca, Genentech, Third Harmonics Bio, Biohaven and Jasper paid to the institution; and personal fees from AstraZeneca, Third Harmonics Bio, Allakos, Biohaven, Jasper and Blueprint. J.A. Smith reports grants from Merck, GSK, the National Institute for Health and Care Research Biomedical Research Centre, Wellcome, Medical Research Council and Natural Environment Research Council; consultancy fees from Merck, Bellus Health, Algernon, AstraZeneca, Boehringer Ingelheim, Chiesi, Nocion, Vitalograph, GlaxoSmithKline, Axalbion and Trevi Therapeutics; payment or honoraria for lectures, presentations, manuscript writing or educational events from Merck and GSK; support for attending meetings from GSK, receipt of cough monitoring equipment from Vitalograph; and the the VitaloJAK algorithm has been licensed by Manchester University Foundation Trust (MFT) and the University of Manchester to Vitalograph Ltd. and Vitalograph Ireland (Ltd.) (MFT receives royalties that may be shared with the clinical division in which J.A. Smith works). P.M. O'Byrne reports grants from AstraZeneca, Merck, Biohaven and Jasper; consultancy fees from AstraZeneca, GSK, Sage, Teva and Affibody; payment or honoraria for lectures, presentations, manuscript writing or educational events from AstraZeneca, GSK and Covis; and is a Section Editor for the European Respiratory Journal. I. Satia is supported by the Canada Research Chair programme; reports grants from Merck, MITACS, GSK, Bellus, Trevi Therapeutics, Bayer and Genentech; consultancy fees from Merck, GSK, Bellus, Sanofi-Regeneron and Methapharm; payment or honoraria for lectures, presentations, manuscript writing or educational events from Merck, GSK, AstraZeneca and Sanofi-Regeneron; and is an associate editor of this journal.

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5

Review

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. 2026 Aug 23.

doi: 10.1007/s41030-026-00382-x. Online ahead of print.

[The Genetic Architecture of Chronic Cough: From Sensory Hypersensitivity to Treatable Trait](#)

[Ran Dong](#)¹, [Mengru Zhang](#)², [Alyn H Morice](#)³

Affiliations Expand

- PMID: 42633611
- DOI: [10.1007/s41030-026-00382-x](#)

Free article

Abstract

Chronic cough is a prevalent global clinical disorder with substantial quality-of-life impairment, and refractory cases remain a major unmet medical need. Cough hypersensitivity syndrome is the core pathological mechanism of chronic cough, and growing genetic evidence has confirmed that inherited susceptibility shapes cough hypersensitivity, clinical heterogeneity and therapeutic responsiveness, redefining chronic cough as a biologically mediated sensory-neural disorder rather than a non-specific secondary symptom of airway diseases. This review summarises genetic evidence for chronic cough from family-based studies, pharmacogenomics and genome-wide association studies (GWAS), revealing distinct genetic architectures of chronic dry cough and sputum production, with enrichment of sensory-neural pathway variants and key genetic loci such as replication factor C subunit 1 (RFC1) functional genomic analyses link genetic variation to vagal afferent excitability, and rare genetic neurological disorders further illuminate the neurogenic basis of cough hypersensitivity. Moreover, genetic insights identify tractable treatable traits and rationalise antitussive drug development, supporting genotype-guided patient stratification. We conclude that integrating genetic architecture into clinical phenotyping and translational research provides a critical framework for precision management of chronic cough, and future progress relies on harmonised deep phenotyping and multi-ancestry genetic studies.

Keywords: RFC1 gene; Chronic cough; Cough hypersensitivity; Genetic architecture; P2X3 receptor; Refractory chronic cough; Sensory-neural disorder.

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Conflict of interest statement

Declarations. Conflict of Interest: Ran Dong has nothing to disclose. Mengru Zhang has nothing to disclose. Alyn H. Morice is an Editorial Board member of Pulmonary Therapy. Alyn H. Morice was not involved in the selection of peer reviewers for the manuscript nor in any of the subsequent editorial decisions regarding this article.

Ethical Approval: This article is based on previously conducted studies and does not contain any new studies with human participants or animals performed by any of the authors.

- [133 references](#)

Supplementary info

Publication typesExpand

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

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Expert Opin Drug Deliv

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. 2026 Aug 30.

doi: 10.1080/17425247.2026.2727113. Online ahead of print.

[Lpb. plantarum inhalation powders for the reduction of lung inflammation and S. aureus growth control in non-CF bronchiectasis](#)

[Stefania Glieca](#)¹, [Martina Tambassi](#)^{2,3}, [Chiara Schianchi](#)¹, [Eride Quarta](#)¹, [Benedetta Bottari](#)¹, [Elena Bancalari](#)¹, [Annalisa Bianchera](#)¹, [Laura Mazzera](#)², [Erika Scaltriti](#)², [Susana Ecenarro Probst](#)⁴, [Stefano Aliberti](#)^{5,6}, [Valentina Fainardi](#)⁷, [Fabio Sonvico](#)^{1,8}, [Francesca Buttini](#)¹

Affiliations Expand

- PMID: 42669029
- DOI: [10.1080/17425247.2026.2727113](#)

Abstract

Introduction: The reduced diversity of the lung microbiome in respiratory conditions, including bronchiectasis, promotes bacterial infection and inflammation, contributing to worsening clinical outcomes. Traditional treatments often fail to address both infection and inflammation. Because of their potential dual-action, lactic acid bacteria (LAB) directly administered to the lungs could represent an innovative therapeutic approach for these diseases.

Research design and methods: Two powders for inhalation containing *Lpb. plantarum*, lactose, l-leucine with and without raffinose, a prebiotic, were produced

by spray drying and *in vitro* tested. The focus was on investigating their potential *in vitro* anti-inflammatory and anti-microbial activities against *S. aureus*.

Results: The powders showed a fine particle fraction (<5 µm) >40% and allowed to maintain anti-inflammatory activity *in vitro* for both treatment and prevention. Moreover, both the powders led to a significant reduction in *S. aureus* growth. The stability study of the powders in capsules at different storage conditions showed the preservation of the LAB up to 90 days in refrigerated conditions (4°C/-20°C).

Conclusions: This proof-of-concept study shows that inhalable spray-dried live LABs retain biological activity and are suitable for pulmonary delivery, supporting their potential as a microbiota-modulating therapy which, however, requires further preclinical validation.

Keywords: Inhalation; lactic acid bacteria; non-cystic fibrosis bronchiectasis; probiotics; respiratory diseases; spray-dried powders.

Full text links



[Proceed to details](#)

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J Clin Rheumatol

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. 2026 Aug 24.

doi: 10.1097/RHU.0000000000002396. Online ahead of print.

[Systemic Sclerosis-associated Interstitial Lung Disease at 2 Tertiary Centers in the USA and Greece: A Comparative Study of Demographics, Management, and Radiologic Progression](#)

[Nikolaos Koletsos¹, Amit Syal², Nafsika Gerolymatou¹, Meryem Nursoy³, Nikolaos Zintziovas¹, Konstantinos Parperis⁴, Paraskevi V Voulgari¹, Chris T Derk⁵](#)

Affiliations Expand

- PMID: 42640876
- DOI: [10.1097/RHU.0000000000002396](#)

Abstract

Objective: To compare demographics, clinical features, treatment approaches, and outcomes of patients with systemic sclerosis-interstitial lung disease (SSc-ILD) at 2 geographically distinct tertiary centers: the University of Pennsylvania (UPenn), USA, and the University of Ioannina (UOI), Greece.

Methods: A cohort of 789 SSc patients (2013 ACR/EULAR criteria) was evaluated through medical records review at both institutions. Patients initially diagnosed with SSc-ILD between January 2020 and December 2024 with at least 72 weeks of follow-up were included. Sociodemographic, clinical, serological, and treatment data were systematically collected. ILD progression was defined as radiographic worsening on serial HRCT-comprising new or increased ground-glass opacification, reticulation, or traction bronchiectasis-as assessed at each center. PFTs were obtained at baseline and at 24, 48, and 72 weeks.

Results: Sixty-six patients were included (35 UPenn, 31 UOI). Arthritis (32.3% vs. 11.4%) and anti-Scl-70 positivity (64.5% vs. 40.0%) were more frequent at UOI. UOI patients had higher rates of rituximab (35.5% vs. 5.7%) and corticosteroid use (77.4% vs. 42.9%). ILD progression at 48 weeks was significantly greater in UPenn (57.1% vs. 17.2%, $p<0.001$). UOI patients reached specialist care faster (median 0.25 vs. 1.2 y from SSc diagnosis, $p=0.001$). On multivariate analysis, dcSSc, male sex, and study center were independent predictors of ILD progression.

Conclusions: This study compares SSc-ILD presentation, management, and outcomes at 2 tertiary centers. UPenn showed a higher radiologic ILD progression rate, likely due to baseline disease severity, treatment differences, and referral timing. Nonetheless, these findings are observational; prospective, internationally standardized studies are needed to confirm these results.

Keywords: disease progression; geographical disparities; interstitial lung disease; scleroderma; systemic sclerosis.

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Conflict of interest statement

The authors declare no conflict of interest.

- [25 references](#)

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3

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. 2026 Aug 24;12(4):01529-2025.

doi: 10.1183/23120541.01529-2025. eCollection 2026 Jul.

Benralizumab in bronchiectasis: results from the phase 3 MAHALE study

James D Chalmers^{1,2}, **Stefano Aliberti**^{3,4}, **Lucy Burr**^{5,6}, **Ulla Møller Weinreich**⁷, **Miguel Ángel Bergna**⁸, **Annika Åstrand**⁹, **Prashanth Basavanna**⁹, **Ying Fan**¹⁰, **Maura Gatti**¹¹, **Calvin N Ho**¹⁰, **Stefan Ivanov**⁹, **Christopher McCrae**¹², **Ana Román**¹¹, **Svitlana Salemio**¹³, **Maria Jison**¹⁰

Affiliations Expand

- PMID: 42639375
- PMCID: [PMC13501443](#)
- DOI: [10.1183/23120541.01529-2025](#)

Abstract

Background: Bronchiectasis is a chronic, inflammatory lung disease with distinct endotypes, often defined by inflammatory cells in blood and sputum. We assessed safety and efficacy of benralizumab, an anti-interleukin-5R α monoclonal antibody, in patients with bronchiectasis and eosinophilic inflammation.

Methods: MAHALE ([NCT05006573](#)) was a 52-week, randomised, multicentre, double-blind, phase 3 study. Patients with bronchiectasis and no comorbid pulmonary conditions were randomised 1:1 to receive subcutaneous benralizumab 30 mg or placebo every 4 weeks. Primary end-point was annualised exacerbation rate. Secondary end-points included: time to first exacerbation, change from baseline in respiratory symptoms, lung function, health-related quality of life (HRQoL), respiratory health status and safety. In August 2022, the study was terminated early due to recruitment challenges related to the COVID-19 pandemic.

Results: 100 patients were randomised and 99 were dosed (benralizumab, n=54; placebo, n=45); 21 had blood eosinophil counts ≥ 300 cells· μL^{-1} . Notable imbalances in baseline characteristics between treatment arms suggested patients receiving benralizumab had more severe disease. The study did not enrol enough patients to meet power requirement to detect differences in efficacy end-points between benralizumab and placebo. At the end of the study, annualised exacerbation rates were not significantly different between treatment groups (rate ratio (95% confidence interval): 1.14 (0.71-1.82), p=0.59). Change in respiratory symptoms and HRQoL were similar between treatment groups. Benralizumab was well tolerated.

Conclusions: A small sample size with eosinophil counts predominantly <300 cells· μL^{-1} and imbalances at baseline limit interpretation of data on clinical outcomes following benralizumab treatment. Adequately powered randomised trials are needed in the population of interest.

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Conflict of interest statement

Conflict of interest: J. D. Chalmers received grants and personal fees from AstraZeneca, Boehringer Ingelheim, GlaxoSmithKline, Insmmed Incorporated and Zambon; a grant from Gilead; and personal fees from Chiesi and Novartis. S. Aliberti received personal fees from AstraZeneca, Bayer Healthcare, Chiesi, GlaxoSmithKline, Grifols, Insmmed Incorporated, Menarini, Zambon and ZetaCube; and grants from Chiesi, Fisher & Paykel and Insmmed Incorporated. L. Burr has nothing to disclose. U. M. Weinreich received personal fees from AstraZeneca, Chiesi, GlaxoSmithKline, Sanofi, ResMed, Fisher & Paykel and O2Matic; and grants from Fisher & Paykel and Liita Care. M.A. Bergna received personal fees from AstraZeneca and GSK. A. Åstrand, P. Basavanna, Y. Fan, M. Gatti, C. N. Ho, S. Ivanov, C. McCrae, A. Román, S. Salemio and M. Jison are or were employees of AstraZeneca at the time of study conduct and may hold stock/shares. C. McCrae is currently an employee of Amgen.

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. 2026 Aug 24;12(4):00182-2026.

doi: 10.1183/23120541.00182-2026. eCollection 2026 Jul.

[Florensocatic in adults with bronchiectasis: the HOPE-BE trial protocol and baseline demographic characteristics](#)

[Nan-Shan Zhong](#)^{1 2 3 4}, [Jie Cao](#)^{5 3}, [Yan Feng](#)^{6 3}, [Xun-Chao Liu](#)^{7 3}, [Guo-Jun Zhang](#)^{8 3}, [Huan Ye](#)^{9 3}, [Zhi-Jun Liang](#)^{10 3}, [Hui Shen](#)^{11 3}, [Zhang Bao](#)^{12 3}, [Zhi-Ren Yang](#)^{13 3}, [Ling-Feng Min](#)^{14 3}, [Hui Jiang](#)^{15 3}, [Rong Qiu](#)¹⁶, [Jian-Ping Liang](#)¹⁷, [Jin-Li Liu](#)¹⁸, [Li-Min Dong](#)¹⁹, [Xin-Yu Song](#)²⁰, [Jin-Xiang Wang](#)²¹, [Yan-Ming Huang](#)²², [Fang-Qiong Li](#)²³, [Lu-Yin Sun](#)²³, [Han-Mo Liu](#)²³, [Wei-Jie Guan](#)⁴

Affiliations Expand

- PMID: 42639008

- PMCID: [PMC13501439](#)
- DOI: [10.1183/23120541.00182-2026](#)

Abstract

Background: Florensocatib (formerly known as HSK31858) is a novel reversible inhibitor of dipeptidyl peptidase 1. We sought to determine the efficacy and safety of florensocatib in decreasing exacerbation frequency in Chinese adults with bronchiectasis.

Methods: The HOPE-BE trial was a phase 3, randomised, placebo-controlled trial which determines the efficacy and safety of high-dose florensocatib (40 mg once daily) *versus* placebo in Chinese adults with bronchiectasis who had two or more exacerbations within the past year. Patients were randomly assigned in a 2:1 ratio to receive florensocatib 40 mg or matching placebo once daily for 52 weeks. We recorded demographics, medical history, bacterial infection status and quality-of-life and performed spirometry at baseline.

Results: We randomised 700 patients who were enrolled from 67 sites in mainland China between September 2024 and November 2025. 60.4% of patients were female. 559 (79.9%) and 141 (20.1%) of patients, respectively, had two and three or more exacerbations in the past year. The median (interquartile range) of 24-h sputum weight was 14.8 (29.3) g, and the median (interquartile range) of sputum purulence score was 5.0 (2.0). 192 (27.4%) patients were culture positive to *Pseudomonas aeruginosa*, and demonstrated significantly higher 24-h sputum volume and purulence score, and lower lung function and quality-of-life scores. Significant geographical variations were seen regarding comorbidity, blood eosinophil counts and sputum bacteriology.

Conclusion: The baseline demographic characteristics of the HOPE-BE trial may provide important clues to future therapeutic efficacy assessment in adults with bronchiectasis.

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Conflict of interest statement

Conflict of interest: W-j. Guan has received lecture fees and a scientific research grant from Haisco Co. Ltd The rest of the authors declared no interest directly related to the sponsor. F-q. Li, L-y. Sun and H-m. Liu are employees of Haisco Co. Ltd, and were involved in the study design and data analysis. The remaining the authors declare no other conflict of interest.

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

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5

Editorial

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. 2026 Aug 24;12(4):00621-2026.

doi: 10.1183/23120541.00621-2026. eCollection 2026 Jul.

[Type 2 inflammation, bronchiectasis and clinical trials: expanding from MAHALE](#)

[B Shoshana Zha](#)¹, [Stephanie A Christenson](#)¹

Affiliations Expand

- PMID: 42638998
- PMCID: [PMC13501440](#)
- DOI: [10.1183/23120541.00621-2026](#)

Abstract

MAHALE marks an important advance in bronchiectasis precision medicine as the first large trial to target T2 inflammation. Future considerations should include choice of target, precision phenoendotyping and multidimensional stratification. <https://bit.ly/4wlKYYT>.

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Conflict of interest statement

Conflict of interest: B.S. Zha reports consulting fees from Insmed, Genentech and Boehringer Ingelheim; clinical trial site principal investigator support from Insmed, Boehringer Ingelheim and AstraZeneca; and research funding from the Cystic Fibrosis Foundation, American Thoracic Society and National Institutes of Health, all outside the submitted work. S.A. Christenson reports consulting fees from Sanofi, AstraZeneca, AbbVie, Apogee Therapeutics and Genentech; and research funding from the National Institutes of Health, American Lung Association, COPD Foundation, Department of Defense and Uniquity Bio, outside the submitted work.

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

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6

Respir Med

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. 2026 Aug 24;262:109116.

doi: 10.1016/j.rmed.2026.109116. Online ahead of print.

[Radiographic outcome and impact factors in children with bronchiectasis](#)

[Jianchuan Chen](#)¹, [Lingjian Zeng](#)², [Jianhua Wei](#)³, [Ying Li](#)⁴, [Na Zang](#)⁵

Affiliations Expand

- PMID: 42636990
- DOI: [10.1016/j.rmed.2026.109116](#)

Abstract

Background: This study aims to investigate the radiological outcomes in children with bronchiectasis under current treatment strategies through a real-world prospective observational study, and to conduct a preliminary analysis of potential influencing factors.

Methods: A total of 492 pediatric patients with bronchiectasis who underwent chest HRCT were enrolled from the Children's Hospital of Chongqing Medical University between January 2018 and December 2022, with follow-up extending until June 2024. Reversible imaging changes in bronchiectasis were determined by comparing changes in chest HRCT and modified Reiff scores (MRS). Univariable logistic regression models were used to preliminarily screen for factors related to imaging prognosis; variables with a significance level of $P < 0.05$ were subsequently included in multivariable logistic regression models for further analysis.

Results: Ultimately, 273 eligible pediatric patients were included in the final analysis, after excluding those lost to follow-up, those without follow-up chest HRCT, and those who underwent lobectomy. Reversible imaging changes were observed in 125 patients (45.8%), comprising 72 cases (26.4%) of complete radiological remission and 53 cases (19.4%) of improvement. Conversely, 148 patients (54.2%) exhibited stable or progressive disease. Multivariable logistic regression analysis revealed that localized radiological changes were significantly associated with radiological reversibility (OR = 1.82, 95% CI 1.11-3.00; P = 0.018). Bronchiectasis associated with a genetic condition and any acute exacerbation of respiratory symptoms during follow-up showed a significant negative association with radiological reversibility (OR = 0.48, 95% CI 0.25-0.91; P = 0.028 and OR = 0.58, 95% CI 0.35-0.97; P = 0.038, respectively).

Conclusion: Pediatric bronchiectasis is partially reversible with appropriate treatment within a reasonable follow-up period. Patients with localized radiological changes are most likely to exhibit reversible imaging changes, whereas those with comorbid genetic diseases and recurrent infections are the least likely to do so.

Keywords: Bronchiectasis; Impact factors; Radiographic outcome; Reversibility.

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Conflict of interest statement

Declaration of competing interest All the authors of this original article report NO financial or personal relationships with other people or organizations that could inappropriately influence or bias our work. Including all the following potential competing interests: Employment. Consultancies. Stock ownership. Honoraria. Paid expert testimony. Patent applications or registrations. Grants or any other funding Affiliation with the journal as an Editor or Advisory Board Member.

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7

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[Epidemiology and Outcomes of Bronchiectasis in Alberta, Canada: A 15-Year Population-Based Study](#)

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Free article

Abstract

Rationale: Bronchiectasis is a chronic, progressive airway disease with rising global prevalence. However, no population-based epidemiologic study of adult bronchiectasis has been published from Canada, leaving the national burden, outcomes, and costs undefined.

Objectives: To determine the incidence, prevalence, mortality, health care utilization, and direct health care costs of bronchiectasis among adults in Alberta, overall and by airway disease phenotype.

Methods: We conducted a population-based retrospective cohort study (2010-2025) using linked Alberta provincial administrative health datasets. Adults (≥18 years) with bronchiectasis were identified using validated ICD-9/10 codes (ICD-10-CA J47; ICD-9 494), excluding cystic fibrosis. Patients were stratified by co-existing COPD or asthma. We estimated incidence, prevalence, health-care utilization, mortality, and direct health-care costs overall and by phenotype.

Results: We identified 12,169 adults with bronchiectasis (median age 65 years; 56% female). Prevalence increased to 311.6 per 100,000 adults in 2024, more than double that in 2010, while annual incidence remained stable at 25.1 (95% CI 24.4-25.7) per 100,000 adults. After age- and sex-standardization to the 2021 Canadian reference population, the standardized average annual incidence was 29.6 and the standardized 2024 prevalence was 433.2 (95% CI 426.3-440.2) per 100,000 adults. Bronchiectasis with comorbid COPD (27%) had the most severe outcomes, including high mortality (55% during follow-up; 17% within one year), the highest hospitalization rate (0.62 per person-year), and the greatest lifetime health-care costs (mean ~\$88,400 CAD). Bronchiectasis with comorbid asthma (13%) occurred in younger, predominantly female patients and was marked by frequent exacerbations (44%) but lower mortality (16%). Overall, patients experienced 0.42 hospital admissions per person-year and mean 5-year direct health-care costs exceeded \$36,000 CAD per patient.

Conclusions: In this first Canadian population-based study of adult bronchiectasis, prevalence more than doubled over 15 years despite stable incidence, indicating a growing chronic respiratory disease burden. Bronchiectasis was associated with substantial mortality, acute care use and direct health-care costs, with especially poor outcomes among those with COPD overlap. These findings provide foundational Canadian data to inform disease recognition with phenotype-specific management and future health-system planning.

Keywords: Bronchiectasis; Epidemiology; Exacerbations.

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8

Review

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[T2-low asthma: mechanistic pathways, biomarkers, and emerging therapeutic strategies](#)

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Abstract

Objective: To synthesize current definitions, mechanistic pathways, biomarker limitations, and evidence-graded therapeutic strategies for T2-low asthma as a heterogeneous clinical and translational construct.

This narrative review searched PubMed/MEDLINE, Embase, the Cochrane Library, and reference lists of key articles from database inception to June 2026. Peer-reviewed human studies, randomized trials, post hoc analyses, systematic reviews, meta-analyses, guidelines, severe-asthma registries, biomarker cohorts, and mechanistic asthma studies were prioritized. Preclinical studies were used only when human evidence was limited and were interpreted as hypothesis-generating.

Results: T2-low asthma is usually defined by low eosinophils, low fractional exhaled nitric oxide, and limited evidence of canonical type 2 inflammation, but this remains an exclusionary definition. The construct includes neutrophilic, paucigranulocytic, obesity-associated, exposure-related, infection-linked, bronchiectasis-overlap, and remodeling-dominant presentations. Candidate pathways include Th1/Th17 signaling, CXCL8/CXCR2-mediated neutrophil recruitment, inflammasome activation, IL-6-associated immunometabolic inflammation, epithelial alarmins, dysbiosis, and small-airway dysfunction. No positive biomarker currently identifies treatment-responsive T2-low asthma in routine practice. Management relies on diagnostic confirmation, optimized inhaled therapy, repeated phenotyping, treatable-traits care, and selected add-on options including tezepelumab, azithromycin, or bronchial thermoplasty in appropriate patients. A total of 63 references were synthesized in this review.

Conclusions: T2-low asthma is clinically important but mechanistically diverse. Progress requires validated positive biomarkers, harmonized phenotyping, and biomarker-enriched trials that test therapies in coherent subgroups without overstating readiness for routine care.

Keywords: IL-6; Non-eosinophilic inflammation; T2-low asthma; airway remodeling; alarmins; biomarkers; inflammasome; neutrophilic inflammation; paucigranulocytic asthma; severe asthma.

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