

18-22-FEB-2026

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

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Fam Med Community Health

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. 2026 Feb 19;14(1):e003713.

doi: 10.1136/fmch-2025-003713.

[Risk factors for COPD exacerbations and mortality, and variation between primary care settings: the PRAXIS cohort study in Sweden](#)

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Affiliations Expand

- PMID: 41720490
- DOI: [10.1136/fmch-2025-003713](https://doi.org/10.1136/fmch-2025-003713)

Abstract

Objective: We aimed to examine the variability of chronic obstructive pulmonary disease (COPD) exacerbations and mortality, between primary healthcare centres, and their associations with comorbid diseases and body mass index, during an 8-year follow-up.

Design: This was a cohort study using multilevel modelling with follow-up from 2014 to 2022. Data came from questionnaires in 2014 and 2022 and medical record

reviews between 2004 and 2014. The main outcomes were exacerbations in 2022 and mortality by 2022. Exacerbations were defined as any emergency visit, and/or use of oral steroids or antibiotics due to worsening of COPD symptoms during the previous 6 months.

Setting: The PRAXIS study included patients at 76 primary healthcare centres in central Sweden.

Participants: Primary care patients aged ≤ 75 years and with a diagnosis of COPD in their medical records between 2007 and 2010 were included in 2014 (n=1163) and followed up in 2022 (n=906). There were no other exclusion criteria.

Results: The 809 patients with complete data attended 70 primary care centres. Multilevel multinomial regression estimated risks of exacerbations and mortality, calculating relative risk ratios (RRRs) with 95% CIs. The intraclass correlation coefficient (ICC) quantified the proportion of variance attributed to variability between centres. The ICC was 0.024, indicating 2.4% of the variation was explained by differences between centres. Patients with a history of depression in 2014 had an increased risk of subsequent exacerbations (RRR 1.95, 95% CI 1.13 to 3.39). For mortality, there were associations with history of anxiety, RRR 3.71 (95% CI 2.06 to 6.87), or cardiovascular disease, especially chronic heart failure, RRR 2.69 (95% CI 1.36 to 5.33). Body mass index had a U-shaped association with mortality.

Conclusions: The variability between centres was small and patient factors appear to be of more importance for COPD exacerbations and mortality than differences between these primary care settings. As expected, pre-existing cardiovascular disease is associated with future excess mortality risk, but, notably, anxiety may also be an important risk factor. Individualised care and management of comorbidity is thus essential among patients in primary care with COPD.

Keywords: Chronic Disease; Epidemiology; Primary Health Care; Respiratory System.

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Conflict of interest statement

Competing interests: BS has received honoraria for educational activities and lectures from AstraZeneca, Boehringer Ingelheim, GlaxoSmithKline and Novartis and has served on advisory boards arranged by AstraZeneca, Novartis, GlaxoSmithKline and Boehringer Ingelheim. HS has received honoraria for educational activities and service on advisory boards from ALK, AstraZeneca, Chiesi, GlaxoSmithKline, Orion Pharma and Sanofi. MG has received honoraria for educational activities and lectures from AstraZeneca, Boehringer Ingelheim and Orion Pharma. JS has received honoraria for educational activities from AstraZeneca, Boehringer Ingelheim, Chiesi and Novartis. MK has received lecture fees from AstraZeneca. The authors report no other conflicts of interest.

Supplementary info

MeSH termsExpand

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Cite

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J Glob Health

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. 2026 Feb 20:16:03004.

doi: [10.7189/jogh.16.03004](https://doi.org/10.7189/jogh.16.03004).

[Healthcare professionals' challenges and solutions in providing palliative care to patients with severe chronic obstructive pulmonary disease](#)

[Sylvia McCarthy](#)¹, [Jayakayatri Jeevajothi Nathan](#)², [Ee Ming Khoo](#)², [Zee Nee Lim](#)¹, [Nik Sherina Hanafi](#)², [Norita Hussein](#)²; [RESPIRE Collaboration](#)

Affiliations Expand

- PMID: 41718005
- DOI: [10.7189/jogh.16.03004](https://doi.org/10.7189/jogh.16.03004)

Abstract

Palliative care significantly improves the quality of life for individuals with advanced chronic diseases. However, access in Malaysia remains limited, particularly for patients with non-malignant conditions such as chronic obstructive pulmonary disease (COPD). Here, we discuss the barriers and solutions identified through a nine hour in-person stakeholder workshop to co-develop practical initiatives for integrating palliative care into the management of severe COPD. Key challenges in the assessment of severe COPD included limited training in holistic care, resource constraints, and fragmented care pathways. In management, issues included low awareness and availability of pulmonary rehabilitation, uncertainty in initiating palliative care and difficulty accessing opioids, limited provider training, and patient-level barriers such as stigma and low health literacy. Proposed solutions included cascade training, decentralised care models, strengthened communication skills, and integrated care pathways. This workshop highlighted the need for multidisciplinary training, system-level integration, and culturally responsive care models to improve palliative access for patients with severe COPD. It also underscored the importance of policy engagement to address structural barriers such as opioid regulation and fragmented care. This approach offers a promising model for capacity building in other resource-limited settings.

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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 the following activities and/or relationships: EMK reports grants from the NIHR UK; personal fees from AstraZeneca; and serves as a board director of the International Primary Care Respiratory Group.

Supplementary info

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Cite

3

J Am Heart Assoc

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. 2026 Feb 20:e043281.

doi: 10.1161/JAHA.125.043281. Online ahead of print.

[Proteomic Profiling of Pulmonary Function and Cardiovascular Disease Risk in the Atherosclerosis Risk in Communities Study](#)

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Affiliations Expand

- PMID: 41717923
- DOI: [10.1161/JAHA.125.043281](https://doi.org/10.1161/JAHA.125.043281)

Abstract

Background: Pulmonary function is linked to cardiovascular disease risk; however, the underlying mechanisms remain unclear. We aimed to identify protein biomarkers associated with pulmonary function and examine their impact on incident chronic obstructive pulmonary disease, coronary heart disease, heart failure, and all-cause mortality.

Methods: Data from White and Black Americans in the Atherosclerosis Risk in Communities study (visit 2: N=11 354, mean age=57 years; visit 5: N=3517, mean age=75 years), a prospective cohort, were analyzed. Linear regression assessed associations between protein levels and pulmonary function measures, including forced expiratory volume in 1 second and forced vital capacity. The impact of the identified proteins on incident chronic obstructive pulmonary disease, coronary heart disease, heart failure, and mortality was estimated using logistic regression and Cox proportional hazards models. Pathway enrichment and Mendelian randomization explored underlying biological functions and causal effects.

Results: Of 4766 proteins analyzed, 364 were cross-sectionally associated with forced expiratory volume in 1 second (and forced vital capacity (false discovery rate<0.05). Ninety-four and 270 proteins had concordant positive and negative effects, respectively. Five pathways related to pulmonary and cardiac function were enriched. Of the 364 proteins, 112 were linked to all 4 outcomes, where 86 were associated with increased risk (odds ratio/hazard ratio [OR/HR], 1.05-1.42) and 26 with reduced risk (OR/HR, 0.69-0.96). Six proteins (STAT3 [signal transducer and activator of transcription 3], MIC-1 [growth differentiation factor 15], apoA-II [apolipoprotein A-II], TPST1 [protein-tyrosine sulfotransferase 1], integrin α 1 β 1 [integrin α -I: β -1 complex], and BLC [C-X-C motif chemokine 13]) showed potential inverse causal effects on with forced expiratory volume in 1 second and forced vital capacity, and integrin α 1 β 1 demonstrated consistent inverse associations with chronic obstructive pulmonary disease, coronary heart disease, and heart failure risks.

Conclusions: Proteins associated with pulmonary function may influence CVD risk. Six proteins, including integrin α 1 β 1, represent promising targets for future interventions.

Keywords: biomarker; forced expiratory volume in 1 second; forced vital capacity; proteomics; pulmonary function.

Full text links



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Int J Emerg Med

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. 2026 Feb 19;19(1):47.

doi: 10.1186/s12245-026-01130-3.

[Ultrasonographic diaphragmatic assessment as an emergency mortality predictor in acute exacerbation of COPD](#)

[Athar Fekry Lasheen](#)¹, [Sami Sayed Ahmed El-Dahdoh](#)², [Mahmoud Tarek AbdElsamea Gadallah](#)³, [Hatem Mahmmod Sultan](#)⁴

Affiliations Expand

- PMID: 41714945
- DOI: [10.1186/s12245-026-01130-3](https://doi.org/10.1186/s12245-026-01130-3)

No abstract available

Keywords: COPD; Diaphragm; Emergency; Mortality; POCUS.

Conflict of interest statement

Declarations. Ethics approval and consent to participate: We conducted our study in accordance with the Declaration of Helsinki, and all participants signed an informed consent form prior to data collection. Moreover, the Institutional Review Board of the Faculty of Medicine approved our study protocol. Consent for publication: Not applicable. Competing interests: The authors declare no competing interests.

- [34 references](#)

Full text links



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5

Eur Respir J

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. 2026 Feb 19:2502358.

doi: 10.1183/13993003.02358-2025. Online ahead of print.

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

[John V Fahy](#)¹

Affiliations Expand

- PMID: 41713949
- DOI: [10.1183/13993003.02358-2025](https://doi.org/10.1183/13993003.02358-2025)

Abstract

Recent studies using computed tomography (CT) have uncovered a high prevalence of airway mucus plugs in patients with asthma and COPD. These mucus plugs persist in the same airways for years and often occur in patients without symptoms of cough and sputum production. Mucus plugs associate strongly with measures of airflow obstruction and disease morbidity in both asthma and COPD, and they occur and persist despite treatment with high doses of inhaled and oral corticosteroids. Thus, airway mucus plugs have emerged as an underappreciated airway pathology in asthma and COPD and a cause of persistent airflow obstruction and disease morbidity that can be specifically targeted for treatment. This narrative review covers the pathobiology of mucus plugs in asthma and COPD with three areas of emphasis: (i) Prevalence and clinical features; (ii) Mechanisms of formation and persistence; (iii) Current and emerging treatments.

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Cite

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Tuberc Respir Dis (Seoul)

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. 2026 Feb 19.

doi: 10.4046/trd.2025.0197. Online ahead of print.

[Small Airway Dysfunction in COPD Pathology: Assessment and Clinical Implications](#)

[Jong Geol Jang](#)¹, [Hyonsoo Joo](#)², [Hyun Lee](#)³

Affiliations Expand

- PMID: 41713846

- DOI: [10.4046/trd.2025.0197](https://doi.org/10.4046/trd.2025.0197)

Free article

Abstract

Chronic Obstructive Pulmonary Disease (COPD) is a progressive lung disease characterized by airflow limitation and persistent respiratory symptoms. Small airway dysfunction (SAD) plays a crucial role in the progression of COPD, originating in airways less than 2 mm in diameter. Chronic exposure to smoke and toxins leads to inflammatory remodeling and luminal obstruction, which can be detected through micro-CT studies before spirometric airflow limitation becomes apparent. SAD exacerbates COPD by increasing airway resistance and promoting dynamic airway collapse during exhalation. Clinically, SAD manifests as gas trapping, hyperinflation, and exercise intolerance, correlating with accelerated lung function decline. Recent evidence suggests that SAD may represent a potentially modifiable and clinically meaningful trait in COPD, with management strategies including extrafine-particle inhalers, smoking cessation, pulmonary rehabilitation, and emerging biologic approaches. Various measurement methods, including pulmonary function tests and computed tomography (CT) imaging, are used to assess SAD. This review focuses on the role of SAD in COPD pathophysiology and the clinical implications of relevant and easily applicable measurements, such as FEF_{25-75%}, impulse oscillometry, Pi10, and parametric response mapping (PRM) and potential treatment modalities of SAD in COPD.

Keywords: COPD; Diagnosis; Lung mechanics; Pathology; Small airway disease; Treatment.

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Review

Drugs

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. 2026 Feb 19.

doi: 10.1007/s40265-026-02294-1. Online ahead of print.

[Mucus as a Treatable Trait in Chronic Airway Diseases](#)

[Mario Cazzola](#)¹, [Paola Rogliani](#)², [Josuel Ora](#)², [Luigino Calzetta](#)³, [Maria Gabriella Matera](#)⁴

Affiliations Expand

- PMID: 41712061
- DOI: [10.1007/s40265-026-02294-1](https://doi.org/10.1007/s40265-026-02294-1)

Abstract

Chronic airway diseases, including asthma, chronic obstructive pulmonary disease, bronchiectasis, and cystic fibrosis, are increasingly recognized as heterogeneous disorders characterized by overlapping pathophysiological mechanisms. Among these, abnormalities in mucus production, composition, and clearance have been identified as clinically significant contributors to symptoms, airflow limitation, exacerbations, and disease progression. Within the "treatable traits" framework, mucus-related abnormalities represent a distinct, modifiable phenotype that supports personalized management strategies. This narrative review explores mucus as a treatable trait across chronic airways diseases, integrating mechanistic insights with clinical assessment, biomarkers, and current and emerging therapeutic approaches. We discuss the role of mucus in disease phenotyping, its impact on morbidity, and the potential of targeted interventions to improve outcomes. Recognizing mucus as a treatable trait aligns with the principles of precision medicine and offers a pathway toward individualized therapy beyond traditional diagnostic labels.

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Conflict of interest statement

Declarations. Conflicts of interest: The Authors have no conflicts of interest that are directly relevant to the content of this article. Mario Cazzola and Luigino Calzetta are Editorial Board members of *Drugs*. Mario Cazzola and Luigino Calzetta were not involved in the selection of peer reviewers for the manuscript, nor in any of the subsequent editorial decisions. **Ethics approval:** Not applicable. **Consent to participate:** Not applicable. **Consent for publication:** Not applicable. **Availability of data and material:** Not applicable. **Code availability:** Not applicable. **Author contributions:** All authors contributed to the manuscript. **Original draft preparation:** Mario Cazzola. **Writing, review, and editing:** Paola Rogliani, Josuel Ora, Luigino Calzetta, and Maria Gabriella Matera. All authors read and approved the final manuscript.

- [129 references](#)

Supplementary info

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Cite

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Lung

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. 2026 Feb 19;204(1):10.

doi: 10.1007/s00408-026-00871-5.

[Clinical History, Spirometry, and CT Features Can Predict Dyspnea in Smokers with and without Spirometry-Defined COPD](#)

[Joosun Shin](#)^{1 2 3}, [Mary E Cooley](#)⁴, [Marilyn J Hammer](#)^{4 5 6}, [Chi-Fu J Yang](#)^{7 6}, [Uno Hajime](#)^{5 6}, [Enrico Maiorino](#)^{8 6}, [Richard Casaburi](#)⁹, [Adel R El Boueiz](#)^{8 10 6}, [Raúl San José Estepar](#)^{11 10 6}, [Peter J Castaldi](#)^{8 12 6}; [COPDGene Investigators](#)

Affiliations Expand

- PMID: 41712019
- PMCID: [PMC12920348](#)
- DOI: [10.1007/s00408-026-00871-5](#)

Abstract

Rationale: Dyspnea is common in smokers with or without chronic obstructive pulmonary disease. Its multifactorial nature makes it challenging to identify specific factors causing dyspnea in smokers with and without chronic obstructive pulmonary disease.

Objectives: The study aims to identify associations between clinical history, spirometry, and computed tomography findings related to dyspnea in smokers, and to develop and compare dyspnea models using different variable combinations.

Methods: Dyspnea was defined as a self-reported modified Medical Research Council dyspnea scale score ≥ 2 . Participants from the COPDGene Study dataset were utilized and split into training and testing samples (80%/20%) to develop and validate a predictive model. The ECLIPSE Study was used for external validation. Bivariable and multivariable logistic regression analyses were used to examine factors associated with dyspnea. Predictive models were developed using Elastic Net.

Main Results: The final prediction model demonstrated good predictive performance, achieving an area under the curve of 0.85 in the test set and 0.80 in the external dataset. We confirmed prior associations with dyspnea and identified novel interactions of multiple risk factors with chronic obstructive pulmonary disease severity.

Conclusions: Dyspnea in smokers with and without chronic obstructive pulmonary disease can be predicted with high accuracy using a model that utilizes clinical history, spirometry, and chest CT imaging. To make accurate predictions, data from at least two of the three variable domains (clinical history, spirometry, or chest CT imaging) was required.

Supplementary Information: The online version contains supplementary material available at [10.1007/s00408-026-00871-5](https://doi.org/10.1007/s00408-026-00871-5).

Keywords: Machine learning; Quantitative chest computed tomography; Spirometry.

Conflict of interest statement

Declarations. Conflict of interest: The authors declare no competing interests.

Ethical approval: This study was performed in accordance with the Declaration of Helsinki. This human study was approved by Dana-Farber Cancer Institute Office for Human Research Studies—approval: 23–686. All adult participants provided written informed consent to participate in this study.

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

Supplementary info

Grants and fundingExpand

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ESC Heart Fail

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. 2026 Feb 19:xvag059.

doi: [10.1093/escf/xvag059](https://doi.org/10.1093/escf/xvag059). Online ahead of print.

[Discharge Neutrophil-to-Lymphocyte Ratio and Its Trajectory as Predictors of 30-Day Outcomes in Acute Heart Failure](#)

[Gil Marcus](#)^{1,2}, [Shiri L Maymon](#)^{3,2}, [Eran Kalmanovich](#)^{1,2}, [Gil Moravsky](#)^{1,2}, [Ido Minha](#)⁴, [Avishay Grupper](#)^{1,2}, [Anat Milman](#)^{1,2}, [Shmuel Fuchs](#)^{1,2}, [Sa'ar Minha](#)^{1,2}

Affiliations Expand

- PMID: 41711242
- DOI: [10.1093/eschf/xvag059](https://doi.org/10.1093/eschf/xvag059)

Free article

Abstract

Aims: To evaluate whether discharge neutrophil-to-lymphocyte ratio (NLR) and its in-hospital trajectory predict 30-day outcomes after acute decompensated heart failure (ADHF) hospitalization, and to compare discharge NLR with admission NLR and with serial NLR measurement.

Methods: Retrospective cohort of 6,784 ADHF discharges (2007-2017; median age 78 [IQR 69-85] years; 48.8% women). Patients were classified by discharge NLR (<5 vs ≥5) and by NLR trajectory (low→low, low→high, high→low, high→high). Primary endpoints were 30-day all-cause readmission and 30-day all-cause mortality. Multivariable Cox models adjusted for age, sex, anemia, chronic kidney disease, diabetes, ischemic heart disease, atrial fibrillation, peripheral vascular disease, and COPD. Discrimination was assessed using AUCs from adjusted logistic models.

Results: High discharge NLR (≥5) was present in 2,258/6,784 (33.3%). Event rates were higher with high vs low discharge NLR for readmission (25.5% vs 19.7%, $p<0.001$) and mortality (7.8% vs 2.8%, $p<0.001$). High discharge NLR was independently associated with readmission (HR 1.21, 95% CI 1.05-1.40, $p=0.007$) and mortality (HR 1.92, 95% CI 1.46-2.53, $p<0.001$). Trajectory further stratified risk: high→high had the greatest risk (readmission HR 1.42, 95% CI 1.25-1.62, $p<0.001$; mortality HR 3.42, 95% CI 2.53-4.62, $p<0.001$); low→high was also high-risk (readmission HR 1.46, 95% CI 1.20-1.77, $p<0.001$; mortality HR 3.05, 95% CI 2.00-4.65, $p<0.001$). High→low showed reduced but residual risk vs low→low (readmission HR 1.07, 95% CI 0.93-1.23, $p=0.321$; mortality HR 1.52, 95% CI 1.06-2.16, $p=0.021$). Discharge NLR outperformed admission NLR (mortality AUC 0.731 vs 0.705; readmission AUC 0.573 vs 0.564). Serial NLR added minimal discrimination beyond discharge NLR alone (mortality AUC 0.736 vs 0.734; readmission AUC 0.571 for both).

Conclusions: Discharge NLR is an independently prognostic, routinely available biomarker for 30-day readmission and mortality after ADHF. Persistently elevated or rising NLR identifies patients at highest short-term risk, while normalization attenuates but does not eliminate risk. A single discharge measurement performs comparably to serial assessment, supporting practical integration of discharge NLR into risk-stratified follow-up, including in resource-limited settings.

Keywords: 30-Day Mortality; 30-Day Readmission; Acute Decompensated Heart Failure; Discharge Biomarkers; Neutrophil-to-Lymphocyte Ratio.

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Cite

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COPD

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doi: 10.1080/15412555.2026.2615290. Epub 2026 Feb 18.

[Impact of Comorbid Interstitial Lung Abnormalities on Acute Exacerbations of COPD: A Hospital-Based Retrospective Cohort Study](#)

[Yang Li](#)¹, [Cong Zhou](#)¹, [Wangsheng Yu](#)¹, [Mei Yang](#)^{1,2}, [Jian Luo](#)³, [Xin Chen](#)⁴, [Xuemei Liu](#)¹, [Bing Mao](#)¹, [Hongli Jiang](#)¹, [Wei Liu](#)¹

Affiliations Expand

- PMID: 41704188
- DOI: [10.1080/15412555.2026.2615290](https://doi.org/10.1080/15412555.2026.2615290)

Free article

Abstract

Objective: To assess the influence of comorbid interstitial lung abnormalities (ILA), lung fibrosis (LF), and interstitial lung disease (ILD) on clinical characteristics and in-hospital outcomes in acute exacerbations of chronic obstructive pulmonary disease (AECOPD).

Methods: In this retrospective cohort study, AECOPD patients were stratified by ILA, LF, or ILD status. Multivariable regression analyzed associations with outcomes, including in-hospital mortality, ICU admission, ventilation use, 30-day readmission, and length of stay (LOS). Subgroup and sensitivity analyses assessed robustness.

Results: Among 11,457 AECOPD patients, 33.1% had ILA, 25.9% had LF, and 5.0% had ILD. After multivariable adjustment for potential confounders, the presence of ILA, LF, or ILD was not independently associated with in-hospital mortality (ILA:

aOR 0.93, 95% CI 0.75-1.14; LF: aOR 0.87, 95% CI 0.70-1.10; ILD: aOR 1.04, 95% CI 0.70-1.53). All conditions significantly increased ICU admission and noninvasive ventilation use but reduced invasive ventilation use.

Conclusions: While not independent mortality predictors, ILA/LF/ILD signify greater disease severity and resource utilization during AECOPD, evidenced by higher ICU needs yet paradoxically lower invasive ventilation, a pattern that might be attributed to distinct pathophysiology and clinical management goals in this complex subgroup. This underscores clinical heterogeneity and necessitates tailored management and goals-of-care discussions for this high-risk subgroup.

Keywords: Chronic obstructive pulmonary disease; exacerbation; in-hospital mortality; interstitial lung abnormality; interstitial lung disease; lung fibrosis.

Supplementary info

MeSH termsExpand

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

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Am J Health Promot

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. 2026 Feb 19:8901171261424683.

doi: 10.1177/08901171261424683. Online ahead of print.

[Multimorbidity Patterns and Obesity Among Americans Turning Forty](#)

[Xinyu Zhu](#)¹, [Rebecca Jones-Antwi](#)², [Solveig A Cunningham](#)^{3,4}

Affiliations Expand

- PMID: 41711311
- DOI: [10.1177/08901171261424683](https://doi.org/10.1177/08901171261424683)

Abstract

PurposeTo identify multimorbidity patterns among U.S adults entering their 40s.**Design**Cross-sectional analysis of cohort data.**Setting and Sample**Data are from the National Longitudinal Study of Youth 1979, a nationally representative cohort

born between 1957-1964 (n = 8104) who were followed from adolescence into adulthood; this analysis used data collected when participants entered their 40s (1998-2006). Measures and Analysis Participants self-reported whether they had ever been diagnosed with each of 7 chronic conditions: hypertension, diabetes, non-skin cancers, chronic lung disease, heart disease, mental disorders, and arthritis or rheumatism. We used latent class analysis to identify multimorbidity patterns. Multimorbidity was defined as ≥ 2 diagnosed conditions and obesity as body mass index ≥ 30 kg/m² from self-reported height and weight. We used multinomial survey-adjusted logistic regressions to examine associations between obesity and disease clusters. Results At mean age of 41y, 10.8% of adults in the U.S. had multimorbidity; 26.3% had obesity. Three patterns emerged: *healthy* (≤ 1 disease), an *arthritis-mental health conditions-dominated* cluster (5.6%) and a *hypertension-diabetes-dominated* cluster (2.4%). People with obesity had 5 times higher odds of having a *hypertension-diabetes-dominated* cluster (OR = 5.2, 95%CI: 3.2-8.5) and double the odds of having an *arthritis-mental health conditions-dominated* cluster (1.7, 1.2-2.2) compared to normal-weight individuals. Conclusion Among U.S. adults in their 40s, multimorbidity clusters were dominated by *arthritis-mental health* and *hypertension-diabetes*; both disproportionately affected individuals with obesity.

Keywords: chronic disease; early midlife; latent class analysis; multimorbidity; obesity.

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Cite

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Pediatrics

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. 2026 Feb 18:e2025073008.

doi: 10.1542/peds.2025-073008. Online ahead of print.

[Patterns of Children With Complex Chronic Conditions: A Latent Class Analysis](#)

[Eyal Cohen](#)^{1,2}, [Maria Osipovich](#)³, [Hallie Benjamin](#)⁴, [Nathaniel D Bayer](#)⁵, [Christian D Pulcini](#)⁶, [Jeffrey D Colvin](#)⁷, [Ryan J Coller](#)⁸, [Jana C Leary](#)³, [Sarah Malecki](#)², [John M Morrison](#)⁹, [Matt Hall](#)¹⁰, [Jay G Berry](#)³

Affiliations Expand

- PMID: 41702422

- DOI: [10.1542/peds.2025-073008](https://doi.org/10.1542/peds.2025-073008)

Abstract

Objectives: The objective of this study was to distinguish empirical classes among children with complex chronic conditions (CCCs) and to assess whether such classes can predict future health care use.

Methods: We analyzed claims data from children aged 1 to 18 years with a CCC who were continuously enrolled in a 10-state Medicaid database from 2017 to 2019. We performed a latent class analysis using demographic factors, clinical characteristics, and health care use patterns in 2017 and assessed the ability of the classes to differentiate health care spending and use in 2018 to 2019 using negative binomial and logistic regression.

Results: We included 185 672 children with a CCC (52% male; median [IQR] age: 11 [5, 15] years). Eight indicator variables led to a 3-class solution (entropy = 0.83): Class 1 (9.1% of the cohort) was characterized by high neuro-disability, high technology dependence, and high multimorbidity; Class 2 (14.8%) had high neuro-disability and low technology dependence; and Class 3 (76.0%) had low neuro-disability and low technology dependence. Compared with children in Class 3, total spending in 2017 to 2018 was increased among both Class 1 and Class 2 (total spending rate ratio [RR] 6.9 [95% CI: 6.7-7.0] and RR 2.5 [95% CI: 2.5-2.6], respectively). The largest categories of subsequent spending were for inpatient care and outpatient specialist services among individuals in Class 1 and for outpatient drugs, outpatient specialists, and mental health for those in Class 2.

Conclusions: Children with CCCs can be categorized into meaningful classes based on readily available data with different patterns of future health care use and costs.

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

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J Paediatr Child Health

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. 2026 Feb 20.

doi: 10.1111/jpc.70315. Online ahead of print.

[Preschool Wheeze Profiles and Early Life Associations: An Australian Prebirth Cohort](#)

[Rachel J Morgan](#)^{1,2}, [Xin Dai](#)³, [Caroline J Lodge](#)³, [Martin O'Hely](#)^{1,4}, [Sarath Ranganathan](#)^{4,5}, [Peter D Sly](#)^{1,6}, [Anne-Louise Ponsonby](#)^{4,7}, [Toby Mansell](#)^{4,5}, [David Burgner](#)^{4,5}, [Simon Phipps](#)^{8,9,10}, [Peter Vuillermin](#)^{1,2,4}; [BIS Investigator Group](#)

Collaborators, Affiliations Expand

- PMID: 41721199
- DOI: [10.1111/jpc.70315](https://doi.org/10.1111/jpc.70315)

Abstract

Aim: To define preschool wheeze profiles to 4-years, identify their early life associations, and impact on wheeze risk at 9-years.

Methods: A latent class analysis of eight wheeze responses (1 month-4 years) and two severity markers (respiratory presentation to emergency department and wheeze with shortness of breath) using data from a pre-birth prospective cohort study. Relative risk ratios (RRR) with 95% confidence intervals were calculated using multinomial logistic regression to examine associations between early life risk factors and wheeze at 9-years.

Results: Four distinct preschool wheeze profiles were identified: "never/infrequent" with minimal wheeze (n = 538), "early persistent" wheeze from 3 months to 4 years (n = 83), "transient" from 6 to 18 months (n = 263) and "late-onset" from 18 months to 4 years (n = 148). Relative to "never/infrequent", maternal asthma history was associated with increased risk of all adverse wheeze profiles, the highest for "early persistent" wheeze [RRR 5.06; 2.96-8.67]. Breastfeeding at 6 months decreased the risk of "early persistent" wheeze [RRR 0.53; 0.31-0.90] and at 12 months protected against all adverse wheeze profiles. Eczema, food allergy, aeroallergen and food sensitisation all increased the risk of "early persistent" and "late-onset" wheeze. "Early persistent" [RRR 7.25; 3.92-13.42] and "late-onset" [RRR 3.93; 2.24-6.89] wheeze profiles were associated with increased risk of wheeze at 9-years.

Conclusions: Early life exposures and atopy measures had distinct associations with data-derived preschool wheeze profiles. Maternal asthma and the absence of breastfeeding emerged as unifying risk factors. Investigation of the underlying mechanistic pathways is required to inform novel primary prevention strategies.

Keywords: allergic sensitisation; birth cohort; latent class analysis; preschool wheeze; risk factors.

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- [28 references](#)

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Cite

2

J Asthma

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. 2026 Feb 20:1-12.

doi: 10.1080/02770903.2026.2633352. Online ahead of print.

[Association between pan-immune-inflammation value and asthma all-cause-mortality in American adults: NHANES 1999-2018](#)

[Mengxue Wu](#)¹, [Pingping Fu](#)¹, [Guanhua Jiang](#)¹, [Zonglang Zhou](#)¹

Affiliations Expand

- PMID: 41718530
- DOI: [10.1080/02770903.2026.2633352](#)

Abstract

Background: The pan-immune-inflammation value (PIV) is a novel biomarker developed to evaluate systemic immune-inflammatory status. Although its predictive utility has been developed in multiple medical contexts, its applicability to asthma-related outcomes remains uncertain and warrants further investigation.

Methods: This investigation examined data collected through the National Health and Nutrition Examination Survey (NHANES) from 1999 to 2018. Multifactorial Cox regression analysis served to evaluate the link between PIV and all-cause mortality (ACM) in individuals with asthma. The investigation utilized Kaplan-Meier survival curves to display survival patterns across PIV quartiles. Restricted cubic spline regression helped investigate the link between PIV and asthma-related ACM. The investigation incorporated subgroup analyses to identify potential effect modifiers, while sensitivity analyses confirmed the reliability of the results.

Results: The investigation involved 5,776 asthmatic individuals aged 20 to 80 years. The comprehensive adjusted analysis (Model 3) indicated that Participants in the highest quartile of $\log_{10}(\text{PIV})$ had a 55.9% higher risk of all-cause mortality compared to those in the lowest quartile (HR = 1.559, 95% CI: 1.131-2.149). The dose-response evaluation demonstrated a linear link between PIV and asthma-related ACM (P for overall trend <0.001; P for nonlinearity = 0.052). Subgroup analysis identified a significant interaction with smoking status (P = 0.005), while no notable interactions were detected in other subgroups (P >0.05).

Conclusion: Rising PIV is linearly and independently associated with elevated all-cause mortality in adults with asthma. These findings suggest that PIV may have potential utility in risk stratification. Further research is needed to confirm its prognostic value.

Keywords: NHANES; asthma; cohort study; pan-immune-inflammation value.

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Cite

3

Review

J Asthma

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. 2026 Feb 20:1-17.

doi: 10.1080/02770903.2026.2633357. Online ahead of print.

[Impact of Weight Loss on Obese Children and Adolescents with Asthma: A Systematic Review and Meta-Analysis](#)

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Affiliations Expand

- PMID: 41717977
- DOI: [10.1080/02770903.2026.2633357](https://doi.org/10.1080/02770903.2026.2633357)

Abstract

Objective: This systematic review and meta-analysis aims to systematically evaluate the efficacy of weight management interventions for improving pulmonary function, asthma control, asthma-specific quality of life, and leptin levels in obese children and adolescents with asthma.

Data sources: Randomized controlled trials (RCTs) and single-group pretest-posttest designs (SGPPDs) were systematically retrieved from six databases (PubMed, Cochrane Library, Web of Science, Embase, CNKI, Wanfang) and three trial registries from inception to September 26, 2024.

Study selections: The analysis included studies involving obese pediatric patients with asthma who underwent weight management interventions. Nine studies met the inclusion criteria after screening. Risk of bias was assessed using ROB 2.0 for RCTs and JBI tools for SGPPDs.

Results: Meta-analysis of RCTs revealed significant improvements in FEV₁% (MD = 4.53, 95% CI: 3.51-5.55) and FVC% (MD = 4.91, 95% CI: 4.15-5.67) following weight management interventions. Asthma Control Test (ACT) and Pediatric Asthma-specific Quality of Life Questionnaire (PAQLQ) scores increased by 1.41 (95% CI: 1.11-1.71) and 0.46 (95% CI: 0.07-0.85), respectively. Leptin levels showed a decreasing trend but lacked statistical significance. SGPPD results were similar to RCT findings but with higher heterogeneity. Peter's regression indicated no publication bias ($P > 0.05$), and sensitivity analysis supported the stability of effect sizes.

Conclusion: Weight management positively impacts pulmonary function, asthma control, and asthma-specific quality of life in obese pediatric asthma patients, while its effect on leptin levels requires further exploration. This study provides critical evidence for weight management strategies.

Keywords: adolescents; asthma; children; meta-analysis; obesity; weight reduction.

Supplementary info

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Comment

Eur Respir J

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. 2026 Feb 19;67(2):2501380.

doi: 10.1183/13993003.01380-2025. Print 2026 Feb.

[Dupilumab and lymphoma risk among patients with asthma](#)

[Brian Lipworth](#)¹, [Philipp Suter](#)², [Robert Greig](#)²

Affiliations Expand

- PMID: 41713965
- DOI: [10.1183/13993003.01380-2025](https://doi.org/10.1183/13993003.01380-2025)

No abstract available

Conflict of interest statement

Conflict of interest: B.J. Lipworth reports grants from AstraZeneca, Teva UK Ltd and Chiesi Ltd, consultancy fees from AstraZeneca, Circassia Pharmaceuticals Plc, Teva UK Ltd, Chiesi Ltd, Lupin Healthcare UK Ltd, Glenmark Pharmaceuticals Ltd, Dr Reddy's Laboratories Ltd, Sandoz UK Ltd, Boehringer Ingelheim and Mylan Pharmaceuticals Inc, payment or honoraria for lectures, presentations, manuscript writing or educational events from AstraZeneca, Sanofi, Circassia Pharmaceuticals Plc, Teva UK Ltd, Chiesi Ltd, Boehringer Ingelheim and Mylan Pharmaceuticals Inc., support for attending meetings from AstraZeneca, Teva UK Ltd, Chiesi Ltd and Boehringer Ingelheim, receipt of equipment, materials, drugs, medical writing, gifts or other services from GSK, and an immediate family member is presently an employee of AstraZeneca. P. Suter reports grants from Lung League Fribourg (Switzerland) and payment or honoraria for lectures, presentations, manuscript writing or educational events from AstraZeneca and GSK. R. Greig reports payment or honoraria for lectures, presentations, manuscript writing or educational events from AstraZeneca.

Comment on

- [Dupilumab and lymphoma risk among patients with asthma: a population-based cohort study.](#)

Ma KS, Brumbaugh B, Saff RR, Phipatanakul W, Tsai SY, Westmeijer M, Holt A, Ebriani J, Camargo CA Jr, Chen ST. *Eur Respir J.* 2025 Sep 25;66(3):2500139. doi: 10.1183/13993003.00139-2025. Print 2025 Sep. PMID: 40537179

Supplementary info

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Eur Respir J

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. 2026 Feb 19;67(2):26E6702.

doi: 10.1183/13993003.E6702-2026. Print 2026 Feb.

[ERJ Podcast February 2026: Addressing the global challenges of COPD and asthma](#)

No authors listed

• PMID: 41713963

• DOI: [10.1183/13993003.E6702-2026](https://doi.org/10.1183/13993003.E6702-2026)

No abstract available

Full text links



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Eur Respir J

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. 2026 Feb 19;67(2):2501387.

doi: 10.1183/13993003.01387-2025. Print 2026 Feb.

[Dupilumab and lymphoma risk in asthma](#)

[Carlos Andres Celis-Preciado](#)¹, [Simon Couillard](#)²

Affiliations Expand

• PMID: 41713962

• DOI: [10.1183/13993003.01387-2025](https://doi.org/10.1183/13993003.01387-2025)

No abstract available

Conflict of interest statement

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Supplementary info

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7

Eur Respir J

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. 2026 Feb 19:2502687.

doi: 10.1183/13993003.02687-2025. Online ahead of print.

[Obesity and asthma: obesity causes and aggravates asthma across the entire type-2 inflammation spectrum](#)

[Sebastian Riemann](#)^{1,2,3}, [Imke Matthys](#)⁴, [Tania Maes](#)^{5,3}, [Bruno Lapauw](#)^{3,4}, [Guy Brusselle](#)^{5,2,3,6}

Affiliations Expand

- PMID: 41713950
- DOI: [10.1183/13993003.02687-2025](https://doi.org/10.1183/13993003.02687-2025)

Abstract

Obesity affects more than 650 million adults worldwide, with prevalence continuing to rise across all age groups and continents. This trend has important implications for asthma: individuals with obesity have a 30-50% higher risk of developing asthma, and obesity is highly prevalent among people with established disease. Mean Body Mass Index (BMI) in clinical trials and registries of adults with asthma consistently ranges from 28-30 kg·m⁻², with up to 70% of patients being overweight or obese. These numbers highlight obesity as one of the most common comorbidities in asthma, consistently associated with poorer asthma control and a higher risk of exacerbations. Although obesity-associated asthma is often described as Type-2 (T2)-low phenotype, it is increasingly recognized as a heterogeneous condition not restricted to a single phenotype. Excess adiposity influences asthma through multiple mechanisms, including dysregulated adipokine signaling, impaired ILC2-eosinophil-macrophage crosstalk in adipose tissue, systemic low-grade inflammation, metabolic dysfunction, and mechanical effects on lung volumes. This diversity complicates diagnosis, endotyping, and treatment stratification. Obesity should therefore be considered a treatable trait in asthma. Weight reduction - through lifestyle interventions, pharmacotherapy, or bariatric surgery - improves symptoms, lung function, and exacerbation risk across both T2-high and T2-low asthma. Importantly, patients with obesity experience similar reductions in exacerbations with anti-T2 biologics as their lean counterparts, though improvements in symptoms and lung function are variable. Future research should prioritize randomized, placebo-controlled trials evaluating GLP-1 and dual GLP-1/GIP-agonist therapies specifically in patients with asthma and obesity, and elucidate how obesity modifies inflammatory endotypes and treatment responses.

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Eur Respir J

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. 2026 Feb 19:2502358.

doi: 10.1183/13993003.02358-2025. Online ahead of print.

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

[John V Fahy](#)¹

Affiliations Expand

- PMID: 41713949
- DOI: [10.1183/13993003.02358-2025](https://doi.org/10.1183/13993003.02358-2025)

Abstract

Recent studies using computed tomography (CT) have uncovered a high prevalence of airway mucus plugs in patients with asthma and COPD. These mucus plugs persist in the same airways for years and often occur in patients without symptoms of cough and sputum production. Mucus plugs associate strongly with measures of airflow obstruction and disease morbidity in both asthma and COPD, and they occur and persist despite treatment with high doses of inhaled and oral corticosteroids. Thus, airway mucus plugs have emerged as an underappreciated airway pathology in asthma and COPD and a cause of persistent airflow obstruction and disease morbidity that can be specifically targeted for treatment. This narrative review covers the pathobiology of mucus plugs in asthma and COPD with three areas of emphasis: (i) Prevalence and clinical features; (ii) Mechanisms of formation and persistence; (iii) Current and emerging treatments.

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J Asthma

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. 2026 Feb 19:1-13.

doi: 10.1080/02770903.2026.2633364. Online ahead of print.

[Tezepelumab is effective in older patients with type 2 severe asthma, and baseline serum cytokine levels may be useful in predicting the efficacy of tezepelumab](#)

[Taku Nishimura^{1,2}, Maho Suzukawa¹, Nobuharu Oshima¹, Hiroyuki Tashimo¹, Masaaki Minegishi¹, Takafumi Kato^{1,2}, Hidenori Kage²](#)

Affiliations Expand

- PMID: 41712271
- DOI: [10.1080/02770903.2026.2633364](#)

Abstract

Objective: Tezepelumab, a monoclonal antibody targeting thymic stromal lymphopoietin (TSLP), is effective in treating severe asthma. However, the factors predicting the therapeutic efficacy of tezepelumab remain unclear. This study examined the background and serum cytokine levels of patients with severe asthma who were treated with tezepelumab to identify the factors that predict therapeutic efficacy.

Methods: Eighteen patients with severe asthma who received tezepelumab were enrolled in this small cohort. Blood tests, pulmonary function tests, and questionnaires were administered at baseline and after 1, 2, 4, 6, and 12 months of treatment. Responders, i.e., participants with a Global Evaluation of Treatment Effectiveness score of "good" or "excellent" 4 months after treatment initiation, were included in the analysis.

Results: There were twelve responders and six non-responders. Responders were older than non-responders, and treatment was significantly more effective in patients with type 2 asthma than in those with non-type 2 asthma. At baseline, responders had significantly lower levels of PDGF-BB and ST2/IL-33R than non-responders (PDGF-BB: responders, 7802.4 ± 1658.8 pg/mL, non-responders, 9530.0 ± 1498.5 pg/mL, p = 0.048; ST2/IL-33R: responders, 13732.8 ± 4472.3 pg/mL, non-responders, 22168.5 ± 5699.3 pg/mL, p = 0.003).

Conclusions: Tezepelumab was more effective in older patients with type 2 asthma than in those with non-type 2 asthma. Furthermore, baseline serum ST2/IL-33R levels, a potential target for new asthma treatments, may be useful in predicting the efficacy of tezepelumab. However, larger studies are needed to validate our findings.

Keywords: PDGF-BB; ST2/IL-33R; Tezepelumab; asthma; biological agent; cytokine; thymic stromal lymphopoietin.

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Review

Drugs

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. 2026 Feb 19.

doi: [10.1007/s40265-026-02294-1](https://doi.org/10.1007/s40265-026-02294-1). Online ahead of print.

[Mucus as a Treatable Trait in Chronic Airway Diseases](#)

[Mario Cazzola](#)¹, [Paola Rogliani](#)², [Josuel Ora](#)², [Luigino Calzetta](#)³, [Maria Gabriella Matera](#)⁴

Affiliations Expand

- PMID: 41712061
- DOI: [10.1007/s40265-026-02294-1](https://doi.org/10.1007/s40265-026-02294-1)

Abstract

Chronic airway diseases, including asthma, chronic obstructive pulmonary disease, bronchiectasis, and cystic fibrosis, are increasingly recognized as heterogeneous disorders characterized by overlapping pathophysiological mechanisms. Among these, abnormalities in mucus production, composition, and clearance have been identified as clinically significant contributors to symptoms, airflow limitation, exacerbations, and disease progression. Within the "treatable traits" framework, mucus-related abnormalities represent a distinct, modifiable phenotype that supports personalized management strategies. This narrative review explores mucus as a treatable trait across chronic airways diseases, integrating mechanistic insights with clinical assessment, biomarkers, and current and emerging therapeutic approaches. We discuss the role of mucus in disease phenotyping, its impact on morbidity, and the potential of targeted interventions to improve outcomes. Recognizing mucus as a treatable trait aligns with the principles of precision medicine and offers a pathway toward individualized therapy beyond traditional diagnostic labels.

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Conflict of interest statement

Declarations. Conflicts of interest: The Authors have no conflicts of interest that are directly relevant to the content of this article. Mario Cazzola and Luigino Calzetta are Editorial Board members of Drugs. Mario Cazzola and Luigino Calzetta were not

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- [129 references](#)

Supplementary info

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Cite

11

Review

J Asthma

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. 2026 Feb 19:1-33.

doi: [10.1080/02770903.2026.2633349](https://doi.org/10.1080/02770903.2026.2633349). Online ahead of print.

[Biologic Therapies for Severe Asthma with Type 2 Inflammation: Current Evidence, Patient Selection, and Future Perspectives](#)

[Picheswara Rao Polu](#)¹

Affiliations [Expand](#)

- PMID: 41711394
- DOI: [10.1080/02770903.2026.2633349](https://doi.org/10.1080/02770903.2026.2633349)

Abstract

Objective: Recent advancements in biologic therapies have revolutionized the treatment landscape for allergic asthma, with a focus on improving patient outcomes through targeted immune modulation. The objective here is to synthesize contemporary clinical evidence, explore criteria for optimal patient selection, examine safety considerations, and highlight future therapeutic directions in managing severe allergic asthma.

Data sources: A systematic literature search was conducted across major medical databases including PubMed, Embase, and Cochrane up to 2025. The search prioritized randomized controlled trials, meta-analyses, and real-world studies involving biologic agents targeting immunoglobulin E (IgE) and key type 2 inflammatory pathways, reflecting the most current therapeutic innovations.

Study selection: Research articles were selected based on relevance to efficacy, safety, and personalized application of biologic agents such as omalizumab, the IL-5 antagonists, dupilumab, and tezepelumab in allergic asthma. Particular emphasis was placed on biomarkers that guide precision medicine and phenotypic-driven management.

Results: Evidence indicates that biologic therapies significantly reduce asthma exacerbations, hospital admissions, and reliance on systemic corticosteroids, while enhancing lung function and quality of life. Utilizing biomarkers such as eosinophil counts, serum IgE, and fractional exhaled nitric oxide (FeNO) optimizes therapeutic response. Despite their transformative role, challenges persist in accessibility, cost, and long-term safety data. Emerging therapies and combination strategies promise further advancement.

Conclusion: Biologic agents targeting type 2 inflammation represent a paradigm shift in allergic asthma treatment. Personalized medicine approaches maximize clinical benefits, though continued research is essential to refine patient selection criteria, address disparities, and extend therapeutic options.

Keywords: Allergic asthma; Anti-IgE; Asthma exacerbations; Biologic therapies; Biomarkers; Dupilumab; IL-5 antagonists; Patient selection; Personalized medicine; Safety profile; Tezepelumab; Type 2 inflammation.

Supplementary info

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12

Allergy

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. 2026 Feb 18.

doi: 10.1111/all.70264. Online ahead of print.

[Small Airways Dysfunction and Remission in Adults With Asthma: A Longitudinal Exploratory Analysis of the Assessment of small Airways involvement In asthma \(ATLANTIS\) Study](#)

[Akshi Kumar](#)¹, [Rory Chan](#)², [Nazanin Zounemat-Kermani](#)^{1,3}, [Eleanor Quek](#)¹, [Ian M Adcock](#)¹, [Bianca Beghe](#)⁴, [Christopher Brightling](#)⁵, [Dave Singh](#)⁶, [Janwillem Kocks](#)⁷, [Alberto Papi](#)⁸, [Klaus F Rabe](#)^{9,10,11}, [Ulrica Scaffidi-Argentina](#)¹², [Maarten van den Berge](#)¹³, [Monica Kraft](#)¹⁴, [Salman Siddiqui](#)¹

Affiliations Expand

- PMID: 41708533
- DOI: [10.1111/all.70264](https://doi.org/10.1111/all.70264)

Abstract

Background: Asthma remission is a feasible treatment goal. However, remission definitions vary, and predictive biomarkers remain underexplored.

Methods: We conducted a post hoc analysis of ATLANTIS ([NCT02123667](#)), a multinational prospective study including 684 adult asthmatics. Remission was defined by 3-component (3C) and 4-component (4C) criteria. 3C remission included: (1) ACQ-6 < 1.5, (2) no maintenance oral corticosteroids, (3) no exacerbations. An absolute decline < 10% in pre-bronchodilator FEV₁% predicted, was added for the 4C definition. Multivariate logistic regression identified remission predictors. A novel Low Disease Activity (LDA) score was developed using factor analysis of five clinical variables (ACQ-6, FeNO, BEC, and FEV₁) including an innovative small airways dysfunction questionnaire tool (SADT). Nasal transcriptomics were analysed for differential gene expression and pathway enrichment and were replicated in U-BIOPRED ([NCT01976767](#)) using sputum transcriptomics. U-BIOPRED was included only to study omics replication of remission pathways identified in ATLANTIS.

Findings: Remission occurred in 48% (3C) and 45% (4C) of patients. Predictors included male sex, better lung function, fewer previous exacerbations, and higher SADT (fewer small airways symptoms). LDA identified milder disease and was associated with remission [OR 3C 4.43 (2.80, 7.10) and 4C 3.46 (2.23, 5.43)], improved QoL [OR 2.07 (1.65, 2.60)], and fewer future exacerbations [OR 0.43 (0.22, 0.85)]. Transcriptomic analyses revealed remission-associated upregulation of interleukin 4/13 signalling and downregulation of coagulation pathways, in both ATLANTIS and U-BIOPRED.

Interpretation: SAD was associated with reduced asthma remission. A novel LDA tool demonstrated clinical utility in stratifying prospective asthma risk. Key immunologic and haemostatic pathways may underpin remission, offering potential targets for future intervention.

Keywords: asthma; disease exacerbation; factor analysis; gene expression analysis; remission induction; spontaneous remission.

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Supplementary info

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Clin Exp Allergy

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. 2026 Feb 18.

doi: 10.1111/cea.70245. Online ahead of print.

[Dual GIPR and GLP-1R Agonist Tirzepatide Is Associated With Fewer Asthma Exacerbations in Adults With Obesity](#)

[Syona Mehta](#)¹, [Syed Fahad Gillani](#)², [Rawan Elkomi](#)², [Miriam Michael](#)^{2,3}

Affiliations [Expand](#)

- PMID: 41708478
- DOI: [10.1111/cea.70245](#)

No abstract available

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Cite

Review

Expert Opin Investig Drugs

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. 2026 Feb 18.

doi: 10.1080/13543784.2026.2619605. Online ahead of print.

[Investigational agents targeting alarmins for asthma treatment: insights and progress from phase I and II trials](#)

[Maral Ranjbar](#)¹, [Christiane E Whetstone](#)¹, [Ravneet K Hansi](#)¹, [Fatemeh Sadeghi](#)¹, [Gail M Gauvreau](#)¹

Affiliations Expand

- PMID: 41706041
- DOI: [10.1080/13543784.2026.2619605](#)

Abstract

Introduction: Asthma is a chronic and heterogeneous airway disease in which epithelial-derived cytokines - TSLP, IL-33, and IL-25-act as upstream drivers of inflammation. Over the past decade, these alarmin cytokines have become key therapeutic targets, leading to the development of a new generation of biologics designed to intervene early in the inflammatory cascade.

Areas covered: This review discusses findings from Phase I and II clinical trials investigating anti-alarmin therapies, including monoclonal antibodies and novel delivery platforms targeting TSLP, IL-33, and IL-25. A comprehensive literature search was conducted across PubMed, ClinicalTrials.gov, and recent conference proceedings to summarize safety, pharmacokinetic, and efficacy outcomes, as well as emerging biomarkers and genetic insights related to treatment response.

Expert opinion: Early-phase studies confirm that alarmin blockade is safe, biologically relevant, and efficacious for improving airway inflammation across multiple asthma phenotypes. TSLP inhibition is an approved and clinically available therapy, while IL-33 and IL-25 remain in earlier development. Future progress will rely on optimized airway-focused dosing strategies such as biomarker-guided patient selection and genetic profiling, to achieve optimal personalized therapy. Anti-alarmin biologics are poised to redefine asthma management by addressing inflammation at the epithelial origin of common asthma triggers and advancing clinical care toward precision medicine.

Keywords: Alarmins; IL-25; IL-33; TSLP; asthma; biologic therapy; clinical trials; early phase studies; thymic stromal lymphopoietin.

Supplementary info

Publication types Expand

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Cite

15

Meta-Analysis

Arch Dis Child

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. 2026 Feb 19;111(3):211-218.

doi: 10.1136/archdischild-2024-327898.

[Use of inhaled/nebulised ipratropium bromide in addition to standard first-line treatment with inhaled/nebulised short-acting beta 2-agonist and systemic steroid in the management of acute asthma exacerbations: a systematic review and meta-analysis of randomised controlled trials](#)

[Ali Abdalla Hamud¹, Khalid Mudawi², Colin Powell³, Aiman Zou Zou¹, Ramadan Salem⁴, Amjad Tonbari⁵, Adham Alhaji⁴, Naim Alnasif¹, Salah Alsaleh⁶, Abdul Kareem Pullattayil^{7,8}, Ibtihal Siddiq Abdelgadir⁹](#)

Affiliations Expand

- PMID: 41224524
- DOI: [10.1136/archdischild-2024-327898](https://doi.org/10.1136/archdischild-2024-327898)

Abstract

Background: The role of inhaled/nebulised ipratropium bromide (IB) in asthma is unclear.

Aims: To assess the efficacy and safety of inhaled/nebulised IB for asthma management in children.

Methods: We searched MEDLINE, EMBASE, CINAHL, the Cochrane Central Register of Controlled Trials and the Web of Science until July 2024. We included randomised controlled trials (RCTs) and followed international guidelines for reporting systematic reviews. Outcomes included morbidity, escalation of care, length of hospital stay, mortality, adverse events and lung function.

Results: We included 24 studies (total participants n=3238). The hospitalisation rate (risk ratio (RR) 0.84, 95% CI 0.70 to 1.00, I² 30%), hospital stay in hours (MD 1.75, 95% CI -0.87 to 4.36, I² 15%) and paediatric intensive care (PICU) admission (RR 0.91, 95% CI 0.35 to 2.32, I² 0%) were similar. The hospitalisation rate was lower in patients who received IB nebuliser (RR 0.76, 95% CI 0.64 to 0.90, I² 0%). The asthma severity score was significantly better in the IB group (MD -0.38, 95% CI -0.63 to -0.12, I² 59%). No serious adverse events were reported.

Conclusion: This review found high-certainty evidence that the IB nebuliser leads to a lower hospitalisation rate. However, when inhaled/nebulised IBs were analysed together, the hospitalisation rate was similar, with moderate certainty evidence. IB improved asthma clinical scores, with low certainty evidence. No difference was reported in other prespecified outcomes. Considering the current evidence and safety profile, inhaled/nebulised IB needs to be considered as an additional treatment for acute asthma exacerbation.

Prospero registration number: CRD42023405023.

Keywords: Child Health; Emergency Care; Intensive Care Units, Paediatric; Paediatric Emergency Medicine; Paediatrics.

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Conflict of interest statement

Competing interests: None declared.

Supplementary info

Publication types, MeSH terms, SubstancesExpand

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

Review

Curr Allergy Asthma Rep

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. 2026 Feb 21;26(1):15.

doi: 10.1007/s11882-026-01256-7.

[Standardization of Nasal Cytology: An Expert-based Delphi Consensus](#)

[Alberto Macchi](#)^{1,2}, [Matteo Gelardi](#)³, [Massimo Landi](#)⁴, [Giulia Gramellini](#)⁵, [Rossana Giancaspro](#)³, [Liliana Nappi](#)⁶, [Clara Imperatore](#)⁷, [Corso Bocciolini](#)⁸, [Veronica](#)

[Seccia](#)⁹, [Piero Pecoraro](#)¹⁰, [Flavio Arnone](#)¹¹, [Valentina Rossi](#)¹², [Enrico Heffler](#)^{13 14}; [all AICNA members](#)

Affiliations Expand

- PMID: 41721147
- DOI: [10.1007/s11882-026-01256-7](#)

No abstract available

Keywords: Cytotypes; Delphi; Methodology; Nasal cytology; Non-allergic rhinitis.

Conflict of interest statement

Declarations. Human and Animal Rights and Informed Consent: This article does not contain any studies with human or animal. Competing Interests: The authors declare no competing interests.

- [17 references](#)

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Full text links



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Cite

2

Randomized Controlled Trial

Br J Dermatol

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. 2026 Feb 18;194(3):441-449.

doi: [10.1093/bjd/ljaf414](#).

[Evaluation of antenatal probiotic intake in infants at risk of atopy: the double-blind PREGRALL randomized clinical trial](#)

[Sébastien Barbarot](#)^{1,2}, [Hélène Aubert](#)², [Marion Boivin](#)³, [Aurore Foureau](#)², [Annabel Maruani](#)⁴, [Catherine Droitcourt](#)⁵, [Juliette Mazereeuw-Hautier](#)⁶, [Elodie Faurel-Paul](#)⁷, [Aurélie Le Thuaut](#)⁸, [Martine Tching-Sin](#)⁹, [Vincent Dochez](#)¹⁰, [Carole Brosseau](#)¹¹, [Marie Bodinier](#)¹¹

Affiliations Expand

- PMID: 41250898
- DOI: [10.1093/bjd/ljaf414](#)

Abstract

Background: New primary preventive therapeutic strategies for atopic dermatitis (AD) are needed. Atopic diseases are associated with disrupted gut microbial balance in early life, suggesting that optimizing microflora through intervention could improve health. Prebiotics, which are immunomodulatory sugars, promote gut microbiota diversity. Most clinical trials focus on improving postnatal infant gut colonization, but prenatal life is crucial for establishing tolerance mechanisms. Preclinical studies indicate that maternal intake of galacto-oligosaccharide (GOS)/inulin prebiotics decreases the risk of food allergy in offspring.

Objectives: To determine whether antenatal probiotic intake prevents AD in children at high risk of atopy.

Methods: The multicentre double-blind randomized PREGRALL clinical trial ran from February 2018 to April 2023 (ClinicalTrials.gov [NCT03183440](#)). The follow-up

period extended from 20 weeks of amenorrhoea in pregnant women to their infants reaching 1 year of age. Women with a physician-diagnosed history of atopy (asthma, allergic rhinitis, AD or food allergy) were selected for inclusion. The women were randomized to daily prebiotic GOS/inulin (n = 188) or placebo (maltodextrin; n = 188 participants) intake from 20 weeks' gestation until delivery. The first outcome was the occurrence of AD at 1 year in children at risk of the disease. Secondary endpoints included AD severity, quality of life, prebiotic tolerance and the prevalence of other atopic diseases.

Results: Of 376 pregnant women included in the trial, prebiotic supplementation did not prevent AD at 1 year (intention-to-treat population odds ratio 1.01, 95% confidence interval 0.59-1.74; P = 0.97) or reduce disease severity in their children.

Subgroup analyses by breastfeeding status or delivery mode revealed no differences. No effects on allergen sensitization or food allergies were found.

Conclusions: We found no evidence that maternal intervention with prebiotics protects against AD at 1 year of age in infants at risk of allergic diseases.

Plain language summary

Atopic dermatitis is a skin condition that causes skin to become red, itchy and inflamed. It is also known as eczema. The condition affects 1 in 5 children worldwide. In France, a team of specialists at a number of university hospitals ran a clinical trial called 'PREGRALL'. The trial was designed to find out whether giving pregnant women daily prebiotics could lower the chances of eczema in their babies. Between February 2018 and April 2023, 376 pregnant women who had asthma, hay fever, eczema or food allergies were split into two groups. From 20 weeks of pregnancy until they gave birth, women in one group took the prebiotic mix each day. A prebiotic is a type of dietary fibre that feeds good bacteria in the gut. Women in the other group took a harmless dummy drug ('placebo') that looked the same as the prebiotic. Neither the doctors nor the mothers knew who was taking the prebiotic or the placebo. When the babies were 1 year old, doctors checked how many had eczema, how severe it was and whether they had any other allergies. We found there was no difference. Babies whose mothers had taken prebiotics when they were pregnant developed eczema just as often and just as severely as those whose mothers had taken the placebo. There were also no changes in food allergies or skin test reactions. Our findings suggest that taking prebiotics during pregnancy alone does not prevent eczema in babies at high risk of the condition. Future studies will need to explore a combination of strategies to find effective ways to prevent eczema before it starts.

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

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BMC Pediatr

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. 2026 Feb 20.

doi: 10.1186/s12887-026-06620-0. Online ahead of print.

[Predictive value of FeNO, eosinophils, and IgE for airway hyperresponsiveness in children with chronic cough: a cross-sectional study](#)

[Jimei Bian](#) ^{#1}, [Tengteng Zhang](#) ^{#2}, [Wei Sun](#) ³, [Haiyan Wang](#) ², [Yingqian Zhang](#) ⁴, [Zhigang Cai](#) ⁵

Affiliations Expand

- PMID: 41715054
- DOI: [10.1186/s12887-026-06620-0](#)

No abstract available

Keywords: Airway hyperresponsiveness; Children; Chronic cough; Eosinophils; Fractional exhaled nitric oxide (FeNO); Immunoglobulin e (IgE).

Conflict of interest statement

Declarations. Ethics approval and consent to participate: This study was conducted in accordance with the Declaration of Helsinki and was approved by the Institutional Ethics Committee of Hebei Children's Hospital. The study was performed in accordance with the Helsinki II declaration and received written informed consent from the parents or legal guardians of all participants under the age of 16. Consent for publication: Not applicable. Competing interests: The authors declare no competing interests.

- [43 references](#)

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Eur Respir J

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. 2026 Feb 19:2502358.

doi: 10.1183/13993003.02358-2025. Online ahead of print.

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

[John V Fahy](#)¹

Affiliations Expand

- PMID: 41713949
- DOI: [10.1183/13993003.02358-2025](https://doi.org/10.1183/13993003.02358-2025)

Abstract

Recent studies using computed tomography (CT) have uncovered a high prevalence of airway mucus plugs in patients with asthma and COPD. These mucus plugs persist in the same airways for years and often occur in patients without symptoms of cough and sputum production. Mucus plugs associate strongly with measures of airflow obstruction and disease morbidity in both asthma and COPD, and they occur and persist despite treatment with high doses of inhaled and oral corticosteroids. Thus, airway mucus plugs have emerged as an underappreciated airway pathology in asthma and COPD and a cause of persistent airflow obstruction and disease morbidity that can be specifically targeted for treatment. This narrative review covers the pathobiology of mucus plugs in asthma and COPD with three areas of emphasis: (i) Prevalence and clinical features; (ii) Mechanisms of formation and persistence; (iii) Current and emerging treatments.

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3

JAMA

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. 2026 Feb 18.

doi: 10.1001/jama.2025.26153. Online ahead of print.

[Pertussis Infection in Adults](#)

[Paul B Cornia](#)^{1,2}, [Benjamin A Lipsky](#)²

Affiliations Expand

- PMID: 41706481
- DOI: [10.1001/jama.2025.26153](https://doi.org/10.1001/jama.2025.26153)

No abstract available

Plain language summary

This JAMA Insights discusses the epidemiology, transmission, and risk factors for pertussis, also referred to as whooping cough, in adults.

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Cite

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

1

BMC Pulm Med

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. 2026 Feb 20.

doi: 10.1186/s12890-026-04186-2. Online ahead of print.

[Pseudomonas aeruginosa phenotypes associated with radiological severity in non-cystic fibrosis bronchiectasis](#)

[Bin Yang](#) ^{#1}[2\[3\]\(#\), \[Rou Li\]\(#\) ^{#1}\[2\\[3\\]\\(#\\), \\[Xing Ming\\]\\(#\\) ^{#4}, \\[Xianchun Zeng\\]\\(#\\) ⁴, \\[Songsong Tan\\]\\(#\\) ², \\[Yaoyao Wu\\]\\(#\\) ³, \\[Xiangyan Zhang\\]\\(#\\) ³, \\[Lin Liu\\]\\(#\\) ⁵\]\(#\)](#)

Affiliations Expand

- PMID: 41715032

- DOI: [10.1186/s12890-026-04186-2](https://doi.org/10.1186/s12890-026-04186-2)

No abstract available

Keywords: High-resolution computed tomography; Non-cystic fibrosis bronchiectasis; Phenotypic characterization; Pseudomonas aeruginosa; Radiographic severity.

Conflict of interest statement

Declarations. Ethics approval and consent to participate: This study strictly adhered to the ethical principles outlined in the Helsinki Declaration. Approval was granted by the Ethics Committee of Guizhou Provincial People's Hospital (Approval No. 2021207), which waived the requirement for obtaining informed consent from participants. This exemption was based on the retrospective nature of the study utilizing de-identified medical records; compliance with the relevant article of China's Ethical Review Measures for Life Sciences and Medical Research Involving Humans regarding exemption criteria; and full alignment with the Personal Information Protection Law's special provisions for scientific research. Consent for publication: Not applicable. Competing interests: The authors declare no competing interests.

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Review

Drugs

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. 2026 Feb 19.

doi: 10.1007/s40265-026-02294-1. Online ahead of print.

[Mucus as a Treatable Trait in Chronic Airway Diseases](#)

[Mario Cazzola](#)¹, [Paola Rogliani](#)², [Josuel Ora](#)², [Luigino Calzetta](#)³, [Maria Gabriella Matera](#)⁴

Affiliations Expand

- PMID: 41712061
- DOI: [10.1007/s40265-026-02294-1](https://doi.org/10.1007/s40265-026-02294-1)

Abstract

Chronic airway diseases, including asthma, chronic obstructive pulmonary disease, bronchiectasis, and cystic fibrosis, are increasingly recognized as heterogeneous disorders characterized by overlapping pathophysiological mechanisms. Among these, abnormalities in mucus production, composition, and clearance have been identified as clinically significant contributors to symptoms, airflow limitation, exacerbations, and disease progression. Within the "treatable traits" framework, mucus-related abnormalities represent a distinct, modifiable phenotype that supports personalized management strategies. This narrative review explores mucus as a treatable trait across chronic airways diseases, integrating mechanistic insights with clinical assessment, biomarkers, and current and emerging therapeutic approaches. We discuss the role of mucus in disease phenotyping, its impact on morbidity, and the potential of targeted interventions to improve outcomes. Recognizing mucus as a treatable trait aligns with the principles of precision medicine and offers a pathway toward individualized therapy beyond traditional diagnostic labels.

© 2026. The Author(s).

Conflict of interest statement

Declarations. Conflicts of interest: The Authors have no conflicts of interest that are directly relevant to the content of this article. Mario Cazzola and Luigino Calzetta are Editorial Board members of *Drugs*. Mario Cazzola and Luigino Calzetta were not involved in the selection of peer reviewers for the manuscript, nor in any of the subsequent editorial decisions. **Ethics approval:** Not applicable. **Consent to participate:** Not applicable. **Consent for publication:** Not applicable. **Availability of data and material:** Not applicable. **Code availability:** Not applicable. **Author contributions:** All authors contributed to the manuscript. **Original draft preparation:** Mario Cazzola. **Writing, review, and editing:** Paola Rogliani, Josuel Ora, Luigino Calzetta, and Maria Gabriella Matera. All authors read and approved the final manuscript.

- [129 references](#)

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3

Thorax

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. 2026 Feb 20:thorax-2025-223305.

doi: 10.1136/thorax-2025-223305. Online ahead of print.

[Clinical, molecular and microbial characterisation of the eosinophilic endotype of bronchiectasis: data from the EMBARC-BRIDGE study](#)

[Jennifer Pollock](#)¹, [Jeffrey T J Huang](#)¹, [Morven Shuttleworth](#)¹, [Merete B Long](#)¹, [Hollian Richardson](#)¹, [Daniela Alferes de Lima](#)¹, [Elena Kuzmanova](#)¹, [Clare Clarke](#)¹, [Michal Shteinberg](#)^{2,3}, [Stefano Aliberti](#)^{4,5}, [Charles Haworth](#)⁶, [Sanjay Haresh Chotirmall](#)^{7,8}, [Eva Polverino](#)⁹, [Pieter C Goeminne](#)¹⁰, [Michael Loebinger](#)^{11,12}, [Natalie Lorent](#)^{13,14}, [Felix C Ringshausen](#)¹⁵, [Oriol Sibila](#)¹⁶, [Eva Rodriguez-Suarez](#)¹⁷, [Christopher McCrae](#)¹⁸, [Amelia Shoemark](#)¹, [James D Chalmers](#)^{19,20}

Affiliations Expand

- PMID: 41690778
- DOI: [10.1136/thorax-2025-223305](#)

Free article

Abstract

Objectives: Eosinophilic bronchiectasis is defined by a blood eosinophil count (BEC) ≥ 300 cells/ μ L, but blood eosinophils imperfectly reflect airway eosinophilic inflammation. Here, we investigated the relationship between eosinophilic airway inflammation, blood eosinophils and clinical severity in bronchiectasis and explored the phenotype associated with eosinophilic bronchiectasis.

Methods: Sputum from 180 patients with stable CT-confirmed bronchiectasis was utilised to investigate airway levels of eosinophil proteins (eosinophil peroxidase (EPX), eosinophil derived-neurotoxin (EDN), eosinophil cationic protein (ECP), major basic protein (MBP) and Galectin-10 (Gal-10)) using a novel stable isotope dilution liquid chromatography-tandem mass spectrometry (LC-MS/MS) assay. To profile eosinophilic bronchiectasis, a nested analysis of patients with BEC < 150 cells/ μ L (n=52) and ≥ 300 cells/ μ L (n=49) was conducted.

Results: Sputum concentrations of Gal-10, ECP and EDN were weakly but significantly associated with radiological severity, FEV₁ and sputum culture

positivity for *Pseudomonas aeruginosa*. Airway eosinophil protein concentrations did not associate with exacerbation frequency. Total eosinophil protein concentration moderately correlated with BECs ($r=0.33$ 95% CI 0.14 to 0.49, $p=0.0007$). Nested analysis revealed increased sputum PCR-positivity for *P. aeruginosa* (26.7% vs 7.7%, $p=0.033$) and an increased frequency of patients showing signs of *Aspergillus* sensitisation (defined as *Aspergillus*-specific IgE titres >0.35 kUA/L, 24.5% vs 3.8%) in eosinophilic bronchiectasis. Sputum inflammatory biomarkers and clinical parameters did not differ between groups.

Conclusions: LC-MS/MS can detect eosinophilic inflammation within bronchiectasis sputum. Weak associations between elevated airway eosinophil proteins, bronchiectasis severity and *P. aeruginosa* infection were observed. Direct measurement of eosinophilic airway inflammation provides additional information in addition to BECs. Eosinophilic bronchiectasis associated with *P. aeruginosa* infection and *Aspergillus* sensitisation.

Keywords: Bronchiectasis; Eosinophil Biology.

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Conflict of interest statement

Competing interests: MS: grants or contracts from GSK, Trudell Medical Int and Tel Aviv League for Lung Disease; Consulting fees from Astra Zeneca, Boehringer Ingelheim, Dexcel, Kamada, Synchrony Medical, Trumed, Vertex and Zambon; payment of honoraria from Astra Zeneca, Boehringer Ingelheim, GSK, Kamada, Sanofi and Insmmed; support for attending meetings and/or travel from Boehringer Ingelheim Israel, Astra Zeneca Israel, Kamada, Rafa and GSK Israel; participation on a Data Safety Monitoring Board or Advisory Board from Bonus Biotherapeutics, Boehringer Ingelheim and Astra Zeneca; AJRCCM Associate Editor, management board member: Israeli Pulmonology Society, Israeli Society for Tuberculosis and Mycobacterial Diseases, Management Board member: EMBARC, editorial board member: ERJ, Chest and ERJ taskforce member: bronchiectasis guidelines; and receipt of equipment from Trudell Medical International for clinical trial. SA: grants or contracts from Insmmed, Chiesi and Fisher and Paykel; royalties or licences from McGraw Hill; consulting fees from Insmmed, Zambon, Astra Zeneca, CSL Behring GmbH, Grifols, Fondazione Internazionale Menarini, Moderna Italy, Moderna TX, Boehringer Ingelheim, Chiesi farmaceutica Spa, MSD Italia S.r.l., Vertex Pharmaceuticals, BRAHMS GMBH, Physioassist SAS, AN2 Therapeutics, GlaxoSmithKline Spa; payment or honoraria from GlaxoSmithKline Spa, Thermofisher Scientific, INSMED Italy, INSMED Ireland Ltd, Boehringer Ingelheim, Zambon, Vertex Pharmaceuticals, Fondazione Internazionale Menarini; participation on a Data Safety Monitoring Board or Advisory Board - INSMED Incorporated, INSMED Italy, AstraZeneca UK Limited, MSD Italia S.r.l and Verona Pharma plc. CH: consulting fees from 30 Technology, AstraZeneca, BiomX, Chiesi, Infex, Insmmed, LifeArc, Pneumagen, Vertex and Zambon; payment or honoraria from Chiesi, Insmmed, Vertex and Zambon; payment for expert testimony from Zambon; and unpaid ECFS Board member. SC: grants or contracts from Singapore Ministry of Health's National Medical Research Council under its Clinician-Scientist Individual Research Grant (MOH-001356), Singapore Ministry of Health's National Medical Research Council under its Clinician Scientist Award (MOH-000710), Open Fund Individual Research Grant (MOH-000955), Singapore Ministry of Education under its

AcRF Tier 1 Grant (RT1/22) (S.H.C), National Research Foundation Singapore under its Open Fund-Large Collaborative Grant (MOH-001636) administered by the Singapore Ministry of Health's National Medical Research Council; consulting fees from CSL Behring, Boehringer Ingelheim, Pneumagen Ltd, Sanofi, Zaccha Pte Ltd.; payment or honoraria from Astra Zeneca and Chiesi Farmaceutici; participation on a Data Safety Monitoring Board or Advisory Board – Inovio Pharmaceuticals Inc. and Imam Abdulrahman Bin Faisal University. EP: grants or contracts from Grifols; consulting fees from Insmmed, Grifols, Pfizer, Moderna, Chiesi, N2Therapeutics, Pari and Electromed; Payment or honoraria from Insmmed, Pari, Teva, GSK, Pfizer, Moderna, Chiesi, Grifols and Vertex; support for attending meetings from Insmmed; Director of the Scientific Relationship of ERS with European Union PG – Payment or honoraria from Insmmed, RMEI, Astra Zeneca and GSK; support for attending meetings from Astra Zeneca; participation on a Data Safety Monitoring Board or Advisory Board – Boehringer, MSD and Pfizer; unpaid member of Belgian Respiratory Society Board Member. ML: consulting fees from Armata, 30T, Astra Zeneca, Parion, Insmmed, Chiesi, Zambon, Electromed, Recode, Boehringer Ingelheim, Ethris, Mannkind, AN2 Therapeutics; payment or honoraria from Insmmed. NL: ERJ taskforce member - bronchiectasis guidelines and Management board member: EMBARC. FR – grants or contracts from German Center for Lung Research (DZL), German Center for Infection Research (DZIF), IMI (EU/EFPIA) and iABC Consortium (including Alaxia, Basilea, Novartis and Polyphor), Mukoviszidose Institute, Novartis and Insmmed Germany; consulting fees from Parion Service, Boehringer Ingelheim, Insmmed and Chiesi; payment or honoraria for lectures, presentations, speakers bureaus, manuscript writing or educational events from I!DE Werbeagentur GmbH, Insmmed, Grifols, Universitätsklinikum Frankfurt am Main, University Hospital Hamburg, AstraZeneca and Sanofi; participation on a Data Safety Monitoring Board or Advisory Board - Insmmed, Boehringer Ingelheim, Parion Sciences and Chiesi; honorary roles in former coordinator of the ERN-LUNG Bronchiectasis Core Network, co-chair of the German Bronchiectasis Registry PROGNOSIS, member of the SteerCo of the European Bronchiectasis Registry EMBARC, PI of the German Center for Lung Research; other financial or non-financial interests AstraZeneca, Boehringer Ingelheim, Insmmed, Novartis, Parion, Recode, Ruhr University-Bochum, University of Dundee and Vertex (fees for clinical trial participation paid to institution). CM: at the time of writing, CM was an employee of Astra Zeneca AS; grants and contracts from Astra Zeneca and LifeArc; consulting fees from Spirovant, Translate Bio and ReCode Therapeutics; payment of honoraria fees from Translate Bio, Ethris and Insmmed; unpaid involvement in European Respiratory Society Clinical Research Collaborations (EMBARC, BEATPCD, AMR Lung). JC: grants or contracts from Astra Zeneca, Boehringer Ingelheim, Insmmed, GSK, Grifols, Gilead Sciences, Trudell and Genentech; consulting fees from Astra Zeneca, Boehringer Ingelheim, Insmmed, Genentech, Antabio, GSK, Grifols, Trudell, Pfizer and Zambon. All other authors report no Conflict of Interest.

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