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

1

Medicine (Baltimore)

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. 2026 Sep 18;105(38):e50756.

doi: 10.1097/MD.00000000000050756.

[Monocyte-to-HDL cholesterol ratio and cardiovascular comorbidity in COPD: Evidence from NHANES 2007 to 2018](#)

[Chengying Zhu](#)¹, [Changjiao Luan](#)², [Yuhui Chu](#)³

Affiliations Expand

- PMID: 42760692
- DOI: [10.1097/MD.00000000000050756](#)

Abstract

Chronic obstructive pulmonary disease (COPD) is frequently complicated by cardiovascular disease (CVD), which significantly increases morbidity and mortality. The monocyte-to-high-density lipoprotein cholesterol ratio (MHR) has emerged as a novel inflammatory biomarker associated with various cardiovascular conditions. However, its relationship with CVD in COPD patients remains understudied. This study aimed to investigate the association between MHR and coexisting CVD in patients with COPD. This cross-sectional investigation analyzed the National Health and Nutrition Examination Survey data from 2007 to 2018, focusing on adults aged ≥ 40 years with physician-diagnosed COPD. The primary outcome encompassed cardiovascular conditions including congestive heart failure, coronary heart disease, angina pectoris, or myocardial infarction. MHR was analyzed both as a continuous variable and in quartiles. Four sequential logistic regression models

were applied: Model 1 was unadjusted; Model 2 adjusted for sex, age, and race/ethnicity; Model 3 further adjusted for education, marital status, smoking, and poverty-income ratio; Model 4 additionally adjusted for hypertension, diabetes, and body mass index. Dose-response relationships were assessed using restricted cubic splines. A total of 1064 COPD patients were included (mean age, 62.8 ± 10.5 years; 56.6% female), of whom 206 (19.4%) had coexisting CVD. Compared with patients without CVD, those with CVD were older (median, 68 vs 61 years; $P < .001$), more often male (62.1% vs 38.9%; $P < .001$), and had a higher prevalence of diabetes (43.2% vs 24.4%; $P < .001$) and hypertension (82.5% vs 54.6%; $P < .001$). MHR levels were higher in the CVD group than in the non-CVD group (0.542 vs 0.423; $P < .001$). In the fully adjusted model, each 1-unit increase in MHR was associated with higher odds of CVD (odds ratio, 3.27; 95% confidence interval, 1.59-6.74; $P < .001$). A graded association was observed across MHR quartiles (P for trend $< .001$), with the highest quartile showing greater odds of CVD than the lowest (odds ratio, 2.70; 95% confidence interval, 1.57-4.73; $P < .001$). Restricted cubic spline analysis indicated a nonlinear positive association between MHR and CVD. In COPD patients, higher MHR was independently associated with a greater prevalence of coexisting CVD, with a graded and nonlinear pattern. Given the cross-sectional design, causal inference is not warranted, and prospective studies are needed.

Keywords: NHANES; cardiovascular disease; chronic obstructive pulmonary disease; inflammatory biomarker; monocyte-to-HDL cholesterol ratio.

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Conflict of interest statement

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

- [23 references](#)

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Cite

2

Medicine (Baltimore)

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. 2026 Sep 18;105(38):e50771.

doi: 10.1097/MD.00000000000050771.

[Neutrophil-to-HDL cholesterol ratio and cardiovascular disease coexistence in COPD patients: An NHANES 2007 to 2018 analysis](#)

[Xia Zhang](#)¹, [Juhua Duan](#)

Affiliations [Expand](#)

- PMID: 42760677
- DOI: [10.1097/MD.00000000000050771](#)

Abstract

The neutrophil-to-high-density lipoprotein cholesterol ratio (NHR) is a composite biomarker reflecting systemic inflammation and lipid metabolism. We examined associations between NHR and cardiovascular disease (CVD) in patients with chronic obstructive pulmonary disease (COPD). This cross-sectional study analyzed National Health and Nutrition Examination Survey data (2007-2018) including adults aged ≥ 40 years with COPD. CVD was defined as self-reported heart failure, coronary artery disease, angina, or myocardial infarction. NHR was calculated as neutrophil count ($\times 10^3/\mu\text{L}$) divided by high-density lipoprotein cholesterol (mmol/L). Multivariable logistic regression assessed NHR-CVD associations, with restricted cubic splines evaluating dose-response relationships. Among 1033 COPD patients, 199 (19.3%) had CVD. After multivariable adjustment, each unit increase in NHR was associated with higher CVD odds ratio (OR: 1.24, 95% confidence interval [CI]: 1.11-1.38). Compared to the lowest quartile, Q3 (OR: 1.65, 95% CI: 1.04-2.85) and Q4 (OR: 2.60, 95% CI: 1.52-4.52) showed higher CVD odds. Spline analysis revealed a nonlinear relationship with a potential inflection point around $\text{NHR} \approx 3.4$. Associations remained consistent across subgroups. Elevated NHR is independently associated with higher CVD prevalence in COPD patients. This cross-sectional analysis suggests NHR may serve as an accessible inflammatory biomarker reflecting cardiovascular comorbidity in this population.

Keywords: COPD; Inflammation; biomarkers; cardiovascular disease; neutrophil-to-HDL ratio.

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Conflict of interest statement

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

- [29 references](#)

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Arch Bronconeumol

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. 2026 Sep 18:S0300-2896(26)00319-4.

doi: 10.1016/j.arbres.2026.08.008. Online ahead of print.

[Factors Associated With Long-Term Mortality in Bronchiectasis](#)

[Article in English, Spanish]

[Grace Oscullo¹](#), [Raúl Méndez¹](#), [Casilda Oliveira²](#), [Rosa Girón³](#), [Marta García-Clemente⁴](#), [Luis Máiz⁵](#), [Oriol Sibila⁶](#), [Lidia Perea⁷](#), [Rafael Golpe⁸](#), [Juan Luis Rodríguez-Hermosa⁹](#), [Esther Barreiro¹⁰](#), [Concepción Prados¹¹](#), [Juan Rodriguez-Lopez¹²](#), [David de la Rosa¹³](#), [Miguel Ángel Martínez-García¹⁴](#)

Affiliations Expand

- PMID: 42760212
- DOI: [10.1016/j.arbres.2026.08.008](#)

Abstract

Introduction: There are scarce data on long-term mortality in bronchiectasis in studies including a high number of bronchiectasis subjects. The objective of this study was to investigate risk factors of all-cause mortality in a large series of bronchiectasis patients with a long follow-up.

Methods: Historical cohort series from the Spanish Registry of Bronchiectasis in 2057 patients with a median follow-up of 84 (IQR: 72-102) months. A wide set of data from all the dimensions of bronchiectasis (general, clinical, etiological, complementary test, peripheral biomarkers, functional, microbiological, and therapeutic) was collected. 408 patients died during follow-up. Multivariable Cox survival analysis was used.

Results: Thirteen variables (Condition/HR): COPD/3.16; Chronic bronchial infection (CBI) by *Pseudomonas aeruginosa* (PA)/2.57; peripheral neutrophilia (>80%)/2.53; Previous and follow-up hospitalization rate/2.01 and 1.93 respectively; Previous and follow-up exacerbation rate/1.05 and 2.01 respectively; Charlson index/1.24; age/1.06; Baseline FEV₁%pred/0.98; Previous pneumonia episodes/1.04 and dyspnea/1.16 were independently associated with greater mortality. FACED, E-FACED and BSI were analyzed separately, with HR of 2.3, 2.2 and 1.7, respectively.

Conclusions: The presence of COPD, CBI by PA, peripheral neutrophilia, and hospitalizations were the four most important variables independently associated with greater long-term mortality in bronchiectasis.

Keywords: Bronchiectasis; COPD; Exacerbations; Hospitalizations; Mortality; Pseudomonas aeruginosa.

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Cite

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Thorax

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. 2026 Sep 18:thorax-2026-225173.

doi: 10.1136/thorax-2026-225173. Online ahead of print.

[Generational changes in lung function in adults from several world regions: results from the Burden of Obstructive Lung Disease study](#)

[Jixuan Ma^{1 2}](#), [Peter G J Burney²](#), [David M Mannino³](#), [Christer Janson⁴](#), [Thorarinn Gíslason^{5 6}](#), [Daniel O Obaseki⁷](#), [Rain Jõgi⁸](#), [Valentina Quintero Santofimio²](#), [James Potts²](#), [Abdul Rashid⁹](#), [Gregory E Erhabor¹⁰](#), [Rune Nielsen¹¹](#), [Ali Kocabas¹²](#), [Asaad Nafees¹³](#), [Rana Ahmed^{14 15}](#), [Meriam Denquezi^{16 17}](#), [Cristina Barbara¹⁸](#), [Joao Cardoso^{19 20}](#), [Herminia Brites Dias²¹](#), [Fátima Rodrigues^{22 23}](#), [Dhiraj Agarwal²⁴](#), [Sanjay Juvekar^{24 25}](#), [Frits M E Franssen²⁶](#), [Terence Seemungal²⁷](#), [Kevin Mortimer^{28 29}](#), [Mohammed El Biaze³⁰](#), [Padukudru Anand Mahesh³¹](#), [Parvaiz Koul³²](#), [Michael Studnicka³³](#), [Andre F S Amaral^{2 34}](#); [BOLD Collaborative Research Group](#); [k](#)

Collaborators, Affiliations Expand

- PMID: 42760129
- DOI: [10.1136/thorax-2026-225173](#)

Abstract

This study estimated birth cohort effects on lung function using BOLD (Burden of Obstructive Lung Disease) data from 28 569 adults born between 1902 and 1976 across 41 sites in 34 countries. Forced vital capacity (FVC), forced expiratory volume in 1 s (FEV₁) and the FEV₁/FVC increased across successive birth cohorts in both high-income countries (HICs) and low- and middle-income countries (LMICs), with mean values rising steadily with later birth year. In fully adjusted models, FVC increased by 21.4 mL, FEV₁ by 24.6 mL and FEV₁/FVC by 0.25% per birth year. These

positive associations were consistent across sex, smoking status and country-income subgroups (HICs and LMICs).

Keywords: COPD epidemiology.

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Conflict of interest statement

Competing interests: DMM is a consultant to GlaxoSmithKline, AstraZeneca, Sanofi, Regeneron, Chiesi, Lilly, Amgen, Up to Date and the COPD Foundation, outside of the submitted work. RN reports grants and personal fees from AstraZeneca, and grants from Sanofi, AstraZeneca and ResMed, outside of the submitted work. FR reports grants and personal fees from A. Menarini, Boehringer Ingelheim, Teva Pharma, Novartis, GlaxoSmithKline, AstraZeneca, VitalAire and Nippon Gases outside the submitted work.

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Cite

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Editorial

Thorax

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. 2026 Sep 18:thorax-2026-225660.

doi: 10.1136/thorax-2026-225660. Online ahead of print.

[Knowing when to stop: the challenge of macrolide discontinuation in chronic airways disease](#)

[Francesca Conway](#)^{1,2}, [Lydia Finney](#)³

Affiliations Expand

- PMID: 42760128
- DOI: [10.1136/thorax-2026-225660](#)

No abstract available

Keywords: Asthma; Bronchiectasis; COPD Exacerbations; Infection Control; Respiratory Infection.

Conflict of interest statement

Competing interests: None declared.

Supplementary info

Publication typesExpand

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Cite

6

Thorax

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. 2026 Sep 18:thorax-2026-225106.

doi: 10.1136/thorax-2026-225106. Online ahead of print.

[Targeting fatigue in COPD with chronic respiratory failure undergoing pulmonary rehabilitation: a multicentre, randomised, placebo-controlled trial of L-arginine/liposomal vitamin C](#)

[Mauro Maniscalco](#)^{1,2}, [Claudio Candia](#)³, [Giuseppe Fiorentino](#)⁴, [Luca Nicola Cesare Bianchi](#)⁵, [Laura Fagetti](#)⁶, [Sara Forlani](#)⁷, [Giuseppe Emanuele La Piana](#)⁸, [Clementina Misuraca](#)⁹, [Matteo Vigna](#)¹⁰, [Riccardo Buraschi](#)⁶, [Mauro Carone](#)¹¹, [Valentina Trimarco](#)¹², [Michele Vitacca](#)¹³; [Arginine Study Investigators](#)

Collaborators, Affiliations Expand

- PMID: 42760127
- DOI: [10.1136/thorax-2026-225106](#)

Abstract

Background: Pulmonary rehabilitation (PR) is the cornerstone of non-pharmacological treatment for chronic obstructive pulmonary disease (COPD), yet fatigue often persists despite rehabilitation. We conducted a multicentre, randomised, double-blind, placebo-controlled trial to evaluate whether oral L-arginine plus liposomal vitamin C improves fatigue in patients with advanced COPD and chronic respiratory failure (CRF) undergoing PR.

Methods: Consecutive patients with stable COPD and CRF receiving long-term oxygen therapy were randomised to L-arginine/liposomal vitamin C or placebo during a standardised 28-day PR programme. Fatigue was assessed using the

Fatigue Severity Scale (FSS). The primary analysis used a longitudinal linear mixed-effects model including repeated FSS measurements, treatment group, time, treatment-by-time interaction and prespecified covariates. Secondary outcomes included 6 min walk distance, sit-to-stand test, handgrip strength, COPD Assessment Test and modified Medical Research Council dyspnoea score.

Results: 98 participants were randomised. A significant difference was found in FSS changes between groups (mean difference -0.90; 95% CI -1.50 to -0.29; $p=0.004$), confirmed by the adjusted treatment-by-time interaction analysis (adjusted between-group difference -0.72; 95% CI -1.25 to -0.20; $p=0.009$). The point estimate exceeded the prespecified minimal clinically important difference (0.6 points). A higher proportion of participants achieved an FSS score <4 in the intervention group versus placebo group (57% vs 36%; $p=0.059$). No significant between-group differences were observed for secondary outcomes.

Conclusions: In patients with COPD and CRF undergoing PR, adjunctive oral L-arginine plus liposomal vitamin C was associated with a greater reduction in perceived fatigue, without significant improvements in functional or patient-reported secondary outcomes.

Trial registration number: [NCT06439875](#).

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

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Conflict of interest statement

Competing interests: MM reports grants for his institution from AstraZeneca and GlaxoSmithKline and payments or honoraria for presentations or educational events from GlaxoSmithKline, Chiesi and Damor Farmaceutici. All these are outside the scope of this manuscript. All the other authors declare no conflicts of interest. Damor Farmaceutici had no role in study design, data collection, analysis and any interpretation of data, writing of the paper or submission. Its involvement in the study was solely related to: (1) study drug and placebo supply and (2) licence purchase for Mini Mental State Examination (MMSE).

Supplementary info

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Structure

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. 2026 Sep 18:S0969-2126(26)00259-5.

doi: 10.1016/j.str.2026.08.012. Online ahead of print.

[Structural basis of QX007N neutralizing interleukin-33 for asthma and COPD treatment](#)

[Qi Wang](#)¹, [Huimin Ke](#)², [Yiliang Wu](#)³, [Yong Kong](#)³, [Tao Chen](#)³, [Wei Li](#)⁴, [Wei Feng](#)⁵

Affiliations Expand

- PMID: 42759520
- DOI: [10.1016/j.str.2026.08.012](#)

Abstract

Interleukin-33 (IL-33), a member of the IL-1 cytokine family, is upregulated in various inflammatory and allergic diseases, including asthma and chronic obstructive pulmonary disease (COPD). In this study, we report the generation and functional characterization of QX007N, a humanized monoclonal antibody that specifically neutralizes IL-33. QX007N shows high neutralization activities against IL-33-mediated signaling. In B-hIL-33 humanized mice, QX007N significantly suppressed ovalbumin (OVA)-specific IgE levels in serum and attenuated acute allergic inflammation in lung cells. Crystal structures of the QX007N-Fab (2.62 Å) and its complex with IL-33 (2.60 Å) were determined. Structural comparison of the QX007N-Fab/IL-33 complex with published antibody/IL-33 complexes and the IL-33/suppression of tumorigenicity 2 (ST2) complex reveals that QX007N-Fab recognizes epitope 2 on IL-33 and sterically inhibits ST2 binding, thereby preventing assembly of the IL-33/ST2/IL-1RAcP signaling complex and downstream signal transduction. These findings establish QX007N as a promising therapeutic candidate for asthma and COPD.

Keywords: COPD; IL-33; QX007N; asthma; crystal structure; monoclonal antibody.

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Conflict of interest statement

Declaration of interests The authors declare no competing interests.

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Cite

Review

Respiration

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. 2026 Sep 18:1.

doi: 10.1159/res/aepag012. Online ahead of print.

[Beyond Hypersecretion: Mucus Plugs as structural and biological determinants of Airway Obstruction](#)

[Jennifer Patricia Vargas Gómez](#), [Juan Camilo Tafur Vidal](#), [Vanessa Rocio Villanueva Guerrero](#), [Jorge Mario Ahumada Ramírez](#), [Eidelman Antonio González Mejía](#), [Isaias Alberto Siado Palencia](#), [Joseph David León Insignares](#), [Evelyn Mendoza Torres](#)

- PMID: 42758674
- DOI: [10.1159/res/aepag012](#)

Abstract

Mucus plugs represent a muco-obstructive endophenotype across the spectrum of chronic obstructive airway diseases. Beyond reflecting mucus hypersecretion alone, they constitute a structural and biological manifestation of altered mucus biophysics, impaired mucociliary clearance, epithelial dysfunction, and inflammatory signaling. Their presence contributes to regional airflow limitation, ventilation heterogeneity, hypoxemia, and adverse clinical outcomes, even when conventional pulmonary function tests underestimate their impact. Advances in imaging have enabled the transition of mucus plugs from a descriptive radiologic finding to a potentially actionable biomarker for risk stratification and therapeutic response assessment, particularly in severe asthma and chronic obstructive pulmonary disease, where muco-obstruction has been associated with increased exacerbation risk and mortality. This narrative review integrates current evidence on the mechanisms underlying plug formation and persistence, their clinical expression, imaging strategies, and therapeutic implications across asthma and chronic obstructive pulmonary disease.

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QJM

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. 2026 Sep 17:hcag250.

doi: 10.1093/qjmed/hcag250. Online ahead of print.

[Channeling by Phenotype: Does the Obesity Paradox in COPD Confound the Respiratory Benefits Attributed to GLP-1 Receptor Agonists?](#)

[Esteban Cardenas-Duran¹](#), [Hefziba Lorences-Noguera¹](#)

Affiliations Expand

- PMID: 42755054
- DOI: [10.1093/qjmed/hcag250](#)

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Cite

10

QJM

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. 2026 Sep 17:hcag252.

doi: 10.1093/qjmed/hcag252. Online ahead of print.

[Rationale for the use of GLP-1Receptor agonists in COPD](#)

[Oscar M P Jolobe](#)

- PMID: 42755047
- DOI: [10.1093/qjmed/hcag252](#)

No abstract available

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Cite

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Nat Commun

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. 2026 Sep 17;17(1):9349.

doi: 10.1038/s41467-026-76974-7.

[Cardiopulmonary hospitalization risks from wildfire-specific and non-wildfire PM_{2.5} in 20 US states](#)

[Min Zhang](#)^{1,2}, [Edgar Castro](#)³, [Minghao Qiu](#)^{4,5}, [Mahdiah Danesh Yazdi](#)⁵, [Boyuan Li](#)⁶, [Rosalind J Wright](#)^{7,8}, [Joel D Schwartz](#)^{3,9}, [Robert O Wright](#)⁷, [Yaguang Wei](#)^{7,3}

Affiliations Expand

- PMID: 42754610
- DOI: [10.1038/s41467-026-76974-7](#)

Abstract

Increasing wildfire activity in the US has made wildfire-specific fine particulate matter (PM_{2.5}) an important and growing source of air pollution, yet its long-term health impacts and relative toxicity compared with non-wildfire PM_{2.5} remain unclear. Using a self-controlled design, we examine associations between 2-year average wildfire-specific and non-wildfire PM_{2.5} and cardiopulmonary hospitalization risks across 20 US states during 2006-2019. Per 1 µg/m³ increase, wildfire-specific PM_{2.5} is associated with significantly higher hospitalization risks for all cardiopulmonary diseases, with relative risks ranging from 10% for heart failure to 16% for asthma. In contrast, a 1-µg/m³ increase in non-wildfire PM_{2.5} is associated with smaller risk elevations, ranging from 4.7% for chronic obstructive pulmonary disease to 8.5% for hypertension. Stronger associations for both wildfire-specific and non-wildfire PM_{2.5} are observed among minorities, metropolitan residents, those with fewer years of education, and more deprived communities. Overall, at an equivalent concentration increase, long-term exposure to wildfire-specific PM_{2.5} poses greater cardiopulmonary hospitalization risks than non-wildfire PM_{2.5}, underscoring wildfire smoke as a growing public health threat that requires targeted mitigation alongside conventional air quality control strategies.

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Conflict of interest statement

Competing interests: The authors declare no competing interests.

- [85 references](#)

Supplementary info

MeSH terms, Substances, Grants and fundingExpand

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J Allergy Clin Immunol Pract

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. 2026 Sep 17:S2213-2198(26)00768-3.

doi: 10.1016/j.jaip.2026.08.038. Online ahead of print.

[Associated factors of physical activity and sedentary behavior in adult patients with asthma](#)

[Smj Janssen](#)¹, [M A Spruit](#)², [Hac van Helvoort](#)³, [R S Djamin](#)⁴, [Jccm In 't Veen](#)⁵, [A J van 't Hul](#)³

Affiliations Expand

- PMID: 42754153
- DOI: [10.1016/j.jaip.2026.08.038](#)

Abstract

Background: Physical activity (PA) and sedentary time (ST) can both be considered behavioral treatable traits (TTs) in patients with asthma, that can coexist. Low levels of PA and high levels of ST can negatively influence patients' health.

Objective: To determine the distribution over the PA/ST-based quadrants, and what differences exist in clinical characteristics between these PA/ST-based quadrants.

Methods: Data were collected in adult patients with asthma at their first-time ever outpatient consultation with a pulmonologist. PA and ST were assessed using the DynaPort MoveMonitor triaxial accelerometer. Patients were classified into quadrants: 'couch potatoes' (inactive (<7000 steps/day) and sedentary (>70% time

spend sedentary)), 'light movers' (inactive and non-sedentary), 'sedentary exercisers' (active and sedentary) or 'busy bees' (active and non-sedentary).

Results: 452 adult patients with asthma (63% women, age: 49±16 years, FEV₁: 87±17% predicted, ACQ: 1.9±1.0 points, AQLQ: 4.8±1.2 points) were included. On average, patients walked 7391±3317 steps per day, and were sedentary for 18±2 hours per day. Most patients were classified as couch potatoes (42%) or sedentary exercisers (38%). 15% was defined as busy bees, and 5% as light movers. Couch potatoes displayed significant differences, in age, persistent smoking, BMI, dyspnea, 6MWT, asthma control, quality of life, FEV₁, and fatigue.

Conclusion: Asthma patients show dispersion across all quadrants based on PA and ST. Patients with both a low PA and high ST display significantly lower asthma control and disease-specific quality of life compared to other groups. Therefore, a behavior change interventions should focus on both aspects.

Keywords: Accelerometer; Asthma; Physical activity; Sedentary time.

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Ann Allergy Asthma Immunol

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doi: 10.1016/j.anai.2026.09.737. Online ahead of print.

[Real-World Effectiveness of Tezepelumab for Patients with Severe Asthma in the United States: CROSSROADS-3](#)

[Jessica K DeMartino¹](#), [Christopher S Ambrose²](#), [Santiago Zuluaga Sanchez³](#), [Benjamin Emmanuel²](#), [Renee L Gennarelli⁴](#), [Temitope Bello⁴](#), [Andrew Lindsley⁵](#), [Jean-Pierre Llanos⁶](#), [Laren Tan⁷](#), [Weily Soong⁸](#)

Affiliations Expand

- PMID: 42754089
- DOI: [10.1016/j.anai.2026.09.737](https://doi.org/10.1016/j.anai.2026.09.737)

Abstract

Background: Tezepelumab was approved in the United States (US) in December 2021 for patients aged 12 years and older with severe asthma. Efficacy has been demonstrated in clinical trials, but real-world evidence of its impact in severe asthma management is more limited.

Objective: To describe US patients receiving tezepelumab and to assess real-world treatment patterns and outcomes before and after tezepelumab initiation.

Methods: This retrospective, single-arm, self-controlled, observational study analyzed US patients 12 and older with severe asthma who initiated tezepelumab between December 2021 and August 2022 using insurance claims data. The overall cohort included patients with at least two asthma exacerbations in the 12 months prior to initiating tezepelumab. Annualized asthma exacerbation rates (AAER), cumulative oral corticosteroid (OCS) use, and exacerbation-related healthcare resource utilization (HCRU) were compared 12 months pre- and post-tezepelumab initiation.

Results: Among tezepelumab recipients (n=321), 45% had received another biologic in the 12 months prior, and among those with available data (n=143), 68% had blood eosinophil count <300 cells/uL. AAER was reduced by 58% (95% confidence interval [CI]: 53%-62%) following tezepelumab initiation. Average annual cumulative OCS dose (prednisone-equivalent) was reduced from 1,295 mg to 770 mg ($p < 0.001$). Asthma exacerbation-related inpatient, emergency department (ED), and outpatient visits also decreased. Reductions in asthma-related outcomes were seen in biologic-naïve and biologic-experienced cohorts and across multiple clinical subgroups of interest.

Conclusion: Patients with severe asthma treated with tezepelumab in the first 9 months post US approval experienced meaningful clinical benefits.

Keywords: asthma; biologics; chronic obstructive pulmonary disease; effectiveness; exacerbation; real-world; severe asthma; tezepelumab.

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Conflict of interest statement

Declaration of competing interest JKD, CSA, and BE are employees of AstraZeneca. SZS, JPL, and AL are employees of Amgen. RLG and TB are employees of Cencora, which was contracted by Amgen Inc and AstraZeneca to carry out this study. LT is an employee of Loma Linda University. WS is an employee of Allervie Health.

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Cite

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Lancet Respir Med

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. 2026 Sep 17:S2213-2600(26)00218-3.

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[State-level burden of chronic respiratory diseases in the USA, 1990-2023, with forecasts to 2050: a systematic analysis for the Global Burden of Disease Study 2023](#)

[GBD 2023 US Chronic Respiratory Disease Collaborators](#)

Collaborators, Affiliations Expand

- PMID: 42753772
- DOI: [10.1016/S2213-2600\(26\)00218-3](#)

Abstract

Background: Chronic respiratory diseases are a leading cause of mortality in the USA, with considerable regional disparities influenced by environmental, occupational, and behavioural risk factors. This study aimed to quantify levels of, and trends in, the burden of chronic respiratory diseases in the USA from 1990 to 2023, with estimates of prevalence, mortality, and disability-adjusted life-years (DALYs); identify risk factors contributing to this burden; and project prevalence trends until 2050.

Methods: Using data from the Global Burden of Diseases, Injuries, and Risk Factors Study (GBD) 2023, we estimated the disease burden for four types of chronic respiratory disease: asthma, chronic obstructive pulmonary disease (COPD), pneumoconiosis, and interstitial lung disease (ILD) and pulmonary sarcoidosis. Estimates were stratified by age group, sex, and year from 1990 to 2023, along with corresponding 95% uncertainty intervals (UIs). Furthermore, we examined total percentage change before and during the COVID-19 pandemic, and forecast the future burden of chronic respiratory diseases through 2050.

Findings: In 2023, an estimated 54·50 million (95% UI 48·86-61·60) individuals lived with chronic respiratory disease in the USA, compared with 33·28 million (28·61-38·23) in 1990. The age-standardised prevalence rate increased by 10·24% (8·01-12·47) between 1990 and 2023, while the age-standardised mortality rate rose modestly from 31·19 (28·85-32·95) per 100 000 population to 34·56 (30·64-37·89) per 100 000 population, indicating persistent gaps in disease control. Marked geographical variation was observed, with the highest age-standardised mortality rates due to COPD and pneumoconiosis in Appalachian states (eg, Kentucky and West Virginia) and elevated asthma and ILD burden in the southern and Great Plains regions. Modifiable risk factors accounted for 44·54% (41·71-45·74) of total DALYs due to chronic respiratory diseases, driven mainly by high BMI for asthma, smoking for COPD, and occupational exposure to asthmagens for pneumoconiosis. Across the US states, higher cigarette taxation and broader respiratory infection vaccination coverage were linked to lower age-standardised DALY rates for COPD and ILD and pulmonary sarcoidosis, whereas asthma showed no consistent pattern. According to our projection models, by 2050, 45·72 million (28·96-67·27) individuals

in the USA will have asthma, while 19·61 million (16·70-22·26) will have COPD, 1·05 million (0·74-1·44) will have ILD and pulmonary sarcoidosis, and 0·01 million (0·008-0·02) will have pneumoconiosis.

Interpretation: State-level policy environments, including fiscal and preventive health measures, might contribute to shaping respiratory health outcomes beyond individual risk factors. Integrating tobacco control measures, equitable vaccination programmes, and targeted health-system investments could help to address the uneven burden of chronic respiratory diseases across US states and the growing mortality gap despite stable prevalence, although further research is needed to clarify which specific policy determinants underlie these associations.

Funding: Gates Foundation.

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Conflict of interest statement

Declaration of interests M Bell reports grants or contracts from the US National Institutes of Health (NIH), Hutchinson Postdoctoral Fellowship, Health Effects Institute, Robert Wood Johnson Foundation, and Wellcome Trust Foundation (all paid to institution); consulting fees from Clinique and ToxiMap (paid to M Bell for consulting fees); payment or honoraria for lectures, presentations, speakers bureaus, manuscript writing or educational events from Colorado School of Public Health, Duke University, University of Texas, Data4Justice, Korea University, Brown University, Konkuk University, and the Research and Management Center for Health Risk of Particulate Matter (honorarium for speaker), from IOP Publishing (honorarium for editorial duties), from NIH, EHS, University of Texas, Fonds de la Recherche Scientifique, and the Health and Medical Research Fund (HMRF; honorarium for grant review), from Korea University (honorarium paid to M Bell for research), from Harvard University (honorarium for external advisory committee), and from SciQuest (honorarium for online survey or workshop); support for attending meetings or travel, or both, from Colorado School of Public Health, University of Texas, Duke University, Harvard University, American Journal of Public Health, Columbia University, Harvard, Community Modeling and Analysis System conference, Nature Conference, Boston University, Konkuk University, MIT, National Academy of Sciences, Wellcome Trust, and University of Pennsylvania (travel reimbursement); and leadership or fiduciary role in other board, society, committee or advocacy group, paid or unpaid with Fifth National Climate Assessment, Lancet Countdown, Johns Hopkins Environmental Health and Engineering Advisory Board, Harvard external advisory committee for training grant, and WHO Global Air Pollution and Health Technical Advisory group (no payment), and with US Environmental Protection Agency Clean Air Scientific Advisory Committee (CASAC; honorarium paid to M Bell) outside the submitted work. X Ding reports grants or contracts from the American Heart Association (2-year predoctoral fellowship; DOI: 10.58275/AHA.25PRE1373497.pc.gr.227106; quarterly payments made to institution); outside the submitted work. J Khubchandani reports grants or contracts from Merck Sharpe Dohme (research unrelated to this study but concerning vaccine hesitancy), from the National Science Foundation, USA (research unrelated to this study but concerning public health message inconsistency), and from New Mexico IDeA Networks of Biomedical Research Excellence (NIH P20GM103451 subgrant; research unrelated to this study

but concerning pain disorders in American adults); support for attending meetings and/or travel from NATCO: The Organization for Donation and Transplant Professionals (invited plenary speaker at annual event, paid for travel and accommodation); and leadership or fiduciary role in other board, society, committee or advocacy group, paid or unpaid as Secretary, World Association of Medical Editors, and as Member, Evidentiary Committee, American Public Health Association (not paid), and as Member, US EPA Good Neighbor Environmental Board, and as Member, US FDA Digital Health Advisory Committee (not paid and assignment until 2025) outside the submitted work. J A Singh reports consulting fees from ROMTech, Atheneum, Clearview Healthcare Partners, Yale, Hulusio, Horizon Pharmaceuticals/DINORA, ANI/Exeltis USA Inc, SOBI Pharmaceuticals, Frictionless Solutions, Schipfer, Crealta/Horizon, Medisys, Fidia, PK Med, Two labs Inc, Adept Field Solutions, Clinical Care Options, Putnam Associates, Focus Forward, Navigant Consulting, Spherix, MedIQ, Jupiter Life Science, UBM LLC, Trio Health, Medscape, WebMD, and Practice Point communications, the NIH, and the American College of Rheumatology (consultant fees paid to J A Singh for each entity); payment or honoraria for lectures, presentations, speakers bureaus, manuscript writing or educational events from Simply Speaking (speaker's bureau; J A Singh previously served as a consultant and consultant fees were paid to J A Singh); support for attending meetings and/or travel as past steering committee member of OMERACT (J A Singh previously received support from the organisation to attend their meeting every 2 years); participation on a data safety monitoring board or advisory board with FDA Arthritis Advisory Committee (J A Singh served previously as a member; no financial support); leadership or fiduciary role in other board, society, committee or advocacy group, paid or unpaid as past steering committee member of the OMERACT, an international organisation that develops measures for clinical trials and receives arm's length funding from 12 pharmaceutical companies; and stock or stock options in aTyr Pharmaceuticals, Atai Life Sciences, Kintara Therapeutics, Intelligent Biosolutions, Acumen Pharmaceutical, TPT Global Tech, Vaxart Pharmaceuticals, Aytu BioPharma, Adaptimmune Therapeutics, GeoVax Labs, Pieris Pharmaceuticals, Enzolytics, Seres Therapeutics, Tonix Pharmaceuticals Holding Corp, Aebona Pharmaceuticals, and Charlotte's Web Holdings (J A Singh owns stock options), and previously in Amarin, Viking, and Moderna Pharmaceuticals (J A Singh owned stock options in these companies previously) outside the submitted work. All other authors declare no competing interests.

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Cite

15

Am J Respir Crit Care Med

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. 2026 Sep 16:aamag460.

doi: 10.1093/ajrccm/aamag460. Online ahead of print.

[Separate Baseline Risk From Eosinophil-Pattern Effects in Mepolizumab COPD](#)

[Lifang Sun](#)¹², [Nani Ye](#)¹², [Yiwen Gong](#)¹²

Affiliations Expand

- PMID: 42750319
- DOI: [10.1093/ajrccm/aamag460](#)

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Cite

16

Review

BMJ Support Palliat Care

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. 2026 Sep 16:spcare-2026-006580.

doi: 10.1136/spcare-2026-006580. Online ahead of print.

[Non-invasive ventilation \(NIV\) and high-flow nasal therapy \(HFNT\) in palliative care: a critical narrative review](#)

[Sebastiano Mercadante](#)¹

Affiliations Expand

- PMID: 42749468
- DOI: [10.1136/spcare-2026-006580](#)

Abstract

Background: Dyspnoea is a prevalent, debilitating symptom in advanced life-limiting illnesses. While opioids and non-pharmacological measures remain foundational, refractory breathlessness presents a major palliative challenge.

Objectives: To critically appraise the evidence regarding patient selection, comparative tolerability, adverse effects and ethical considerations of non-invasive ventilation (NIV) and high-flow nasal therapy (HFNT) in palliative care.

Methods: A comprehensive narrative review of literature from PubMed, Embase and Cochrane Library (from inception to June 2026) and major clinical guidelines was conducted.

Results: NIV is best supported in hypercapnic respiratory failure ($\text{PaCO}_2 > 45$ mm Hg), showing benefits in chronic obstructive pulmonary disease exacerbations, pulmonary oedema and amyotrophic lateral sclerosis (ALS). In advanced cancer, NIV reduces dyspnoea primarily in hypercapnic patients but mask discomfort and communication barriers limit tolerability. Conversely, HFNT has emerged as a superiorly tolerated option in hypoxemic failure-particularly in end-stage interstitial lung disease (ILD) and advanced cancer-providing significant dyspnoea relief while preserving oral intake and verbal communication until the end of life. Time-limited trials (< 1 hour for NIV; 2 hours for HFNT) help identify early responders. Ethical challenges include potential overtreatment and support withdrawal complexities.

Conclusions: Respiratory support selection should be guided by respiratory physiology (hypercapnic vs hypoxemic), explicit goals of care and tolerability. NIV remains optimal for hypercapnic failure, whereas HFNT offers superior comfort and preserves communication in hypoxaemic patients. Robust randomised trials are needed.

Keywords: Chronic obstructive pulmonary disease; Heart failure; Home Care; Hospice care; Lung; Neurological conditions.

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Conflict of interest statement

Competing interests: None declared.

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17

Editorial

Respirology

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. 2026 Sep 16.

doi: 10.1002/resp.70312. Online ahead of print.

[Heading in the Right Direction: Statistical Models for Lung Function Trajectories and Their Associations With Biomarkers](#)

[Andrew Robert Gray](#)¹

Affiliations Expand

- PMID: 42749301
- DOI: [10.1002/resp.70312](#)

No abstract available

Keywords: COPD; GBTM; biomarker; chronic obstructive pulmonary disease; group-based trajectory modelling; lung function trajectory.

- [10 references](#)

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Cite

18

Am J Respir Crit Care Med

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. 2026 Sep 16:aamag461.

doi: 10.1093/ajrccm/aamag461. Online ahead of print.

[Eosinophil History as a Treatable-Trait Signal in COPD](#)

[Laixin Song](#)¹, [Yuan Zhong](#)¹

Affiliations Expand

- PMID: 42747294

- DOI: [10.1093/ajrccm/aamaq461](https://doi.org/10.1093/ajrccm/aamaq461)

No abstract available

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19

Am J Respir Crit Care Med

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. 2026 Sep 16:aamag462.

doi: 10.1093/ajrccm/aamag462. Online ahead of print.

[Reply to Sun et al. and to Song and Zhong](#)

[Dave Singh^{1,2}, Gerard J Criner³, Stefanie Kolterer⁴; all authors of “Mepolizumab Efficacy in COPD: Insights from Longitudinal Patterns of Blood Eosinophil Counts and Their Variability Across 3 Clinical Trials”](#)

Affiliations Expand

- PMID: 42747291
- DOI: [10.1093/ajrccm/aamaq462](https://doi.org/10.1093/ajrccm/aamaq462)

No abstract available

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Cite

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BMJ Open Respir Res

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. 2026 Sep 15;13(1):e003875.

doi: 10.1136/bmjresp-2025-003875.

Participant views of case finding for COPD after lung cancer screening: the C FIND COPD study

Olivia R Phillips^{1 2}, Tricia M McKeever^{1 3}, Joanne Porte^{1 3}, Paula C A Almeida^{1 4}, Emma L O'Dowd^{1 3}, Rachael L Murray^{1 2}, Charlotte E Bolton^{5 3}

Affiliations Expand

- PMID: 42744412
- PMCID: [PMC13583836](#)
- DOI: [10.1136/bmjresp-2025-003875](#)

Abstract

Background: Early and accurate diagnosis of chronic obstructive pulmonary disease (COPD) is essential to ensure correct management and minimise future morbidity. Therefore, case finding in symptomatic at-risk individuals is highly valuable. The C FIND COPD study invited symptomatic people at risk of COPD for a COPD case-finding diagnostic assessment. These individuals had undergone a previous lung cancer screening low-dose CT. The diagnostic assessment used a mobile research unit stationed in community car parks across Nottinghamshire. This current qualitative study aimed to gather participants' opinions about this research study and the associated lung assessment.

Methods: 15 participants accepted an interview using a semi-structured interview guide by an independent researcher. At the visit, seven interviewees had been given a new diagnosis of COPD and eight had no current evidence of the condition. The interviews were transcribed verbatim and analysed in NVivo (V.14) using inductive thematic analysis.

Results: Across five themes, highlights included praise for the clinical research staff, the accessibility and atmosphere of the research unit, convenience of appointment and opportunity of case finding. Subsequent suboptimal communication with general practitioner surgeries was flagged as a key issue in the weeks following the assessment.

Conclusion: Overall, case finding of COPD after lung cancer screening as part of the C FIND COPD study was considered a valuable assessment and experience. Interviewees were grateful for the service and aside from some practical aspects, people supported a wider roll-out.

Keywords: COPD; COPD epidemiology; Pulmonary Disease, Chronic Obstructive.

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Conflict of interest statement

Competing interests: CEB has received grants from NIHR Nottingham BRC and AstraZeneca. She has been on an iDMC with Roche. RLM has received grants from

Yorkshire Cancer Research, Cancer Research UK, UK Prevention Research Partnership and Horizon. ELO'D has received grants from the Ruth Strauss Foundation, Horizon Europe and the NIHR. The other authors declare no conflicts of interest.

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- [1 figure](#)

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Cite

21

Respir Med

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. 2026 Sep 15:109161.

doi: 10.1016/j.rmed.2026.109161. Online ahead of print.

[Cluster Analysis of Obstructive Lung Disease Phenotypes: the Framingham Heart Study and the Rotterdam Study](#)

[Jingwen Zhang](#)¹, [Xander Bertels](#)², [Hanfei Xu](#)¹, [Jessica D Gereige](#)³, [Seung Hoan Choi](#)¹, [Guy G Brusselle](#)⁴, [André G Uitterlinden](#)⁵, [Josée Dupuis](#)⁶, [George T O'Connor](#)⁷, [Lies Lahousse](#)⁸

Affiliations Expand

- PMID: 42744204
- DOI: [10.1016/j.rmed.2026.109161](#)

Abstract

Background: The traditional classification of obstructive lung diseases into asthma and chronic obstructive pulmonary disease oversimplifies their complexity. A hypothesis-free classification using routine clinical and laboratory characteristics may identify clinically important subgroups.

Methods: Hierarchical clustering was applied to 1,473 Framingham Heart Study (FHS) participants with a history of asthma or airflow obstruction based on pre-

bronchodilator spirometry. Variables included demographics, smoking history, body mass index, inflammatory markers, spirometry, and symptoms, excluding self-reported diagnoses. Classification rules were defined by Classification and Regression Trees (CART). Survival and polygenic scores were compared across clusters. The validation analysis used 1,080 Rotterdam Study (RS) participants.

Results: Six clusters emerged in FHS using nine phenotypic variables. Cluster 1 showed preserved pulmonary function with minimal symptoms in never and former smokers. Clusters 2 and 3 had preserved pulmonary function with atopic symptoms but differed in airway symptom frequency. Cluster 4 had mild impairment of pulmonary function with frequent sputum production in smokers. Cluster 5 showed moderate pulmonary function impairment without exertional dyspnea, mainly in older former smokers. Cluster 6 had pulmonary impairment with dyspnea and obesity and included adults older than those in clusters 1-4. Clusters 2, 3, and 5 were genetically predisposed to asthma, while clusters 4 and 6 had higher mortality. Similar patterns were noted in RS.

Conclusions: Six clinically interpretable phenotypic subgroups based on smoking history, pulmonary function, and symptoms were identified and externally validated, highlighting the importance of classifying patients based on shared observable characteristics to inform on disease susceptibility and prognosis.

Keywords: COPD; asthma; chronic obstructive pulmonary disease; clustering; mortality; polygenic score; pulmonary disease.

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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: Outside this manuscript, LL has been consulted as expert for AstraZeneca, GSK and Sanofi, and has given a lecture sponsored by Chiesi, IPSA vzw and Domus Medica vzw (non-profit organizations facilitating lifelong learning for health care providers), all paid to her institution. GGB was the president of the Belgian Respiratory Society, and his institution (Ghent University Hospital) received grants from Merck, Sharp & Dohme. He received payment or honoraria for lectures, presentations, speakers' bureaus, manuscript writing, or educational events from the following pharmaceutical companies: AstraZeneca, Boehringer-Ingelheim, Chiesi, Novartis, and Sanofi Regeneron. JDG is a currently Sanofi employee and has a patent for phase 2 results on CSU and asthma studies conducted by Sanofi. The institution (Boston University) of JD and GOC received support from the National Institute of Health. Other authors declare that they have no competing interests. If there are other authors, they declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

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Cite

22

Respiration

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. 2026 Sep 15:1.

doi: 10.1159/res/aepag010. Online ahead of print.

[Translation and cross-cultural adaptation into Italian, French, and German of the Undiagnosed COPD and Asthma Population Questionnaire \(UCAP-Q\): the Swiss UCAP-Q](#)

[Dan Adler](#), [Anthony Pernoud](#), [Matteo Arrigotti](#), [Anastasia Cortese](#), [Christian F Clarenbach](#), [Shawn D Aaron](#), [Vittoria Viganò](#), [Pietro Gianella](#)

- PMID: 42743084
- DOI: [10.1159/res/aepag010](#)

Free article

Abstract

Introduction: Early detection of asthma and chronic obstructive pulmonary disease improves outcomes, yet population screening is not recommended. The Undiagnosed COPD and Asthma Population Questionnaire (UCAP-Q) is a recently validated self-administered questionnaire designed to detect individuals at risk of asthma and COPD. The purpose was to translate and cross-culturally adapt the UCAP-Q into Italian (UCAP-Q-It), French (UCAP-Q-Fr), and German (UCAP-Q-De).

Methods: Translations and cross-cultural adaptations followed a standardized 10-step process, including forward and backward translation, expert review, harmonization, and cognitive debriefing. Thirty native-speaking adults with respiratory symptoms (10 per language) assessed item comprehensibility using a 10-point scale. Feedback was used to refine wording and ensure conceptual and cultural equivalence.

Results: Minor linguistic adjustments were required, particularly for smoking exposure and bronchodilator use. Back translations closely matched the original questionnaire, with only one minor discrepancy identified and corrected. Comprehensibility was high across all versions, with mean scores of 9.9 ± 0.8 (Italian), 9.7 ± 0.8 (French), and 9.3 ± 1.5 (German). A small number of items were revised for clarity, including the addition of explicit response anchors.

Conclusion: The questionnaire was successfully translated and culturally adapted into Italian, French, and German, maintaining its conceptual integrity and high comprehensibility. The Swiss UCAP-Q provides healthcare professionals with a

standardized, multilingual tool to support active case-finding of individuals at risk of asthma and COPD.

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23

Review

Cochrane Database Syst Rev

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. 2026 Sep 15;9(9):MR000013.

doi: 10.1002/14651858.MR000013.pub7.

[Strategies to improve recruitment to randomised trials](#)

[Adwoa Parker](#)¹, [Gloria Mongelli](#)¹, [Camila Piccolo-Lawrance](#)¹, [Elizabeth Coleman](#)¹, [Athanasios Gkekas](#)¹, [Han-I Wang](#)¹, [Shoba Dawson](#)², [Heidi Green](#)³, [Rosalind Way](#)⁴, [Arti Rai](#)⁵, [Hanne Bruhn](#)⁶, [Frank Sullivan](#)⁷, [Cherish Boxall](#)⁸, [Markus Chan](#)⁷, [Paul Manson](#)⁶, [Catherine Hewitt](#)¹, [Caroline Fairhurst](#)¹, [Mike Clarke](#)⁹, [Shaun Treweek](#)^{6,10}

Affiliations Expand

- PMID: 42742038
- PMCID: [PMC13576036](#)
- DOI: [10.1002/14651858.MR000013.pub7](#)

Abstract

Background: Recruiting participants to randomised controlled trials (RCTs) is challenging. Identifying effective recruitment strategies would benefit health research: poor recruitment leads to underpowered trials, reducing the reliability of findings and increasing the risk of wasted resources, ethical concerns, and trial failure. Evidence to inform recruitment strategies is increasingly generated through Studies Within A Trial (SWATs), which are methodological studies embedded within host RCTs. This is an update of a review last published in 2018.

Objectives: Primary: to quantify the effects of strategies to improve recruitment of participants to RCTs. Secondary: to evaluate recruitment strategies' cost-

effectiveness and impact on retention, and the equity, diversity, and inclusion (EDI) characteristics of recruited participants.

Search methods: We used MEDLINE, Embase, and six other databases to identify the studies included in the review. We also sought unpublished recruitment SWATs through social media and targeted email dissemination to trial methodology networks. The latest search date was 16 February 2023.

Selection criteria: We included randomised SWATs evaluating trial recruitment strategies embedded in healthcare and non-healthcare trials. We excluded quasi-randomised, hypothetical, questionnaire-only, retention-only, or clinician incentive studies.

Data collection and analysis: Primary outcome: proportion of eligible participants or centres recruited.

Secondary outcomes: cost-effectiveness, retention rates, and EDI characteristics of included participants. We conducted random-effects meta-analysis for strategies evaluated in at least two studies; otherwise, we synthesised results narratively. We reported effects as risk differences (RDs) with 95% confidence intervals (CIs), and assessed between-trial heterogeneity. We used GRADE to assess the certainty of evidence for the primary outcome. We expressed cost-effectiveness as the incremental cost per additional participant recruited in pounds sterling (GBP).

Main results: We identified 91 eligible studies (53 new to this update), providing 94 comparisons and involving at least 176,747 participants. Eighty-one studies involved strategies aimed at trial participants, while 10 evaluated strategies aimed at recruiters. All were healthcare studies. We found 65 recruitment strategies; 49 were evaluated in a single study. Only five strategies were supported by high-certainty evidence according to GRADE criteria, and we focus on these strategies in the summary below. Open-label trials versus blinded, placebo trials. Open-label trials recruited more participants than blinded trials (RD 10%, 95% CI 8% to 12%; 3 studies, 9004 participants), corresponding to approximately 10 additional participants per 100 approached. The studies involved mostly women in the UK and Estonia. No cost or retention data were reported. Telephone reminder versus no telephone reminder. Telephone reminders to people who did not respond to an initial postal invitation boosted recruitment by 6% (95% CI 3% to 9%; 2 studies, 1450 participants), in trials with low underlying recruitment (we are less certain for trials with over 10% recruitment). The studies involved people with a mean age of 58 years in Canada and Norway. No cost or retention data were reported. Recruitment primer letter versus no letter. Pre-recruitment letters and leaflets designed to encourage participation made little or no difference to recruitment (absolute improvement 1%, 95% CI -1% to 2%; 2 studies, 5376 participants), and were associated with increased costs compared to not sending a primer (incremental cost: GBP 2.08). The studies involved mostly older white people in the UK and Ireland. Multimedia information via a digital link/QR code plus paper participant information leaflet (PIL) versus paper PIL alone. This made little or no difference to recruitment (absolute improvement 0%, 95% CI -1% to 1%; 7 studies, 11,612 participants) and retention (absolute improvement 0%, 95% CI -2% to 3%; 5 studies, 7403 participants), and increased costs compared to not including multimedia information (incremental cost: GBP 0.78). The studies involved people in the UK. Optimised, user-tested PIL versus standard PIL. Optimising participant information leaflets (e.g. through user-testing the leaflet with the target population to shape its

content, format, and appearance) made little or no difference to recruitment: absolute improvement was 0% (95% CI 0% to 1%; 6 studies, 27,805 participants). The studies involved people in the UK. Only one study reported EDI data; participants were mostly older women. No cost or retention data were reported. We had moderate-certainty evidence for 13 other strategies; confidence was often reduced because the results came from single studies. Seven strategies involved changes to how potential participants received information; four involved changes to trial conduct; one targeted the recruiter or recruitment site; and one tested non-monetary incentives. We had much less confidence in the other 47 comparisons because the studies had design flaws, were single studies, or had very uncertain results. Costs were reported in only 17 of 91 studies. Strategy impact on retention was reported in 15 studies. All but one study (99%) were from high-income countries. The most reported demographics were age (49 studies), sex (32 studies), gender (27 studies), and education level (16 studies).

Authors' conclusions: The evidence on strategies to improve trial recruitment remains broad but lacks depth. Of 65 strategies evaluated, only five were supported by high-certainty evidence. Open-label trial designs and telephone reminders to non-responders increased recruitment, while optimised participant information leaflets, recruitment primer letters, and multimedia information provided alongside a paper participant information leaflet had little or no effect. Reporting of participant characteristics was poor, limiting assessment of equity, diversity, and inclusion across most studies. Evidence is heavily skewed toward high-income countries. Future research must prioritise evaluations in low-to-middle-income settings and consistently report cost, retention, and EDI outcomes. We strongly urge the methodology research community to strengthen the evidence base by prioritising replications of existing strategies over the development and testing of new ones.

Funding: National Institute for Health and Care Research (Advanced Fellowship, Adwoa Parker, reference:NIHR302256). Health Research Board, Republic of Ireland, Evidence Synthesis Ireland (grant ESI-2021-001) **REGISTRATION:** This review updates an earlier Cochrane review, which was first published in 2002 and subsequently updated in 2007, 2010, and 2018. Previous versions of the review and their protocols are available at: <https://doi.org/10.1002/14651858.MR000013.pub2>
<https://doi.org/10.1002/14651858.MR000013.pub3>
<https://doi.org/10.1002/14651858.MR000013.pub4>
<https://doi.org/10.1002/14651858.MR000013.pub5>
<https://doi.org/10.1002/14651858.MR000013.pub6>.

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Conflict of interest statement

Adwoa Parker — Lead author on Hughes-Morley 2016 and Parker 2018 (START PIS ECLS); co-author on Man 2015 (START PIS Healthlines), Madurasinghe 2021 (START PIS HeLP Diabetes), and Madurasinghe 2023. She was not involved in data extraction or risk of bias assessment for these studies in this review.

Shaun Treweek — Co-author on Parker 2018 and Madurasinghe 2023. He was not involved in data extraction or risk of bias assessment for these studies. Although Shaun Treweek and Adwoa Parker were not involved in Cockayne 2017 (START PIS REFORM), Knapp 2020 (START PIS CASPER), Sheridan 2020 (START PIS ISDR), or

Jolly 2019 (START MMI PSM-COPD), they contributed to the wider START study in which these studies were nested. They were not involved in data extraction or risk of bias assessment for this review.

Shaun Treweek and Frank Sullivan are co-authors of Treweek 2012 and were not involved in data extraction or risk of bias assessment for this review.

Shaun Treweek was a reviewer for Jennings 2015a–e (all included in a single article) and received waived registration fees to attend and present work on trial recruitment, retention, and participant diversity at the Clinical Outsourcing Group (COG) 2023 and 2025 conferences, which are primarily attended by pharmaceutical industry representatives. This support covered registration fees only; no other expenses were paid.

Adwoa Parker, Shaun Treweek, and Frank Sullivan declare no further conflicts of interest.

Elizabeth Coleman — Named author on Jefferson 2018 and Knapp 2023e (Thermic-3). She was also involved in analyses contributing to a meta-analysis that included Knapp 2023a (BALANCE), Knapp 2023b (BAMP), Knapp 2023c (CHAMP-UK), Knapp 2023d (FORCE), and Knapp 2023f (UKALL). She was not involved in study eligibility decisions, data extraction, risk of bias assessment, or GRADE assessment for any included studies.

Mike Clarke — Involved in several SWATs that may have been eligible for inclusion in this review but was not involved in study eligibility decisions, data extraction, risk of bias assessment, or GRADE assessment for any such studies.

Caroline Fairhurst — Lead author of Fairhurst 2022, included in this review. She was not involved in data extraction or risk of bias assessment for this review.

Catherine Hewitt — Co-author of Fairhurst 2022, Cockayne 2017, Rodgers 2019, and Jefferson 2018. She was not involved in eligibility decisions, data extraction, risk of bias assessment, or GRADE assessment for this review.

Cherish Boxall — Owner, Founder, and Director of Engage Intelligently Ltd, a behavioural science consultancy that has previously provided recruitment and retention training to academic and public sector research teams. She currently holds no commercial contracts and receives payment only for non-commercial training. She remains an advocate for inclusive recruitment.

Hanne Bruhn — None known. Heidi Green — None known. Paul Manson — None known. Markus Chan — None known. Shoba Dawson — None known. Athanasios Gkekas — None known. Gloria Mongelli — None known. Camila Piccolo-Lawrance — None known. Arti Rai — None known. Han-I Wang — None known. Rosalind Way — None known.

Update of

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- [4 figures](#)

Supplementary info

Publication types, MeSH termsExpand

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Ann Med

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. 2026 Dec;58(1):2722722.

doi: 10.1080/07853890.2026.2722722. Epub 2026 Sep 15.

[Risk factors for future exacerbations in patients with COPD treated with dual LABA/LAMA](#)

[Qing Song](#)^{1 2 3}, [Tingting Chen](#)^{2 3}, [Dan Peng](#)⁴, [Chengrui Liu](#)^{2 3}, [Rensen Xiao](#)^{2 3}, [Qingqin Yao](#)^{2 3}, [Xiaoling Guo](#)^{2 3}, [Longhua Sun](#)^{2 3}, [Wenxin Yuan](#)⁵, [Fang Huang](#)^{2 3}

Affiliations Expand

- PMID: 42741955
- PMCID: [PMC13580378](#)
- DOI: [10.1080/07853890.2026.2722722](#)

Abstract

Background: The Global Initiative for Chronic Obstructive Lung Disease (GOLD) 2026 report revised the combined chronic obstructive pulmonary disease (COPD) assessment. Patients in groups B and E are recommended dual long-acting β_2 -agonist (LABA)/long-acting muscarinic antagonist (LAMA) as the initial inhalation therapy. However, some patients still experience exacerbations during treatment. This study aimed to investigate the risk factors for future exacerbations in patients with COPD treated with dual LABA/LAMA.

Methods: This was a retrospective cohort study. Baseline data included demographic characteristics, pulmonary function, symptom scores, GOLD grades, GOLD groups, the number of exacerbations and hospitalizations in the past year, LABA/LAMA, and comorbidities were collected. The number of future exacerbations was collected during one year of follow-up.

Results: A total of 1076 patients with COPD were included. There were 284 (26.4%) patients experienced exacerbations during follow-up. Patients who experienced exacerbations were older and had higher clinical COPD questionnaire scores, a great number of exacerbations and hospitalizations in the past year, and a higher proportion of GOLD grades 3-4. Logistic regression analysis showed that GOLD grades 3-4 (odds ratio [OR] = 1.343, 95% confidence intervals [CI] = 1.016-1.776), one exacerbation in the past year (OR = 1.763, 95% CI = 1.248-2.489), and ≥ 2 exacerbations in the past year (OR = 2.514, 95% CI = 1.792-3.525) were independent risk factors for experiencing exacerbations. Furthermore, in group B, logistic regression analysis showed that GOLD grades 3-4 (OR = 1.808, 95% CI = 1.096-2.981) and hypertension (OR = 3.400, 95% CI = 1.712-6.752) were independent risk factors for experiencing exacerbations. In group E, logistic regression analysis showed that ≥ 2 exacerbations in the past year (OR = 1.426, 95% CI = 1.021-1.993) was an independent risk factor for experiencing exacerbations.

Conclusions: Patients with COPD treated with LABA/LAMA remained at high risk of future exacerbations. GOLD grades 3-4 and exacerbations in the past year were associated with future exacerbations and may warrant particular attention from clinicians.

Keywords: Chronic obstructive pulmonary disease; GOLD grades; Laba/LAMA; exacerbation.

Conflict of interest statement

No potential conflict of interest was reported by the author(s).

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

Supplementary info

MeSH terms, Substances[Expand](#)

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Cite

25

Respir Med

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. 2026 Sep 14:263:109160.

doi: 10.1016/j.rmed.2026.109160. Online ahead of print.

Spirometric impairment and incident cardiovascular disease: Beyond airflow limitation

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Affiliations Expand

- PMID: 42735858
- DOI: [10.1016/j.rmed.2026.109160](#)

Abstract

Background: Impaired spirometry is associated with cardiovascular disease (CVD), but it is unclear whether this risk is driven by airflow limitation or other spirometric dimensions. We compared spirometric phenotypes and lung-function measures in relation to incident CVD.

Methods: We included 3660 Sleep Heart Health Study participants (mean age, 64.2 ± 10.5 years) without prespecified baseline CVD. Phenotypes were normal spirometry, Global Initiative for Chronic Obstructive Lung Disease (GOLD) grade 1, preserved ratio impaired spirometry (PRISm), and GOLD grades 2-4. Measures were forced expiratory volume in 1 s (FEV₁), forced vital capacity (FVC), and FEV₁/FVC. Cox models adjusted for demographic, smoking, socioeconomic, and cardiovascular covariates.

Results: During a median 11.4 years of follow-up, 730 incident CVD events occurred. Lower FEV₁ and lower FVC were associated with CVD, whereas FEV₁/FVC was not. In joint FVC-FEV₁ models, FVC remained associated with CVD (hazard ratio per 10-percentage-point lower FVC percent predicted, 1.124; 95% confidence interval, 1.035-1.221), whereas FEV₁ did not. In the principal model including fixed-ratio airflow limitation, lower FVC remained associated with CVD (hazard ratio, 1.091; 95% confidence interval, 1.048-1.136), whereas airflow limitation was not independently associated. The association persisted without airflow limitation and across sensitivity analyses. FVC improved model fit beyond spirometric phenotypes, with modest discrimination gain.

Conclusions: CVD risk associated with impaired spirometry was more consistently related to lower FVC than to airflow limitation. FVC may capture cardiovascular risk not reflected by airflow limitation alone.

Keywords: Airflow limitation; Forced vital capacity; Preserved ratio impaired spirometry; Pulmonary function; Spirometric impairment; cardiovascular disease.

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Conflict of interest statement

Declaration of competing interest All authors declare that they have no conflicts of interest relevant to this study.

Full text links



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Cite

26

Review

Int J Environ Health Res

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. 2026 Sep 14:1-15.

doi: 10.1080/09603123.2026.2734444. Online ahead of print.

[Heat exposure and its impact on COPD morbidity and mortality: a systematic review and meta-analysis](#)

[Yeonjae Kim](#)¹, [Hyunwook Park](#)¹, [Wanhyung Lee](#)¹

Affiliations Expand

- PMID: 42734163
- DOI: [10.1080/09603123.2026.2734444](#)

Abstract

Heat exposure is associated with adverse chronic obstructive pulmonary disease (COPD) outcomes, but findings vary across studies. We quantified the heat-COPD association and evaluated sources of heterogeneity. PubMed, Embase, and Google Scholar were searched for observational studies on heat exposure and COPD morbidity or mortality. Random-effects meta-analyses pooled risk estimates, using a three-level model for non-independent estimates. Stratified analyses examined outcome types, heat definitions, lag durations, air-pollution adjustment, geographic scope, and effect-size measures. Thirty-six studies were included. Heat exposure was associated with increased overall COPD risk (pooled risk ratio [RR], 1.15; 95% CI: 1.09-1.21). The association was stronger for mortality (RR, 1.26; 95% CI: 1.18-1.34) than morbidity (RR, 1.05; 95% CI: 1.01-1.09). Heat-wave and threshold-based definitions showed higher pooled associations (both RR, 1.21) than continuous temperature-based definitions (RR, 1.05), which showed lower heterogeneity. Positive pooled associations were observed across the reported lag windows. Air-pollution adjustment did not substantially alter associations. Heat exposure was associated with increased COPD risk, particularly mortality. The magnitude of the association varied by heat-exposure definition, highlighting the need for standardized reporting of heat metrics, thresholds, lag structures, and co-exposures to inform targeted prevention strategies.

Keywords: COPD; Heat; 'climate change'.

Supplementary info

Publication typesExpand

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Cite

27

Thorax

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. 2026 Sep 15;81(10):943-947.

doi: 10.1136/thorax-2026-225201.

[Standardising terminology in routine electronic health records for respiratory endpoints: why we still can't agree](#)

[Lies Lahousse](#)^{1,2}, [Kjell Erik Julius Håkansson](#)³, [Aparna Balasubramanian](#)⁴, [Job F M van Boven](#)^{5,6}, [Andrea S Gershon](#)⁷, [Chad H Hochberg](#)⁸, [Guy F Joos](#)⁹, [Janwillem W H Kocks](#)^{6,10,11}, [Adam Lewis](#)¹², [Vidya Navaratnam](#)^{13,14,15}, [Fredrik Nyberg](#)¹⁶, [Sanja Stanojevic](#)¹⁷, [Mathias Therkelsen King](#)¹⁸, [Holly Tibble](#)¹⁹, [Lowie Vanfleteren](#)^{9,20,21}, [Ulla Möller Weinreich](#)^{18,22}, [Katia Verhamme](#)²³, [Jennifer K Quint](#)²⁴

Affiliations Expand

- PMID: 42336667
- DOI: [10.1136/thorax-2026-225201](#)

Free article

No abstract available

Keywords: Asthma Epidemiology; COPD Exacerbations; COPD epidemiology.

Conflict of interest statement

Competing interests: JKQ has been supported by institutional research grants from UKRI, NIHR, Health Data Research UK, BI, AZ, and Insmed and received personal fees for advisory board participation, consultancy or speaking fees from GlaxoSmithKline, BI, Chiesi and AZ. AZ has provided funding to Imperial and Imperial Consultants for project management support for this work. Outside this manuscript, LL has been consulted as an expert for AZ, GSK and Sanofi and has given lectures sponsored by Chiesi, Johnson and Johnson Services, INC and IPSA vzw and Domus Medica vzw (non-profit organisations facilitating lifelong learning for healthcare providers), all paid to her institution. She received support for travel

from Menarini and AZ. CH reports grants from the National Institutes of Health, USA, outside of the submitted work. JvB reports consulting fees from Aardex, ALK, AstraZeneca, Chiesi, GSK, Pfizer, Sanofi, Teva, Trudell Medical, Vertex and the WHO paid to his institution. KH reports grants from AstraZeneca, GSK, Novo Nordisk and Sanofi paid to his employer. LvF reports consulting fees from AstraZeneca, GSK and Sanofi and payment for presentations from AstraZeneca, GSK, Sanofi, Chiesi, Pulmonx and Grifols. VN reports consulting fees and payment for advisory board participation from BI. AL, AG, FN, HT and MK have nothing to disclose.

Full text links



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28

Thorax

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. 2026 Sep 18:thorax-2026-224791.

doi: 10.1136/thorax-2026-224791. Online ahead of print.

[Establishing the top 10 research priorities for lung volume reduction treatment for people with COPD](#)

[Sara C Buttery](#)^{1,2}, [Richard Barraclough](#)³, [Timothy J P Batchelor](#)⁴, [Sofina Begum](#)², [Rocco Bilancia](#)⁵, [Edward J Caruana](#)⁶, [James W Dodd](#)^{7,8}, [Justin L Garner](#)^{9,2}, [Neil J Greening](#)¹⁰, [Samuel V Kemp](#)¹¹, [Alan J B Kirk](#)⁵, [Rod A Lawson](#)¹², [Babu Naidu](#)¹³, [Christopher M Orton](#)^{9,2}, [Karen Redmond](#)¹⁴, [Carole Ridge](#)², [Pallav L Shah](#)^{9,2}, [Jane S Watson](#)¹⁵, [Nicholas S Hopkinson](#)⁹; [LVR-PSP steering group](#)

Collaborators, Affiliations Expand

- PMID: 42248680
- DOI: [10.1136/thorax-2026-224791](#)

Abstract

Lung volume reduction procedures are an established evidence-based aspect of chronic obstructive pulmonary disease (COPD) care. We conducted a research prioritisation exercise involving people with COPD and healthcare professionals across a range of disciplines, to identify a clear set of 10 questions to guide the development of research proposals in this area. Priorities were identified using an iterative approach based on the James Lind Alliance methodology. The final set of 10 priorities address the identification, assessment and optimisation of patients

with COPD prior to any procedure, how lung volume reduction procedures are conducted and how care after the procedure has taken place should be organised.

Keywords: Emphysema; Lung Volume Reduction Surgery.

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Conflict of interest statement

Competing interests: SCB reports personal fees for educational lectures and travel from PulmonX Inc. TB received honoraria for lectures from Medtronic. RB reports honoraria for lectures from Intuitive and support for attending meetings and travel from PulmonX Inc and Intuitive. EC reports honoraria from AtriCure, PulmonX Inc and Intuitive. JWD reports support for travel and educational honoraria from PulmonX Inc. He is also the COPD lead for Respiratory Transformation Partnership NHSE/HIN and acting senior clinical lead/asthma clinical lead for National Respiratory Audit Program RCP. SK reports conference fees from Sanofi, personal consulting fees from Ambu and PulmonX Inc and personal lecture fees from PulmonX Inc. He is on the advisory board for Intuitive and Ambu and DSMB for Apreo Health. RAL reports he is a member of South Yorkshire Respiratory Specialist Advisory Group and Yorkshire and Humber Clinical Senate. CMO reports honoraria for lectures and consulting fees from PulmonX Inc. PLS reports consulting fees from Creo Medical, Olympus and Pulmonx advisory boards and honoraria from PulmonX Inc and Olympus. JSW reports honoraria from AstraZeneca, GSK and Chiesi.

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Cite

29

Editorial

Eur J Heart Fail

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. 2026 Sep 15;28(3):509-510.

doi: 10.1093/ejhf/xuag065.

[Letter regarding the article 'Beta-blockers in patients with heart failure with reduced ejection fraction and concomitant chronic obstructive pulmonary disease: cardiovascular and respiratory outcomes'](#)

[Yuanru Chai](#)^{1,2}, [Dawei Wang](#)^{2,3,4}

Affiliations Expand

- PMID: 41802233
- DOI: [10.1093/ejhf/xuag065](https://doi.org/10.1093/ejhf/xuag065)

Free article

No abstract available

Keywords: Beta-blockers; Chronic obstructive pulmonary disease (COPD); Heart failure with reduced ejection fraction (HFrEF).

Comment in

- [Beta-blockers in patients with heart failure with reduced ejection fraction and concomitant chronic obstructive pulmonary disease: cardiovascular and respiratory outcomes.](#)

Beer BN, Lindberg F, Savarese G. Eur J Heart Fail. 2016 Sep 15;28(3):511-512. doi: 10.1093/ejhf/xuag066. PMID: 41795868 No abstract available.

Comment on

- [Beta-blockers in patients with heart failure with reduced ejection fraction and concomitant chronic obstructive pulmonary disease: cardiovascular and respiratory outcomes.](#)

Beer BN, Lindberg F, Savarese G. Eur J Heart Fail. 2016 Sep 15;28(3):511-512. doi: 10.1093/ejhf/xuag066. PMID: 41795868 No abstract available.

Supplementary info

Publication types, Grants and fundingExpand

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Cite

30

Editorial

Eur J Heart Fail

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. 2016 Sep 15;28(3):511-512.

doi: 10.1093/ejhf/xuag066.

Beta-blockers in patients with heart failure with reduced ejection fraction and concomitant chronic obstructive pulmonary disease: cardiovascular and respiratory outcomes

Benedikt N Beer^{1,2,3,4}, **Felix Lindberg**¹, **Gianluigi Savarese**¹

Affiliations Expand

- PMID: 41795868
- DOI: [10.1093/ejhf/xuag066](https://doi.org/10.1093/ejhf/xuag066)

Free article

No abstract available

Keywords: COPD; HFrEF; beta-blocker; effectiveness; heart failure; safety.

Comment in

- [Letter regarding the article 'Beta-blockers in patients with heart failure with reduced ejection fraction and concomitant chronic obstructive pulmonary disease: cardiovascular and respiratory outcomes'.](#)

Chai Y, Wang D.Eur J Heart Fail. 2026 Sep 15;28(3):509-510. doi: 10.1093/ejhf/xuag065.PMID: 41802233 No abstract available.

Comment on

- [Letter regarding the article 'Beta-blockers in patients with heart failure with reduced ejection fraction and concomitant chronic obstructive pulmonary disease: cardiovascular and respiratory outcomes'.](#)

Chai Y, Wang D.Eur J Heart Fail. 2026 Sep 15;28(3):509-510. doi: 10.1093/ejhf/xuag065.PMID: 41802233 No abstract available.

Supplementary info

Publication typesExpand

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Cite

31

Multicenter Study

Thorax

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. 2026 Sep 15;81(10):988-998.

doi: 10.1136/thorax-2025-224192.

Understanding risk of poor outcomes in adults hospitalised with respiratory syncytial virus infection: evidence from a multicentre UK cohort

Tommaso Morelli^{1 2}, Martha Purcell^{3 2}, Jon Panaguiton⁴, Rachel Patel⁵, Sharon Weinberg⁶, George Hulston⁶, Hans Siy-Yap⁶, Emma A Davies⁶, Anluan Keating^{3 2}, Ida Saidy⁶, Anna Freeman^{3 2}, Karl J Staples^{3 2}, Pedro Rodrigues⁷, Abigail Jones⁷, Alexander Allen⁷, Aruna T Bansal⁸, Stefan J Marciniak^{9 10}, Neil J Greening¹¹, Michael G Crooks¹², Philip Mitchelmore⁵, Salman H Siddiqui¹³, James Myerson¹⁴, Matthew J Pavitt¹⁴, Cyrus Daneshvar¹⁵, James D Chalmers¹⁶, Paul H Lee⁷, Tom Lewis⁵, Tristan W Clark^{3 2}, Sarah Denny¹⁷, Dexter J Wiseman¹⁷, Huw Ellis⁶, Tom Ma Wilkinson^{3 2}; UNIVERSAL Study Group; Universal Study Group

Collaborators, Affiliations Expand

- PMID: 41644135
- DOI: [10.1136/thorax-2025-224192](https://doi.org/10.1136/thorax-2025-224192)

Free article

Abstract

Background: Respiratory syncytial virus (RSV) causes substantial winter pressure on adult services. In the UK, RSV vaccination currently targets adults aged ≥ 75 years and care home residents; it remains uncertain whether this age criterion alone meaningfully discriminates risk of poor outcome among adults hospitalised with RSV.

Methods: We pooled three UK hospital cohorts (one prospective, two retrospective) of adults admitted with acute respiratory infection (ARI) and PCR-confirmed RSV. The primary outcome was intensive care unit/high dependency unit (ICU/HDU) admission or all-cause mortality within 60 days. Prespecified predictors (age, sex and comorbidities) entered a least absolute shrinkage and selection operator (LASSO) penalised logistic regression; selected variables were refitted using standard logistic regression. Discrimination, calibration and decision-analytic performance were assessed using 1000-bootstrap internal validation and decision-curve analysis.

Results: Among 334 adults, 37 (11.1%) experienced the primary outcome. An age-only rule mirroring current UK vaccine age-eligibility (≥ 75 years) demonstrated only modest discrimination (optimism-adjusted area under the receiver operating characteristic curve (AUC) 0.58, 95% CI 0.48 to 0.65) and a compressed distribution of predicted risks. A four-predictor model-including age, COPD, active/previous cancer and dementia-achieved higher discrimination AUC (0.77 (0.69 to 0.85)), a wider spread of predicted risks and the greatest net benefit across clinically plausible escalation thresholds (5-20%).

Conclusions: In adults hospitalised with RSV-associated ARI, simple age-based heuristics-including the UK ≥ 75 -year threshold-showed only modest ability to discriminate risk of ICU/HDU admission/60-day mortality once hospitalised. Comorbidity-inclusive approaches may provide more informative hospital-level risk stratification and warrant evaluation in future RSV vaccine-effectiveness and outcome studies. Any application requires external validation, more systematic RSV testing and comparison with physiology-based scores in larger, vaccinated cohorts.

Keywords: COPD Exacerbations; Clinical Epidemiology; Mortality; Respiratory Infection; Viral infection.

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Conflict of interest statement

Competing interests: SHS has received fees for advisory services/speaker fees from AstraZeneca, Chiesi, GSK, Areteia Therapeutics, CSL Behring and Medscape. KJS: reports research grants from AstraZeneca and EpiEndo; speakers' honouraria from AstraZeneca. TWC has received research grants from BioFire Diagnostics, bioMérieux, QIAGEN, Sense Biodetection and Inflammatrix; speaker fees, honouraria and travel reimbursement from BioFire Diagnostics, bioMérieux, QIAGEN, Cepheid and Janssen; consultancy fees from bioMérieux, QIAGEN, Cepheid, Roche, Janssen and Synairgen; has served on advisory boards for Cepheid, Roche, Roche Diagnostics, Janssen, GSK, Shionogi, Sanofi and Seqirus; member of an independent data monitoring committee for a trial sponsored by Roche; holds shares in Synairgen plc. TMW has received grants and fees from AstraZeneca, BergenBio, Boehringer Ingelheim, Chiesi, GSK, Janssen, Olam, MMH, Synairgen, Union Chimique Belge and Valneva. All other authors declare no competing interests.

Supplementary info

Publication types, MeSH termsExpand

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

1

Review

Eur J Intern Med

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. 2026 Sep 18:107197.

doi: 10.1016/j.ejim.2026.107197. Online ahead of print.

CKM: Epidemiology, current clinical implications and future burden

Elisa Russo¹, Miriam Dotta², Elisabetta Bussalino³, Diego Moriconi⁴, Francesca Viazzi⁵

Affiliations Expand

- PMID: 42760144
- DOI: [10.1016/j.ejim.2026.107197](https://doi.org/10.1016/j.ejim.2026.107197)

Abstract

Cardiovascular-kidney-metabolic (CKM) syndrome was formalized by the American Heart Association in 2023 to capture the biological and clinical continuum linking excess adiposity, metabolic dysfunction, chronic kidney disease (CKD), and cardiovascular disease (CVD). Population-based studies indicate that CKM stage ≥ 1 affects approximately three-quarters to nine-tenths of adults in contemporary cohorts, with stage 2 consistently representing the largest population reservoir. Importantly, CKM distribution is not uniform: advanced stages rise sharply with age and are more frequent in men and socioeconomically disadvantaged groups. Beyond its high prevalence, CKM staging carries substantial prognostic information. Longitudinal studies from the United States, Europe, and Asia demonstrate a graded increase in cardiovascular and all-cause mortality with advancing CKM stage, while emerging evidence links CKM multimorbidity to kidney failure, heart-failure hospitalization, frailty, impaired quality of life, and higher healthcare expenditure. This burden is expected to increase further as obesity, diabetes, CKD, and heart failure expand globally, with Global Burden of Disease analyses projecting substantial increases in the absolute burden of major CKM components through 2046. The 2026 AHA/ACC/ADA/ASN multisociety CKM guideline now translates this epidemiological framework into clinical practice through integrated staging, kidney assessment, and absolute-risk-based prevention. Major evidence gaps remain in stage transitions and regression, patient-reported outcomes, health economics, and low- and middle-income countries. For these reasons, this review aims to summarize the evolving epidemiology of CKM syndrome, examine its clinical implications, and outline its projected future burden and key priorities for research and clinical practice.

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Conflict of interest statement

Declaration of competing interest All authors declare that they have no conflicts of interest.

Supplementary info

Publication typesExpand

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Cite

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Expert Rev Respir Med

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. 2026 Sep 17.

doi: 10.1080/17476348.2026.2736888. Online ahead of print.

[Post-influenza syndromes: a hidden burden in clinical practice](#)

[Sotirios Tsiodras](#)¹

Affiliations Expand

- PMID: 42755182
- DOI: [10.1080/17476348.2026.2736888](https://doi.org/10.1080/17476348.2026.2736888)

Abstract

Introduction: Influenza is still taught and managed as a self-limited acute respiratory illness. The COVID-19 pandemic forced a reexamination of every respiratory virus and made a longer time horizon impossible to ignore. Comparator-controlled cohort data now indicate that influenza, like SARS-CoV-2, is followed by persistent, new-onset multi-system disease that is largely invisible in practice.

Areas covered: This perspective reframes influenza as a systemic infection with a distinct post-acute footprint. Drawing on autopsy, experimental and comparative-cohort evidence, a working construct of post-acute influenza syndrome (PAIS) is outlined across its cardiovascular, pulmonary, infectious, neurological, metabolic, renal and immunological components. Literature was identified through PubMed searches combining post-acute, post-influenza and post-viral terms with influenza (run to June 2026), with citation tracking, prioritizing studies with a non-influenza comparator. Influenza is framed as a cardiovascular stress test and a trigger of long-term multimorbidity in the already vulnerable, alongside the unresolved conflict over whether its cardiac burden exceeds that of COVID-19.

Expert opinion: Post-influenza sequelae are real, clinically consequential, and systematically missed because of delayed onset, attribution bias and fragmented care. Vaccination, longitudinal follow-up of high-risk survivors and integrated care pathways should become standard practice within five years.

Keywords: Cardiovascular sequelae; heart failure; influenza; long covid; long flu; multimorbidity; post-acute infection syndrome; post-viral syndrome; vaccination.

Full text links

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Cite

3

Review

Breathe (Sheff)

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. 2026 Sep 15;22(3):260060.

doi: 10.1183/20734735.0060-2026. eCollection 2026 Jul.

[Mechanisms of *Mycobacterium tuberculosis* disease and the impact of co-infections and post-TB complications](#)

[Thi Phuong Phan](#)¹, [Aurélien Dinh](#)², [Anh Tuan Dinh-Xuan](#)³

Affiliations Expand

- PMID: 42750993
- PMCID: [PMC13579343](#)
- DOI: [10.1183/20734735.0060-2026](#)

Abstract

Background: *Mycobacterium tuberculosis* (Mtb) remains a leading cause of global morbidity and mortality. Viral, bacterial, fungal, and parasitic co-infections substantially modify tuberculosis (TB) pathogenesis, and an increasingly recognised population of TB survivors develops post-TB lung disease (PTLD), which predisposes them to recurrent respiratory infections.

Objectives: To summarise current evidence on 1) Mtb pathophysiology and immunopathogenesis; 2) mechanisms by which major viral, bacterial, fungal, and parasitic co-infections alter TB progress; and 3) infectious complications associated with PTLD.

Content: Mtb exploits innate immune evasion, altered macrophage activation, and granuloma remodelling in order to persist. Viral co-infections, particularly HIV, influenza, and severe acute respiratory syndrome coronavirus 2, impair T-helper 1 immunity, disrupt cytokine signalling, increase bacterial load, and drive progression to severe or disseminated TB. Bacterial pathogens (e.g. *Streptococcus pneumoniae*, *Staphylococcus aureus*, *Klebsiella pneumoniae*, *Pseudomonas aeruginosa*) complicate diagnosis, increase severity, and contribute to antimicrobial resistance. Fungal and parasitic infections skew immunity and can delay diagnosis or reduce

vaccine efficacy. PTLT results from sustained inflammation, matrix metalloproteinase activation, fibrosis, bronchiectasis, and cavitation; these structural changes favour chronic colonisation by opportunistic bacteria and long-term functional impairment.

Conclusions: TB pathogenesis is profoundly influenced by co-infections, and PTLT is an under-recognised driver of chronic respiratory morbidity. Integrated diagnostics, coordinated management of multimorbidity, and tailored strategies for PTLT are essential to reduce TB-related burden.

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Conflict of interest statement

Conflict of interest: The authors have nothing to disclose.

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

Supplementary info

Publication typesExpand

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Cite

4

IJTLT Open

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. 2026 Sep 15;3(9):607-609.

doi: 10.5588/ijtldopen.26.0337. eCollection 2026 Sep.

[Multimorbidity care during TB treatment: no longer if, but how](#)

[C Calderwood](#)^{1,2,3}, [E Marambire](#)², [O Mufare](#)², [S Bernays](#)^{2,4}, [K Kranzer](#)^{2,3,5}

Affiliations Expand

- PMID: 42746384
- PMCID: [PMC13577211](#)
- DOI: [10.5588/ijtldopen.26.0337](#)

No abstract available

Keywords: TB survivors; chronic respiratory disease; integrated care; service delivery; tuberculosis.

Conflict of interest statement

Conflicts of interest: none declared.

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

Supplementary info

Publication typesExpand

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Cite

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HIV Res Clin Pract

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. 2026 Dec 31;27(1):2731527.

doi: 10.1080/25787489.2026.2731527. Epub 2026 Sep 14.

[Comorbidity and polypharmacy burden among people living with HIV in the United States stratified by age, sex, and race: updated evidence from a contemporary cohort](#)

[Sean P Fleming](#)¹, [Shweta Kamat](#)², [Girish Prajapati](#)¹, [Kyung Min Lee](#)², [Viktor Chirikov](#)², [Traci LeMasters](#)², [Princy N Kumar](#)³

Affiliations Expand

- PMID: 42735234
- DOI: [10.1080/25787489.2026.2731527](#)

Free article

Abstract

Background: Advances in antiretroviral therapy (ART) have extended the life expectancy of people living with HIV, increasing the prevalence of comorbidities and polypharmacy burden.

Objective: To compare comorbidity burden and polypharmacy among people living with HIV and matched people without HIV stratified by age, sex, and race/ethnicity.

Methods: This retrospective study used claims data from Optum's de-identified Clinformatics® Data Mart Database (01/01/19-12/31/24). Adults (≥18 years) with ≥1 ART claim or HIV diagnosis code during the 2024 calendar year (index date: earliest ART or HIV claim) were matched 2:1 to adults without HIV by age group, sex, race, region, and insurance type. Continuous enrolment of 12 months pre-index (baseline) and ≥30 days post-index was required. Baseline comorbidities and polypharmacy were compared between the two cohorts. .

Results: A total of 26,078 people living with HIV were matched to 52,156 people without HIV. Mean age was 58.9 years, 21.3% were female and 31.3% were Black. Mean comorbidity burden was higher in people living with HIV vs without HIV overall (3.70 vs 3.14) and across age groups and sex (female: 4.40 vs 3.85; male: 3.33 vs 2.78) (all $p < 0.001$). Multimorbidity (≥2 non-HIV comorbidities) and polypharmacy (≥5 non-ART drugs) prevalence were significantly higher among people living with HIV and increased with age and among females. Similar patterns were observed across racial/ethnic groups.

Conclusions: People living with HIV had greater comorbidity and polypharmacy burden than matched people without HIV across demographic subgroups. These findings underscore the need for comprehensive comorbidity assessment and comedication review to minimise drug interactions and support optimal treatment decisions for people living with HIV.

Keywords: HIV; aging with HIV; comorbidity; multimorbidity; people with HIV; polypharmacy.

Supplementary info

MeSH termsExpand

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Cite

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Circulation

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. 2026 Sep 15;154(11):959-962.

doi: 10.1161/CIRCULATIONAHA.126.080149. Epub 2026 Sep 14.

[Brain and Heart Interconnections: The Path Forward](#)

[Peter P Liu](#)¹, [Roland von Känel](#)², [Mitchell S V Elkind](#)^{3 4}

Affiliations Expand

- PMID: 42735220
- DOI: [10.1161/CIRCULATIONAHA.126.080149](#)

No abstract available

Keywords: brain diseases; cardiovascular diseases; cerebrovascular disorders; cognition disorders; mental health; multimorbidity; neurovascular coupling.

Conflict of interest statement

Dr Liu is the chair and scientific co-lead of the “Brain–Heart Interconnectome,” a Canada First Research Excellent Fund (CFREF) Initiative from the Canadian federal government. Dr Elkind reports being a full-time employee of the American Heart Association. Dr von Känel is a member of the Brain-Heart Interconnectome International Advisory Committee.

Full text links



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

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Am J Med

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. 2026 Sep 18:S0002-9343(26)00675-3.

doi: 10.1016/j.amjmed.2026.09.011. Online ahead of print.

[Impact of Small Airway Dysfunction on Asthma Presentation and Future Exacerbation Risk: A Cohort Study](#)

[Sheau-Ning Yang](#)¹, [Chuan-Yen Sun](#)², [Kun-Ta Chou](#)³, [Diahn-Warng Perng](#)², [Kang-Cheng Su](#)², [Yi-Han Hsiao](#)², [Hsin-Kuo Ko](#)², [Yuh-Min Chen](#)²

Affiliations Expand

- PMID: 42759868
- DOI: [10.1016/j.amjmed.2026.09.011](https://doi.org/10.1016/j.amjmed.2026.09.011)

Abstract

Background: Small airway dysfunction is increasingly recognized in asthma, but its associations with future exacerbation risk and follow-up physiologic changes remain incompletely defined. This study aimed to examine the association of small airway dysfunction with future exacerbation risk in an asthma care cohort and to characterize physiologic changes during follow-up.

Materials and methods: We enrolled 167 adults with stable asthma who had paired baseline and follow-up spirometry and oscillometry assessments, with a median interval of 12 months between assessments. Small airway dysfunction was defined as $R_5-R_{20} > 0.07$ kPa/(L/s) by impulse oscillometry. Baseline characteristics were compared by small airway dysfunction status. Time to future acute exacerbation was analyzed using multivariable Cox proportional hazards regression. Longitudinal changes in clinical and physiologic measures among participants with small airway dysfunction were also assessed.

Results: Small airway dysfunction was present in 134 of 167 participants (80.2%). Participants with small airway dysfunction had a higher rate of future acute exacerbations than those without (43.3% vs 21.2%, $p=0.020$). After multivariable adjustment, prior acute exacerbation history (aHR:2.61, 95% CI:1.40-4.85) and small airway dysfunction (aHR:3.26, 95% CI:1.47-7.23) were independently associated with future acute exacerbation risk. Among participants with small airway dysfunction, asthma symptom control and selected spirometric measures improved from baseline to follow-up.

Conclusions: In adults with asthma, small airway dysfunction defined by impulse oscillometry was independently associated with an increased risk of future acute exacerbations. Among those with small airway dysfunction, asthma symptom control and selected spirometric measures improved from baseline to follow-up.

Keywords: Acute exacerbations; Asthma; Impulse oscillometry; Longitudinal follow-up; Lung function; Small airway dysfunction.

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Conflict of interest statement

Conflict of Interest None

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Cite

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Structure

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. 2026 Sep 18:S0969-2126(26)00259-5.

doi: 10.1016/j.str.2026.08.012. Online ahead of print.

[Structural basis of QX007N neutralizing interleukin-33 for asthma and COPD treatment](#)

[Qi Wang](#)¹, [Huimin Ke](#)², [Yiliang Wu](#)³, [Yong Kong](#)³, [Tao Chen](#)³, [Wei Li](#)⁴, [Wei Feng](#)⁵

Affiliations Expand

- PMID: 42759520
- DOI: [10.1016/j.str.2026.08.012](#)

Abstract

Interleukin-33 (IL-33), a member of the IL-1 cytokine family, is upregulated in various inflammatory and allergic diseases, including asthma and chronic obstructive pulmonary disease (COPD). In this study, we report the generation and functional characterization of QX007N, a humanized monoclonal antibody that specifically neutralizes IL-33. QX007N shows high neutralization activities against IL-33-mediated signaling. In B-hIL-33 humanized mice, QX007N significantly suppressed ovalbumin (OVA)-specific IgE levels in serum and attenuated acute allergic inflammation in lung cells. Crystal structures of the QX007N-Fab (2.62 Å) and its complex with IL-33 (2.60 Å) were determined. Structural comparison of the QX007N-Fab/IL-33 complex with published antibody/IL-33 complexes and the IL-33/suppression of tumorigenicity 2 (ST2) complex reveals that QX007N-Fab recognizes epitope 2 on IL-33 and sterically inhibits ST2 binding, thereby preventing assembly of the IL-33/ST2/IL-1RAcP signaling complex and downstream signal transduction. These findings establish QX007N as a promising therapeutic candidate for asthma and COPD.

Keywords: COPD; IL-33; QX007N; asthma; crystal structure; monoclonal antibody.

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Conflict of interest statement

Declaration of interests The authors declare no competing interests.

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Cite

Review

Respiration

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. 2026 Sep 18:1.

doi: 10.1159/res/aepag012. Online ahead of print.

[Beyond Hypersecretion: Mucus Plugs as structural and biological determinants of Airway Obstruction](#)

[Jennifer Patricia Vargas Gómez](#), [Juan Camilo Tafur Vidal](#), [Vanessa Rocio Villanueva Guerrero](#), [Jorge Mario Ahumada Ramírez](#), [Eidelman Antonio González Mejía](#), [Isaias Alberto Siado Palencia](#), [Joseph David León Insignares](#), [Evelyn Mendoza Torres](#)

- PMID: 42758674
- DOI: [10.1159/res/aepag012](#)

Abstract

Mucus plugs represent a muco-obstructive endophenotype across the spectrum of chronic obstructive airway diseases. Beyond reflecting mucus hypersecretion alone, they constitute a structural and biological manifestation of altered mucus biophysics, impaired mucociliary clearance, epithelial dysfunction, and inflammatory signaling. Their presence contributes to regional airflow limitation, ventilation heterogeneity, hypoxemia, and adverse clinical outcomes, even when conventional pulmonary function tests underestimate their impact. Advances in imaging have enabled the transition of mucus plugs from a descriptive radiologic finding to a potentially actionable biomarker for risk stratification and therapeutic response assessment, particularly in severe asthma and chronic obstructive pulmonary disease, where muco-obstruction has been associated with increased exacerbation risk and mortality. This narrative review integrates current evidence on the mechanisms underlying plug formation and persistence, their clinical expression, imaging strategies, and therapeutic implications across asthma and chronic obstructive pulmonary disease.

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Occup Med (Lond)

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. 2026 Sep 18:kqag068.

doi: 10.1093/occmed/kqag068. Online ahead of print.

Work-related asthma in stainless steel welders, irritant or allergy?

Vicky C Moore^{1,2}, Alastair S Robertson¹, Christopher C Huntley¹, Gareth I Walters¹, P Sherwood Burge¹

Affiliations Expand

- PMID: 42758126
- DOI: [10.1093/occmed/kqag068](https://doi.org/10.1093/occmed/kqag068)

Abstract

Background: Work-related asthma in welders is often thought to be irritant rather than allergic, limiting the availability of surveillance, assisted retraining and compensation. However, excess inflammatory gene activation is a feature of asthma in stainless-steel welders.

Aims: To investigate a cohort of workers exposed to stainless-steel welding fume who have work-related symptoms to assess if their diagnosis best fits irritant or allergic phenotypes or endotypes.

Methods: All workers seen between 2000 and 2021 with confirmed work-related asthma exposed to stainless-steel welding fume were included. The types of exposure responses were identified from Oasys programme plots of 2-hourly peak expiratory flow (PEF) measurements at work and home over 4 weeks. While exposed, non-specific bronchial reactivity (NSBR), atopy, eosinophilia and fractional exhaled nitric oxide (FeNO) were measured. The irritant endotype was defined as (i) absence of relevant immunoglobulin E sensitization; (ii) association with NSBR; (iii) immediate onset of symptoms following exposure; and (iv) either pre-existing asthma or a latency period for symptom onset of <6 months.

Results: Twenty-five workers exposed to stainless-steel welding fume showed PEF changes, confirming work-related asthma. A possible irritant endotype was present in four. One had pre-existing asthma, two had latencies of <6 months and three had NSBR. Peripheral eosinophilia and raised FeNO were uncommon.

Conclusions: The phenotype or endotype was incompatible with purely irritant mechanisms in 21 participants and had predominately T helper 2 low inflammatory characteristics. Stainless-steel welders with work-related asthma should be managed as occupational asthma with hypersensitivity.

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J Allergy Clin Immunol Pract

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. 2026 Sep 17:S2213-2198(26)00771-3.

doi: 10.1016/j.jaip.2026.08.046. Online ahead of print.

[Treatable Traits and Asthma Control: a Prospective Study in Pregnancy](#)

[Xiaopei Yan](#)¹, [Jing Xie](#)¹, [Hui Wang](#)¹, [Xian Yue Sun](#)¹, [Kun Wen](#)¹, [Xueqin Wang](#)¹, [Ning Li](#)¹, [Yantian Lv](#)¹, [Lu Shi](#)², [Wu Xiao](#)³, [Ting Xu](#)⁴, [Qinrong Xu](#)⁵, [Ran Tao](#)⁶, [Xilan Gu](#)⁷, [Chao Chen](#)⁸, [Yuqiong Chen](#)⁸, [Bin Zeng](#)⁹, [Yanwei Tan](#)¹⁰, [Chang Qi](#)¹¹, [Ting Ruan](#)¹, [Minghua Jin](#)¹, [Li Xu](#)¹, [Ying Chen](#)¹², [Guopeng Xu](#)¹³

Affiliations Expand

- PMID: 42754156
- DOI: [10.1016/j.jaip.2026.08.046](https://doi.org/10.1016/j.jaip.2026.08.046)

Abstract

Background: The treatable traits (TTs) approach has emerged as a promising strategy for managing asthma, but its application in pregnant women remains underexplored.

Objective: To explore the effect of a TT-based intervention on asthma outcomes in pregnant women.

Methods: This prospective study enrolled 62 non-pregnant and 37 pregnant women with asthma. Multidimensional assessment identified pulmonary, extrapulmonary, and behavioral and risk factor TTs. Participants then received a 12-week multidisciplinary intervention tailored to TTs. We assessed TTs, Asthma Control

Questionnaire-5 (ACQ-5), and the cough evaluation test at baseline and after the intervention.

Results: Total TTs significantly decreased from a median (interquartile range) of 5.0 (3.0-6.0) to 2.0 (2.0-3.0) overall ($P < .001$), with consistent improvements in both subgroups. Results from ACQ-5 improved from 0.8 to 0.2 ($P < .001$), and the cough evaluation test from 12.0 to 6.0 ($P < .001$). Changes in TTs showed a strong positive correlation with improvements in ACQ-5 in the overall cohort ($\rho = 0.69$; $P < .001$), which remained robust in both subgroups. Multivariable regression identified Δ TTs as an independent predictor of postintervention ACQ-5 ($\beta = -0.67$; $P < .001$). Mediation analysis further revealed a significant indirect effect of baseline TTs on asthma improvement through Δ TTs (effect = 0.13; 95% CI, 0.08-0.19), supporting a causal mediation pathway. Baseline between-group comparisons showed no significant differences in most TTs after adjustment. All pregnant women delivered safely, with no intervention-related serious adverse events.

Conclusions: In this single-arm study, a trait-guided intervention was associated with reduced TTs and improved asthma control, with TTs reduction mediating the improvement. The approach appeared safe in pregnancy, but randomized control trials are needed.

Keywords: Asthma; Pregnancy; Treatable traits.

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J Allergy Clin Immunol Pract

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. 2026 Sep 17:S2213-2198(26)00770-1.

doi: 10.1016/j.jaip.2026.07.050. Online ahead of print.

[The Safety of Long-Acting \$\beta\$ -Agonists for the Treatment of Asthma in Pregnancy: A Prospective Observational Study](#)

[Andrea E Davis](#)¹, [Alec Todd](#)², [Yunjun Luo](#)², [Michael E Wechsler](#)³, [Michael Schatz](#)⁴, [Christina Chambers](#)²; [of the OTIS Collaborative Research Group](#)

Affiliations Expand

- PMID: 42754151

- DOI: [10.1016/j.jaip.2026.07.050](https://doi.org/10.1016/j.jaip.2026.07.050)

Abstract

Background: Asthma is among the most common chronic diseases affecting pregnant women. In adults with uncontrolled asthma, the addition of a long-acting β -agonist (LABA) to inhaled corticosteroids (ICS) is more effective than increasing the dose of ICS for asthma control. However, data on the gestational safety of LABAs are limited.

Objective: To evaluate the risk for major birth defects, small for gestational age (SGA), spontaneous abortion (SAB), and preterm delivery (PTD) in women using LABA during pregnancy.

Methods: Participants in the United States or Canada were recruited between 2009 and 2014 by MotherToBaby Pregnancy Studies at UC San Diego. Pregnant women treated with LABAs, with or without ICS, were compared with those using short-acting β -agonists (SABAs), with or without ICS, and with those without asthma. Data on exposures and outcomes were collected through maternal interviews and medical records.

Results: A total of 439 participants were enrolled: 100 exposed to LABAs, 103 exposed to SABAs, and 236 nonasthmatic women. Liveborn infants of women exposed to LABAs were not significantly more likely to have major congenital malformations compared with either reference group (adjusted relative risk [aRR], 1.05; 95% confidence interval [CI], 0.32, 3.40; and aRR, 0.63; 95% CI, 0.23, 1.67, respectively). LABA exposure was no more likely to result in SAB, PTD, or SGA infants than in either comparison group.

Conclusion: There was no significant increase in risk for the selected adverse outcomes in women exposed to LABAs during pregnancy.

Keywords: Asthma; Fetal outcomes; Long-acting β -agonists; Maternal outcomes; Pregnancy.

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J Allergy Clin Immunol Pract

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. 2026 Sep 17:S2213-2198(26)00769-5.

doi: 10.1016/j.jaip.2026.08.045. Online ahead of print.

Treatable traits in pregnant women with asthma: a retrospective study of prevalence and associations with exacerbation and poor asthma control

Esha Joshi¹, Peter G Gibson², Bronwyn K Brew¹, Megan E Jensen¹, Daniel Barker³, Erin Nolan³, Vanessa M McDonald⁴, Vanessa E Murphy⁵

Affiliations Expand

- PMID: 42754147
- DOI: [10.1016/j.jaip.2026.08.045](https://doi.org/10.1016/j.jaip.2026.08.045)

Abstract

Background: Treatable traits personalize asthma management, yet their prevalence and associations with exacerbations and asthma control in pregnancy are understudied.

Objective: To determine the prevalence of 18 treatable traits and their associations with exacerbations and asthma control in pregnant women with asthma.

Methods: Breathing for Life Trial clinical records were examined to identify 18 potential treatable traits from mid-pregnancy. Regression models adjusted for confounders determined associations with future exacerbations during pregnancy. In a sub-group, traits associated with asthma control were assessed at multiple timepoints during pregnancy using a generalized linear mixed model.

Results: Pregnant women (n= 761) with mild-moderate asthma exhibited a median of 36% of possible traits assessed. Prevalent treatable traits included no asthma action plan (84.2%); inhaler device polypharmacy (82.1%) and iron deficiency (70.4%). History of exacerbation (aOR 2.47, 95% CI 1.61, 3.78); p<0.002 and significant nausea (aOR 1.88, 95% CI 1.24, 2.85); p=0.039 were associated with increased exacerbation whilst history of exacerbation was associated with increasing exacerbations (aIRR 2.26, 95% CI 1.51, 3.40); p=0.002 after adjusting for confounders and multiple comparisons. In mid-pregnancy, inhaler device polypharmacy (OR 2.72, 95% CI 2.08, 3.57); p=0.002, current smoking (OR 2.51, 95% CI 1.36, 4.63); p=0.039; and history of exacerbation (OR 1.95, 95% CI 1.26, 3.02); p=0.039; were associated with poorer asthma control.

Conclusion: Behavioral/risk factor traits are common in asthma during pregnancy. History of exacerbation and significant nausea were associated with increased exacerbation risk. Inhaler device polypharmacy, smoking and history of exacerbations were associated with poor asthma control in mid-pregnancy.

Keywords: asthma; asthma control; behavioural/risk factor; exacerbation; extrapulmonary; pregnancy; pulmonary; treatable traits.

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8

Ann Allergy Asthma Immunol

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. 2026 Sep 17:S1081-1206(26)01199-3.

doi: 10.1016/j.anai.2026.09.737. Online ahead of print.

[**Real-World Effectiveness of Tezepelumab for Patients with Severe Asthma in the United States: CROSSROADS-3**](#)

[Jessica K DeMartino¹](#), [Christopher S Ambrose²](#), [Santiago Zuluaga Sanchez³](#), [Benjamin Emmanuel²](#), [Renee L Gennarelli⁴](#), [Temitope Bello⁴](#), [Andrew Lindsley⁵](#), [Jean-Pierre Llanos⁶](#), [Laren Tan⁷](#), [Weily Soong⁸](#)

Affiliations Expand

- PMID: 42754089
- DOI: [10.1016/j.anai.2026.09.737](#)

Abstract

Background: Tezepelumab was approved in the United States (US) in December 2021 for patients aged 12 years and older with severe asthma. Efficacy has been demonstrated in clinical trials, but real-world evidence of its impact in severe asthma management is more limited.

Objective: To describe US patients receiving tezepelumab and to assess real-world treatment patterns and outcomes before and after tezepelumab initiation.

Methods: This retrospective, single-arm, self-controlled, observational study analyzed US patients 12 and older with severe asthma who initiated tezepelumab between December 2021 and August 2022 using insurance claims data. The overall cohort included patients with at least two asthma exacerbations in the 12 months prior to initiating tezepelumab. Annualized asthma exacerbation rates (AAER), cumulative oral corticosteroid (OCS) use, and exacerbation-related healthcare resource utilization (HCRU) were compared 12 months pre- and post-tezepelumab initiation.

Results: Among tezepelumab recipients (n=321), 45% had received another biologic in the 12 months prior, and among those with available data (n=143), 68% had blood eosinophil count <300 cells/uL. AAER was reduced by 58% (95% confidence interval [CI]: 53%-62%) following tezepelumab initiation. Average annual cumulative OCS dose (prednisone-equivalent) was reduced from 1,295 mg to 770 mg (p < 0.001). Asthma exacerbation-related inpatient, emergency department (ED), and outpatient

visits also decreased. Reductions in asthma-related outcomes were seen in biologic-naïve and biologic-experienced cohorts and across multiple clinical subgroups of interest.

Conclusion: Patients with severe asthma treated with tezepelumab in the first 9 months post US approval experienced meaningful clinical benefits.

Keywords: asthma; biologics; chronic obstructive pulmonary disease; effectiveness; exacerbation; real-world; severe asthma; tezepelumab.

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Conflict of interest statement

Declaration of competing interest JKD, CSA, and BE are employees of AstraZeneca. SZS, JPL, and AL are employees of Amgen. RLG and TB are employees of Cencora, which was contracted by Amgen Inc and AstraZeneca to carry out this study. LT is an employee of Loma Linda University. WS is an employee of Allervie Health.

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Lancet Respir Med

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. 2026 Sep 17:S2213-2600(26)00218-3.

doi: 10.1016/S2213-2600(26)00218-3. Online ahead of print.

[State-level burden of chronic respiratory diseases in the USA, 1990-2023, with forecasts to 2050: a systematic analysis for the Global Burden of Disease Study 2023](#)

[GBD 2023 US Chronic Respiratory Disease Collaborators](#)

Collaborators, Affiliations Expand

- PMID: 42753772
- DOI: [10.1016/S2213-2600\(26\)00218-3](#)

Abstract

Background: Chronic respiratory diseases are a leading cause of mortality in the USA, with considerable regional disparities influenced by environmental,

occupational, and behavioural risk factors. This study aimed to quantify levels of, and trends in, the burden of chronic respiratory diseases in the USA from 1990 to 2023, with estimates of prevalence, mortality, and disability-adjusted life-years (DALYs); identify risk factors contributing to this burden; and project prevalence trends until 2050.

Methods: Using data from the Global Burden of Diseases, Injuries, and Risk Factors Study (GBD) 2023, we estimated the disease burden for four types of chronic respiratory disease: asthma, chronic obstructive pulmonary disease (COPD), pneumoconiosis, and interstitial lung disease (ILD) and pulmonary sarcoidosis. Estimates were stratified by age group, sex, and year from 1990 to 2023, along with corresponding 95% uncertainty intervals (UIs). Furthermore, we examined total percentage change before and during the COVID-19 pandemic, and forecast the future burden of chronic respiratory diseases through 2050.

Findings: In 2023, an estimated 54·50 million (95% UI 48·86-61·60) individuals lived with chronic respiratory disease in the USA, compared with 33·28 million (28·61-38·23) in 1990. The age-standardised prevalence rate increased by 10·24% (8·01-12·47) between 1990 and 2023, while the age-standardised mortality rate rose modestly from 31·19 (28·85-32·95) per 100 000 population to 34·56 (30·64-37·89) per 100 000 population, indicating persistent gaps in disease control. Marked geographical variation was observed, with the highest age-standardised mortality rates due to COPD and pneumoconiosis in Appalachian states (eg, Kentucky and West Virginia) and elevated asthma and ILD burden in the southern and Great Plains regions. Modifiable risk factors accounted for 44·54% (41·71-45·74) of total DALYs due to chronic respiratory diseases, driven mainly by high BMI for asthma, smoking for COPD, and occupational exposure to asthmagens for pneumoconiosis. Across the US states, higher cigarette taxation and broader respiratory infection vaccination coverage were linked to lower age-standardised DALY rates for COPD and ILD and pulmonary sarcoidosis, whereas asthma showed no consistent pattern. According to our projection models, by 2050, 45·72 million (28·96-67·27) individuals in the USA will have asthma, while 19·61 million (16·70-22·26) will have COPD, 1·05 million (0·74-1·44) will have ILD and pulmonary sarcoidosis, and 0·01 million (0·008-0·02) will have pneumoconiosis.

Interpretation: State-level policy environments, including fiscal and preventive health measures, might contribute to shaping respiratory health outcomes beyond individual risk factors. Integrating tobacco control measures, equitable vaccination programmes, and targeted health-system investments could help to address the uneven burden of chronic respiratory diseases across US states and the growing mortality gap despite stable prevalence, although further research is needed to clarify which specific policy determinants underlie these associations.

Funding: Gates Foundation.

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Conflict of interest statement

Declaration of interests M Bell reports grants or contracts from the US National Institutes of Health (NIH), Hutchinson Postdoctoral Fellowship, Health Effects Institute, Robert Wood Johnson Foundation, and Wellcome Trust Foundation (all

paid to institution); consulting fees from Clinique and ToxiMap (paid to M Bell for consulting fees); payment or honoraria for lectures, presentations, speakers bureaus, manuscript writing or educational events from Colorado School of Public Health, Duke University, University of Texas, Data4Justice, Korea University, Brown University, Konkuk University, and the Research and Management Center for Health Risk of Particulate Matter (honorarium for speaker), from IOP Publishing (honorarium for editorial duties), from NIH, EHS, University of Texas, Fonds de la Recherche Scientifique, and the Health and Medical Research Fund (HMRF; honorarium for grant review), from Korea University (honorarium paid to M Bell for research), from Harvard University (honorarium for external advisory committee), and from SciQuest (honorarium for online survey or workshop); support for attending meetings or travel, or both, from Colorado School of Public Health, University of Texas, Duke University, Harvard University, American Journal of Public Health, Columbia University, Harvard, Community Modeling and Analysis System conference, Nature Conference, Boston University, Konkuk University, MIT, National Academy of Sciences, Wellcome Trust, and University of Pennsylvania (travel reimbursement); and leadership or fiduciary role in other board, society, committee or advocacy group, paid or unpaid with Fifth National Climate Assessment, Lancet Countdown, Johns Hopkins Environmental Health and Engineering Advisory Board, Harvard external advisory committee for training grant, and WHO Global Air Pollution and Health Technical Advisory group (no payment), and with US Environmental Protection Agency Clean Air Scientific Advisory Committee (CASAC; honorarium paid to M Bell) outside the submitted work. X Ding reports grants or contracts from the American Heart Association (2-year predoctoral fellowship; DOI: 10.58275/AHA.25PRE1373497.pc.gr.227106; quarterly payments made to institution); outside the submitted work. J Khubchandani reports grants or contracts from Merck Sharpe Dohme (research unrelated to this study but concerning vaccine hesitancy), from the National Science Foundation, USA (research unrelated to this study but concerning public health message inconsistency), and from New Mexico IDeA Networks of Biomedical Research Excellence (NIH P20GM103451 subgrant; research unrelated to this study but concerning pain disorders in American adults); support for attending meetings and/or travel from NATCO: The Organization for Donation and Transplant Professionals (invited plenary speaker at annual event, paid for travel and accommodation); and leadership or fiduciary role in other board, society, committee or advocacy group, paid or unpaid as Secretary, World Association of Medical Editors, and as Member, Evidentiary Committee, American Public Health Association (not paid), and as Member, US EPA Good Neighbor Environmental Board, and as Member, US FDA Digital Health Advisory Committee (not paid and assignment until 2025) outside the submitted work. J A Singh reports consulting fees from ROMTech, Atheneum, Clearview Healthcare Partners, Yale, Hulio, Horizon Pharmaceuticals/DINORA, ANI/Exeltis USA Inc, SOBI Pharmaceuticals, Frictionless Solutions, Schipher, Crealta/Horizon, Medisys, Fidia, PK Med, Two labs Inc, Adept Field Solutions, Clinical Care Options, Putnam Associates, Focus Forward, Navigant Consulting, Spherix, MedIQ, Jupiter Life Science, UBM LLC, Trio Health, Medscape, WebMD, and Practice Point communications, the NIH, and the American College of Rheumatology (consultant fees paid to J A Singh for each entity); payment or honoraria for lectures, presentations, speakers bureaus, manuscript writing or educational events from Simply Speaking (speaker's bureau; J A Singh previously served as a consultant and consultant fees were paid to J A Singh); support for attending meetings and/or travel as past steering committee member of OMERACT

(J A Singh previously received support from the organisation to attend their meeting every 2 years); participation on a data safety monitoring board or advisory board with FDA Arthritis Advisory Committee (J A Singh served previously as a member; no financial support); leadership or fiduciary role in other board, society, committee or advocacy group, paid or unpaid as past steering committee member of the OMERACT, an international organisation that develops measures for clinical trials and receives arm's length funding from 12 pharmaceutical companies; and stock or stock options in aTyr Pharmaceuticals, Atai Life Sciences, Kintara Therapeutics, Intelligent Biosolutions, Acumen Pharmaceutical, TPT Global Tech, Vaxart Pharmaceuticals, Aytu BioPharma, Adaptimmune Therapeutics, GeoVax Labs, Pieris Pharmaceuticals, Enzolytics, Seres Therapeutics, Tonix Pharmaceuticals Holding Corp, Aebona Pharmaceuticals, and Charlotte's Web Holdings (J A Singh owns stock options), and previously in Amarin, Viking, and Moderna Pharmaceuticals (J A Singh owned stock options in these companies previously) outside the submitted work. All other authors declare no competing interests.

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Editorial

Lancet

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. 2026 Sep 19;408(10560):1061.

doi: 10.1016/S0140-6736(26)01904-5.

[The unmet needs of people living with severe asthma](#)

[The Lancet](#)

- PMID: 42753749
- DOI: [10.1016/S0140-6736\(26\)01904-5](#)

No abstract available

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11

J Asthma

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. 2026 Sep 17:1-18.

doi: 10.1080/02770903.2026.2730876. Online ahead of print.

[Effectiveness of mepolizumab in patients switching from prior biologic treatments for severe asthma: a post hoc analysis of the NUCALA Effectiveness Study \(NEST\)](#)

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Affiliations Expand

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Abstract

Introduction: Biologic therapy is recommended for patients with severe asthma that remains uncontrolled despite receiving optimal therapy. This post hoc analysis of the Nucala Effectiveness Study (NEST) assessed real-world effectiveness of mepolizumab in biologic-experienced patients with severe asthma.

Methods: For this post hoc analysis of NEST (a multi-country, bi-directional, observational cohort study in Chile, Colombia, India, Kuwait, Oman, Qatar, Saudi Arabia, Türkiye and United Arab Emirates), data from biologic-experienced patients were included. The primary outcome was comparison of clinically significant exacerbation (CSE) incidence rates 12 months pre and post mepolizumab initiation. Secondary outcomes included changes in oral corticosteroid (OCS) use and Asthma Control Test (ACT) scores.

Results: Data from 174 patients were included; 94.8% received omalizumab previously and 84.8% had discontinued use due to lack of treatment efficacy. Incidence rate ratio (95% confidence interval) was 0.26 (0.18-0.36; 74.0% reduction in CSEs post initiation). Of 170 patients, OCS use reduced from 60.0% ($n = 102$) to 23.5% ($n = 40$); 39/102 (38.2%) patients continued OCS use post mepolizumab initiation. Among OCS users, mean (standard deviation [SD]) OCS dose reduced from 20.8 (17.3) to 6.7 (15.3) mg/day post initiation. Mean (SD) ACT scores improved

from 14.0 (5.4; $n = 139$) to 19.5 (5.2; $n = 140$) post initiation; of 125 patients, 66.4% achieved a ≥ 3 -point increase in ACT score.

Conclusion: Mepolizumab treatment led to reduced CSEs and OCS use, and improved ACT scores in biologic-experienced patients with severe asthma. These findings indicate the importance of a patient-centred approach regarding biologic treatment.

Keywords: Quality of Life; Treatment; anti-IL-5; low-middle-income countries; monoclonal antibody; real-world evidence.

Plain language summary

Treatment for people with severe asthma in many low-middle-income countries and some countries in Asia, Latin America and the Middle East can be improved. People with severe asthma who still experience symptoms despite current therapies may need advanced treatments. Mepolizumab is a type of advanced treatment called a biologic, used to treat people with severe asthma with an eosinophilic phenotype aged 6 years and older. It was shown in the Nucala Effectiveness Study (NEST) that mepolizumab works well to treat people with severe asthma living in Chile, Colombia, India, Kuwait, Oman, Qatar, Saudi Arabia, Türkiye and United Arab Emirates. However, little is known about how well mepolizumab works in people from these countries who have previously received a different biologic therapy. This paper looked at how effective mepolizumab was in individuals who had previously used a different biologic therapy. In the current study, people experienced 74% fewer severe asthma attacks (clinically significant exacerbations) after starting mepolizumab. In addition, fewer people were dependent on oral corticosteroids (OCS; a type of medication taken to reduce symptoms) for symptom relief, with only 23.5% of individuals taking OCS by the end of the study. Of those still receiving OCS, their average dose was also lower after receiving mepolizumab. Finally, people were able to control their asthma symptoms better. These results show that mepolizumab could benefit people with severe asthma, who have tried other biologic therapies previously without success, in countries where the challenges of living with asthma and OCS use are high.

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Review

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. 2026 Sep 17.

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Innovative positioning of respiratory allergen immunotherapy: a focus on precision medicine

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Affiliations Expand

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Abstract

Introduction: Allergen immunotherapy (AIT) is the only treatment for IgE-mediated respiratory allergy that can modify disease progression. Historically, AIT has relied on empirical personalization, based on allergen selection and clinical judgment. However, AIT is now transitioning to a structured, precision-medicine framework to optimize patient selection and treatment strategies by aligning interventions with individual characteristics and response profiles. However, key methodological and implementation challenges must be addressed before precision AIT can be routinely operationalized.

Areas covered: This review addresses the evolution of AIT toward a precision medicine framework. Specifically, we discuss emerging strategies and associated challenges to refine the use of AIT, including improved patient characterization, assessment of response trajectories, and treatment optimization through molecular diagnostics, digital health tools, and adjunctive biologic therapies.

Expert opinion: AIT has the potential to be an individualized, disease-modifying intervention. To achieve this, the field needs to move beyond 'one size fits all' empirical approaches, toward structured, response-guided strategies supported by multivariable prediction models and patient-centered outcomes. While the current limitations in evidence, outcome measurement, and regulatory frameworks hamper the implementation into actionable pathways, the international community of allergy care should strive to address these challenges and promote a more nuanced evidence-based use of AIT.

Keywords: AIT; Allergen immunotherapy; Disease-modifying; allergic rhinitis; asthma; prevention.

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. 2026 Sep 15;14(9):e70761.

doi: 10.1002/rcr2.70761. eCollection 2026 Sep.

[Recurrent Asthma Exacerbations Secondary to Gastric Stenosis After Gastric Band Slippage: Case Report and Literature Review](#)

[Gerardo Arwi](#)¹, [Adriana Avram](#)¹, [Philip Bardin](#)^{1 2}

Affiliations Expand

- PMID: 42750966
- PMCID: [PMC13578907](#)
- DOI: [10.1002/rcr2.70761](#)

Abstract

Recurrent asthma exacerbations despite optimal therapy warrant investigation for alternative causes. In this setting, silent aspiration is a key but often forgotten trigger of airway inflammation that should be considered in the differential diagnosis. We present a patient with long-standing severe Type 2 asthma complicated by recurrent exacerbations of an infective nature that was ultimately found to be associated with gastric band slippage causing gastric stenosis and delayed gastric emptying. Exacerbations ceased after surgical intervention and removal of the band. The report highlights the importance of considering gastrointestinal causes, particularly in people with prior gastric surgery, as a reason for poor asthma control and repeat exacerbations. We review literature pertaining to this field and emphasise the need for a multidisciplinary approach (including surgical intervention) to identify and effectively treat silent aspiration.

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Conflict of interest statement

The authors declare no conflicts of interest.

- [12 references](#)
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Respir Med

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. 2026 Sep 16:109159.

doi: 10.1016/j.rmed.2026.109159. Online ahead of print.

[Paranasal sinus opacification and lower airway mucus plugs and wall thickening in asthma: a two-cohort computed tomography study](#)

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Affiliations [Expand](#)

- PMID: 42749225
- DOI: [10.1016/j.rmed.2026.109159](#)

Abstract

Background: Chronic rhinosinusitis and asthma frequently coexist, yet the morphological relationship between paranasal sinus and lower airway in asthma remains unclear. We hypothesized that paranasal sinus opacification is closely associated with lower airway structural abnormalities in asthma.

Methods: We analyzed two independent asthma cohorts: the Kyoto asthma cohort (discovery) and the Hi-CARAT study (validation). Paranasal sinus opacification was identified as the Lund-Mackay score (LMS) ≥ 6 on paranasal sinus CT. Mucus plugs score in upper-middle lobe airways and lower lobe airways, wall area percentage (WA%) of the right apical (RB1) and posterior basal (RB10) bronchi, and total airway count on inspiratory CT were compared between those with LMS ≥ 6 and LMS < 6 . Small airway dysfunction (SAD%) was measured on registered inspiratory and expiratory CT in the discovery cohort.

Results: Of 96 and 180 patients in the discovery and validation cohorts, 21 and 75 had LMS ≥ 6 . Patients with an LMS ≥ 6 had higher mucus plugs scores in both upper-middle and lower lobe airways. WA% was also increased, particularly in RB10. In multivariable analyses, LMS ≥ 6 was independently associated with greater mucus plugs and increased WA% in the subsegmental RB10 airways independent of oral corticosteroid use, biologics use, blood eosinophil counts, and fractional exhaled nitric oxide. LMS ≥ 6 was also associated with greater SAD%.

Conclusions: Paranasal sinus opacification on CT was associated with lower airway mucus plugs and wall thickening in asthma, independent of type 2 inflammation, supporting the unified airway concept.

Keywords: Airway remodeling; Asthma; Chronic rhinosinusitis; Computed tomography; Mucus plugs.

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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: Naoya Tanabe reports a relationship with FUJIFILM Corporation that includes: funding grants. Naoya Tanabe reports a relationship with Daiichi Sankyo Inc that includes: funding grants. Naoya Tanabe reports a relationship with AstraZeneca that includes: speaking and lecture fees. Naoya Tanabe reports a relationship with Sanofi that includes: speaking and lecture fees. Naoya Tanabe reports a relationship with GSK that includes: speaking and lecture fees. Kaoruko Shimizu reports a relationship with AstraZeneca that includes: speaking and lecture fees. Atsuyasu Sato reports a relationship with AstraZeneca that includes: funding grants. Atsuyasu Sato reports a relationship with Sanofi that includes: funding grants. Atsuyasu Sato reports a relationship with Nippon Boehringer Ingelheim Co Ltd that includes: funding grants. Atsuyasu Sato reports a relationship with Daiichi Sankyo Inc that includes: funding grants. Atsuyasu Sato reports a relationship with Astellas Pharma Inc that includes: funding grants. Atsuyasu Sato reports a relationship with Kyorin Pharmaceutical Co Ltd that includes: funding grants. Susumu Sato reports a relationship with Nippon Boehringer Ingelheim Co Ltd that includes: funding grants. Susumu Sato reports a relationship with Teijin Pharma Limited that includes: funding grants. Susumu Sato reports a relationship with Philips that includes: funding grants. Susumu Sato reports a relationship with Fukuda Denshi Co Ltd that includes: funding grants. Susumu Sato reports a relationship with Fukuda Co Ltd that includes: funding grants. Susumu Sato reports a relationship with ResMed that includes: funding grants. Toyohiro Hirai reports a relationship with FUJIFILM Corporation that includes: funding grants. Toyohiro Hirai reports a relationship with Daiichi Sankyo Inc that includes: funding grants. Satoshi Konno reports a relationship with Mochida Pharmaceutical Co Ltd that includes: funding grants. Satoshi Konno reports a relationship with Nippon Shinyaku Co Ltd that includes: funding grants. Satoshi Konno reports a relationship with Nippon Boehringer Ingelheim Co Ltd that includes: funding grants. Satoshi Konno reports a relationship with Kaneka Corporation that includes: funding grants. Satoshi Konno reports a relationship with Novartis that includes: funding grants. Satoshi Konno reports a relationship with AstraZeneca that includes: speaking and lecture fees. Satoshi Konno reports a relationship with Kyorin Pharmaceutical Co Ltd that includes: speaking and lecture fees. 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. The other authors 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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Review

Curr Allergy Asthma Rep

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doi: 10.1007/s11882-026-01294-1.

[Type 2-low Asthma: Epidemiology, Multiomics, and Emerging Therapies](#)

[Philip Mendez](#)^{1,2}, [Alanis Rosado](#)³, [Juan Carlos Cardet](#)⁴

Affiliations Expand

- PMID: 42747714
- PMCID: [PMC13582353](#)
- DOI: [10.1007/s11882-026-01294-1](#)

Abstract

Purpose of review: Type 2-low (T2-low) asthma, characterized by low blood and sputum eosinophils and low fractional exhaled nitric oxide (FeNO), remains a major unmet need because of frequent corticosteroid insensitivity and a lack of targeted therapies. This review summarizes recent advances in its epidemiology, multiomics, and therapeutic landscape.

Recent findings: T2-low inflammation is highly prevalent, affecting approximately 14%-39% of adults with current asthma and up to 60% of children. Its pathogenesis reflects complex non-T2 mechanisms, including IL-17 signaling, innate immune activation through IL-1 β and IL-33, and neutrophilic inflammation. Heterogeneity is further shaped by systemic factors such as obesity and immunosenescence and by environmental exposures such as ozone. Among available therapies, long-term macrolides and the anti-TSLP biologic tezepelumab have shown significant efficacy in reducing exacerbations, whereas other pathway-specific interventions have yielded inconsistent clinical benefits. Emerging metabolic approaches, including GLP-1 receptor agonists, may offer additional promise. Progress in T2-low asthma will require mechanism-based classification and clinically deployable biomarkers to align targeted therapies with specific biological drivers.

Keywords: Biomarkers; Neutrophilic asthma; Non-T2 asthma; Non-eosinophilic asthma; T2-low asthma.

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Conflict of interest statement

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

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Am J Respir Cell Mol Biol

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. 2026 Sep 16:aanag184.

doi: 10.1093/ajrcmb/aanag184. Online ahead of print.

[Crosstalk Between Basophils, Mast Cells and Epithelium Amplifies T2 Inflammation in Allergic Asthma](#)

[William W Busse](#)¹, [Stephane Esnault](#)^{2 3}

Affiliations [Expand](#)

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No abstract available

Keywords: Allergic asthma; CCL26; airway inflammation; allergen provoked inflammation; basophils.

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Respir Med

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[**Cluster Analysis of Obstructive Lung Disease Phenotypes: the Framingham Heart Study and the Rotterdam Study**](#)

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Affiliations Expand

- PMID: 42744204
- DOI: [10.1016/j.rmed.2026.109161](#)

Abstract

Background: The traditional classification of obstructive lung diseases into asthma and chronic obstructive pulmonary disease oversimplifies their complexity. A hypothesis-free classification using routine clinical and laboratory characteristics may identify clinically important subgroups.

Methods: Hierarchical clustering was applied to 1,473 Framingham Heart Study (FHS) participants with a history of asthma or airflow obstruction based on pre-bronchodilator spirometry. Variables included demographics, smoking history, body mass index, inflammatory markers, spirometry, and symptoms, excluding self-reported diagnoses. Classification rules were defined by Classification and Regression Trees (CART). Survival and polygenic scores were compared across clusters. The validation analysis used 1,080 Rotterdam Study (RS) participants.

Results: Six clusters emerged in FHS using nine phenotypic variables. Cluster 1 showed preserved pulmonary function with minimal symptoms in never and former smokers. Clusters 2 and 3 had preserved pulmonary function with atopic symptoms but differed in airway symptom frequency. Cluster 4 had mild impairment of pulmonary function with frequent sputum production in smokers. Cluster 5 showed moderate pulmonary function impairment without exertional dyspnea, mainly in older former smokers. Cluster 6 had pulmonary impairment with dyspnea and obesity and included adults older than those in clusters 1-4. Clusters 2, 3, and 5

were genetically predisposed to asthma, while clusters 4 and 6 had higher mortality. Similar patterns were noted in RS.

Conclusions: Six clinically interpretable phenotypic subgroups based on smoking history, pulmonary function, and symptoms were identified and externally validated, highlighting the importance of classifying patients based on shared observable characteristics to inform on disease susceptibility and prognosis.

Keywords: COPD; asthma; chronic obstructive pulmonary disease; clustering; mortality; polygenic score; pulmonary disease.

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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: Outside this manuscript, LL has been consulted as expert for AstraZeneca, GSK and Sanofi, and has given a lecture sponsored by Chiesi, IPSA vzw and Domus Medica vzw (non-profit organizations facilitating lifelong learning for health care providers), all paid to her institution. GGB was the president of the Belgian Respiratory Society, and his institution (Ghent University Hospital) received grants from Merck, Sharp & Dohme. He received payment or honoraria for lectures, presentations, speakers' bureaus, manuscript writing, or educational events from the following pharmaceutical companies: AstraZeneca, Boehringer-Ingelheim, Chiesi, Novartis, and Sanofi Regeneron. JDG is a currently Sanofi employee and has a patent for phase 2 results on CSU and asthma studies conducted by Sanofi. The institution (Boston University) of JD and GOC received support from the National Institute of Health. Other authors declare that they have no competing interests. If there are other authors, they declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

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Budesonide/formoterol fumarate dihydrate versus budesonide with a novel suspension technology for uncontrolled asthma: phase 3 LITHOS study

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Affiliations Expand

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- PMCID: [PMC13573226](#)
- DOI: [10.1183/23120541.01818-2025](#)

Abstract

Background: Inhaled corticosteroid (ICS)/long-acting β_2 -agonist (LABA) therapy is a mainstay asthma treatment. LITHOS (clinicaltrials.gov identifier [NCT05755906](#)), a randomised phase 3 study, assessed efficacy and safety of low-dose budesonide/formoterol fumarate dihydrate (BFF) *via* a metered-dose inhaler (MDI) using Aerosphere co-suspension delivery technology (BFF_A) *versus* low-dose budesonide *via* MDI using Aerosphere (BD).

Methods: Participants (aged 12-80 years; N=374) with inadequately controlled asthma (seven-item Asthma Control Questionnaire score ≥ 1.5) despite low-dose ICS or ICS/LABA were randomised to 12 weeks of twice-daily BFF 160/10 μ g (BFF_A 160) or BD 160 μ g (BD 160). End-points included change from baseline in forced expiratory volume in 1 s (FEV₁) area under the curve from 0-3 h (AUC₀₋₃) (primary) and morning pre-dose trough FEV₁ (key secondary) at week 12, onset of action, severe exacerbation rates and safety/tolerability.

Results: Least-square mean differences (95% CI) demonstrated that BFF_A 160 provided superior lung function improvement *versus* BD 160 at week 12 for change from baseline in FEV₁ AUC₀₋₃ (200 (134-267) mL; $p < 0.0001$) and morning pre-dose FEV₁ (82 (20-144) mL; $p = 0.0096$). Severe exacerbation rates were nominally reduced with BFF_A 160 *versus* BD 160 (rate ratio (95% CI) 0.48 (0.23-0.97); unadjusted $p = 0.0419$). No new or unexpected safety findings were observed; on-treatment adverse effects were comparable between treatments (BFF_A 160, 18.4%; BD 160, 19.5%).

Conclusion: These findings support the use of BFF_A 160 twice daily with novel Aerosphere technology for the treatment of people aged 12-80 years with asthma inadequately controlled by low-dose ICS or ICS/LABA.

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Conflict of interest statement

Conflict of interest: A. Papi reports grants from AstraZeneca, Chiesi, GlaxoSmithKline and Sanofi; consultancy fees from AstraZeneca, Avillion, Chiesi, GlaxoSmithKline, Moderna, Regeneron, Roche, Sanofi, Zambon and Zentiva; and honoraria for lectures from AstraZeneca, Avillion, Chiesi, GlaxoSmithKline, Moderna, Regeneron, Roche, Sanofi and Zambon. R.A. Wise reports research grant support from AstraZeneca, Chiesi, Sanofi-Regeneron and Verona; and consulting

fees for serving on DSMB or Clinical Endpoint Committees from Abbvie, AstraZeneca, BioNTech, Boehringer-Ingelheim, BristolMyersSquibb, Chiesi, Kamada and Pulmonx. D.J. Jackson reports advisory board, speaker fees and research grants from AstraZeneca and GlaxoSmithKline. N. Lugogo reports consulting fees from AbbVie, Amgen, Apogee, AstraZeneca, Avillion, Foresee, Genentech, GlaxoSmithKline, Niox, Novartis, Regeneron, Sanofi and Teva; honoraria for non-speakers bureau presentations from AstraZeneca, GlaxoSmithKline, Sanofi/Regeneron and Teva; and travel support from AstraZeneca, GlaxoSmithKline, Regeneron, Sanofi and Teva; her institution received research support from Amgen, AstraZeneca, Avillion, Bellus, Evidera, Genentech, Gossamer Bio, GlaxoSmithKline, Janssen, Novartis, Regeneron, Roche, Sanofi and Teva; she is an honorary faculty member of Observational and Pragmatic Research Institute but does not receive compensation for this role. R. Chen reports research grants and speaker's fees from AstraZeneca, Genrix Bio, GlaxoSmithKline, Novartis and Sanofi, all outside the scope of this work; and is an associate editor of this journal. H. Chami, C. Armengol, S.Z. Daoud, E. Nauc  r, K. Bowen, A. Megally, O. Sobande and M. Patel are employees of AstraZeneca and may hold stock and/or stock options in the company.

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[**Budesonide/formoterol fumarate dihydrate versus budesonide with a novel suspension technology for uncontrolled asthma: phase 3 VATHOS study**](#)

[David J Jackson](#)¹, [Robert A Wise](#)², [Alberto Papi](#)³, [Njira Lugogo](#)⁴, [Ruchong Chen](#)^{5,6}, [Hassan Chami](#)^{2,7}, [Clara Armengol](#)⁸, [Sami Z Daoud](#)⁷, [Emma Nauc  r](#)⁹, [Karin Bowen](#)¹⁰, [Ayman Megally](#)⁷, [Olami Sobande](#)⁷, [Mehul Patel](#)¹¹

Affiliations Expand

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- PMCID: [PMC13573227](#)
- DOI: [10.1183/23120541.01817-2025](#)

Abstract

Background: Inhaled corticosteroid (ICS)/long-acting β_2 -agonist (LABA) therapy is important in asthma. The phase 3 VATHOS study (ClinicalTrials.gov: [NCT05202262](#)) assessed the efficacy and safety of budesonide/formoterol fumarate dihydrate (BFF) *via* metered-dose inhaler (MDI) using Aerosphere co-suspension technology (BFF_A) *versus* either budesonide (BD) *via* MDI using Aerosphere or BFF *via* dry-powder inhaler (BFF_{DPI}).

Methods: Participants (age 12-80 years; n=645) with inadequately controlled asthma on medium-dose ICS or ICS/LABA were randomised 1:2:2:2 to twice-daily BFF 160/10 μ g (BFF_A 160), BFF 320/10 μ g (BFF_A 320), BD 320 μ g (BD 320) or open-label BFF_{DPI} 320/9 μ g, respectively. End-points included change from baseline in forced expiratory volume in 1 s area under the curve from 0 to 3 h (FEV₁ AUC₀₋₃) at 24 weeks (primary), and morning pre-dose trough FEV₁ at 24 weeks, onset of action (day 1 change in FEV₁, 5 min post-dose) and severe exacerbation rates (secondary). Adverse events (AEs) were recorded.

Results: BFF_A 320 demonstrated superior lung function *versus* BD 320 at week 24 (mean change from baseline in FEV₁ AUC₀₋₃: 173 (95% CI 112-233) mL (p<0.0001); trough FEV₁: 61 (95% CI 1-120) mL (p=0.0447); onset of action: 144 (95% CI 110-177) mL (p<0.0001)). Severe exacerbation rates were similar between BFF_A 320 and BD 320 (rate ratio 1.02 (95% CI 0.61-1.70); p=0.9473). AEs were similar across treatments (BFF_A 320, 50.3%; BFF_A 160, 50.0%; BD 320, 38.1%; BFF_{DPI}, 45.7%). BFF_A 320 showed non-inferiority to BFF_{DPI} in lung function.

Conclusion: These findings support the use of BFF_A 320 with co-suspension delivery technology in people with inadequately controlled asthma on medium-dose ICS or ICS/LABA.

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Conflict of interest statement

Conflicts of interest: D.J. Jackson reports attendance at advisory board meetings, receipt of speaker fees and research grants from AstraZeneca and GlaxoSmithKline. R.A. Wise reports research grant support from AstraZeneca, Chiesi, Sanofi-Regeneron and Verona; and consulting fees for serving on Data Safety Monitoring Boards or Clinical End-point Committees from AbbVie, AstraZeneca, Biontech, Boehringer Ingelheim, BristolMyersSquibb, Chiesi, Kamada and Pulmonx. A. Papi reports grants from AstraZeneca, Chiesi, GlaxoSmithKline and Sanofi; consultancy fees from AstraZeneca, Avillion, Chiesi, GlaxoSmithKline, Moderna, Regeneron, Roche, Sanofi, Zambon and Zentiva; and honoraria for lectures from AstraZeneca, Avillion, Chiesi, GlaxoSmithKline, Moderna, Regeneron, Roche, Sanofi and Zambon. N. Lugogo received consulting fees from AbbVie, Amgen, Apogee, AstraZeneca, Avillion, Foresee, Genentech, GlaxoSmithKline, Niox, Novartis, Regeneron, Sanofi

and Teva; honoraria for non-speakers' bureau presentations from GlaxoSmithKline, Teva, Sanofi/Regeneron and AstraZeneca; and travel support from AstraZeneca, Sanofi, Teva, Regeneron and GlaxoSmithKline; her institution received research support from Amgen, AstraZeneca, Avillion, Bellus, Evidera, Gossamer Bio, Genentech, GlaxoSmithKline, Janssen, Regeneron, Roche, Sanofi, Novartis and Teva; and she is an honorary faculty member of Observational and Pragmatic Research Institute but does not receive compensation for this role. R. Chen reports research grants and speaker's fees from AstraZeneca, GlaxoSmithKline, Genrix Bio, Novartis and Sanofi, all outside the scope of this work, and is an Associate Editor for ERJ Open Research. H. Chami, C. Armengol, S.Z. Daoud, E. Nauc  r, K. Bowen, A. Megally, O. Sobande and M. Patel are employees of AstraZeneca and may hold stock and/or stock options in the company.

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. 2026 Sep 14;12(5):00054-2026.

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[Achieving clinical remission in moderate-to-severe asthma using inhaled triple therapy](#)

[Giorgio Walter Canonica](#)^{1,2}, [Dave Singh](#)^{3,4}, [Alberto Papi](#)⁵, [Guy Brusselle](#)⁶, [Alessio Piraino](#)⁷, [Laura Franzini](#)⁷, [Andrea Vele](#)⁸, [Gemzel Hernandez](#)⁸, [Gwen Skloot](#)⁸, [J Christian Virchow](#)⁹

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- PMID: 42741602
- PMCID: [PMC13573224](#)

- DOI: [10.1183/23120541.00054-2026](https://doi.org/10.1183/23120541.00054-2026)

Abstract

Background: There is growing interest in evaluating the ability of treatments to deliver clinical remission in patients with asthma. We conducted *post hoc* analyses of TRIMARAN and TRIGGER, two clinical studies comparing the efficacy and safety of fixed-dose combination beclometasone dipropionate (BDP), formoterol fumarate (FF) and glycopyrronium (G) (TRIMARAN, 100/6/10 µg and TRIGGER 200/6/10 µg) with BDP/FF (100/6 µg and 200/6 µg, respectively).

Methods: Clinical remission was defined as: no use of oral corticosteroids over 52 weeks, no occurrence of severe exacerbations over 52 weeks, Asthma Control Questionnaire-5 score <1.5 at weeks 26, 40 and 52, and pre-dose forced expiratory volume in 1 s at week 52 equal to, or higher than, the baseline value.

Results: Of 2291 patients included in these analyses, 598 (26.1%) met the clinical remission definition (*i.e.* met all criteria) at week 52: 315 (27.4%) in TRIMARAN and 283 (24.8%) in TRIGGER. The proportion of patients who achieved clinical remission was higher in the BDP/FF/G group than in the BDP/FF group in both studies (29.4% and 29.6% in TRIMARAN and TRIGGER, respectively, *versus* 25.4% and 20.0%), with the difference reaching statistical significance in TRIGGER (odds ratio 1.70, 95% confidence interval 1.29-2.23; $p < 0.001$) and when data were pooled (29.5% *versus* 22.7%; 1.44, 1.19-1.73; $p < 0.001$).

Conclusions: Among patients with asthma that was uncontrolled by an inhaled corticosteroid (ICS)/long-acting β_2 -agonist (LABA) combination prior to study entry, a higher proportion achieved clinical remission by switching to inhaled triple therapy than by continuing ICS/LABA.

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Conflict of interest statement

Conflict of interest: In addition to the medical writing support disclosed above, the authors have the following conflicts of interest. G.W. Canonica reports having received research grants as well as being lecturer or having received advisory board fees from A. Menarini, Anallergo, Allergy Therapeutics, Apogee, AstraZeneca, Celltrion, Chiesi Farmaceutici, Faes, Firma, Genentech, Guidotti Glaxo Smith Kline, Hal Allergy, Innovacaremd, Novartis, OmPharma, RedMaple, Sanofi-Aventis, Sanofi-Genzyme, Stallergenes-Greer and Uriach Pharma, all outside the scope of the current manuscript. D. Singh received personal fees from Adovate, Aerogen, Almirall, Apogee, Arrowhead, AstraZeneca, Bial, Boehringer Ingelheim, Chiesi, Cipla, CONNECT Biopharm, Covis, CSL Behring, DevPro Biopharma LCC, Elpen, Empirico, EpiEndo, Genentech, Generate Biomedicines, GlaxoSmithKline, Glenmark, Kamada, Kinaset Therapeutics, Kymera, Menarini, MicroA, OM Pharma, Orion, Pieris Pharmaceuticals, Pulmatrix, Revolo, Roivant Sciences, Sanofi, Synairgen, Tetherex, Teva, Theravance Biopharma, Upstream and Verona Pharma, all outside the scope of the current manuscript. A. Papi reports grant payments to his institution from Chiesi, AstraZeneca, GlaxoSmithKline, Boehringer Ingelheim, Pfizer, Teva and Sanofi, consultancy fees from Chiesi, AstraZeneca, GlaxoSmithKline, Novartis, Sanofi, Iqvia, Avillion and Elpen Pharmaceuticals, and payment or honoraria for lectures, presentations, speakers' bureaus, manuscript

writing or educational events from Chiesi, AstraZeneca, GlaxoSmithKline, Boehringer Ingelheim, Menarini, Novartis, Zambon, Mundipharma, Teva, Sanofi, Edmond Pharma, Iqvia, MSD, Avillion and Elpen Pharmaceuticals, all outside the submitted work. G. Brusselle reports honoraria for lectures from AstraZeneca, Boehringer Ingelheim, Chiesi, GlaxoSmithKline, Novartis and Teva; he is a member of advisory boards for Amgen, AstraZeneca, Boehringer Ingelheim, GlaxoSmithKline, Novartis, Sanofi/Regeneron and Teva; all these declarations are outside the submitted work. A. Piraino, L. Franzini, A. Vele, G. Hernandez and G. Skloot are employees of Chiesi. J.C. Virchow reports consulting fees and payment or honoraria for lectures, presentations, speakers' bureaus, manuscript writing or educational events from Novartis, Chiesi, GlaxoSmithKline, AstraZeneca, TEVA, Menarini, Berlin-Chemie, Sanofi and Boehringer Ingelheim, support for attending meetings and/or travel from Sanofi and Boehringer Ingelheim, and participation on a data safety monitoring board or advisory board for Chiesi, all outside the submitted work.

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- [3 figures](#)

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Editorial

ERJ Open Res

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. 2026 Sep 14;12(5):00799-2026.

doi: 10.1183/23120541.00799-2026. eCollection 2026 Sep.

[Asthma remission following inhaled treatments](#)

[Dennis Thomas](#)^{1,2}, [Peter G Gibson](#)^{1,2,3}

Affiliations Expand

- PMID: 42741290
- PMCID: [PMC13573215](#)
- DOI: [10.1183/23120541.00799-2026](#)

Abstract

Asthma remission is an attainable goal across severities, endotypes and treatments. Optimised inhaled therapy can induce remission in over a quarter of patients, with triple therapy outperforming dual therapy. <https://bit.ly/4xkFUEs>.

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Conflict of interest statement

Conflict of interest: D. Thomas declares grants from GlaxoSmithKline. P.G. Gibson declares grants and payment or honoraria from GlaxoSmithKline, Orion, AstraZeneca and Sanofi.

- [18 references](#)

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Cite

22

Book

[Omalizumab](#)

[Calvin Kumar](#)¹, [Preeti Patel](#)

In: StatPearls [Internet]. Treasure Island (FL): StatPearls Publishing; 2026 Jan.

2026 Sep 14.

Affiliations Expand

- PMID: 31424767
- Bookshelf ID: [NBK545183](#)

Free Books & Documents

Excerpt

Omalizumab received initial approval from the U.S. Food and Drug Administration in 2003 for the treatment of moderate-to-severe allergic asthma. Subsequent approval in 2014 extended its use to patients with chronic spontaneous (idiopathic) urticaria in both the United States and Europe. Omalizumab is a recombinant humanized immunoglobulin G1 (IgG1) monoclonal antibody directed against immunoglobulin E (IgE), and is used in the management of allergic asthma and chronic urticaria. It acts by binding circulating IgE and preventing interaction with the high-affinity FcεRI

receptor expressed on mast cells and basophils, thereby attenuating the allergic inflammatory. As a result, omalizumab plays a central role in the management of moderate-to-severe IgE-mediated asthma and chronic spontaneous urticaria. This activity provides a comprehensive overview of omalizumab, including its indications, contraindications, mechanisms of action, pharmacokinetics, adverse effects, precautions, and monitoring requirements. It also incorporates emerging evidence and key studies, particularly in asthma and urticaria, to support contemporary clinical practice.

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Conflict of interest statement

Disclosure: Calvin Kumar declares no relevant financial relationships with ineligible companies.

Disclosure: Preeti Patel declares no relevant financial relationships with ineligible companies.

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Cite

23

Book

[Wheat Allergy](#)

[Deepti Vellaichamy Manian](#)¹, [Sharon F. Daley](#)²

In: StatPearls [Internet]. Treasure Island (FL): StatPearls Publishing; 2026 Jan. 2026 Sep 14.

Affiliations Expand

- PMID: 30725677
- Bookshelf ID: [NBK536992](#)

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Excerpt

Bread wheat, also known as *Triticum aestivum*, is one of the most widely cultivated crops. The crop is grown worldwide because it thrives in diverse climates, has high nutritional value and palatability, and can be processed into a variety of foods and beverages. Wheat can trigger a range of immune-mediated adverse reactions. Wheat-related immune-mediated conditions include immunoglobulin E (IgE)-mediated wheat allergy, non-IgE-mediated hypersensitivity, and distinct disorders such as celiac disease and non-celiac gluten sensitivity. These conditions have different pathophysiologies, and proper differentiation supports appropriate management. IgE-mediated wheat allergy may occur after ingestion (food allergy) or inhalation (respiratory tract allergy, such as baker's asthma). Reactions can range from mild symptoms to life-threatening anaphylaxis. Additionally, the activity reviews the etiology, pathophysiology, epidemiology, clinical manifestations, diagnostic evaluation, and management of wheat allergy, including the appropriate use and limitations of skin-prick testing, serum specific IgE testing, component-resolved diagnostics, and oral food challenges. The activity further reviews recognition of wheat allergy, differentiation from other wheat-related conditions, interpretation of diagnostic testing, counseling on wheat avoidance and nutritional adequacy, and appropriate emergency preparedness for anaphylaxis.

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Conflict of interest statement

Disclosure: Deepti Vellaichamy Manian declares no relevant financial relationships with ineligible companies.

Disclosure: Sharon F Daley declares no relevant financial relationships with ineligible companies.

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Lancet

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. 2026 Sep 19;408(10560):1064-1066.

doi: 10.1016/S0140-6736(26)01769-1. Epub 2026 Sep 7.

[Early-life primary prevention of childhood asthma](#)

[Vincent W V Jaddoe](#)¹, [Liesbeth Duijts](#)²

Affiliations Expand

- PMID: 42705252
- DOI: [10.1016/S0140-6736\(26\)01769-1](#)

No abstract available

Conflict of interest statement

We declare no competing interests.

Full text links



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Clinical Trial

Lancet

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. 2026 Sep 19;408(10560):1103-1113.

doi: 10.1016/S0140-6736(26)01443-1. Epub 2026 Sep 7.

[Use of the bacterial lysate OM-85 for the primary prevention of wheezing lower respiratory illness in preschool children: a randomised, placebo-controlled trial](#)

[Wayne J Morgan](#)¹, [David T Mauger](#)², [Leonard B Bacharier](#)³, [Cindy S Bauer](#)⁴, [Stephanie D Davis](#)⁵, [Anne M Fitzpatrick](#)⁶, [Theresa W Guilbert](#)⁷, [Daniel J Jackson](#)⁸, [Meyer Kattan](#)⁹, [Dayna Long](#)¹⁰, [Wanda Phipatanakul](#)¹¹, [S J Teach](#)¹², [Susan](#)

[J Boehmer²](#), [Aliva De¹³](#), [Ashley L Devonshire¹⁴](#), [Jonathan M Gaffin¹⁵](#), [Michelle L Hernandez⁵](#), [Ian M Paul¹⁶](#), [William J Sheehan¹⁷](#), [Jeffrey R Stokes¹⁸](#), [Fernando D Martinez¹⁹](#)

Affiliations Expand

- PMID: 42705251
- DOI: [10.1016/S0140-6736\(26\)01443-1](https://doi.org/10.1016/S0140-6736(26)01443-1)

Free article

Abstract

Background: Wheezing lower respiratory tract illnesses are a major health concern in preschool children. We report the results of the ORBEX trial which evaluated the safety and efficacy of the bacterial lysate, OM-85, in the primary prevention of wheezing lower respiratory tract illness.

Methods: ORBEX is a parallel-arm, double-blind, placebo-controlled trial for the primary prevention of wheezing lower respiratory tract illness in young children at increased risk for asthma due to atopic dermatitis, parental asthma, or asthma in a blood sibling aged 4 years or older. Children aged 6-18 months were centrally randomly assigned (1:1) at 11 academic clinical sites with experience in recruiting young children in the USA to receive OM-85 3·5 mg or placebo orally for 10 days each month for 24 months and then followed for an additional 36 months to evaluate outcomes while they were off the study drug. Identical openable capsules were used for active drug and placebo, and staff, investigators, and participants were masked to treatment assignment. Participants received usual treatment for wheezing illness as per US guidelines. Randomisation was stratified by sex, age group, family history of asthma, and clinical site. The primary outcome was the time to first wheezing lower respiratory tract illness during the 36-month observation period off the study drug analysed in the intention-to-treat population, which included all randomly assigned participants. The trial is registered with clinicaltrials.gov, [NCT02148796](https://clinicaltrials.gov/ct2/show/study/NCT02148796), and is completed.

Findings: Between Jan 3, 2017, and Nov 30, 2020, 984 children were screened for eligibility, 162 were excluded, and 822 were randomly assigned (411 to the OM-85 intervention group and 411 to the placebo group). 492 participants were male (59·9%) and 330 (40·1%) were female and the mean age of participants was 11·8 months (SD 3·8). 681 children completed the 24-month treatment period, and 596 children completed the 36-month observation period. 132 children experienced at least one wheezing lower respiratory tract illness during the observation period; 71 (21%) of 342 in the OM-85 group and 61 (18%) of 339 in the placebo group. There was no significant difference between OM-85 and placebo with respect to the time to first wheezing lower respiratory tract illness (log-rank test p value 0·35; hazard ratio 1·16 [95% CI 0·82-1·64]). The most frequent adverse events, fevers, coughs, and colds, did not differ between groups.

Interpretation: Oral administration of OM-85 in early life did not decrease the incidence of wheezing lower respiratory tract illness in this high-risk population. Bacterial lysates are not efficacious for the primary prevention of asthma-like symptoms during the preschool years.

Funding: National Heart, Lung, and Blood Institute and OM Pharma with supplemental funding and provision of study drug and placebo from OM Pharma.

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Conflict of interest statement

Declaration of interests All authors, with the exception of IMP, report grants from the US National Institutes of Health (NIH) and National Heart, Lung, and Blood Institute (NHLBI), and study drug or financial support from OM Pharma, GlaxoSmithKline, and Merck & Co during the conduct of the study. WJM reports grants paid to the University of Arizona from the National Institute of Allergy and Infectious Diseases (NIAID), Advanced Research Projects Agency for Health, NIH, and NHLBI, and the Cystic Fibrosis Foundation; consulting roles, travel support, and multiple data monitoring committee chair roles with the Cystic Fibrosis Foundation, including chairing the national Cystic Fibrosis Foundation Data Safety Monitoring Board (DSMB). DTM reports grants from NIH for other asthma-related clinical trials, and DSMB payments from Parexel and the Cystic Fibrosis Foundation. LBB reports grants from NIAID; royalties from Elsevier and UpToDate; consulting fees from Sanofi, Regeneron, Genentech, GlaxoSmithKline, DBV Technologies, Teva, Medscape, Kinaset, OM Pharma, AstraZeneca, Recludix, Apogee, and Eli Lilly; honoraria from Sanofi and Regeneron for lectures; participation on a DSMB or Advisory Board for DBV Technologies, AstraZeneca, Vertex, Aravax, and Horizon; leadership roles with the American Academy of Allergy, Asthma & Immunology (uncompensated) and the American Board of Allergy and Immunology (compensated); and receipt of medical writing services from Sanofi/Regeneron. SDD reports an unpaid leadership role as Chair of the American Thoracic Society Publications Policy Committee outside the submitted work. TWG reports grants paid to her institution from GSK, Sanofi, Regeneron, AstraZeneca, and OM Pharma for paediatric asthma studies; royalties from UpToDate; consulting fees from Sanofi, Regeneron, AstraZeneca, OM Pharma, and Teva for virtual and in-person advisory boards; honoraria and travel support from PlatformQ Health and Advent for continuing medical education and educational seminars; and DSMB membership with the Best Pharmaceuticals for Children Act. DJJ reports grants from NIAID, the NIH Office of the Director, and Regeneron; consulting fees from Areteia, GlaxoSmithKline, Apogee, Regeneron, and Sanofi; and Advisory Board participation with AstraZeneca and Upstream Bio. WP reports consulting fees from Regeneron, Sanofi, Genentech, Kymera, Chiesi, and Novartis; and honoraria from Chiesi and GSK. SJT reports grants from NIH and NIAID and the Environmental Protection Agency paid to his institution; royalties from UpToDate; and an unpaid leadership role as Editor of Pediatrics Open Science with the American Academy of Pediatrics. ALD reports grants paid to her institution from Sanofi, GlaxoSmithKline, OM Pharma, Food Allergy Research and Education, DBV Technologies, the National Peanut Board, the Gerber Foundation, Abbott Laboratories, AstraZeneca, and Regeneron Pharmaceuticals for paediatric allergy and asthma studies; consulting fees from Genentech paid to her; and meeting registration fees from the American Academy of Allergy, Asthma & Immunology and travel support from Food Allergy Research and Education. JMG reports grants from AstraZeneca and GSK paid to his institution; and DSMB payments from Teva paid to him. MLH reports grants paid to her institution from the National Center for Advancing Translational Sciences and the University of Arizona during the conduct

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Supplementary info

Publication types, MeSH terms, Substances, Associated data, Grants and fundingExpand

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Cite

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Thorax

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. 2026 Sep 15;81(10):943-947.

doi: 10.1136/thorax-2026-225201.

[Standardising terminology in routine electronic health records for respiratory endpoints: why we still can't agree](#)

[Lies Lahousse](#)^{1,2}, [Kjell Erik Julius Håkansson](#)³, [Aparna Balasubramanian](#)⁴, [Job F M van Boven](#)^{5,6}, [Andrea S Gershon](#)⁷, [Chad H Hochberg](#)⁸, [Guy F Joos](#)⁹, [Janwillem W H Kocks](#)^{6,10,11}, [Adam Lewis](#)¹², [Vidya Navaratnam](#)^{13,14,15}, [Fredrik Nyberg](#)¹⁶, [Sanja Stanojevic](#)¹⁷, [Mathias Therkelsen King](#)¹⁸, [Holly Tibble](#)¹⁹, [Lowie Vanfleteren](#)^{9,20,21}, [Ulla Møller Weinreich](#)^{18,22}, [Katia Verhamme](#)²³, [Jennifer K Quint](#)²⁴

Affiliations Expand

- PMID: 42336667
- DOI: [10.1136/thorax-2026-225201](#)

Free article

No abstract available

Keywords: Asthma Epidemiology; COPD Exacerbations; COPD epidemiology.

Conflict of interest statement

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Thorax

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. 2026 Sep 15;81(10):949-957.

doi: 10.1136/thorax-2025-223465.

[2024 BTS/NICE/SIGN asthma guidelines have the potential to improve UK asthma outcomes, but we must act now](#)

[Michael G Crooks](#)^{1 2}, [Dominic L Sykes](#)^{3 2}, [Robert R Horne](#)⁴, [Helena Cummings](#)^{2 5}, [Kay Roy](#)⁶, [Alex Fynney](#)⁷, [Andrew Whittamore](#)^{7 8}, [Shoaib Faruqi](#)², [Daryl Freeman](#)^{5 9}, [Jennifer K Quint](#)^{10 11}, [Katherine Hickman](#)^{5 12}, [Bev Bostock](#)^{5 13}, [Joanne King](#)^{14 15}, [Judith Dyson](#)¹⁶

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- PMID: 41760103

- DOI: [10.1136/thorax-2025-223465](https://doi.org/10.1136/thorax-2025-223465)

No abstract available

Keywords: Asthma; Asthma Guidelines; Asthma Pharmacology; Asthma in primary care.

Conflict of interest statement

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Review

Intern Med

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. 2026 Sep 15;65(18):2465-2470.

doi: 10.2169/internalmedicine.6267-25. Epub 2026 Feb 10.

Eosinophilic Bronchiolitis Diagnosed by a Transbronchial Lung Cryobiopsy and Successfully Treated with Biologic Agents: A Report of Two Cases and Literature Review

Katsuhiro Itogawa¹, Masako Amano¹, Daisuke Nakatani¹, Hiroki Ohta¹, Kenji Kusano¹, Tomohiro Oba¹, Rie Kawabe¹, Hideaki Yamakawa¹, Shintaro Sato¹, Keiichi Akasaka¹, Akiko Adachi², Tamiko Takemura³, Hidekazu Matsushima¹

Affiliations Expand

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- DOI: [10.2169/internalmedicine.6267-25](https://doi.org/10.2169/internalmedicine.6267-25)

Free article

Abstract

Eosinophilic bronchiolitis (EB) is a rare airway disease characterized by eosinophilic bronchiolar inflammation. We herein report two cases of EB diagnosed by a transbronchial lung cryobiopsy (TBLC), a less invasive diagnostic procedure than a surgical biopsy. Two patients with a history of refractory asthma responded to treatment with oral corticosteroids and biologic agents. To our knowledge, these are among the first reported cases of EB that were successfully managed with dupilumab and benralizumab. These cases underscore the diagnostic utility of TBLCs and suggest the potential use of biologic agents as corticosteroid-sparing options for EB.

Keywords: asthma; benralizumab; biologic agent; cryobiopsy; dupilumab; eosinophilic bronchiolitis.

Supplementary info

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

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Review

J Microbiol Immunol Infect

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. 2026 Sep 17:S1684-1182(26)00125-8.

doi: 10.1016/j.jmii.2026.09.009. Online ahead of print.

Advances in the role of house dust mite allergen components in the pathogenesis of allergic diseases

Chao-Fan Guo¹, Yan Wang¹, Yi-Nuo Wang¹, Meng Zhang¹, Yu-Rui Mao², You-Peng Wang³

Affiliations Expand

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- DOI: [10.1016/j.jmii.2026.09.009](https://doi.org/10.1016/j.jmii.2026.09.009)

Abstract

House dust mites (HDMs) represent one of the most prevalent indoor aeroallergens globally and are closely associated with type 2 immune-mediated conditions, including allergic asthma, allergic rhinitis, and atopic dermatitis. To date, over 30 HDM allergenic components have been identified and are classified into proteases, lipid-binding proteins, structural proteins, and proteins with uncharacterized functions based on their structural and biological features. Among these, allergens from group 1, 2, and 23 exhibit robust immunoglobulin E(IgE)-binding activity and play pivotal roles in allergic sensitization and inflammatory cascades. HDM allergens disrupt epithelial barrier integrity, activate cell surface receptors, and promote the maturation of dendritic cells via Toll-like receptors, thereby driving type 2 immune responses. Furthermore, recent studies indicate that HDM allergens modulate the homeostasis of the immune microenvironment by affecting metabolic pathways, such as glycolysis, lipid metabolism, and ferroptosis. Traditional diagnostics and treatments heavily rely on crude mite extracts, which are limited by their complex composition, batch-to-batch variability, and a heightened risk of adverse reactions. Conversely, component-resolved diagnosis (CRD) and allergen immunotherapy (AIT) present novel avenues for precision medicine. This review systematically delineates the classification, structural characteristics, and immunopathogenic mechanisms of HDM allergen components in allergic diseases. It further summarizes recent advances in precision diagnostics and targeted interventions, aiming to provide a theoretical foundation for the individualized clinical management of allergic diseases.

Keywords: Allergen components; Allergic diseases; House dust mite; Pathogenic mechanisms; Precision medicine.

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Conflict of interest statement

Declaration of competing interest The authors declare no potential conflicts of interest with regard to the research, authorship, or publication of this article.

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Cite

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Review

Expert Opin Biol Ther

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. 2026 Sep 17.

doi: 10.1080/14712598.2026.2716844. Online ahead of print.

[**Innovative positioning of respiratory allergen immunotherapy: a focus on precision medicine**](#)

[Antonio Bognanni^{1,2,3}](#), [Nicolò Valli^{1,2}](#), [Mattia Giovannini^{4,5}](#), [Giovanni Paoletti^{1,2}](#), [Simona Barbaglia⁶](#), [Danilo Di Bona⁷](#), [Enrico Marco Heffler^{1,2}](#), [Giorgio Walter Canonica^{1,2}](#)

Affiliations Expand

- PMID: 42751853
- DOI: [10.1080/14712598.2026.2716844](#)

Abstract

Introduction: Allergen immunotherapy (AIT) is the only treatment for IgE-mediated respiratory allergy that can modify disease progression. Historically, AIT has relied on empirical personalization, based on allergen selection and clinical judgment. However, AIT is now transitioning to a structured, precision-medicine framework to optimize patient selection and treatment strategies by aligning interventions with individual characteristics and response profiles. However, key methodological and implementation challenges must be addressed before precision AIT can be routinely operationalized.

Areas covered: This review addresses the evolution of AIT toward a precision medicine framework. Specifically, we discuss emerging strategies and associated

challenges to refine the use of AIT, including improved patient characterization, assessment of response trajectories, and treatment optimization through molecular diagnostics, digital health tools, and adjunctive biologic therapies.

Expert opinion: AIT has the potential to be an individualized, disease-modifying intervention. To achieve this, the field needs to move beyond 'one size fits all' empirical approaches, toward structured, response-guided strategies supported by multivariable prediction models and patient-centered outcomes. While the current limitations in evidence, outcome measurement, and regulatory frameworks hamper the implementation into actionable pathways, the international community of allergy care should strive to address these challenges and promote a more nuanced evidence-based use of AIT.

Keywords: AIT; Allergen immunotherapy; Disease-modifying; allergic rhinitis; asthma; prevention.

Supplementary info

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Cite

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Ann Allergy Asthma Immunol

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. 2026 Sep 15:S1081-1206(26)01182-8.

doi: 10.1016/j.anai.2026.09.733. Online ahead of print.

[Real-World Infection Outcomes and Disparities with Dupilumab Use in Allergic Rhinitis](#)

[Hana B Ruran](#)¹, [Shivani K Patel](#)², [Jonathan Zou](#)³, [Wanda Phipatanakul](#)⁴, [Stella E Lee](#)⁵

Affiliations Expand

- PMID: 42744049
- DOI: [10.1016/j.anai.2026.09.733](https://doi.org/10.1016/j.anai.2026.09.733)

No abstract available

Conflict of interest statement

Conflict of Interest Statement Dr. Phipatanakul reports consulting with Sanofi, Regeneron, Genentech, Novartis, Astra Zeneca for asthma therapeutics. The rest of the authors report no relevant disclosures.

Supplementary info

Grants and fundingExpand

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Cite

chronic cough

1

Laryngoscope

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. 2026 Sep 18.

doi: 10.1002/lary.70841. Online ahead of print.

[Supraglottic Botulinum Toxin Injection Improves Symptoms of Laryngeal Sensory Dysfunction](#)

[Daniel Novakovic](#)^{1,2}, [Katrina Sandham](#)^{1,2}, [Thomas Emslie Stewart](#)², [James Jordan Johnston](#)^{1,3}

Affiliations Expand

- PMID: 42760584
- DOI: [10.1002/lary.70841](#)

Abstract

Objective: Central/peripheral vagal hypersensitivity underpins laryngeal sensory dysfunction (LSD). Botulinum toxin type A (BoNT-A) injection has emerged as a targeted treatment for modulating laryngeal sensory pathways. This study aimed to evaluate short-term outcomes and predictors of response following supraglottic BoNT-A injection in patients with refractory LSD.

Methods: Retrospective cohort study of patients undergoing supraglottic BoNT-A injection treatment between 2019 and 2025 for LSD symptoms refractory to

medical/behavioral therapy. Outcome measures included the Newcastle Laryngeal Hypersensitivity Questionnaire (LHQ), Reflux Symptom Index (RSI), Cough Severity Index (CSI), and Voice Handicap Index-10 (VHI-10). Pre- and post-treatment scores were compared using paired statistical tests and effect size estimation. Treatment characteristics and follow-up duration were reported, along with attainment of minimal clinically important difference (MCID) and predictors of response.

Results: Eighty consecutive patients (mean age 58.3 years; 48 female) showed significant improvement across hypersensitivity domains: LHQ +3.1 (95% CI: 2.4-3.8, $p < 0.001$), RSI -7.9 points (95% CI: -9.7 to -5.8, $p < 0.001$), CSI -5.7 points ($p < 0.001$). VHI-10 was unchanged (-1.3, $p = 0.20$). MCID thresholds were achieved in 64% for LHQ and 56% for RSI. Overall, 71% of patients reported phenotypic and clinically relevant improvement. Patients with a positive short-term superior laryngeal nerve (SLN) block were more likely to respond to supraglottic BoNT. No serious complications occurred.

Conclusions: Supraglottic BoNT-A injection is a safe, effective treatment for laryngeal sensory dysfunction targeting the sensory field of the SLN to provide clinically meaningful reductions in throat irritation without compromising voice function.

Keywords: botulinum toxin; chronic cough; laryngeal hypersensitivity; laryngeal sensory dysfunction; superior laryngeal nerve.

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Cite

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BMJ Open

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. 2026 Sep 18;16(9):e126545.

doi: 10.1136/bmjopen-2026-126545.

Multicentre, 2×2 factorial, randomised, open-label trial of neuromodulators and cough control therapy for refractory or unexplained chronic cough: the FORTITUDE trial protocol

Elena Kum^{1,2}, Wafa Hassan^{1,2}, Sue Beaudin¹, Geoff Strong¹, Kim Smith¹, Ana Oliveira³, Mustafa Al-Saiedy⁴, Renata Mancopes^{5,6}, Ana Sofia Grave³, Melanie Bernier⁷, Anurag Bhalla⁸, Danica L Brister⁴, Andréanne Côté⁷, Simon Couillard⁹, Stephen K Field⁴, Faye Johnston¹⁰, Robert Newman¹⁰, Nada Popovic¹⁰, Alan G Kaplan^{11,12}, Dina Brooks¹³, Gordon Guyatt², Imran Satia^{14,2,15}

Affiliations Expand

- PMID: 42760069
- DOI: [10.1136/bmjopen-2026-126545](https://doi.org/10.1136/bmjopen-2026-126545)

Abstract

Introduction: While clinicians commonly prescribe neuromodulators for the treatment of refractory or unexplained chronic cough, no trials have directly compared these treatments. Furthermore, although guidelines recommend non-pharmacological management involving physiotherapy and speech-language therapy, few trials have evaluated its effectiveness.

Methods and analysis: FORTITUDE (*FactOriAl Randomized Trial To evaluate neuromodulators and cough control therapy*) is a 6-week, 2×2 factorial, randomised, open-label trial with an observational extension up to 1 year. The trial will include Canadian hospital sites enrolling 124 patients. Patients ≥18 years old with either refractory or unexplained chronic cough will undergo independent 1:1 randomisation to pharmacotherapy-either low-dose morphine (up to 5 mg two times per day) or pregabalin (up to 150 mg two times per day)-and concurrent cough control therapy (CCT) or no CCT. The CCT will consist of five virtual sessions delivered over 6 weeks by a trained physiotherapist or speech-language pathologist. Change from baseline in 24-hour cough frequency at 6 weeks represents the primary outcome. Secondary outcomes include change from baseline in awake, sleep and cough bout frequencies; cough severity on the McMaster Cough Severity Questionnaire and the 100-mm Visual Analogue Scale; and cough quality of life on the Leicester Cough Questionnaire at 6 weeks. We will analyse safety and tolerability at 6 weeks and explore potential interactions between neuromodulators and CCT. Follow-up in an observational extension of up to 12 months post-randomisation will assess long-term treatment patterns, adherence and safety in a real-world setting.

Ethics and dissemination: Health Canada's Pharmaceutical Drugs Directorate has provided approval to conduct this study. We have approval from the Hamilton Integrated Research Ethics Board of the Main Coordinating Site, with ethics pending at other participating sites. Results of the main trial and the observational extension will be published as manuscripts in peer-reviewed journals.

Trial registration number: [NCT07288528](https://clinicaltrials.gov/ct2/show/study/NCT07288528).

Keywords: Clinical Protocols; Pulmonary Disease; Randomized Controlled Trial.

Conflict of interest statement

Competing interests: EK, WH, SB, GS, KS, MAS, RM, ASG, MB, FJ, RN, NP, DB, GHG report no conflicts of interest. AO reports consultancy fees from GSK and is an Associate Editor for the European Respiratory Journal – Open Research. AB reports receiving consulting fees from GSK, AstraZeneca and Sanofi-Regeneron; and payment or honouraria from GSK, AstraZeneca and Sanofi-Regeneron. DLB reports consultancy fees from Khure Health, payment or honouraria for lectures, presentations, manuscript writing or educational events from AstraZeneca, Glaxo Smith Kline 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. AC has received speaker fees and consulting fees from AstraZeneca, Sanofi-Regeneron and GlaxoSmithKline and research grants from AstraZeneca and GlaxoSmithKline. SC reports the following: he has received non-restricted research grants from the NIHR Oxford BRC, the Quebec Respiratory Health Research Network, the Association Pulmonaire du Québec, the Academy of Medical Sciences, AstraZeneca, bioMérieux, Circassia Niox Group and Sanofi-Genzyme-Regeneron; he is the holder of the Association Pulmonaire du Québec's Research Chair in Respiratory medicine and is a Clinical research scholar of the Fonds de recherche du Québec; he received speaker honouraria from AstraZeneca, GlaxoSmithKline, Sanofi-Regeneron, Circassia Niox Group and Valeo Pharma; he received consultancy fees for FirstThought, Apogee Therapeutics, Upstream Bio, AstraZeneca, GlaxoSmithKline, Sanofi-Regeneron, Access Biotechnology and Access Industries; he has received sponsorship to attend/speak at international scientific meetings by/for AstraZeneca and Sanofi-Regeneron. He is an advisory board member and detains stock options for Biometry Inc – a company which is developing a FeNO device (myBiometry); he is co-inventor for the 5 patents filed as 'Method for alleviating dyspnea with neuromodulation'. He advised the Institut national d'excellence en santé et services sociaux (INESSS) for an update of the asthma general practice information booklet for general practitioners as well as therapeutic indications for Enerzair, and is a member of the asthma steering committee of the Canadian Thoracic Society. SKF reports grants from GSK, advises on the CTS Chronic Cough Working Group and previously advised on the ACCP Cough Guidelines. AK has received consulting fees from ALK, Amgen, AstraZeneca, DIA, GSK, Pfizer, Roche, Sanofi, Trudel and Valeo; personal fees for speaking or advisory boards from ALK, Amgen, AstraZeneca, DIA, GSK, Pfizer, Roche, Sanofi, Trudel and Valeo; and holds leadership within the Family Physician Airways Group of Canada and Respiratory Effectiveness Group. IS is supported by the Canada Research Chair programme, reports grants from Merck, MITACS, GSK, Bellus, Trevi Therapeutics, Bayer, Genentech, Nacion; personal speaker fees from Merck, GSK, AstraZeneca, Sanofi-Regeneron, Nacion; consulting fees from Merck, GSK, Bellus, Sanofi-Regeneron, Methapharm and Vitalograph outside the submitted work.

Supplementary info

Publication types, MeSH terms, Substances, Associated dataExpand

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Review

Pulm Ther

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. 2026 Sep 18.

doi: [10.1007/s41030-026-00384-9](https://doi.org/10.1007/s41030-026-00384-9). Online ahead of print.

[Challenges and Burdens in Refractory Chronic Cough: Patients' and Physicians' Perspectives](#)

[Mandy Beadnell](#)¹, [José Canga Rodríguez](#)², [Otilie Dotzenrod](#)³, [Isadora Farrell](#)⁴, [Mary Ellen McDonough](#)⁵, [Wendi Smith](#)⁶, [Thomas Carroll](#)⁷, [Peter Dicpinigaitis](#)⁸, [Bonnie Pobiner](#)⁹, [Dasha Shamarina](#)¹⁰, [Aarti Tarkar](#)¹¹, [Peter Kardos](#)¹²

Affiliations Expand

- PMID: 42758416
- DOI: [10.1007/s41030-026-00384-9](https://doi.org/10.1007/s41030-026-00384-9)

Abstract

Refractory chronic cough (RCC) is a disease identified in people with chronic cough that persists for > 8 weeks despite adequate treatment for known cough-related aetiologies. People with RCC can experience cough > 400 times/day, some of which may be sudden, intense coughing bouts, representing a substantial disease burden. To explore their experiences of living with the disease, nine adults with RCC (≥ 18 years old; USA = 4, UK and Germany = 5) were invited to one of two advice-seeking meetings, based on referral from the healthcare professional (HCP) who confirmed their RCC diagnosis. Sessions were conducted using a semi-structured discussion guide and were audio-recorded and transcribed. Content analysis was performed using Max Qualitative Data Analysis software. Three cough-specialist physicians were then asked to provide commentary on the lived experiences of these patients. The patient and cough-specialist perspectives highlight unmet needs throughout the RCC patient journey, particularly regarding diagnostic complexity and dissatisfaction with current treatments. The negative impact of daily symptoms on quality of life underscores the need for peer support initiatives. Variability in the diagnostic journey suggests that standard diagnostic checklists could support HCPs and reduce diagnostic delays or uncertainty. Improved recognition of patient-reported symptoms remains central to addressing symptom underestimation in

clinical practice. Wearable symptom-monitoring devices may provide complementary objective data, although their correlation with patient-reported symptoms can be variable. Finally, broader dissemination of the experiences of people with RCC and their real-world treatment outcomes is needed to enhance HCP awareness and inform future therapeutic development. The first section of this article is authored by patients with RCC, who describe their experiences of living with RCC; the following section is written by the physicians, who discuss the management of RCC in the context of these experiences.

Keywords: Disease management; Healthcare professionals; Patient perspectives; Refractory chronic cough; Unexplained chronic cough.

Plain language summary

Refractory chronic cough (RCC) is a disease identified in a subset of people with a cough lasting > 8 weeks that persists even after treatment for known causes of cough. People with RCC may cough hundreds of times a day, with some coughs being very intense. To understand the experiences of living with RCC, adults diagnosed with the condition in the USA, the UK, and Germany were asked specific questions about their experiences. Their comments were summarised and three cough-specialist physicians commented on these perspectives. Patient feedback highlighted many unmet needs related to difficulty in getting a diagnosis of RCC and current available treatments that are not always effective. Daily difficulties faced by patients with RCC highlight the need for peer support groups. Access to a diagnostic checklist may help healthcare professionals (HCPs) reduce uncertainty and diagnose RCC sooner, requiring fewer investigations. Using wearable devices to better track coughing—such as how often it happens, when it occurs, and how long it lasts—may help HCPs monitor cough symptoms in people with RCC. However, this information should be used together with patients' own descriptions of how the cough affects their daily lives. Finally, sharing real-life patient experiences and treatment outcomes may improve HCP awareness of RCC and support the development of new treatments. The first part of this article was written by patients, who shared their perspectives of living with RCC, followed by the physicians discussing RCC management in the context of these perspectives.

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Conflict of interest statement

Declarations. Conflict of Interest: Mandy Beadnell, José Canga Rodríguez, Otilie Dotzenrod, Isadora Farrell, Mary Ellen McDonough and Wendi Smith have nothing to disclose. Thomas Carroll, Peter Dicpinigaitis and Peter Kardos declare consultancy fees from GSK. Peter Kardos also declares consultancy fees from MSD. Bonnie Pobiner, Dasha Shamarina and Aarti Tarkar are employed by, and hold financial equities in, GSK. Thomas Carroll has stock options in GSK and is on the scientific advisory board for N-Zyme Biomedical. Bonnie Pobiner was an employee of GSK at the time of the advice-seeking meetings and development of the manuscript. **Ethical Approval:** This article is based on the output from discussions held at two advice-seeking meetings. It does not contain any new interventional studies with human participants or animals performed by any of the authors.

- [82 references](#)

Supplementary info

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4

Review

Life Sci

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. 2026 Sep 15:401:124499.

doi: 10.1016/j.lfs.2026.124499. Epub 2026 May 28.

[Airway sensory neurobiology and TRP channels in chronic cough: mechanisms, cough hypersensitivity, and therapeutic translation](#)

[Xinyue Yang](#)¹, [Xianglong Duan](#)²

Affiliations Expand

- PMID: 42214607
- DOI: [10.1016/j.lfs.2026.124499](#)

Abstract

Aims: Chronic cough is increasingly viewed as a heterogeneous clinical syndrome associated with cough hypersensitivity, not simply a symptom defined by duration. This review examines key mechanisms in chronic cough, the reasons why mechanistic insights have translated poorly into therapy, and future directions involving patient stratification and biomarkers.

Materials and methods: We reviewed and summarized mechanistic, preclinical, and translational studies on TRPA1, TRPV1, TRPV4, and TRPM8 channels, focusing on peripheral and central mechanisms and on how these findings relate to clinical development.

Key findings: TRP channels are multimodal sensors in airway sensory nerves and epithelial cells. They respond to irritants, temperature changes, mechanical stress, osmotic stimuli, and inflammatory mediators. Their activation can drive cation influx, neuronal depolarization, neuropeptide release, and ATP-P2X3 signaling, thereby increasing cough reflex sensitivity and neurogenic inflammation. The

translational evidence differs across TRP subtypes. TRPV1 has relatively strong support from mechanistic studies and human cough challenge work, whereas TRPA1 is biologically plausible but still has limited human evidence. Evidence for TRPV4 and TRPM8 is more sparse, with TRPV4 mainly linked to ATP-purinergic signaling and TRPM8 less clearly defined in chronic cough. To date, TRP-channel antagonists have produced limited and inconsistent reductions in spontaneous cough frequency.

Significance: These findings suggest that blocking peripheral TRP channels alone may not be enough to control cough hypersensitivity. Future studies should connect patient selection with biomarkers and clinically relevant endpoints.

Keywords: Airway Hyperresponsiveness; Chronic cough; Sensory neurons; Transient receptor potential (TRP) channels.

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Conflict of interest statement

Declaration of competing interest We, the undersigned authors of the review article entitled “Airway sensory neurobiology and TRP channels in chronic cough: mechanisms, cough hypersensitivity, and therapeutic translation” submitted to Life Sciences, hereby declare that we have no financial, personal, or professional relationships with any individuals or organizations that could inappropriately influence or bias the content of this work.

Supplementary info

Publication types, MeSH terms, SubstancesExpand

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

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Arch Bronconeumol

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. 2026 Sep 18:S0300-2896(26)00319-4.

doi: 10.1016/j.arbres.2026.08.008. Online ahead of print.

[Factors Associated With Long-Term Mortality in Bronchiectasis](#)

[Article in English, Spanish]

[Grace Oscullo](#)¹, [Raúl Méndez](#)¹, [Casilda Oliveira](#)², [Rosa Girón](#)³, [Marta García-Clemente](#)⁴, [Luis Máiz](#)⁵, [Oriol Sibila](#)⁶, [Lidia Perea](#)⁷, [Rafael Golpe](#)⁸, [Juan Luis](#)

[Rodríguez-Hermosa⁹](#), [Esther Barreiro¹⁰](#), [Concepción Prados¹¹](#), [Juan Rodríguez-Lopez¹²](#), [David de la Rosa¹³](#), [Miguel Ángel Martínez-García¹⁴](#)

Affiliations Expand

- PMID: 42760212
- DOI: [10.1016/j.arbres.2026.08.008](#)

Abstract

Introduction: There are scarce data on long-term mortality in bronchiectasis in studies including a high number of bronchiectasis subjects. The objective of this study was to investigate risk factors of all-cause mortality in a large series of bronchiectasis patients with a long follow-up.

Methods: Historical cohort series from the Spanish Registry of Bronchiectasis in 2057 patients with a median follow-up of 84 (IQR: 72-102) months. A wide set of data from all the dimensions of bronchiectasis (general, clinical, etiological, complementary test, peripheral biomarkers, functional, microbiological, and therapeutic) was collected. 408 patients died during follow-up. Multivariable Cox survival analysis was used.

Results: Thirteen variables (Condition/HR): COPD/3.16; Chronic bronchial infection (CBI) by *Pseudomonas aeruginosa* (PA)/2.57; peripheral neutrophilia (>80%)/2.53; Previous and follow-up hospitalization rate/2.01 and 1.93 respectively; Previous and follow-up exacerbation rate/1.05 and 2.01 respectively; Charlson index/1.24; age/1.06; Baseline FEV₁%pred/0.98; Previous pneumonia episodes/1.04 and dyspnea/1.16 were independently associated with greater mortality. FACED, E-FACED and BSI were analyzed separately, with HR of 2.3, 2.2 and 1.7, respectively.

Conclusions: The presence of COPD, CBI by PA, peripheral neutrophilia, and hospitalizations were the four most important variables independently associated with greater long-term mortality in bronchiectasis.

Keywords: Bronchiectasis; COPD; Exacerbations; Hospitalizations; Mortality; *Pseudomonas aeruginosa*.

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Editorial

Thorax

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. 2026 Sep 18:thorax-2026-225660.

doi: 10.1136/thorax-2026-225660. Online ahead of print.

[Knowing when to stop: the challenge of macrolide discontinuation in chronic airways disease](#)

[Francesca Conway](#)^{1 2}, [Lydia Finney](#)³

Affiliations Expand

- PMID: 42760128
- DOI: [10.1136/thorax-2026-225660](#)

No abstract available

Keywords: Asthma; Bronchiectasis; COPD Exacerbations; Infection Control; Respiratory Infection.

Conflict of interest statement

Competing interests: None declared.

Supplementary info

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PLoS One

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. 2026 Sep 18;21(9):e0355956.

doi: 10.1371/journal.pone.0355956. eCollection 2026.

[Validation of the Bronchiectasis Severity Index in alpha-1 antitrypsin deficiency](#)

[Joshua De Soyza](#)^{1 2}, [Paul Ellis](#)^{1 2}, [Daniella Spittle](#)¹, [Anita Pye](#)¹, [Alice M Turner](#)^{1 2}

Affiliations Expand

- PMID: 42758741
- DOI: [10.1371/journal.pone.0355956](https://doi.org/10.1371/journal.pone.0355956)

Abstract

Bronchiectasis is increasingly recognised in patients with alpha-1 antitrypsin deficiency (AATD), yet prognostic tools validated in general bronchiectasis populations have not been specifically evaluated in this group. The Bronchiectasis Severity Index (BSI) is a widely used multidimensional score predicting mortality, hospitalisation, and exacerbations in all-cause bronchiectasis. This study aimed to validate the BSI in a cohort of patients with AATD-bronchiectasis. Clinical data were obtained from the Birmingham AATD registry. Patients with severe AATD genotypes and CT-confirmed bronchiectasis were included, while those with non-severe genotypes or alternative causes of bronchiectasis were excluded. BSI scores were calculated using available registry data with minor adjustments reflecting the limitations of cross-sectional data collection. Associations between BSI and mortality were assessed using Kaplan-Meier survival analysis and Cox proportional hazards models adjusted for COPD, smoking status, and sex. Secondary analyses evaluated associations between BSI and lung function decline (FEV1 and KCO) and health-related quality of life (SGRQ). A total of 198 patients were included (mean age 54.3 ± 9.7 years; 53.5% male), the majority with the ZZ genotype (97.5%) and coexisting COPD (87.4%). Median BSI score was 5 (range 0-14). Mortality differed significantly across BSI severity groups ($p < 0.001$): estimated 1-year mortality was 1.1%, 7.4%, and 20.0% for mild, moderate, and severe disease respectively, while 4-year mortality was 5.7%, 23.7%, and 31.8%. In Cox regression analysis adjusted for COPD, smoking, and sex, BSI remained significantly associated with mortality (hazard ratio 1.13 per point increase; 95% CI 1.05-1.23; $p = 0.002$). BSI score was also associated with greater decline in gas transfer (KCO) ($\beta = -0.22\%$ per point per year; $p < 0.001$), but showed no significant association with FEV1 decline or SGRQ score. The Bronchiectasis Severity Index is associated with mortality risk in patients with AATD-associated bronchiectasis, supporting its use as a prognostic tool in this population. These findings provide evidence that a severity score derived from all-cause bronchiectasis cohorts can be applied to AATD, although prospective validation in larger multicentre datasets is warranted.

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Conflict of interest statement

The authors have read the journal's policy and have the following competing interests: PE has received speaker fees from Chiesi, GSK, and AstraZeneca. AMT has had grants to her institution and/or honoraria from CSL Behring, Grifols, Vertex, Takeda, Chiesi, AstraZeneca, GSK, Sanofi, and Boehringer Ingelheim. JDS, DA, and AP have no conflicts of interest to declare. This does not alter our adherence to PLOS ONE policies on sharing data and materials. There are no patents, products in development, or marketed products associated with this research to declare.

Supplementary info

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Curr Opin Pulm Med

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. 2026 Sep 18.

doi: 10.1097/MCP.0000000000001314. Online ahead of print.

[Medical issues and pulmonary outcomes in cystic fibrosis and bronchiectasis](#)

[George Doumat](#)¹, [Manya Iyer](#), [Raksha Jain](#)

Affiliations Expand

- PMID: 42755280
- DOI: [10.1097/MCP.0000000000001314](#)

Abstract

Purpose of review: Bronchiectasis from cystic fibrosis and noncystic fibrosis causes include a spectrum of chronic suppurative airway conditions that share key pathophysiologic mechanisms but differ substantially in genetic basis, epidemiology, and clinical course. Recent therapeutic advances, particularly highly effective CFTR modulators in cystic fibrosis and emerging anti-inflammatory therapies in bronchiectasis, have reshaped disease management and prompted re-evaluation of treatment paradigms, outcome measures, and approaches to long-term monitoring.

Recent findings: In cystic fibrosis, highly effective CFTR modulator therapy, including elexacaftor/tezacaftor/ivacaftor and the recently approved once daily vanzacaftor/tezacaftor/deutivacaftor, has produced sustained increase in lung function, reduced frequency of pulmonary exacerbations, and improved quality of life, while highlighting the limitations of FEV1 as a sole future marker of treatment response. In noncystic fibrosis bronchiectasis, the phase 3 ASPEN trial demonstrated that brensocatib, a dipeptidyl peptidase-1 inhibitor, significantly reduces exacerbation frequency and slows lung function decline at the higher dose, representing a potential disease-modifying therapy. Emerging evidence also

underscores the prognostic importance of comorbidities and disease modifiers, including *Pseudomonas aeruginosa* and gastroesophageal reflux disease.

Summary: Management of all forms of bronchiectasis is increasingly shifting toward individualized, endotype-directed care. Integration of disease-modifying therapies, systematic assessment of comorbidities, validated severity stratification tools, and patient-reported outcomes will be essential to optimizing long-term clinical outcomes and advancing precision medicine approaches across this heterogeneous disease spectrum.

Keywords: brensocatib; bronchiectasis; cystic fibrosis; cystic fibrosis transmembrane conductance regulator modulators; pulmonary exacerbations.

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Curr Opin Pulm Med

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. 2026 Sep 18.

doi: 10.1097/MCP.0000000000001315. Online ahead of print.

[Eosinophils in bronchiectasis](#)

[Megan Trieu](#)¹, [Praveen Akuthota](#), [Jeffrey Barry](#)

Affiliations Expand

- PMID: 42755272
- DOI: [10.1097/MCP.0000000000001315](#)

Abstract

Purpose of review: Bronchiectasis has traditionally been viewed as a predominantly neutrophil-driven airway disease. Recognition of eosinophilic inflammation in a substantial subset of patients has challenged this paradigm. This review summarizes emerging evidence regarding its pathogenesis, clinical significance, and therapeutic implications.

Recent findings: Eosinophilic bronchiectasis is identified using blood or sputum eosinophilia, although optimal biomarkers and thresholds are unclear. Eosinophilic inflammation occurs in bronchiectasis and overlapping disease states characterized by type 2 immune activation, including asthma, allergic bronchopulmonary aspergillosis, and cystic fibrosis, complicating diagnosis but potentially informing disease severity, prognosis, and treatment options. Evidence for targeted therapies is limited to largely observational data. Patients with elevated eosinophil counts may derive greater benefit from inhaled corticosteroids. Early studies of biologics appear promising, particularly in patients with coexisting ABPA or asthma, although their benefit in eosinophilic bronchiectasis independent of these conditions remains uncertain.

Summary: Eosinophilic bronchiectasis represents a distinct inflammatory endotype that may enable a more personalized approach to disease management. Future studies should identify clinically relevant biomarkers to standardize its definition, clarify its relationship with overlapping type 2 airway diseases, and guide the use of inhaled corticosteroids and biologics.

Keywords: biologic therapy; bronchiectasis; eosinophils; inhaled corticosteroids; type 2 inflammation.

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Cite

6

Curr Opin Pulm Med

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. 2026 Sep 18.

doi: 10.1097/MCP.0000000000001310. Online ahead of print.

[Bronchiectasis in immunodeficiency](#)

[Jordon L Jaggars](#)¹, [James M Fernandez](#)

Affiliations Expand

- PMID: 42755263
- DOI: [10.1097/MCP.0000000000001310](#)

Abstract

Purpose of review: As the field of bronchiectasis continues to advance, so does the recognition of undiagnosed immunodeficiency as a potential contributor. This review aims to highlight what is currently known about bronchiectasis in immunodeficiency as well as explore future therapeutics and needs.

Recent findings: Guidelines emphasize the need for evaluation for underlying immunodeficiency in patients with known bronchiectasis. Despite this known association, evaluation continues to be variable in clinical practice resulting in potentially missed therapeutic options, such as immunoglobulin replacement therapy in the setting of immunodeficiency. While the mainstay treatment for those with bronchiectasis and immunodeficiency continues to be immunoglobulin replacement therapy and prophylactic antibiotics, the future is hopeful with more directed therapy for the underlying pathophysiology of bronchiectasis with targeted agents such as brensocatib.

Summary: This review highlights the need for ongoing research to improve detection of bronchiectasis in immunodeficiency and include patients with immunodeficiency and bronchiectasis in trial designs for therapeutics in bronchiectasis.

Keywords: IgG-RT; bronchiectasis; immunodeficiency.

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Editorial

Pulmonology

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. 2026 Dec;32(1):2734660.

doi: 10.1080/25310429.2026.2734660. Epub 2026 Sep 17.

[Fatigue in bronchiectasis: An under-recognised treatable trait](#)

[Akhil Sawant¹](#)

Affiliations Expand

- PMID: 42751816
- DOI: [10.1080/25310429.2026.2734660](https://doi.org/10.1080/25310429.2026.2734660)

Free article

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Supplementary info

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Cite

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Pulmonology

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. 2026 Dec;32(1):2728945.

doi: 10.1080/25310429.2026.2728945. Epub 2026 Sep 15.

[Commentary on "prognostic implications of cluster-defined phenotypes in AECOPD patients with bronchiectasis: A multicenter study."](#)

[Etika Rana](#)¹, [Kashish Arora](#)²

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[Sputum microbiome and clinical profiles in Portuguese non-cystic fibrosis bronchiectasis patients](#)

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Abstract

Background: The global prevalence of bronchiectasis (BC) has been rising. This study aimed to characterise the sputum microbiome and correlate the microbiome with clinical data obtained from clinically stable Portuguese patients with BC.

Methods: Non-cystic fibrosis BC patients were enrolled. A single spontaneous sputum sample was collected and analysed by 16S rRNA gene sequencing. Taxonomic composition, α -diversity (Shannon index), and β -diversity (Bray-Curtis) were analysed and correlated with clinical, functional, and radiological variables.

Results: Fifty-eight patients (median age 58 years) were included. The sputum microbiome showed marked inter-patient variability and could be stratified into distinct subtypes dominated by *Haemophilus* (24%), *Streptococcus* (24%), *Pseudomonas* (14%), and an emergent *Rothia*/*Streptococcus* subtype (10%). *Haemophilus* and *Pseudomonas* subtypes displayed opposite clinical patterns, with *Pseudomonas* associated with more severe disease as shown by lower forced expiratory volume in 1 s (FEV1), higher bronchiectasis severity index (BSI), and diffuse radiological changes. α -diversity was significantly lower in BC patients with changes in the left lower lobe (LLL) and associated with extreme serum IgA values, while β -diversity showed significant associations with bronchiectasis severity index, body mass index, and LLL involvement. No association between α - or β -diversities and lung function was found.

Conclusions: This first characterisation of the sputum microbiome in Portuguese BC patients revealed marked heterogeneity and distinct microbial subtypes associated with disease severity and radiological patterns. These results highlight the potential influence of host-microbiome interactions and anatomical factors in

shaping BC phenotypes. Larger and longitudinal studies are warranted to confirm the subtype temporal stability.

Keywords: Bronchiectasis; Pseudomonas; chronic infection; lung microbiome; sputum biodiversity.

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Book

[Young Syndrome](#)

[Venkatkiran Kanchustambham, Arif Jan](#)¹

In: StatPearls [Internet]. Treasure Island (FL): StatPearls Publishing; 2026 Jan.

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Excerpt

Young syndrome, also termed sinusitis-infertility syndrome, was first described by urologist Dr Donald Young following his observation of a cohort of infertile men with concomitant chronic respiratory disease. This condition is a rare inherited disorder with a clinical profile similar to Kartagener syndrome, most often presenting in middle-aged men as the triad of chronic rhinosinusitis, bronchiectasis, and obstructive azoospermia. The prevalence of Young syndrome is broadly comparable to that of Klinefelter syndrome, making it one of the more common causes of combined sinopulmonary disease and male infertility.

Individuals with Young syndrome have structurally normal lung parenchyma and cilia but produce abnormally thick, viscous respiratory and reproductive secretions. In the lungs, this thick and tenacious mucus impairs mucociliary clearance, predisposing patients to recurrent lower respiratory tract infections and progressive bronchiectasis. Within the male reproductive tract, inspissated secretions obstruct sperm transport at the level of the epididymis. Spermatogenesis itself is intact, and functional obstruction prevents sperm from reaching the ejaculate, resulting in

obstructive azoospermia. Women with Young syndrome may have mildly reduced fertility, with fewer than 50% of pregnancies completing successfully. However, this feature is not as prominent a clinical finding as the reproductive impact on men.

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Conflict of interest statement

Disclosure: Venkatkiran Kanchustambham declares no relevant financial relationships with ineligible companies.

Disclosure: Arif Jan declares no relevant financial relationships with ineligible companies.

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Randomized Controlled Trial

Cell Rep Med

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[Symptoms and treatment response to florensocatic and inhaled tobramycin in bronchiectasis: Post hoc analysis of two randomized trials](#)

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Abstract

Inhaled antibiotics and DPP-1 inhibitors improve clinical outcomes in bronchiectasis, but whether baseline symptom burden predicts differential treatment responses remains unclear. In this post hoc analysis of two multicenter randomized trials (SAVE-BE, n = 224; TORNASOL, n = 357), we evaluate the association between baseline Quality of Life-Bronchiectasis Respiratory Symptom Scale (QoL-B-RSS) and treatment effects of florensocatic and inhaled tobramycin. In SAVE-BE, florensocatic reduces exacerbation rates versus placebo (relative risk [RR], 0.47; 95% confidence interval [CI], 0.33-0.67; $p < 0.0001$), with RRs of 0.53 and 0.40 observed in patients with high and low symptom burdens, respectively, but no significant symptomatic improvement. In TORNASOL, tobramycin produces clinically meaningful QoL-B-RSS improvements (exceeding the 8-point cutoff in high-symptom patients) and ameliorates bronchitic symptoms, with greater benefits in those with higher baseline symptom burden. These hypothesis-generating findings suggest that baseline symptom burden may identify differential responses to anti-inflammatory versus anti-infective therapies in bronchiectasis and support its potential as a simple, practical stratification tool to guide personalized treatment.

Keywords: DPP-1 inhibitor; bronchiectasis; exacerbations; inhaled tobramycin; symptoms; treatment response.

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Conflict of interest statement

Declaration of interests The authors have no potential conflicts of interest to disclose.

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