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

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Published Erratum

Chronic Obstr Pulm Dis

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. 2025 Apr 25.

doi: 10.15326/jcopdf.2024.0582E. Online ahead of print.

[Clinical Implications of *Pseudomonas Aeruginosa* Colonization in Chronic Obstructive Pulmonary Disease Patients](#)

No authors listed

- PMID: 40279375
- DOI: [10.15326/jcopdf.2024.0582E](#)

Abstract

This corrects the article, "Clinical Implications of *Pseudomonas Aeruginosa* Colonization in Chronic Obstructive Pulmonary Disease Patients," published in Volume 12, Issue 2, pp. 137-145.

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Erratum for

- [Clinical Implications of *Pseudomonas Aeruginosa* Colonization in Chronic Obstructive Pulmonary Disease Patients.](#)

Kwok WC, Tam TCC, Chau CH, Lam FM, Ho JCM. Chronic Obstr Pulm Dis. 2025 Mar 27;12(2):137-145. doi: 10.15326/jcopdf.2024.0582.PMID: 39912873

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JMIR Cardio

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. 2025 Apr 25:9:e57749.

doi: 10.2196/57749.

[Co-Occurring Diseases and Mortality in Patients With Chronic Heart Disease, Modeling Their Dynamically Expanding Disease Portfolios: Nationwide Register Study](#)

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Affiliations [Expand](#)

- PMID: 40279150
- DOI: [10.2196/57749](#)

Abstract

Background: Medical advances in managing patients with chronic heart disease (HD) permit the co-occurrence of other chronic diseases due to increased longevity, causing them to become multimorbid. Previous research on the effect of co-

occurring diseases on mortality among patients with HD often considers disease counts or clusters at HD diagnosis, overlooking the dynamics of patients' disease portfolios over time, where new chronic diseases are diagnosed before death. Furthermore, these studies do not consider interactions among diseases and between diseases, biological and socioeconomic variables, which are essential for addressing health disparities among patients with HD. Therefore, a mapping of the effect of combinations of these co-occurring diseases on mortality among patients with HD considering such interactions in a dynamic setting is warranted.

Objective: This study aimed to examine the effect of the co-occurring diseases of patients with HD on mortality, modeling their dynamically expanding chronic disease portfolios while identifying interactions between the co-occurring diseases, socioeconomic and biological variables.

Methods: This study used data from the national Danish registries and algorithmic diagnoses of 15 chronic diseases to obtain a study population of all 766,596 adult patients with HD in Denmark from January 1, 1995, to December 31, 2015. The time from HD diagnosis until death was modeled using an extended Cox model involving chronic diseases and their interactions as time-varying covariates. We identified interactions between co-occurring diseases, socioeconomic and biological variables in a data-driven manner using a hierarchical forward-backward selection procedure and stability selection. We mapped the impact on mortality of (1) the most common disease portfolios, (2) the disease portfolios subject to the highest level of interaction, and (3) the most severe disease portfolios. Estimates from interaction-based models were compared to an additive model.

Results: Cancer had the highest impact on mortality (hazard ratio=6.72 for male individuals and 7.59 for female individuals). Excluding cancer revealed schizophrenia and dementia as those with the highest mortality impact (top 5 hazard ratios in the 11.72-13.37 range for male individuals and 13.86-16.65 for female individuals for combinations of 4 diseases). The additive model underestimated the effects up to a factor of 1.4 compared to the interaction model. Stroke, osteoporosis, chronic obstructive pulmonary disease, dementia, and depression were identified as chronic diseases involved in the most complex interactions, which were of the fifth order.

Conclusions: The findings of this study emphasize the importance of identifying and modeling disease interactions to gain a comprehensive understanding of mortality risk in patients with HD. This study illustrated that complex interactions are widespread among the co-occurring chronic diseases of patients with HD. Failing to account for these interactions can lead to an oversimplified attribution of risk to individual diseases, which may, in cases of multiple co-occurring diseases, result in an underestimation of mortality risk.

Keywords: chronic heart disease; interaction effects; multimorbidity; survival analysis; time-varying covariates.

©Nikolaj Normann Holm, Anne Frølich, Helena Dominguez, Kim Peder Dalhoff, Helle Gybel Juul-Larsen, Ove Andersen, Anders Stockmarr. Originally published in JMIR Cardio (<https://cardio.jmir.org>), 25.04.2025.

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Adv Clin Exp Med

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. 2025 Apr 25.

doi: 10.17219/acem/189880. Online ahead of print.

[Effectiveness of nursing care intervention on the management of patients with chronic obstructive pulmonary disease: A systematic review and meta-analysis of randomized controlled trials](#)

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Affiliations Expand

- PMID: 40277395
- DOI: [10.17219/acem/189880](#)

Abstract

Background: Chronic obstructive pulmonary disease (COPD) contributes considerably to morbidity and mortality worldwide, necessitating innovative interventions to enhance patient outcomes.

Objectives: The present synthesis aimed to discern the impact of nursing interventions on physical, mental and social health outcomes among COPD patients, focusing on 6-minute walk distance (6MWD), self-efficacy, anxiety, depression, dyspnea, hospitalization, St. George's Respiratory Questionnaire score, patient satisfaction, and all-cause mortality.

Material and methods: This review was conducted to include randomized controlled trials exploring nursing interventions for COPD patients without demographic restriction and sourced from several databases (MEDLINE, Cochrane Central

Register of Controlled Trials (CENTRAL), Scopus, CINAHL (Cumulative Index to Nursing and Allied Health Literature), and OpenGrey) until September 2023. Quality assessments were done using the Cochrane Risk of Bias 2 (RoB 2) tool, followed by meta-analysis using a random-effects model with continuous outcomes interpreted as standardized mean difference (SMD) and categorical outcomes as risk ratio (RR).

Results: Thirty-six studies were incorporated, revealing nursing interventions to notably enhance 6MWD (SMD: 0.628, $p = 0.001$) and self-efficacy (SMD: 0.800, $p < 0.001$), and significantly decrease anxiety (SMD: -0.952, $p = 0.015$) and depression levels (SMD: -0.952, $p = 0.006$). However, the effects of hospitalization, quality of life (QoL) and dyspnea did not reach statistical significance. Notably, high heterogeneity was observed in several outcomes.

Conclusion: Nursing interventions yielded significant improvements for 6MWD, self-efficacy, anxiety, and depression among COPD patients. However, their impact on hospitalization and QoL remains indeterminate, necessitating further nuanced research to optimize and tailor nursing care strategies for this demographic. Enhanced intervention standardization and larger, multicenter trials are warranted to confirm and expand these findings.

Keywords: chronic obstructive pulmonary disease; meta-analysis; nursing; quality of life.

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Respir Care

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. 2025 Apr 25.

doi: 10.1089/respcare.11653. Online ahead of print.

[Association of Preserved Ratio Impaired Spirometry and Mortality Outcomes Compared With Normal Spirometry: A Meta-Analysis](#)

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- PMID: 40275815
- DOI: [10.1089/respcare.11653](https://doi.org/10.1089/respcare.11653)

Abstract

Background: One of the leading causes of death in the United States is chronic lung disease, with COPD being the most common. One of the hallmarks of COPD is spirometric obstruction as evidenced by a reduced FEV₁/FVC ratio. Preserved ratio impaired spirometry (PRISm) is a spirometric pattern characterized as a low FEV₁ coupled with a preserved FEV₁/FVC ratio. This systematic review and meta-analysis sought to understand better the relationship between PRISm and cardiovascular, respiratory, and all-cause mortality. **Methods:** We systematically searched PubMed and clinicaltrials.gov for articles published between 2014 and 2023, providing data regarding the association of PRISm compared with normal spirometry in terms of mortality outcomes. The generic inverse variance method was used to assess the pooled hazard ratio value at a 95% CI, and forest plots were created using RevMan for analysis. $P < .05$ was considered to be significant. **Results:** Our analysis included 690,015 subjects from four prospective studies and three retrospective studies. The pooled hazard ratio for all-cause, cardiovascular, and respiratory-related mortality was 1.70, 1.95, and 5.70 for all prospective studies, respectively, and 1.62, 1.66, and 3.35, in combined prospective and retrospective studies, respectively, which were statistically significant in the random effect model ($P < .001$). However, 76% heterogeneity was observed in respiratory-related mortality ($P = .009$). After excluding studies associated with publication bias, a "leave-out" sensitive analysis resulted in a significant pooled hazard ratio of 1.98 with a high significance ($P < .001$). **Conclusions:** PRISm, often labeled as GOLD-U, is associated with mortality outcomes and should not be overlooked while treating patients with chronic lung diseases. This meta-analysis provides a stronger correlation of PRISm with all-cause mortality, cardiovascular mortality, and respiratory mortality compared with normal spirometry.

Keywords: COPD; PRISm; mortality; preserved ratio impaired spirometry; restrictive spirometry; unclassified spirometry.

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BMC Public Health

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. 2025 Apr 24;25(1):1528.

doi: 10.1186/s12889-025-22506-9.

[Cost-effectiveness of chronic obstructive pulmonary disease population screening in China: based on individual data from WHO Collaborating Centre-initiated 'Enjoying Breathing Program'](#)

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Affiliations Expand

- PMID: 40275164
- DOI: [10.1186/s12889-025-22506-9](#)

Free article

Abstract

Background: Chronic obstructive pulmonary disease (COPD) imposes a significant and growing burden on China and the world. Early detection and diagnosis may be an effective way to alleviate this severe pressure on public health. The Enjoying Breathing Program (the Program), a nationwide one-time and two-step COPD screening and management program with long-term follow-up initiated by the World Health Organization Collaborating Centre (WHO CC), has demonstrated its significant clinical benefit. However, the cost-effectiveness of the Program remains unknown.

Methods: A lifetime Markov model was developed to compare the cost-effectiveness of the Program of COPD screening to no screening from a Chinese healthcare perspective. Patient-level data, including treatment rate, medication cost, transition probability, etc., were sourced from the Program. Other parameter data were sourced from published literature.

Results: Enjoying Breathing Program for COPD screening was proved probably cost-effective compared with no screening in China with an incremental cost of \$118, and incremental health benefit gain of 0.021 quality-adjusted life years (QALYs), resulting in an incremental cost-effectiveness ratio (ICER) of \$5,679/QALY which was much less than willingness-to-pay (WTP) of 1×Gross Domestic Product (GDP) per capita in 2022 (\$11,814). Sensitivity analysis proved the robustness of the results and subgroup analysis demonstrated health benefits varied among different

subgroups. Annual screening and higher compliance may further enhance the cost-effectiveness.

Conclusions: Despite the underlying uncertainty, annual two-step COPD population screening in China may probably be cost-effective compared with no screening and deserves further large-scale implementation.

Keywords: China; Chronic obstructive pulmonary disease; Cost-effectiveness; Enjoying Breathing Program; Population screening.

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Conflict of interest statement

Declarations. Ethics approval and consent to participate: Ethical approval was granted by the Clinical Research Ethics Committee of China-Japan Friendship Hospital (Ethics Approval Number: 2019-41-k29), and all participants provided written informed consent for participation. Consent for publication: Not applicable. **Competing interests:** The authors declare no competing interests.

- [43 references](#)

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Respir Med

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. 2025 Apr 22:108110.

doi: 10.1016/j.rmed.2025.108110. Online ahead of print.

[Pulmonary rehabilitation utilization in patients with chronic respiratory diseases: 2014-2019](#)

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Affiliations Expand

- PMID: 40273996
- DOI: [10.1016/j.rmed.2025.108110](https://doi.org/10.1016/j.rmed.2025.108110)

Abstract

Background: Chronic respiratory diseases are associated with significant disability and death. Pulmonary rehabilitation (PR) is recommended in the management of chronic respiratory diseases. There is limited population level data comparing PR utilization and completion among patients with chronic respiratory diseases.

Methods: A retrospective, cross sectional analysis concerning PR use in adults residing in the U.S. with chronic obstructive pulmonary disease (COPD), interstitial lung disease (ILD), idiopathic pulmonary fibrosis (IPF), pulmonary hypertension, and bronchiectasis was conducted using the Merative™ MarketScan® Research Databases. PR use was identified using current procedural terminology (CPT) and healthcare common procedure coding system (HCPCS) codes. Demographics, comorbidities, oxygen use, medications, initiation and participation of PR by disease state were collected. Analysis involved chi-square tests and generalized estimating equations.

Results: From 2014 to 2019, we identified 892,741 adults with chronic respiratory diseases and COPD was the most prevalent. PR initiation occurred in 2.3% and annual participation ranged from 1.5 % to 1.7 %. The IPF group had the largest proportion of patients that initiated PR compared to other groups. Completion of ≥ 8 sessions was greatest for the group with IPF (60.8 %), followed by non IPF ILD (56.2 %), bronchiectasis (55.3 %), pulmonary hypertension (55.1 %) and COPD (53.9 %). Completion of ≥ 8 sessions was significantly greater for the IPF group compared to the COPD group, ($p < 0.0001$).

Conclusion: PR was underutilized among individuals with chronic respiratory disease, however the group with IPF demonstrated the greatest proportion of PR initiation and completion compared with other groups.

Keywords: COPD; ILD; IPF; Pulmonary rehabilitation; chronic respiratory disease; pulmonary hypertension.

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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: Alexander Duarte reports a relationship with Simply Speaking Pulmonary Arterial Hypertension - Rush University that includes: speaking and lecture fees and travel reimbursement. 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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Chronic Obstr Pulm Dis

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. 2025 Apr 24.

doi: 10.15326/jcopdf.2025.0603. Online ahead of print.

[Rationale and Design of the Alpha-1 Biomarkers Consortium Study](#)

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Affiliations Expand

- PMID: 40273316
- DOI: [10.15326/jcopdf.2025.0603](#)

Free article

Abstract

Rationale: Alpha-1 antitrypsin deficiency (AATD) is the most common genetic cause of chronic obstructive pulmonary disease (COPD), but considerable phenotypic variability exists among affected individuals who share disease-causing variants. Therefore, a multi-center longitudinal cohort study of 270 adult participants with PiZZ AATD will be established with goal of examining how computed tomography (CT) imaging and serum and airway biomarkers can be used to explain differences in phenotypic manifestations and outcomes.

Methods: Study visits at enrollment, 18 months and 36 months will obtain spirometry, patient-reported outcomes and biosampling from blood, nasal mucosa and sputum. Chest CT image acquisition will be utilized for whole lung and lobar

estimations of emphysema based on lung density and to test novel measurements of airway remodeling and lung tissue mechanics. Dried blood spot cards will be collected if the participant experiences an acute exacerbation of COPD (AECOPD) during the study. Genetic analysis will be performed with complete SERPINA1 sequencing, and peripheral blood mononuclear cells (PBMCs) will be isolated to generate a repository of inducible pluripotent stem cells (iPSCs).

Results: The cohort will be deeply characterized including imaging, physiology, and symptomatology cross-sectionally and longitudinally over a 3-year follow-up period. A validation cohort from Ireland will independently enroll patients with identical procedures.

Conclusion: This is the first cohort of AATD to incorporate such detailed metrics of disease including quantitative emphysema measures with the overarching goal of improving the understanding of disease heterogeneity in AATD and identifying factors associated with disease severity and progression.

Keywords: alpha-1 antitrypsin deficiency; biomarkers; computed tomography; emphysema; spirometry.

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Randomized Controlled Trial

Respir Res

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. 2025 Apr 23;26(1):156.

doi: 10.1186/s12931-025-03230-9.

[The longitudinal impact of low-dose morphine on diurnal cortisol profiles in people with chronic breathlessness and chronic obstructive pulmonary disease \(COPD\): an exploratory study](#)

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Affiliations Expand

- PMID: 40269943
- PMCID: [PMC12020152](#)
- DOI: [10.1186/s12931-025-03230-9](#)

Abstract

Introduction: Stress activates the hypothalamic-pituitary-adrenal (HPA) axis of which cortisol is an end product. 'Allostatic load' is where systems including the HPA axis are exposed to high, cumulative, physiologic burdens (such as chronic breathlessness) leading to flatter diurnal cortisol slopes and poorer health outcomes. The aim of this hypothesis-generating study explored longitudinal changes in cortisol secretion and any associated changes in breathlessness after introducing regular, low dose morphine or placebo.

Methods: This was an optional, hypothesis-generating sub-study embedded in a multi-site, randomised, double-blind, placebo-controlled trial (RCT) of regular, low-dose morphine for chronic breathlessness and chronic obstructive pulmonary disease. In a blinded dose-increment algorithm by week three, doses were 0 mg-32 mg. Participants in the RCT could elect to continue in a six-month blinded extension. This sub-study excluded people who used non-inhaled corticosteroids in the previous month or were on subcutaneous insulin. Participants collected saliva for cortisol assays for two days at baseline, and ends of weeks 1, 3 and 12 at 3,6 and 12 h after waking, generating sufficient data to calculate diurnal cortisol slopes and areas under the curve (AUC). Samples were analysed using ELISA. Correlations between diurnal cortisol profiles (slope and AUC) and a range of measures were explored.

Results: Twenty mostly female former smokers were in this sub-study. At baseline and the end of week 1, one-way ANOVA between-group analyses showed no significant differences in the log-transformed cortisol slope or ln-AUC. There was a strong correlation between the age-adjusted Charlson Comorbidity Index (CCI) and ln-AUC ($r=-0.70$, $p < 0.001$) and moderate correlation with age ($r=-0.43$, $p = 0.06$). In the blinded extension study, there was a self-selecting blinded group ($n = 7$) all on active medication. Global impression of change (GIC) was highly correlated with the diurnal cortisol slope ($r_s = 0.98$, $p = 0.01$), and with decrease in average breathlessness ($r = 0.89$, $p = 0.04$).

Discussion: This hypothesis-generating study did not show a relationship between the diurnal cortisol profile and morphine in people with chronic breathlessness and COPD. For the sub-group still on study at 12weeks, the cortisol curves became steeper as average breathlessness decreased and as global impression of change

(GIC) improved, suggesting that reducing breathlessness may potentially positively impact the HPA axis in a sub-group of people.

Trial registration: Registration Number [NCT02720822](#) date registered 28/03/2016.

Keywords: Chronic breathlessness; Cortisol; Palliative care; Sustained-release morphine; Symptom control.

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Conflict of interest statement

Declarations. Ethics approval and consent to participate: Ethics approval was obtained from relevant Health Human Research Ethics Committees before recruitment commenced. All participants gave informed written consent. **Competing interests:** The authors DF, RR, NS, AC report no competing interests. DC is an unpaid advisory board member for Helsinn Pharmaceuticals. He is a paid consultant and receives payment for intellectual property with Mayne Pharma and is a consultant with Specialised Therapeutics Australia Pty. Ltd. **Ethics declaration:** This study was approved by the Hunter New England Human Research Ethics Committee (Reference 15/12/16/3.06) in accordance with the Declaration of Helsinki. **Consent to publish:** Not applicable.

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. 2025 Apr 23;15(1):14113.

doi: 10.1038/s41598-025-97895-3.

[Association between systemic immune-inflammation index and chronic bronchitis: NHANES 2001-2018](#)

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Affiliations Expand

- PMID: 40269079
- PMCID: [PMC12019561](#)
- DOI: [10.1038/s41598-025-97895-3](#)

Abstract

The systemic immune-inflammation index (SII) is a newly identified marker of inflammation, and the relationship between chronic bronchitis (CB) and inflammation is closely associated. However, the influence of SII on CB remains unclear at present. This cross-sectional study was conducted using data from individuals with complete SII and CB records from the 2001-2018 National Health and Nutrition Examination Survey (NHANES). Binary weighted logistic regression was employed to investigate the relationship between SII and CB risk. Additionally, restricted cubic spline regression models and segmented regression models were used to examine nonlinear relationships and threshold effects. Receiver operating characteristic (ROC) curves were adopted to evaluate the predictive value of SII for CB. Stratified analysis was adopted to assess the association between SII and CB in different populations. After adjusting for all covariables, there was a significant positive relevance observed between log-transformed SII (log (SII)) with CB (OR = 1.52, 95% CI: 1.27-1.82, P < 0.001). A nonlinear dose-response relationship with the threshold of 8.14 was observed between log (SII) and CB risk. When log (SII) exceeded 8.14, each unit increase in log (SII) was associated with a 1.31-fold increase in the risk of CB (OR = 1.31, 95% CI: 1.22-1.40, P < 0.001). Furthermore, ROC curves revealed strong predictive capability of SII for CB (AUC = 0.729). Elevated SII levels are associated with an increased prevalence of CB. Furthermore, a non-linear association exists between SII and the increased risk of CB.

Keywords: Chronic bronchitis; Cross-sectional study; NHANES; Systemic immunity-inflammation index.

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Conflict of interest statement

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

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Chest

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. 2025 Apr 22:S0012-3692(25)00518-5.

doi: 10.1016/j.chest.2025.04.017. Online ahead of print.

[Lung Quantitative Computed Tomography Textures are Associated with Systemic Inflammation and Mortality in COPD](#)

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Affiliations Expand

- PMID: 40268239
- DOI: [10.1016/j.chest.2025.04.017](https://doi.org/10.1016/j.chest.2025.04.017)

Abstract

Background: Chronic obstructive pulmonary disease (COPD) is characterized by persistent inflammation that is responsible for remodeling the bronchovascular bundles, which may lead to poor quality of life. Quantitative computed tomography (QCT) textures of the lung can capture local disease patterns of inflammation and related respiratory morbidity.

Research question: Are bronchovascular bundle textures, obtained from the adaptive multiple feature method (AMFM), associated with systemic inflammation, morbidity, and mortality in COPD?

Study design and methods: We analyzed data from the SPIROMICS (n = 2,981) and COPDGene (n = 10,305) studies. The predictors included two QCT biomarkers, the bronchovascular bundles (BVB) and CT density gradient (CTDG) textures, age, sex, BMI, race, smoking status, smoking pack-years, CT emphysema, and Pi10 (airway wall thickness). Outcomes included plasma biomarker concentrations from Meso Scale Discovery proteomics assays and complete blood counts, both as markers of inflammation, along with FEV₁, FEV₁/FVC ratio, SGRQ, 6MWD, and mMRC dyspnea scale. Associations of these QCT textures with FEV₁ decline and all-cause mortality were also investigated.

Results: Increased BVB texture was significantly associated with elevated neutrophil and monocyte counts, and the neutrophil-to-lymphocyte ratio (NLR), independent of clinical covariates, CT emphysema, and Pi10. Elevated CTDG was associated with increased neutrophil count, NLR, and tumor necrosis factor (TNF)- α . Increased CTDG and BVB textures were also associated with a lower FEV₁ and six-minute walk distance. CTDG at baseline was also associated with decline in FEV₁ at five-year follow-up in COPDGene. We observed a significant association of both BVB (HR_{SPIROMICS}=1.084, 95% CI: 1.035, 1.135, P<0.001; HR_{COPDGene}=1.106, 95% CI: 1.080, 1.131, P<0.001) and CTDG (HR_{SPIROMICS}=1.033, 95% CI: 1.003, 1.064, P=0.03; HR_{COPDGene}=1.079, 95% CI: 1.061, 1.096, P<0.001) textures with all-cause mortality independent of CT emphysema and Pi10.

Interpretation: QCT textures may provide imaging evidence of the spatial heterogeneity of lung inflammation and overall disease burden in COPD.

Keywords: CT density gradient texture; List: Quantitative computed tomography textures; bronchovascular bundles texture; chronic obstructive pulmonary disease; lung function decline; mortality; systemic inflammation.

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Randomized Controlled Trial

JMIR Mhealth Uhealth

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. 2025 Apr 23:13:e56318.

doi: 10.2196/56318.

[A Smartphone App Self-Management Program for Chronic Obstructive Pulmonary Disease: Randomized Controlled Trial of Clinical Outcomes](#)

[Lisa Glynn](#) ^{#1 2}, [Eddie Moloney](#) ^{#2 3}, [Stephen Lane](#) ^{2 3}, [Emma McNally](#) ^{2 3}, [Carol Buckley](#) ², [Margaret McCann](#) ³, [Catherine McCabe](#) ^{#3}

Affiliations Expand

- PMID: 40267465
- DOI: [10.2196/56318](#)

Free article

Abstract

Background: Chronic obstructive pulmonary disease (COPD) negatively impacts clinical health outcomes, resulting in frequent exacerbations, increased hospitalizations, reduced physical activity, deteriorated quality of life, and diminished self-efficacy. Previous studies demonstrated that a self-management program tailored for adults with COPD improves self-management decisions, resulting in a positive effect on clinical health outcomes. Limitations of these studies include issues regarding heterogeneity among interventions used, patient population characteristics, outcome measures, and longitudinal studies. Limited studies focused on the use of a comprehensive self-management program using a smartphone app for adults with COPD over 12 months.

Objective: This study aimed to explore the effectiveness of a smartphone app self-management program and monthly phone calls compared with standard respiratory outpatient care on clinical health outcomes in adults with COPD.

Methods: This was a 3-arm parallel pilot randomized controlled trial (RCT) that included 92 participants. Participants were randomized into intervention arm 1, which included a self-management smartphone app and monthly phone calls (n=31); intervention arm 2, which included a self-management smartphone app (n=31); and arm 3, which was standard respiratory outpatient care (n=30). All arms received standard respiratory outpatient care. The primary outcome was a binary indicator equal to 1 if participants reported attendance to a general practitioner (GP) and or a hospital setting as a result of an exacerbation and 0 otherwise. This indicator was recorded at 6 months and 12 months from the baseline. Secondary outcomes included engagement, breathlessness, physical activity, health-related quality of life, and self-efficacy.

Results: There was a statistically significant difference (P=.03), indicating fewer exacerbations in the intervention arm 2 compared with the control arm at 6 months in the hospital setting. The intervention arms had a statistically significant difference indicating a lower risk of developing an exacerbation at 6 months in both

the GP ($P=.01$) and hospital setting ($P=.006$) compared to the control arm. Furthermore, intervention arm 1 demonstrated a statistically significant difference in exercise capacity at 6 and 12 months ($P=.02$ and $P=.03$). The intervention arm 2 illustrated a statistically significant difference in step count ($P=.009$) compared to the control arm. The majority of participants (60%, 33/55) used the app over the 12-month period.

Conclusions: This study demonstrated that a smartphone app self-management program had a positive effect on clinical health outcomes for participants with COPD in comparison to standard respiratory outpatient care. This study illustrated benefits such as reduced exacerbations resulting in fewer hospitalizations, improved exercise capacity, and physical activity among the intervention arms. This was a single-center study, which was limited in power to demonstrate significant effects on all measured outcomes but paves the way for a larger, fully powered multicenter trial exploring the effect of a smartphone app self-management program on clinical health outcomes in adults with COPD.

Trial registration: ClinicalTrials.gov [NCT05061810](https://clinicaltrials.gov/study/NCT05061810);
<https://clinicaltrials.gov/study/NCT05061810>.

Keywords: COPD; RCT; app; application; applications; apps; chronic obstructive pulmonary disease; clinical health; clinical health outcomes; effectiveness; hospital; hospital setting; hospitals; intervention; interventions; mhealth; mobile health; mobile phone; patient; patients; quality of life; randomised controlled trial; self-efficacy; self-management; smartphone; smartphone application.

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Supplementary info

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J Allergy Clin Immunol

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. 2025 Apr 23:S0091-6749(25)00004-1.

doi: 10.1016/j.jaci.2024.12.1086. Online ahead of print.

[Clarification of the efficacy of tezepelumab in the phase 2a COURSE trial](#)

[Dave Singh](#)¹, [MeiLan K Han](#)², [Jean-Pierre Llanos](#)³, [Neil Martin](#)⁴, [Amit Parulekar](#)⁵, [Konstantinos Kostikas](#)⁶, [Sandhia S Ponnarambil](#)⁷

Affiliations Expand

- PMID: 40266168
- DOI: [10.1016/j.jaci.2024.12.1086](https://doi.org/10.1016/j.jaci.2024.12.1086)

No abstract available

Conflict of interest statement

Disclosure statement Disclosure of potential conflict of interest: D. Singh has received personal fees from Adovate, Aerogen, Ammirall, Apogee, Arrowhead, AstraZeneca, Bial, Boehringer Ingelheim, Chiesi, Cipla, CONNECT Biopharm, Covis, CSL Behring, DevPro Biopharma LCC, Elpen, Empirico, EpiEndo, Genentech, Generate Biomedicines, GSK, 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. M. K. Han has received grant support from the American Lung Association, AstraZeneca, Biodesix, Boehringer Ingelheim, the COPD Foundation, Gala Therapeutics, Novartis, Nuvaira, Sanofi, Sunovion, and the US National Institutes of Health; royalties from Penguin Random House, UpToDate, and W.W. Norton and Company; consultancy fees from Aerogen, Altesa BioSciences, Amgen, Apreo Health, AstraZeneca, Boehringer Ingelheim, DevPro Biopharma, Genentech, GSK, Merck, Mylan, Novartis, Polarion, Pulmonx, Regeneron Pharmaceuticals, Roche, RS BioTherapeutics, Sanofi, Teva Pharmaceuticals, and Verona Pharma; personal fees from AstraZeneca, Boehringer Ingelheim, GSK and Novartis; speaker fees from AstraZeneca, Boehringer Ingelheim, Chiesi, Cipla, GSK, Integrity, Medscape, MedWiz Pharmacy, and the National Association for Continuing Education; and fees for advisory board participation from Medtronic and Novartis; in addition, she owns stock in Altesa BioSciences and Meissa Vaccines and has leadership or fiduciary roles in the American Lung Association (advisory committee and volunteer spokesperson), the American Thoracic Society (journal editor), the COPD Foundation (scientific committee and board member), and the Global Initiative for Chronic Obstructive Lung Disease (scientific committee member). J.-P. Llanos is an employee of Amgen and owns stock in Amgen. N. Martin, A. Parulekar, and S. S. Ponnarambil are employees of AstraZeneca and may own stock or stock options in AstraZeneca. K. Kostikas is an employee of AstraZeneca and has received fees for lectures and/or consultancy fees from AstraZeneca, Boehringer Ingelheim, Chiesi, ELPEN, GSK, Menarini, Pfizer, Sanofi, and Specialty Therapeutics.

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. 2025 Apr 22;11(2):00744-2024.

doi: 10.1183/23120541.00744-2024. eCollection 2025 Mar.

[Accuracy of early warning scores for predicting clinical worsening in COPD patients](#)

[Enrique Castro-Portillo](#)^{1 2}, [Joan B Soriano](#)^{3 4 5 2}, [Raúl López-Izquierdo](#)^{5 6 7}, [Carlos Del Pozo Vegas](#)^{6 8}, [José L Martín-Conty](#)^{9 10 11}, [Irene Sánchez Soberón](#)¹², [Juan F Delgado Benito](#)¹², [Begoña Polonio-López](#)^{9 10 11}, [Manuel Sánchez-de-la-Torre](#)^{5 13 14}, [Miguel A Castro Villamor](#)^{6 15}, [Ancor Sanz-García](#)^{9 10 11 16}, [Francisco Martín-Rodríguez](#)^{6 12 16}

Affiliations Expand

- PMID: 40264458
- PMCID: [PMC12012928](#)
- DOI: [10.1183/23120541.00744-2024](#)

Abstract

Background: COPD, a condition whose acute exacerbations (AECOPD) are commonly faced by the emergency medical services (EMSs), could modify the performance of early warning scores (EWSs). Our objectives were to assess the 2-day mortality predictive performance of five EWSs in patients with baseline COPD managed by an EMS with unselected acute diseases and to compare the EWS performance between those with AECOPD and those without.

Methods: This was a prospective observational study of adults (age >18 years) with a previous COPD diagnosis who were admitted to and transferred to the emergency department by the EMSs due to an unselected acute disease, whether AECOPD or

other according to the emergency medical team. Demographics, vital signs for the five EWSs (National Early Warning Score 2 (NEWS2), quick Sequential (Sepsis-related) Organ Failure Assessment (qSOFA), quick COVID-19 Severity Index (qCSI), CURB-65 score for pneumonia severity and BAP-65 score for AECOPD) calculations and outcomes (hospital and intensive care unit (ICU) admission and 2-day mortality) were collected.

Results: A total of 1703 patients with COPD were selected: 524 with AECOPD and 1179 without. NEWS2 presented the highest predictive capacity for the global, AECOPD and non-AECOPD cohorts: area under the curve 0.880 (95% CI 0.84-0.91), 0.775 (95% CI 0.68-0.86) and 0.913 (95% CI 0.86-0.96), respectively.

Conclusions: NEWS2 was the best predictive model for COPD, presenting excellent performance for the global and non-AECOPD cohorts but a decreased performance for the AECOPD cohort. Therefore, NEWS2 may aid in EMS decision making through appropriate risk assessment, but its use in COPD patients with AECOPD should be handled with care due to decreased performance.

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Conflict of interest statement

Conflict of interest: All authors report no conflicts of interest.

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

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Eur J Med Res

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. 2025 Apr 22;30(1):316.

doi: 10.1186/s40001-025-02595-3.

[Neutrophil-to-lymphocyte ratio as a prognostic marker for lung cancer in combined pulmonary fibrosis and emphysema patients](#)

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Affiliations Expand

- PMID: 40264240
- PMCID: [PMC12013058](#)
- DOI: [10.1186/s40001-025-02595-3](#)

Abstract

Background: Combined pulmonary fibrosis and emphysema (CPFE) represents a distinct clinical syndrome characterized by the coexistence of upper lobe emphysema and lower lobe fibrosis, with an increased risk of lung cancer (LC) development. This study aimed to detect the clinical features and prognosis of CPFE patients with LC and the ability of neutrophil-to-lymphocyte ratio (NLR) to predict outcomes in those individuals.

Methods: A retrospective cohort study involving patients diagnosed with CPFE combined with LC between January 2017 and December 2023 was conducted. Clinical characteristics, laboratory parameters and survival data were collected.

Results: A total of 80 CPFE patients with LC were included, with a mean age of 68.1 years, and a male predominance (93.8%). The LCs were predominantly adenocarcinomas (38.8%), with a significant proportion diagnosed at advanced stages (22.5% at stage III, 47.5% at stage IV) and preferential peripheral pulmonary localization (72.5%). CPFE patients with LC had estimated 1-year, 3-year, and 5-year survival rates of 52%, 40%, and 37%, respectively, with a median overall survival of 29.2 months. Multivariate Cox regression analysis revealed that increased NLR [adjusted hazard ratio (HR) 1.180, 95% confidence interval CI 1.029-1.352, $p = 0.018$] and elevated carcinoembryonic antigen (CEA) (adjusted HR 1.005, 95% CI 1.000-1.010, $p = 0.036$) were related to an enhanced risk of all-cause mortality. Receiver-operating characteristic analysis identified an NLR cutoff value of 2.6 as a predictor of all-cause death within 24 months [area under the curve = 0.651; specificity = 62.1%; sensitivity = 66.6%; $p < 0.05$]. Patients with an NLR greater than 2.6 had a significantly greater risk of all-cause death than those with an NLR of 2.6 or less (adjusted HR 2.3, 95% CI 1.197-4.754; $p = 0.011$).

Conclusions: The NLR may serve as a cost-effective and widely accessible biomarker for risk stratification, particularly in CPFE patients with advanced-stage LC. In our cohort, an NLR cutoff value of 2.6 provides improved prognostic accuracy in predicting mortality outcomes.

Keywords: Combined pulmonary fibrosis and emphysema; Lung cancer; Neutrophil-to-lymphocyte ratio; Overall survival.

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Conflict of interest statement

Declarations. Ethics approval and consent to participate: This study was approved by the ethics committee of the First Affiliated Hospital with Nanjing Medical University (2024-SR-877), which waived the requirement for informed consent due to the retrospective study design. **Consent for publication:** Not applicable. **Competing interests:** The authors declare no competing interests.

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

Supplementary info

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Semin Respir Crit Care Med

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. 2025 Apr 22.

doi: 10.1055/a-2531-1166. Online ahead of print.

[Obstructive Sleep Apnea and Chronic Obstructive Pulmonary Disease Overlap Syndrome](#)

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Affiliations Expand

- PMID: 40262777
- DOI: [10.1055/a-2531-1166](#)

Abstract

The coexistence of chronic obstructive pulmonary disease (COPD) and obstructive sleep apnea (OSA) in the same patients is defined as COPD/OSA overlap syndrome (OVL). OSA and sleep complaints are quite common among COPD patients and

contribute to an increase in the risk of COPD exacerbation and mortality. Patients with OVL are more likely to develop cardiometabolic disease than patients with OSA or COPD alone. We must consider OSA as a treatable trait since the use of positive pressure ventilation reduces severe exacerbations, all-cause hospitalizations, and mortality in patients with COPD.

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Conflict of interest statement

None declared.

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Emerg Microbes Infect

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. 2025 Apr 22:2497302.

doi: 10.1080/22221751.2025.2497302. Online ahead of print.

[Prevalence and treatment outcomes of latent tuberculosis infection among older patients with chronic obstructive pulmonary disease in an area with intermediate tuberculosis burden](#)

[Hung-Ling Huang](#)^{1 2 3 4}, [Meng-Hsuan Cheng](#)^{1 2 3 5}, [Meng-Rui Lee](#)^{6 7 8}, [Jung-Yien Chien](#)^{7 8}, [Po-Liang Lu](#)^{2 4}, [Chau-Chyun Sheu](#)^{1 2 3}, [Jann-Yuan Wang](#)^{7 9}, [Inn-Wen Chong](#)^{1 3}, [Jinn-Moon Yang](#)¹⁰, [Wei-Chang Huang](#)^{11 12 13 14}

Affiliations Expand

- PMID: 40262275
- DOI: [10.1080/22221751.2025.2497302](https://doi.org/10.1080/22221751.2025.2497302)

Free article

Abstract

ABSTRACTChronic obstructive pulmonary disease (COPD) and aging both increase the risk of tuberculosis (TB), an important infectious disease in human. Exploring the burden and predictors of latent tuberculosis infection (LTBI) and treatment outcomes for older individuals with COPD is essential to guide LTBI intervention policy. We enrolled patients aged over 60 years with COPD between January 2021 and June 2023 for LTBI screening using interferon-gamma release assay (IGRA). LTBI treatment options included all WHO-recommended regimens. The final regimen was selected through shared decision-making between patients and their COPD physicians, leveraging the long-standing rapport being established. We investigated the prevalence of LTBI in this population, identified risk factors using logistic regression analysis, and evaluated treatment outcomes. A total of 810 COPD patients (mean: 72.8-years) underwent LTBI screening, with an IGRA-positive rate of 23.8%. IGRA positivity was correlated with smoking pack-years (adjusted odds ratio [aOR]: 1.02, $p < 0.001$), current smoking status (aOR 1.40, $p = 0.030$), COPD duration (aOR 1.10, $p = 0.03$), inhaled corticosteroid use (aOR 3.06, $p < 0.001$), and a cumulative equivalent dose of prednisolone exceeding 210 mg over 2 years (aOR 3.13, $p < 0.001$). Treatment was initiated in 150 patients (77.7%), predominantly with weekly rifapentine plus isoniazid (3HP) (60.7%). The overall completion rate was 82.0%, with adverse reactions being the primary reason for discontinuation. Our findings support that the LTBI intervention is recommended for older patients with COPD, especially those at higher risk, as nearly 25% of them have tuberculosis infection. The high treatment completion rate highlights the safety and feasibility of the WHO-recommended regimens.

Keywords: chronic obstructive pulmonary disease; latent tuberculosis infection; prevalence; preventive therapy; safety.

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Ann Phys Rehabil Med

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. 2025 Apr 21;68(6):101977.

doi: 10.1016/j.rehab.2025.101977. Online ahead of print.

[Access to respiratory rehabilitation in France: Opinions of pulmonologists and people with chronic obstructive pulmonary disease](#)

[Marina Gueçamburu](#)¹, [Jean-Marie Grosbois](#)², [Odile Sauvaget](#)³, [Jésus Gonzalez-Bermejo](#)⁴, [Amandine Rapin](#)⁵, [Arthur Pavot](#)⁶, [Pauline Henrot](#)⁶, [Mathieu Delorme](#)⁷, [Grégory Reychler](#)⁸, [Frédéric Costes](#)⁹, [Maéva Zysman](#)⁶

Affiliations Expand

- PMID: 40262253
- DOI: [10.1016/j.rehab.2025.101977](https://doi.org/10.1016/j.rehab.2025.101977)

Abstract

Despite its well-known benefits, respiratory rehabilitation (RR) remains underutilized among people with chronic obstructive lung disease (COPD) due to both patient- and physician-related barriers. This qualitative study (October 2023-March 2024) used two questionnaires: one for people with COPD to assess disease severity and access challenges, and another for pulmonologists to identify prescription obstacles. Distributed via associations and mailing lists, the survey reached 3,000 people with COPD and 500 pulmonologists, revealing shared concerns about facility shortages, poor information, and transportation issues. Enhancing RR access through better training, patient education, and expanded facilities should be a public health priority.

Keywords: Access barriers; Chronic obstructive pulmonary disease; Comorbidities; Pulmonologist; Respiratory rehabilitation.

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Conflict of interest statement

Competing interest JGB received fees from home respiratory devices manufactures for courses and expert board (Air Liquide, Lowenstein, Breas). PH reports grants from Avad and non-financial support from GSK, Chiesi and Avad, outside the submitted work. MD reports consulting fees from Air Liquide Medical Systems, GSK, ResMed SAS; payment of honoraria for lectures, presentations, speakers, bureaus, manuscript writing of educational events from Air Liquide Medical Systems and Breas Medical AB; support for attending meetings and/or travel from ISIS Médical; receipt equipment for his institution from L3 Médical, ISIS Médical, Fisher and Paykel, SOS Oxygène, Air Liquid Medical Systems. FC reports payment or honoraria for lectures, presentations, speakers bureaus, manuscript writing, or educational events from Glaxo Smith Kline, Astra Zeneca, Sanofi, Menarini, Chiesi, Vitalair, Elivie Santé; support for attending meetings and/or travel from Glaxo Smith Kline, Chiesi. MZ reports grants or contracts from AVAD (INSERM U1045); payment or honoraria for lectures, presentations, speakers bureaus, manuscript writing, or educational events from CSL Behring, GSK, Boeringer Ingelheim, AstraZeneca, Menarini, Sanofi; Support for attending meetings and/or travel from Chiesi, AstraZeneca, Sanofi. The remaining authors declare that they have no relevant conflicts of interest.

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Emerg Radiol

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. 2025 Apr 22.

doi: 10.1007/s10140-025-02343-4. Online ahead of print.

[Point-of-care lung ultrasound - a rapid and reliable diagnostic tool for emergency physicians treating patients with acute dyspnea in high-volume emergency departments](#)

[Irina Ciumanghel](#) ^{#1 2}, [Eliza Barbuta](#) ^{#1 2}, [Adi-Ionut Ciumanghel](#) ^{3 4}, [Iulian Buzincu](#) ^{1 5}, [Gabriela Grigorasi](#) ^{1 2}, [Diana Cimpoesu](#) ^{1 2}

Affiliations Expand

- PMID: 40261500
- DOI: [10.1007/s10140-025-02343-4](#)

Abstract

Purpose: Acute dyspnea is a common presenting symptom in the Emergency Department (ED). The study aims to assess the concordance between emergency physician diagnosis (i.e., initial rapid assessment at ED admission including point-of-care lung ultrasound - PoC-LUS) and attending physician diagnosis (i.e., hospital admission diagnosis which also includes CT scans) in patients presenting with dyspnea.

Method: We performed a prospective pilot observational study in the ED of tertiary care university hospital between 31.01.2022 and 03.09.2024. We included dyspneic patients presented when the physician involved in the study was on call.

Results: A total of 103 patients were included (mean age, 70±16.1 years). An excellent agreement was found between emergency physician and attending physician diagnosis for all etiologies of dyspnea: pleural effusion (Cohen's kappa coefficient 1 for bilateral, 0.844 for right, 0.790 for left pleural effusion), pneumonia ($\kappa = 0.979$ for right, $\kappa = 0.930$ for left pneumonia), bronchopneumonia ($\kappa = 0.912$), acute pulmonary edema ($\kappa = 1$), chronic obstructive pulmonary disease exacerbation ($\kappa = 0.904$), pleuropulmonary tumors ($k = 0.884$), acute respiratory

distress syndrome - ARDS ($\kappa = 1$), ($p < 0.001$ for all). The median(\pm SD) time needed to complete the emergency physician diagnosis was 16(\pm 4) minutes and the median(\pm SD) time needed to complete the attending physician diagnosis was 480(\pm 112) minutes.

Conclusion: In patients presenting in the ED with dyspnea, PoC-LUS guided emergency physician diagnosis has a very good diagnosis performance. The time needed to complete the emergency physician diagnosis is much lower than the time needed to complete the attending physician diagnosis. Given its availability, PoC-LUS is a useful tool for the assessment of patients presenting with dyspnea.

Keywords: Acute dyspnea; Emergency physician; Lung ultrasound; Point-of-care lung ultrasound.

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Conflict of interest statement

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

- [22 references](#)

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BMC Palliat Care

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. 2025 Apr 21;24(1):106.

doi: 10.1186/s12904-025-01743-0.

[Empowering nurses to provide palliative care for COPD patients in a pulmonary department: participatory action research](#)

[Narjes Heshmatifar](#)¹, [Mahnaz Amini](#)², [Hamid Reza Zنده Talab](#)³, [Zahra Sadat Manzari](#)⁴

Affiliations Expand

- PMID: 40259300

- PMID: [PMC12013196](#)
- DOI: [10.1186/s12904-025-01743-0](#)

Abstract

Background: Chronic obstructive pulmonary disease (COPD) affects the quality of life of patients and their caregivers. Although palliative care can improve quality of life, COPD patients and their caregivers have limited access to palliative care services. This study was conducted to empower nurses to provide palliative care to COPD patients in the pulmonary department.

Methods: This participatory action research (PAR) was conducted in four steps: observation, reflection, planning, and action. Participants included all nurses (n = 18) who provided PC to COPD patients in the pulmonary department. The research team, physicians and managers, and a multiprofessional palliative care team formed the core PAR team. The data were collected via PCKT, FATCOD-B, and PCPS questionnaires about palliative care, interviews, focus groups, and observation. Qualitative content analysis and paired t-tests were used for data analysis.

Results: Three major themes emerged: professional incompetence in palliative care, basic shortages in palliative care, and a lack of professional support. Three changes were made including enhancing palliative care knowledge, establishing a palliative care team, and increasing career motivation. There were significant increases in PCKT, FATCOD-B, and PCPS scores before and after PAR ($p = 0.000$).

Conclusion: Given the importance of providing palliative care, necessary measures, including PC training, and promoting inter professional collaboration and as well as motivating staff, should be taken by health managers.

Keywords: COPD; Nurse; Palliative care; Participatory action research.

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Conflict of interest statement

Declarations. Ethics approval and consent to participate: The study has been approved by the Research Ethics Committee of Mashhad University (IR.MUMS.REC.1402.007). All the necessary permissions were obtained from Mashhad University of Medical Sciences and Imam Reza Hospital. Data confidentiality was strictly maintained and all data was anonymized. The authors confirm that written informed consent was obtained from all participants. Helsinki declaration in ethical codes was respected in all the stages of the study. Consent for publication: All authors have provided their consent for publication. Competing interests: The authors declare no competing interests.

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- [2 figures](#)

Supplementary info

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Randomized Controlled Trial

BMC Pulm Med

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. 2025 Apr 21;25(1):185.

doi: 10.1186/s12890-025-03656-3.

[Effect of home noninvasive positive pressure ventilation combined with pulmonary rehabilitation on dyspnea severity and quality of life in patients with severe stable chronic obstructive pulmonary disease combined with chronic type II respiratory failure: a randomized controlled trial](#)

[Shu Xie](#)^{#1}, [Xiaoping Li](#)^{#1}, [Yanfeng Liu](#)¹, [Jian Huang](#)¹, [Fangying Yang](#)²

Affiliations Expand

- PMID: 40259286
- PMCID: [PMC12013138](#)
- DOI: [10.1186/s12890-025-03656-3](#)

Abstract

Background: Chronic obstructive pulmonary disease (COPD) is a progressive respiratory condition that significantly affects patients' quality of life. Non-invasive positive pressure ventilation (NPPV) and pulmonary rehabilitation have both shown promise in improving symptoms and lung function in COPD patients. However, the

combined effects of home-based pulmonary rehabilitation and NPPV on moderate to severe COPD patients remain unclear.

Objective: This study aimed to evaluate the efficacy of home pulmonary rehabilitation combined with non-invasive positive pressure ventilation (CPRNG group) compared to conventional treatment (CTG group) in patients with moderate to severe COPD.

Methods: A total of 269 patients with moderate to severe COPD were enrolled, with 137 patients in the CTG group and 132 in the CPRNG group. The primary outcome measures included the COPD assessment test (CAT) score, modified medical research council scale (mMRC) score, forced expiratory volume in one second (FEV₁) percentage, 6-min walk test, and arterial oxygen pressure (PaO₂). Secondary outcomes included various dimensions of quality of life (impact, symptoms, and activity) measured through patient-reported outcomes.

Results: Baseline comparisons between groups showed no significant differences in sociodemographic characteristics, disease duration, or symptoms. The CPRNG group showed significant improvements compared to the CTG group in the CAT score ($p = 0.028$), mMRC score ($p = 0.015$), FEV₁% ($p = 0.008$), 6-min walk test ($p = 0.001$), and PaO₂ ($p < 0.001$). Additionally, improvements in impact, symptoms, activity, and overall scores were significantly better in the CPRNG group ($p < 0.05$).

Conclusions: Home pulmonary rehabilitation combined with non-invasive positive pressure ventilation significantly improves multiple dimensions of quality of life, particularly in controlling symptoms and enhancing daily activities in COPD patients. This combined therapy proves to be an effective treatment strategy, offering notable benefits in lung function, exercise capacity, and overall quality of life in COPD patients.

Trial registration: The clinical trial was registered retrospectively on the Chinese Clinical Trial Registry (ChiCTR, www.chictr.org.cn ID: ChiCTR2500096605) on 2025-01-26, as required by The Fourth Hospital of Institutional (Changsha Fourth Hospital, Hunan Province, China) Review Board guidelines. Ethics approval date: January 2023 to December 2025.

Keywords: COPD; Lung function; Non-invasive ventilation; Pulmonary rehabilitation; Quality of life.

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Conflict of interest statement

Declarations. Ethics approval and consent to participate: The study was conducted in accordance with the Declaration of Helsinki, and approved by the Institutional Review Board (or Ethics Committee) of Changsha Fourth Hospital. Ethics Review Number: CSSDSYY-LLSC-KYXM-2022-5-71. Informed consent was obtained from all subjects involved in the study. Consent for publication: Not applicable. Competing interests: The authors declare no competing interests.

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- [1 figure](#)

Supplementary info

Publication types, MeSH terms, Grants and fundingExpand

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Expert Rev Respir Med

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. 2025 Apr 23:1-10.

doi: 10.1080/17476348.2025.2493367. Online ahead of print.

[Ensifentrine vs placebo for chronic obstructive pulmonary disease: a systematic review and meta-analysis of randomized clinical trials](#)

[Giulia Carvalhal](#)¹, [Gonzalo Alberto Peralta-Jiménez](#)², [Maria Meritxell Roca Mora](#)³, [Laith Ayasa](#)^{4 5}, [Vivian Barrera](#)⁶, [Kavita Advani](#)⁷, [Antonio Anzueto](#)⁸, [Jafar Aljazeera](#)^{9 10}

Affiliations Expand

- PMID: 40252011
- DOI: [10.1080/17476348.2025.2493367](https://doi.org/10.1080/17476348.2025.2493367)

Abstract

Introduction: To evaluate the efficacy and safety of ensifentrine in chronic obstructive pulmonary disease (COPD).

Methods: We searched electronic databases and registries until 25 January 2025, for randomized clinical trials (RCTs) comparing ensifentrine vs placebo in patients with COPD. Primary outcomes include forced expiratory volume in one second (FEV₁) area under the curve (AUC), peak FEV₁, and morning trough FEV₁.

Results: Ten RCTs involving 2,589 patients were included. Compared with placebo, ensifentrine improved FEV₁ AUC by 104.24 ml (95% CI, 74.03 to 133.44; moderate certainty) on day 1 and by 90.37 ml (95% CI, 54.94 to 125.81; moderate certainty) at study end. Ensisfentrine increased peak FEV₁ by 140.99 ml on day 1 (95% CI, 107.48 to 174.5; moderate certainty) and by 118.98 ml at the final assessment (95% CI, 86.49 to 151.47; moderate certainty). Ensisfentrine improved morning trough FEV₁ by 42.15 ml (95% CI, 19.87 to 64.43; high certainty). Dose-response analysis showed a bell-shaped curve for all outcomes. Ensisfentrine did not significantly differ from placebo in adverse events or improvements in COPD symptoms and quality of life.

Conclusions: Compared with placebo, ensifentrine improved lung function in COPD. Larger RCTs are needed to integrate this bronchodilator benefit with patient-centered outcomes.

Prospero registration: CRD42024571928.

Keywords: COPD; Chronic obstructive pulmonary disease; ensifentrine; meta-analysis; randomized controlled trials.

Supplementary info

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Review

Expert Rev Respir Med

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. 2025 Apr 23:1-6.

doi: 10.1080/17476348.2025.2494643. Online ahead of print.

[Recent discoveries from clinical trials: why opioids should not be used for dyspnea management in COPD](#)

[Nicholas T Vozoris](#) ¹²³⁴

Affiliations Expand

- PMID: 40247669
- DOI: [10.1080/17476348.2025.2494643](https://doi.org/10.1080/17476348.2025.2494643)

Abstract

Introduction: Chronic breathlessness among persons with chronic obstructive pulmonary disease (COPD) is a distressing and limiting symptom and a substantial management challenge for healthcare practitioners. Historically, multiple professional respiratory societies have encouraged the prescription of opioid drugs as a therapeutic intervention for chronic breathlessness. However, in 2024, the European Respiratory Society (ERS) published clinical practice guidelines that markedly departed from such traditional recommendations and stated that opioids should not be used for chronic breathlessness.

Areas covered: This manuscript will review recently published, well-designed, randomized controlled trials (literature was searched on PubMed from January 2020 to January 2025) that evaluated the efficacy of oral opioids for chronic breathlessness in persons with COPD and which influenced the new position adopted by ERS in 2024.

Expert opinion: Recent, well-designed, adequately powered clinical trials consistently demonstrate that oral opioids are not effective at reducing chronic breathlessness (nor at improving overall quality of life, functional status or exercise tolerance) amongst individuals with advanced COPD. Other professional respiratory societies need to consider and potentially embrace the new ERS position on opioids for dyspnea in COPD, so as to guide members away from an unhelpful, and in some cases harmful, management paradigm.

Keywords: COPD; Chronic breathlessness; drug efficacy; opioids; randomized controlled trials; refractory dyspnea.

Supplementary info

Publication typesExpand

Full text links



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

JMIR Cardio

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. 2025 Apr 25:9:e57749.

doi: 10.2196/57749.

[Co-Occurring Diseases and Mortality in Patients With Chronic Heart Disease, Modeling Their Dynamically Expanding Disease Portfolios: Nationwide Register Study](#)

[Nikolaj Normann Holm¹](#), [Anne Frølich^{2,3}](#), [Helena Dominguez⁴](#), [Kim Peder Dalhoff^{5,6}](#), [Helle Gybel Juul-Larsen⁷](#), [Ove Andersen^{6,7,8}](#), [Anders Stockmarr¹](#)

Affiliations Expand

- PMID: 40279150
- DOI: [10.2196/57749](#)

Abstract

Background: Medical advances in managing patients with chronic heart disease (HD) permit the co-occurrence of other chronic diseases due to increased longevity, causing them to become multimorbid. Previous research on the effect of co-occurring diseases on mortality among patients with HD often considers disease counts or clusters at HD diagnosis, overlooking the dynamics of patients' disease portfolios over time, where new chronic diseases are diagnosed before death. Furthermore, these studies do not consider interactions among diseases and between diseases, biological and socioeconomic variables, which are essential for addressing health disparities among patients with HD. Therefore, a mapping of the effect of combinations of these co-occurring diseases on mortality among patients with HD considering such interactions in a dynamic setting is warranted.

Objective: This study aimed to examine the effect of the co-occurring diseases of patients with HD on mortality, modeling their dynamically expanding chronic disease portfolios while identifying interactions between the co-occurring diseases, socioeconomic and biological variables.

Methods: This study used data from the national Danish registries and algorithmic diagnoses of 15 chronic diseases to obtain a study population of all 766,596 adult patients with HD in Denmark from January 1, 1995, to December 31, 2015. The time from HD diagnosis until death was modeled using an extended Cox model involving chronic diseases and their interactions as time-varying covariates. We identified interactions between co-occurring diseases, socioeconomic and biological variables in a data-driven manner using a hierarchical forward-backward selection procedure and stability selection. We mapped the impact on mortality of (1) the most common disease portfolios, (2) the disease portfolios subject to the highest

level of interaction, and (3) the most severe disease portfolios. Estimates from interaction-based models were compared to an additive model.

Results: Cancer had the highest impact on mortality (hazard ratio=6.72 for male individuals and 7.59 for female individuals). Excluding cancer revealed schizophrenia and dementia as those with the highest mortality impact (top 5 hazard ratios in the 11.72-13.37 range for male individuals and 13.86-16.65 for female individuals for combinations of 4 diseases). The additive model underestimated the effects up to a factor of 1.4 compared to the interaction model. Stroke, osteoporosis, chronic obstructive pulmonary disease, dementia, and depression were identified as chronic diseases involved in the most complex interactions, which were of the fifth order.

Conclusions: The findings of this study emphasize the importance of identifying and modeling disease interactions to gain a comprehensive understanding of mortality risk in patients with HD. This study illustrated that complex interactions are widespread among the co-occurring chronic diseases of patients with HD. Failing to account for these interactions can lead to an oversimplified attribution of risk to individual diseases, which may, in cases of multiple co-occurring diseases, result in an underestimation of mortality risk.

Keywords: chronic heart disease; interaction effects; multimorbidity; survival analysis; time-varying covariates.

©Nikolaj Normann Holm, Anne Frølich, Helena Dominguez, Kim Peder Dalhoff, Helle Gybel Juul-Larsen, Ove Andersen, Anders Stockmarr. Originally published in JMIR Cardio (<https://cardio.jmir.org>), 25.04.2025.

Supplementary info

MeSH termsExpand

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J Affect Disord

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. 2025 Apr 22:S0165-0327(25)00697-4.

doi: 10.1016/j.jad.2025.04.122. Online ahead of print.

[A network analysis of depressive symptoms and cognitive performance in older adults with multimorbidity: A nationwide population-based study](#)

[Ting Zheng](#)¹, [Xiao Zheng](#)², [Benli Xue](#)³, [Shujuan Xiao](#)³, [Chichen Zhang](#)⁴

Affiliations Expand

- PMID: 40274116
- DOI: [10.1016/j.jad.2025.04.122](https://doi.org/10.1016/j.jad.2025.04.122)

Abstract

Background: Depression and cognitive impairment are prevalent mental health issues. Older adults in China exhibits a higher prevalence of multimorbidity, which is linked to an increased risk of depression and cognitive impairment. This study aims to investigate association between depressive symptoms and cognitive impairment in older adults with multimorbidity using network analysis, and to identify important bridge symptoms as potential intervention targets.

Method: The study included 5729 individuals aged 60 years and above with multimorbidity, drawn from the China Health and Retirement Longitudinal Survey (CHARLS) dataset. Depressive symptoms and cognitive performance were assessed utilizing the CESD-10 (10-item Center for Epidemiologic Studies Depression) and MMSE (Mini Mental State Examination) scales, respectively. We constructed a network structure of depressive symptoms and cognitive performance, and calculated index of strength and bridge strength for each symptom. Furthermore, a comparative analysis of the network structure across gender and age groups were conducted.

Results: D3 (Felt depressed), C1 (Orientation), and D10 (Could not get going) were identified as the central symptoms of the depressive symptoms - cognitive performance network. C1 (Orientation), C5 (Linguistic skills), and D10 (Could not get going) were bridge symptoms connecting the two illnesses. Moreover, significant differences in edge weights were observed across gender and age groups.

Conclusions: The central symptoms and bridge symptoms in the network may represent the most effective intervention pathway for addressing cognitive impairment and depression in older adults with multimorbidity. Clinical interventions should properly focus on gender and age differences in symptom presentation.

Keywords: Cognitive performance; Depressive symptoms; Health management; Multimorbidity; Network analysis; Older adults.

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Conflict of interest statement

Declaration of competing interest The authors declare that they have no competing interests.

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

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Clin Pediatr (Phila)

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. 2025 Apr 24:99228251328157.

doi: 10.1177/00099228251328157. Online ahead of print.

[Comparison of Questionnaires in Childhood Asthma Control](#)

[Mehmet Karaci](#)¹, [Emre Akkelle](#)²

Affiliations Expand

- PMID: 40275603
- DOI: [10.1177/00099228251328157](https://doi.org/10.1177/00099228251328157)

Abstract

Asthma is the most common chronic disease in childhood. The aim of this study is to determine the control levels of asthma patients followed in our clinic and to see the results of different control tests. Patients aged 7 years and older were included in the study. To determine asthma control levels, patients were administered the Global Initiative for Asthma (GINA) control level and Asthma Control Questionnaire (ACQ) questionnaires. The study was conducted with a total of 90 patients, 52 (57.8%) male and 38 (42.2%) female. The most common allergen sensitivity was house dust mite with 76.7%. While there was a significant relationship between having a family history of atopy and the ACQ questionnaire ($P = .011$), this situation could not be detected in the GINA control questionnaire. Complete control rates in

GINA and ACQ were found to be 13.3% to 58.9%, respectively. It was observed that asthma control questionnaires had similar rates of capturing patients with full control and those without control.

Keywords: asthma; asthma control questionnaires; atopy; childhood; skin prick test.

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Editorial

Thorax

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. 2025 Apr 24:thorax-2025-223056.

doi: 10.1136/thorax-2025-223056. Online ahead of print.

[Is this the unified asthma guideline we've been waiting for?](#)

[Hitasha Rupani](#)^{1 2 3}

Affiliations Expand

- PMID: 40274413
- DOI: [10.1136/thorax-2025-223056](https://doi.org/10.1136/thorax-2025-223056)

No abstract available

Keywords: Asthma; Asthma Guidelines.

Conflict of interest statement

Competing interests: HR has received advisory board and speaker fees from GSK, Chiesi, AstraZeneca, Sanofi and Boehringer Ingelheim; conference support from AZ and Sanofi and grant funding to her institution from AZ and GSK.

Supplementary info

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Thorax

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. 2025 Apr 24:thorax-2024-222910.

doi: 10.1136/thorax-2024-222910. Online ahead of print.

[BTS/NICE/SIGN joint guideline on asthma: diagnosis, monitoring and chronic asthma management \(November 2024\) - summary of recommendations](#)

[British Thoracic Society \(BTS\); National Institute for Health and Care Excellence \(NICE\); Scottish Intercollegiate Guidelines Network \(SIGN\)](#)

- PMID: 40274410
- DOI: [10.1136/thorax-2024-222910](https://doi.org/10.1136/thorax-2024-222910)

No abstract available

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

Conflict of interest statement

Competing interests: None declared.

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Published Erratum

Eur Respir J

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. 2025 Apr 24;65(4):2352059.

doi: 10.1183/13993003.52059-2023. Print 2025 Apr.

["Epigenomic partitioning of a polygenic risk score for asthma reveals distinct genetically driven disease pathways." B. Stikker, L. Trap, B. Sedaghati-Khayat, et al. Eur Respir J 2024; 64: 2302059](#)

No authors listed

- PMID: 40274301
- PMCID: [PMC12018759](#)
- DOI: [10.1183/13993003.52059-2023](#)

No abstract available

Erratum for

- [Epigenomic partitioning of a polygenic risk score for asthma reveals distinct genetically driven disease pathways.](#)

Stikker B, Trap L, Sedaghati-Khayat B, de Bruijn MJW, van Ijcken WFJ, de Roos E, Ikram A, Hendriks RW, Brusselle G, van Rooij J, Stadhouders R. Eur Respir J. 2024 Aug 29;64(2):2302059. doi: 10.1183/13993003.02059-2023. Print 2024 Aug. PMID: 38901884 Free PMC article.

- [1 figure](#)

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Editorial

Eur Respir J

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. 2025 Apr 24;65(4):2500153.

doi: 10.1183/13993003.00153-2025. Print 2025 Apr.

[Lunsekimig's bispecific targeting of IL-13 and TSLP in asthma: dual targets for synergistic effects?](#)

[Mohamed-Ilias Kourid](#)¹, [Simon Couillard](#)²

Affiliations Expand

- PMID: 40274300
- DOI: [10.1183/13993003.00153-2025](https://doi.org/10.1183/13993003.00153-2025)

No abstract available

Conflict of interest statement

Conflict of interest: M-I. Kourid reports no conflict of interest. S. Couillard 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; 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; received speaker honoraria from AstraZeneca, GlaxoSmithKline, Sanofi-Regeneron and Valeo Pharma; received consultancy fees from FirstThought, AstraZeneca, GlaxoSmithKline, Sanofi-Regeneron, Access Biotechnology and Access Industries; has received

sponsorship to attend/speak at international scientific meetings by//for AstraZeneca and Sanofi-Regeneron; is an advisory board member and retains stock options for Biometry Inc., a company which is developing a FeNO device (myBiometry); 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; and is a member of the asthma steering committee of the Canadian Thoracic Society.

Comment on

- [A proof-of-mechanism trial in asthma with lunsekimig, a bispecific NANOBODY molecule.](#)

Deiteren A, Krupka E, Bontinck L, Imberdis K, Conickx G, Bas S, Patel N, Staudinger HW, Suratt BT. Eur Respir J. 2025 Apr 24;65(4):2401461. doi: 10.1183/13993003.01461-2024. Print 2025 Apr. PMID: 39884759 Free PMC article. Clinical Trial.

Supplementary info

Publication types Expand

Full text links



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J Pediatr Nurs

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. 2025 Apr 23:83:7-14.

doi: 10.1016/j.pedn.2025.04.019. Online ahead of print.

[The impact of education program on nurses' knowledge and performance about acute exacerbations of chronic bronchial asthma in PICUs](#)

[Amira Adel Mohammed](#)¹, [Salam Bani Hani](#)², [Abdulqadir J Nashwan](#)³

Affiliations Expand

- PMID: 40273678

- DOI: [10.1016/j.pedn.2025.04.019](https://doi.org/10.1016/j.pedn.2025.04.019)

Abstract

Background: Acute exacerbations of bronchial asthma can lead to worsening symptoms, therefore it's important to have a well-designed management program. Many pediatric nurses, particularly internship nurses and recently graduated nurses in the PICU, lacked adequate knowledge and performance in managing children with acute exacerbations.

Objective: This study aimed to assess nurses' knowledge and performances regarding acute exacerbations of chronic bronchial asthma.

Materials and methods: A quasi-experimental (pre/post-test) design at PICUs xxx and PICU at xxx University Hospital, Egypt. A convenience sample of sixty nurses was randomly split into two groups (30 internship nursing students at the PICU and 30 newly graduated registered nurses).

Results: The two groups under study had inadequate preprogram knowledge of acute exacerbations of chronic asthma. Compared to freshly registered nurses, internship nurses have a sufficient level of knowledge regarding acute exacerbations of chronic bronchial asthma during the program. Additionally, children who received care from the internship nurses group had lower levels of dyspnea after the program than children who received care from the nurses' group, indicating that internship nurses performed better than freshly registered nurses in PICUs.

Conclusion: The present study recommended establishing regular workshops that focus the evidence-based performances regarding the management of acute exacerbations of chronic bronchial asthma in PICUs.

Keywords: And acute exacerbation; Bronchial asthma; Educational program; Performance; Knowledge.

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Conflict of interest statement

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

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. 2025 Apr 24:9:e64212.

doi: 10.2196/64212.

[Mobile Health App for Adolescent Asthma Self-Management: Development and Usability Study of the Pulmonary Education and Knowledge Mobile Asthma Action Plan](#)

[Xing He^{1,2}, Jiang Bian^{1,2}, Ariel Berlinski^{3,4}, Yi Guo⁵, A Larry Simmons^{3,6}, S Alexandra Marshall⁷, Carolyn J Greene⁸, Rita Hudson Brown^{3,4}, Jessica Turner⁴, Tamara T Perry^{3,4}](#)

Affiliations Expand

- PMID: 40272455
- DOI: [10.2196/64212](https://doi.org/10.2196/64212)

Free article

Abstract

Background: Adolescents with asthma are vulnerable to poor asthma outcomes due to inadequate self-management skills and nonadherence to medications. Mobile health (mHealth) apps have shown promise in improving asthma control, medication adherence, and self-efficacy. However, existing mHealth asthma apps lack personalization and real-time feedback and are not tailored for at-risk adolescents.

Objective: This study aimed to design, develop, and test a smartphone-based mHealth Asthma Action Plan for adolescents, called Pulmonary Education and Knowledge Mobile Asthma Action Plan (PEAK-mAAP), in preparation for a large-scale randomized controlled trial.

Methods: We employed user-centered design principles to develop our app, leveraging our previous work and following guidelines from the National Heart, Lung, and Blood Institute. The app consists of a patient-facing mobile app and a provider-facing portal. A convenience sample of 13 adolescents (aged 12-20 years) was recruited from the Arkansas Children's Research Institute database or direct health care provider referrals. Participants underwent a task-based usability assessment followed by the System Usability Scale assessment to measure user satisfaction, interface effectiveness, and overall system usability.

Results: PEAK-mAAP integrates 7 core modules supporting personalized asthma self-management, symptom monitoring, medication tracking, and real-time feedback. The mean System Usability Scale score was 83/100 (SD 5.54), indicating high user satisfaction and system usability. Notably, older adolescents (>17 years) reported higher usability scores (87.5) than younger users (77.5), suggesting potential age-related differences in app navigation and engagement.

Conclusions: The results demonstrate that PEAK-mAAP is a feasible and user-friendly mHealth intervention for adolescent asthma self-management. While the high usability score reflects a positive user experience, some participants encountered initial usability challenges, highlighting the need for minor refinements and user training materials. The integration of personalized self-management tools and real-time feedback distinguishes PEAK-mAAP from existing asthma apps, addressing key barriers to adherence and engagement. Moving forward, an ongoing randomized controlled trial will assess its clinical effectiveness, long-term engagement, and impact on asthma outcomes, providing further insights into its potential as a scalable solution for adolescent asthma care.

Keywords: adolescents; asthma self-management; mobile health; mobile phone; usability; user-centered design.

© Xing He, Jiang Bian, Ariel Berlinski, Yi Guo, A Larry Simmons, S Alexandra Marshall, Carolyn J Greene, Rita Hudson Brown, Jessica Turner, Tamara T Perry. Originally published in JMIR Formative Research (<https://formative.jmir.org>).

Supplementary info

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Am J Ind Med

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. 2025 Apr 23.

doi: 10.1002/ajim.23725. Online ahead of print.

[Occupational Exposure Patterns to Disinfectants and Cleaning Products and Its Association With Asthma Among French Healthcare Workers](#)

[Bakari Ibrahim](#)¹, [Nicole Le Moual](#)¹, [Guillaume Sit](#)¹, [Marcel Goldberg](#)², [Bénédicte Leynaert](#)¹, [Céline Ribet](#)², [Nicolas Roche](#)^{1,3}, [Raphaëlle Varraso](#)¹, [Marie Zins](#)², [Rachel Nadif](#)¹, [Laurent Orsi](#)¹, [Oriane Dumas](#)¹

Affiliations Expand

- PMID: 40268382
- DOI: [10.1002/ajim.23725](https://doi.org/10.1002/ajim.23725)

Abstract

Background: Disinfectants and cleaning products (DCPs) are important asthma risk factors among healthcare workers. However, healthcare work involves heterogenous cleaning tasks and co-exposure to many chemicals. These multidimensional aspects have rarely been considered. We aimed to identify patterns of occupational exposure to DCPs and study their associations with asthma.

Methods: CONSTANCES is a French population-based cohort of ≈220,000 adults. Current asthma and asthma symptom score were defined by questionnaire at inclusion (2012-2021). Healthcare workers completed a supplementary questionnaire on their current/last held occupation, workplace, and cleaning activities that were used in unsupervised learning algorithms to identify occupational exposure patterns. Logistic and negative binomial regression models, adjusted for potential confounders, were used to assess associations with asthma outcomes.

Results: In 5512 healthcare workers, four occupational exposure clusters were identified: Cluster1 (C1, 42%, reference), mainly characterized by low exposed nurses and physicians; C2 (7%), medical laboratory staff moderately exposed to common DCPs (chlorine/bleach, alcohol); C3 (41%), nursing assistants and nurses highly exposed to a few DCPs (mainly quaternary ammonium compounds); and C4 (10%), nurses and nursing assistants highly exposed to multiple DCPs (e.g., glutaraldehyde, hydrogen peroxide, and acids). Among women (n = 3734), C2 (mean score ratio [95% CI]: 1.31 [1.02; 1.68]) and C3 (1.18 [1.03; 1.36]) were associated with higher asthma symptom score, and an association was suggested between C3 and current asthma (odds ratio 1.22 [0.99; 1.51]).

Conclusion: In a large population of healthcare workers, four DCP exposure patterns were identified, reflecting the heterogeneity of healthcare jobs. Two patterns, including one characterized by laboratory workers, were associated with greater asthma symptoms in women.

Keywords: asthma; cleaning and disinfecting products; clustering; healthcare workers; occupational exposure.

- [63 references](#)

Supplementary info

Grants and funding [Expand](#)

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Pediatrics

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. 2025 Apr 24:e2024068459.

doi: 10.1542/peds.2024-068459. Online ahead of print.

[Safety of LAIV Vaccination in Asthma or Wheeze: A Systematic Review and GRADE Assessment](#)

[Allyn Bandell](#)¹, [Lucia Giles](#)², [Penélope Cervelo Bouzo](#)³, [Gillian C Sibbring](#)⁴, [Jon Maniaci](#)⁵, [Henry Wojtczak](#)⁶, [Andrew G Sokolow](#)⁷

Affiliations [Expand](#)

- PMID: 40268297
- DOI: [10.1542/peds.2024-068459](#)

Abstract

Context: The US Advisory Committee on Immunization Practices states a contraindication for live attenuated influenza vaccine (LAIV) use in children aged 2 to 4 years with asthma or recurrent wheeze plus a precaution, defined as defer vaccine use, in those aged >5 years with asthma.

Objective: We assessed the certainty of evidence on the safety of LAIV vs inactivated influenza vaccine (IIV) or no vaccine, or before vs after LAIV, in eligible individuals with asthma and/or wheeze.

Data sources: Embase, MEDLINE, CCTR, and CDSR were searched for eligible studies (database inception to August 27, 2024) via Ovid/Elsevier.

Study selection: Screening (title/abstract and full text) and data extraction were performed by a single reviewer; an independent reviewer screened 10%. Risk of bias (ROB) was assessed using ROB2 and ROBINS-I. Evidence certainty was assessed using the Grading of Recommendations, Assessment, Development, and Evaluation (GRADE) framework.

Results: Searches yielded 24 eligible studies (28 publications); 15 comparative studies were included in the GRADE assessment. No difference in patient-reported safety outcomes was reported in 86.7% of studies comparing LAIV and IIV (all ages and disease severities; "very low" to "moderate" certainty evidence). A higher instance of rhinitis and a lower incidence of inpatient/emergency department visits and wheezing were reported after LAIV vs IIV. Evidence was mostly downgraded for ROB, imprecision, and indirectness. Similar results were observed for all comparisons.

Limitations: The heterogeneity of identified outcomes precluded a meta-analysis.

Conclusions: This suggests comparable safety outcomes with LAIV vs IIV in persons with asthma and/or recurrent wheeze, irrespective of disease severity.

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Respir Care

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. 2025 Apr 23.

doi: 10.1089/respcare.12543. Online ahead of print.

[Diagnosing Asthma in Children](#)

[Shikha Saxena](#)¹, [Christian Rosas-Salazar](#)²

Affiliations Expand

- PMID: 40267168

- DOI: [10.1089/respcare.12543](https://doi.org/10.1089/respcare.12543)

Abstract

Despite being the most common chronic lung disease in children, asthma continues to be frequently misdiagnosed in the pediatric population. The recommendations to establish a diagnosis of asthma in school-aged children have evolved over time, but there are still important discrepancies between published guidelines. Furthermore, preschool-aged children are often unable to perform objective testing, so the diagnosis of asthma remains a clinical one in the first several years of life, and there is still debate on the criteria and nomenclature to be used in this age group. In this review, we first discuss the definition and misdiagnosis of asthma in children. We then assess and compare published guidelines that outline how to establish the diagnosis of asthma in school-aged children. We also discuss the necessary steps to diagnose preschool-aged children with this disease. Last, we outline unanswered questions and opportunities for research in this field.

Keywords: GINA; asthma; children; diagnosis; guidelines.

Full text links



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Published Erratum

BMC Med Res Methodol

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. 2025 Apr 22;25(1):105.

doi: 10.1186/s12874-025-02550-0.

[Correction: Cause of death coding in asthma](#)

[Alexandria Chung](#)¹, [George Addo Opoku-Pare](#)¹, [Holly Tibble](#)^{2,3}

Affiliations [Expand](#)

- PMID: 40264001
- PMCID: [PMC12016139](#)
- DOI: [10.1186/s12874-025-02550-0](#)

No abstract available

Erratum for

- [Cause of death coding in asthma.](#)

Chung A, Opoku-Pare GA, Tibble H. BMC Med Res Methodol. 2024 Jun 5;24(1):129. doi: 10.1186/s12874-024-02238-x. PMID: 38840045 Free PMC article.

- [1 reference](#)

Supplementary info

Publication types [Expand](#)

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Clin Exp Pediatr

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. 2025 Apr 22.

doi: 10.3345/cep.2025.00423. Online ahead of print.

[Global burden of asthma among children and adolescents with projections to 2050: a comprehensive review and forecasted modeling study](#)

[Tae Hyeon Kim](#)^{1,2,3}, [Hyunjee Kim](#)^{2,3}, [Jiyeon Oh](#)^{1,2}, [Soeun Kim](#)^{2,3}, [Michael Miligkos](#)⁴, [Dong Keon Yon](#)^{1,2,3,5}, [Nikolaos G Papadopoulos](#)^{4,6}

Affiliations [Expand](#)

- PMID: 40262764
- DOI: [10.3345/cep.2025.00423](https://doi.org/10.3345/cep.2025.00423)

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Abstract

Understanding pediatric asthma is crucial to its effective diagnosis and intervention, as it may alleviate the adulthood disease burden. This epidemiological review describes the prevalence of asthma among individuals under 20 years of age by categorizing them into 3 age groups: 1-4, 5-9, and 10-19 years. Estimates were obtained from the Global Burden of Diseases, Injuries, and Risk Factors Study (GBD) 2021, which covered the prevalence of asthma from 1990 to 2021 across 21 GBD regions with 95% uncertainty intervals (UIs). We also projected the prevalence of pediatric asthma in 2050 by using a logistic regression predictive model from the existing literature and incorporating body mass index as a covariate with fixed coefficients over time. Overall, a continuous decline in asthma prevalence rates among children and adolescents was observed from 1990 to 2021, with higher rates in males and a peak prevalence rate in the 5-9 years group. Central Europe showed significantly increased prevalence rates compared to those of other regions. Our projection suggests that the prevalence rate of pediatric asthma will decline to approximately 2,608.05 per 100,000 population by 2050 (95% UI, 1,632.94-3,868.26), representing a 39.5% decrease from the 2021 figures. Despite these trends, asthma remains a substantial health burden for children and adolescents that may persist into adulthood. Therefore, proactive diagnosis and intervention are essential to mitigating the associated disease burden.

Keywords: Adolescent; Asthma; Child; Prevalence.

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Adv Ther

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. 2025 Apr 22.

doi: 10.1007/s12325-025-03184-w. Online ahead of print.

[Efficacy of Biologics in Reducing Exacerbations Requiring Hospitalization or an Emergency Department Visit in Patients with Moderate or Severe, Uncontrolled Asthma](#)

[Reynold A Panettieri Jr](#)¹, [Monica Kraft](#)², [Mario Castro](#)³, [Magdalena Bober](#)⁴, [Andrew W Lindsley](#)⁵, [Max Shelkrot](#)⁶, [Christopher S Ambrose](#)⁷

Affiliations Expand

- PMID: 40261563
- DOI: [10.1007/s12325-025-03184-w](https://doi.org/10.1007/s12325-025-03184-w)

Abstract

Introduction: Patients with moderate or severe, uncontrolled asthma are often prescribed biologic therapies to improve disease control and reduce asthma exacerbations. The efficacy of different biologics in reducing asthma exacerbations associated with hospitalization or an emergency department (ED) visit has varied across randomized controlled trials (RCTs). This study summarizes published US Food and Drug Administration-approved biologic efficacy data for exacerbations that required hospitalization or an ED visit in patients with moderate or severe, uncontrolled asthma.

Methods: A PubMed literature search (24 May 2024) identified phase 2b/3 RCTs of omalizumab, mepolizumab, reslizumab, benralizumab, dupilumab, or tezepelumab. Annualized asthma exacerbation rate (AAER) ratios for exacerbations that required hospitalization or an ED visit, or hospitalization regardless of an ED visit, were extracted. A pooled efficacy estimate of the AAER ratio for exacerbations that required hospitalization or an ED visit across the RCTs was assessed using a meta-analysis based on a random effects model. The percentage of total variation across all included RCTs that was due to heterogeneity was calculated (I^2).

Results: Among 308 articles identified, nine publications describing 10 RCTs reported relevant AAER ratio data. No suitable omalizumab data were identified. In all trials, biologic treatment showed a reduction versus placebo in the AAER for exacerbations that required hospitalization or an ED visit, except in one of two benralizumab studies and both reslizumab studies. The pooled efficacy estimate showed a 56% reduction (95% CI 37-69) in the AAER for exacerbations requiring hospitalization or an ED visit (I^2 , 59.93%; $p = 0.0075$). One of three mepolizumab trials and both tezepelumab trials showed a reduction versus placebo in the AAER for exacerbations that required hospitalization regardless of an ED visit.

Conclusion: These findings suggest that there may be differential effects of biologics in reducing exacerbations that require hospitalization or an ED visit in patients with moderate or severe, uncontrolled asthma.

Keywords: Biologic; Efficacy; Emergency department; Exacerbations; Hospitalization; Literature review; Moderate asthma; Randomized placebo-controlled trial; Severe asthma.

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Conflict of interest statement

Declarations. Conflict of Interest: Reynold A. Panettieri Jr. has received research support from ACTIV-1, Agomab Therapeutics, AstraZeneca, Janssen Pharmaceuticals, the Research Institute for Fragrance Materials, Teva Pharmaceuticals, and Vault Health; has served as a consultant/advisory board member for AstraZeneca, Genentech, Praesidia Biotherapeutics, and the Research Institute for Fragrance Materials; and has received speaker fees from AstraZeneca, Merck Group, and Sanofi. Monica Kraft has received research support from the American Lung Association, AstraZeneca, Janssen, the National Institutes of Health, Sanofi, and Synairgen with funds paid to the Icahn School of Medicine and University of Arizona and has received personal fees from AstraZeneca, Chiesi, Genentech, Kinaset Therapeutics, and Sanofi. Mario Castro has received grants/research support from the American Lung Association, AstraZeneca, Gala Therapeutics, Genentech, GSK, the National Institutes of Health, Novartis, the Patient-Centered Outcomes Research Institute, PULMATRiX, Sanofi-Aventis, Shionogi, and Theravance Biopharma; consultancy fees from Allakos, Amgen, Arrowhead, AstraZeneca, Genentech, Merck, Novartis, OM Pharma, Pioneering Medicines, Regeneron Pharmaceuticals, Sanofi, and Teva Pharmaceuticals; and royalties from Aer Therapeutics. Magdalena Bober, Max Shelkrot and Christopher S. Ambrose are employees of AstraZeneca and may own stock or stock options in AstraZeneca. Andrew W. Lindsley is an employee of Amgen and owns stock in Amgen. **Ethical Approval:** This article is based on previously conducted studies and does not contain any new studies with human participants or animals performed by any of the authors.

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Clin Rev Allergy Immunol

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. 2025 Apr 21;68(1):44.

doi: 10.1007/s12016-025-09045-2.

[Targeting IL-13 and IL-4 in Asthma: Therapeutic Implications on Airway Remodeling in Severe Asthma](#)

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Affiliations Expand

- PMID: 40257546
- PMCID: [PMC12011922](#)
- DOI: [10.1007/s12016-025-09045-2](#)

Abstract

Asthma is a chronic respiratory disorder affecting individuals across all age groups. It is characterized by airway inflammation and remodeling and leads to progressive airflow restriction. While corticosteroids remain a mainstay therapy, their efficacy is limited in severe asthma due to genetic and epigenetic alterations, as well as elevated pro-inflammatory cytokines interleukin-4 (IL-4), interleukin-13 (IL-13), and interleukin-5 (IL-5), which drive structural airway changes including subepithelial fibrosis, smooth muscle hypertrophy, and goblet cell hyperplasia. This underscores the critical need for biologically targeted therapies. This review systematically examines the roles of IL-4 and IL-13, key drivers of type-2 inflammation, in airway remodeling and their potential as therapeutic targets. IL-4 orchestrates eosinophil recruitment, immunoglobulin class switching, and Th2 differentiation, whereas IL-13 directly modulates structural cells, including fibroblasts and epithelial cells, to promote mucus hypersecretion and extracellular matrix (ECM) deposition. Despite shared signaling pathways, IL-13 emerges as the dominant cytokine in remodeling processes including mucus hypersecretion, fibrosis and smooth muscle hypertrophy. While IL-4 primarily amplifies inflammatory cascades by driving IgE switching, promoting Th2 cell polarization that sustain cytokine release, and inducing chemokines to recruit eosinophils. In steroid-resistant severe asthma, biologics targeting IL-4/IL-13 show promise in reducing exacerbations and eosinophilic inflammation. However, their capacity to reverse established remodeling remains inconsistent, as clinical trials prioritize inflammatory biomarkers over long-term structural outcomes. This synthesis highlights critical gaps in understanding the durability of IL-4/IL-13 inhibition on airway structure and

advocates for therapies combining biologics with remodeling-specific strategies. Through the integration of mechanistic insights and clinical evidence, this review emphasizes the need for long-term studies utilizing advanced imaging, histopathological techniques, and patient-reported outcomes to evaluate how IL-4/IL-13-targeted therapies alter airway remodeling and symptom burden, thereby informing more effective treatment approaches for severe, steroid-resistant asthma.

Keywords: Anti-IL-13; Anti-IL-4; Asthma, airway remodeling; Interlukin-13 (IL-13); Interlukin-4 (IL-4).

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Conflict of interest statement

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

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

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J Asthma

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. 2025 Apr 21:1-12.

doi: 10.1080/02770903.2025.2495725. Online ahead of print.

[The impact of Tezepelumab therapy on perceived asthma triggers: a multicentre real-life study](#)

[Andrea Portacci](#)¹, [Giulia Scioscia](#)², [Silvano Dragonieri](#)¹, [Maria Aliani](#)³, [Ernesto Lulaj](#)¹, [Francesca Montagnolo](#)¹, [Pietro Magaletti](#)², [Piera Soccio](#)², [Luciana Salerno](#)³, [Donato Lacedonia](#)², [Giovanna Elisiana Carpagnano](#)¹

Affiliations Expand

- PMID: 40257396
- DOI: [10.1080/02770903.2025.2495725](https://doi.org/10.1080/02770903.2025.2495725)

Abstract

Objective: Asthma exacerbations are often triggered by factors such as respiratory infections, allergens, exercise, and airway irritants, significantly affecting patients' respiratory symptoms and quality of life. Effective management of triggers is crucial in severe asthma care. Tezepelumab, an anti-thymic stromal lymphopoietin (TSLP) monoclonal antibody, can effectively reduce severe asthma exacerbations and symptoms burden. However, its impact on patients' perception of trigger-related symptoms remains underexplored.

Methods: We conducted an observational, multicentre study involving 30 severe asthma patients starting Tezepelumab 210 mg every 4 weeks. Asthma triggers were assessed with the Asthma Triggers Inventory (ATI), while respiratory symptoms and HRQoL were evaluated using the Asthma Control Test (ACT), Asthma Control Questionnaire (ACQ) and Asthma Quality of Life Questionnaire (AQLQ). Data were collected at baseline (T0) and after 3 months of treatment (T3).

Results: At T3, patients demonstrated a significant reduction in the impact of asthma triggers as well as improvements in the perception of triggers effects on HRQoL. Specific improvements were observed in the "air pollution/irritants" and "infection" domains of the ATI. Correlation analysis revealed a significant association between ATI and AQLQ changes over time.

Conclusion: Tezepelumab positively impacts patients' perception of asthma triggers and their HRQoL, supporting its role in managing triggers hypersensitivity as a treatable trait in severe asthma. Further research is warranted to investigate underlying mechanisms and long-term effects.

Keywords: Anti-TSLP; Severe asthma; Tezepelumab; Trigger; control; quality of life.

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Expert Rev Respir Med

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. 2025 Apr 21:1-8.

doi: 10.1080/17476348.2025.2495166. Online ahead of print.

[Lung ultrasound in children with asthma exacerbations: a systematic review and meta-analysis](#)

[Lucypaula Andrade Pinheiro Fernandes](#)¹, [Jose Dirceu Ribeiro](#)²

Affiliations Expand

- PMID: 40242948
- DOI: [10.1080/17476348.2025.2495166](#)

Abstract

Introduction: Lung ultrasound (LUS) is a noninvasive radiation-free imaging tool used to evaluate respiratory conditions, particularly in children and adolescents with asthma exacerbations. However, its role in diagnosing and managing asthma exacerbations remains unclear. We aimed to demonstrate LUS findings in pediatric asthma exacerbations, focusing on patterns such as B-lines, consolidation, and pleural abnormalities.

Methods: A systematic review was conducted following the Preferred reporting items for systematic reviews and meta-analyses guidelines. Databases such as MEDLINE/PubMed and EMBASE were reviewed. The eligibility criterion was observational studies on LUS for pediatric asthma exacerbations. Bias risk was assessed using a validated tool. Data were analyzed both qualitatively and quantitatively, with findings summarized and meta-analysis conducted.

Results: Five studies involving 192 participants were included in the analysis. The LUS findings included B-lines, consolidation, and pleural abnormalities. Meta-analysis revealed that 52.0% (95% confidence interval: 23.0-80.3) of the cases demonstrated positive LUS findings.

Conclusions: LUS exhibited potential for diagnosing asthma exacerbations, particularly in identifying B-lines, consolidation, and pleural abnormalities. However, variability in detection rates was observed across different studies, which might be due to the differences in study populations and criteria. Despite these limitations, LUS can be a valuable tool for managing asthma exacerbations.

Protocol registration: www.crd.york.ac.uk/Prospero identifier CRD42021244729.

Keywords: Pediatrics; Ultrasonography; asthma; children; lung.

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Review

J Investig Allergol Clin Immunol

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. 2025 Apr 22;35(2):76-86.

doi: 10.18176/jiaci.1084. Epub 2025 Mar 14.

[The Evolving Role of Pulmonary Function Interpretation: Clinical Implications of the New ERS/ATS Standards in Asthma Care](#)

[F García-Río](#)^{1 2 3}

Affiliations [Expand](#)

- PMID: 40084848
- DOI: [10.18176/jiaci.1084](#)

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Abstract

Asthma remains a significant public health challenge, requiring precise diagnostic and management strategies. Pulmonary function tests (PFTs) are essential in assessing disease severity, guiding treatment decisions, and monitoring disease progression. The 2022 ERS/ATS technical standards introduced critical updates to enhance the accuracy and standardization of interpretation of pulmonary function findings. These modifications include the adoption of Global Lung Initiative reference values, the transition from race-based to race-neutral equations, the

replacement of percent-predicted values with z-scores, and a redefinition of bronchodilator responsiveness criteria. Additionally, new spirometric patterns such as dysanapsis and preserved ratio impaired spirometry have been recognized, improving the detection and characterization of airflow limitation. These updates significantly impact asthma management by refining disease phenotyping, improving diagnostic precision, and tailoring treatment strategies. Furthermore, advancements in artificial intelligence are expected to enhance predictive analytics and early intervention strategies in assessment of pulmonary function. However, challenges remain with respect to the adoption of these modifications in clinical practice, particularly regarding the classification of disease severity and the impact of race-neutral equations on diagnostic thresholds. Future research is necessary to validate the long-term implications of these changes on asthma outcomes. Clinicians must familiarize themselves with evolving standards to optimize patient care and reduce health disparities. The 2022 ERS/ATS guidelines represent a substantial advancement in PFT, with the potential to improve both clinical decision-making and patient prognosis in asthma management.

Keywords: Asthma; Guidelines; Lung function; Reference equations; Spirometry.

Supplementary info

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Clinical Trial

Eur Respir J

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. 2025 Apr 24;65(4):2401461.

doi: 10.1183/13993003.01461-2024. Print 2025 Apr.

[A proof-of-mechanism trial in asthma with lunsekimig, a bispecific NANOBODY molecule](#)

[Annemie Deiteren](#)¹, [Emmanuel Krupka](#)², [Lieselot Bontinck](#)³, [Karine Imberdis](#)², [Griet Conickx](#)³, [Selcuk Bas](#)⁴, [Naimish Patel](#)⁵, [Heribert W Staudinger](#)⁶, [Benjamin T Suratt](#)⁷

Affiliations Expand

- PMID: 39884759
- PMCID: [PMC12018761](#)
- DOI: [10.1183/13993003.01461-2024](#)

Abstract

Background: Monovalent biologics blocking thymic stromal lymphopoietin (TSLP) or interleukin (IL)-13 have been shown to elicit pharmacodynamic responses in asthma following a single dose. Therefore, dual blockade of these cytokines may result in an enhanced response compared to single targeting and has the potential to break efficacy ceilings in asthma. This study assessed the safety and tolerability of lunsekimig, a bispecific NANOBODY molecule that blocks TSLP and IL-13, and its effect on type 2 (T2) inflammatory biomarkers and lung function in asthma.

Methods: This was a phase 1b, single-dose (subcutaneous lunsekimig 400 mg or placebo), randomised (2:1), double-blind, proof-of-mechanism study in 36 participants with mild-to-moderate asthma and elevated exhaled nitric oxide fraction (F_{ENO} ; ≥ 25 ppb), a marker of airway inflammation. The primary end-point was safety and tolerability through day 71. The main pharmacodynamic secondary end-point was change from baseline in F_{ENO} at day 29.

Results: Lunsekimig was well tolerated, with no serious treatment-emergent adverse events. F_{ENO} was significantly reduced from day 8 through day 29 after a single dose, with change from baseline of -40.9 (90% CI -55.43 - -26.39) ppb ($p < 0.0001$) versus placebo at day 29. Blood-based T2 biomarkers at day 29 were significantly reduced from baseline. Lung function, particularly small airway dysfunction, was numerically improved at day 29, most notably in participants with impaired lung function at baseline.

Conclusions: A single dose of lunsekimig was well tolerated, significantly suppressed T2 inflammation and improved lung function in mild-to-moderate asthma.

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Conflict of interest statement

Conflict of interest: A. Deiteren, E. Krupka, L. Bontinck, K. Imberdis, G. Conickx, H.W. Staudinger and B.T. Suratt are employees of Sanofi, and may hold stock and/or stock options in the company. S. Bas has no potential conflicts of interest to disclose. N. Patel was an employee of Sanofi at the time of manuscript development, and is currently the Chief Medical Officer at CRISPR Therapeutics.

Comment in

- [Lunsekimig's bispecific targeting of IL-13 and TSLP in asthma: dual targets for synergistic effects?](#)

Kourid MI, Couillard S. Eur Respir J. 2025 Apr 24;65(4):2500153. doi: 10.1183/13993003.00153-2025. Print 2025 Apr. PMID: 40274300 No abstract available.

- [40 references](#)
- [6 figures](#)

Supplementary info

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J Investig Allergol Clin Immunol

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. 2025 Apr 22;35(2):132-134.

doi: 10.18176/jiaci.1041. Epub 2024 Nov 25.

[Tezepelumab in Patients With Severe Asthma: Response at 3 Months](#)

[J C Miralles-López¹](#), [R Andújar-Espinosa²](#), [F J Bravo-Gutierrez³](#), [S Cabrejos-Perotti⁴](#), [M Ramírez-Hernández⁴](#), [C Díaz-Chantar⁵](#), [M J Pajarón Fernández⁶](#), [J Valverde-Molina⁷](#), [V Pérez-Fernández⁸](#); [RE-ASGRAMUR GROUP](#)

Affiliations Expand

- PMID: 39584417
- DOI: [10.18176/jiaci.1041](#)

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No abstract available

Keywords: Real-life; Response to treatment; Severe asthma; Tezepelumab.

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. 2025 Apr 24;9(1):BJGPO.2024.0062.

doi: 10.3399/BJGPO.2024.0062. Print 2025 Apr.

[Prevalence and predictors of annual asthma reviews in Scottish primary care data: an observational study](#)

[Holly Tibble](#)^{1,2}, [Alexandria Ming Wai Chung](#)^{3,4}

Affiliations Expand

- PMID: 39357905
- DOI: [10.3399/BJGPO.2024.0062](#)

Free article

Abstract

Background: People with asthma are recommended to have regular reviews in primary care, with assessment of symptoms, adjustment of treatment and self-management processes, and the delivery of a written action plan for emergencies.

Aim: To investigate the incidence and factors associated with attendance of annual asthma reviews.

Design & setting: This observational study used electronic health records for 49 307 patients in Scotland with asthma between 1 January 2000 and 31 March 2017. The analysis population of 13 726 patients had at least five asthma-related encounters between 2008 and 2016.

Method: Multivariable logistic regression was employed, using linked primary care prescription data and primary care registration demographic data.

Results: There was a median of 381 days between subsequent reviews. Reviews in the index year were strongly associated with reviews in the following year (odds ratio [OR] 1.76, 95% confidence interval [CI] 1.68 to 1.84). In contrast, asthma consultations (excluding reviews) in the index year were associated with lower odds of having a review in the following year (OR 0.48, 95% CI = 0.46 to 0.51). Those aged 18-35 years in the index year or those with missing addresses in the practice registration data were the least likely groups to have an asthma review in the following year.

Conclusion: Reviewing the delivery of asthma care identifies patients who may be slipping through the gaps by receiving only reactive asthma care rather than the structured, preventive care that can be delivered through annual reviews. Understanding the risk factors for not receiving an annual review can be leveraged to create more effective review invitations, such as explaining the specific content of reviews, introducing new contact methods to improve health equity, and reviewing the algorithm used to determine who is invited.

Keywords: asthma; health promotion; large database research; primary health care.

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

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Pediatrics

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. 2025 Apr 24:e2024068459.

doi: 10.1542/peds.2024-068459. Online ahead of print.

[Safety of LAIV Vaccination in Asthma or Wheeze: A Systematic Review and GRADE Assessment](#)

[Allyn Bandell¹](#), [Lucia Giles²](#), [Penélope Cervelo Bouzo³](#), [Gillian C Sibbring⁴](#), [Jon Maniaci⁵](#), [Henry Wojtczak⁶](#), [Andrew G Sokolow⁷](#)

Affiliations Expand

- PMID: 40268297

- DOI: [10.1542/peds.2024-068459](https://doi.org/10.1542/peds.2024-068459)

Abstract

Context: The US Advisory Committee on Immunization Practices states a contraindication for live attenuated influenza vaccine (LAIV) use in children aged 2 to 4 years with asthma or recurrent wheeze plus a precaution, defined as defer vaccine use, in those aged >5 years with asthma.

Objective: We assessed the certainty of evidence on the safety of LAIV vs inactivated influenza vaccine (IIV) or no vaccine, or before vs after LAIV, in eligible individuals with asthma and/or wheeze.

Data sources: Embase, MEDLINE, CCTR, and CDSR were searched for eligible studies (database inception to August 27, 2024) via Ovid/Elsevier.

Study selection: Screening (title/abstract and full text) and data extraction were performed by a single reviewer; an independent reviewer screened 10%. Risk of bias (ROB) was assessed using ROB2 and ROBINS-I. Evidence certainty was assessed using the Grading of Recommendations, Assessment, Development, and Evaluation (GRADE) framework.

Results: Searches yielded 24 eligible studies (28 publications); 15 comparative studies were included in the GRADE assessment. No difference in patient-reported safety outcomes was reported in 86.7% of studies comparing LAIV and IIV (all ages and disease severities; "very low" to "moderate" certainty evidence). A higher instance of rhinitis and a lower incidence of inpatient/emergency department visits and wheezing were reported after LAIV vs IIV. Evidence was mostly downgraded for ROB, imprecision, and indirectness. Similar results were observed for all comparisons.

Limitations: The heterogeneity of identified outcomes precluded a meta-analysis.

Conclusions: This suggests comparable safety outcomes with LAIV vs IIV in persons with asthma and/or recurrent wheeze, irrespective of disease severity.

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Editorial

Clin Exp Allergy

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. 2025 Apr 22.

doi: 10.1111/cea.70065. Online ahead of print.

[Allergen-Specific Immunotherapy: The Need for Content Transparency](#)

[Melvin Lee Qiyu](#)¹, [Tom Dawson](#)²

Affiliations Expand

- PMID: 40263895
- DOI: [10.1111/cea.70065](https://doi.org/10.1111/cea.70065)

No abstract available

Keywords: allergen variability; allergens and Epitopes; allergen-specific immunotherapy (AIT); component-resolved diagnostics (CRD); education; paediatrics; pharmacology and pharmacogenomics; rhinitis; standardisation of allergen content; transparency in immunotherapy products.

- [9 references](#)

Supplementary info

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. 2025 Apr 22;15(1):13855.

doi: 10.1038/s41598-025-98175-w.

[Exploring the comorbidity association and biological mechanisms of chronic rhinosinusitis and chronic obstructive pulmonary disease](#)

[Shihan Liu](#)¹, [Jinxiong Yang](#)¹, [Yiyi Lin](#)¹, [Lingli Zhang](#)², [Wenlong Luo](#)¹

Affiliations Expand

- PMID: 40263405
- PMCID: [PMC12015216](#)
- DOI: [10.1038/s41598-025-98175-w](#)

Abstract

Although chronic rhinosinusitis (CRS) and chronic obstructive pulmonary disease (COPD) are both common chronic inflammatory diseases, the interaction between their comorbidities remains poorly understood within the unified airway disease framework. This study, for the first time, integrated multi-omics analysis and large-scale epidemiological data to explore their common mechanisms and clinical significance. The NHANES database was used for analysis, and multivariate logistic regression was employed to assess the comorbidity risk of CRS and COPD. Machine-learning models (glmnet, ranger, and xgboost) were used to analyze the NHANES data to determine the best model. Subsequently, Mendelian randomization(MR) was applied to explore relevant associations. Additionally, CRS and COPD datasets from GEO were further analyzed to identify potential targets. The NHANES analysis showed a significant association between CRS and COPD, with MR results indicating that CRS significantly increased the risk of COPD. Multi-omics integration revealed that C3 and CD163 are core targets in CRS/COPD patients. The ranger model was identified as the most suitable in this study. This study provides new evidence that CRS is an independent risk factor for COPD and establishes a unified airway mechanism centered on C3-CD163-mediated inflammation. These findings advance the "one airway, one disease" paradigm and support a dual-target therapeutic strategy.

Keywords: Chronic obstructive pulmonary disease; Chronic rhinosinusitis; Comorbidity analysis; Gene expression; Mendelian randomization.

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Conflict of interest statement

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

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

Supplementary info

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Eur Arch Otorhinolaryngol

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. 2025 Apr 21.

doi: 10.1007/s00405-025-09392-y. Online ahead of print.

[Efficacy of nasal saline irrigation in conjunction with intranasal steroids in allergic rhinitis](#)

[Omvir Singh Chahar](#)¹, [Sheetal Raina](#)¹, [Ahmad Rizwan](#)¹, [Supreet Singh Nayyar](#)², [Shailendra Tripathi](#)¹, [Akshay Bhatnagar](#)¹, [Ombir Singh](#)¹, [Nandini Bisht](#)¹, [Mohneesh Dixit](#)¹

Affiliations Expand

- PMID: 40257579
- DOI: [10.1007/s00405-025-09392-y](https://doi.org/10.1007/s00405-025-09392-y)

Abstract

Aim: To study the efficacy of nasal saline irrigation combined with intranasal corticosteroids in treating Allergic Rhinitis and compare it with intranasal corticosteroids alone.

Methodology: A prospective, randomized trial conducted at a tertiary care center. Symptomatic individuals diagnosed with Allergic Rhinitis were included. The control group received fluticasone propionate nasal spray (200 mcg/day) and the treatment group received fluticasone propionate nasal spray (200 mcg/day) along with nasal saline irrigation with isotonic normal saline (50 ml/nostril with each irrigation thrice a day). The two groups were followed up for 12 weeks. The outcome

was compared using a patient-reported experience measure "Allergic rhinitis scoring system".

Results: A total of 120 patients (60 in each group) were included in the study. Pre-intervention, there were no significant differences between the two groups with the Allergic rhinitis scoring system. Post-Intervention, significant improvements were evident across all assessed symptoms: rhinorrhoea (14.93 ± 4.16 vs. 17.80 ± 3.16 , $p < 0.0001$), sneezing (14.40 ± 3.91 vs. 18.27 ± 3.16 , $p < 0.0001$), nasal blockage (10.47 ± 4.66 vs. 13.80 ± 4.80 , $p = 0.0002$), nasal pruritus (17.93 ± 3.17 vs. 19.13 ± 1.96 , $p = 0.0140$), ocular pruritus (18.60 ± 2.84 vs. 19.13 ± 2.22 , $p = 0.2537$), and total Allergic rhinitis scoring system score (77.00 ± 9.79 vs. 88.13 ± 7.70 , $p < 0.0001$).

Conclusion: Nasal saline irrigation used in conjunction with intranasal corticosteroids more effectively alleviates all symptoms of Allergic rhinitis. However, there was no significant difference in ocular pruritus in both groups.

Trial registration: Trial registered with Clinical trial registry-India, CTRI/2023/01/048641. URL: <https://ctri.nic.in/Clinicaltrials/main1.php?EncHid=44058.73881> .

Keywords: Allergic rhinitis; Allergy; Intranasal corticosteroids; Nasal obstruction; Normal saline nasal irrigation; Sneezing.

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Conflict of interest statement

Declarations. Conflict of interest: None. **Ethical approval:** Institute ethical committee clearance taken for this study (Approval Number: CHCC/ACA/14/Corres/IEC Cert No. 49/2022 dt Sept 2022). All patients received the standard of care for their condition and was as per the ethical standards. **Informed consent:** No identifying information about participants is available in the article. However, all patients have given consent for the treatment they have received.

- [13 references](#)

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Int Forum Allergy Rhinol

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. 2025 Apr 21:e23589.

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[Long-Term Particulate Matter Exposure May Increase Risk of Chronic Rhinosinusitis With Nasal Polyposis: Results from an Exposure-Matched Study](#)

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Affiliations Expand

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• DOI: [10.1002/alr.23589](#)

Abstract

Background: Particulate matter ≤ 2.5 μm in diameter (PM_{2.5}) and its role in chronic rhinosinusitis (CRS) pathogenesis have gained heightened attention. We previously demonstrated that PM_{2.5} exposure may bias the nasal mucosa in CRS toward a Type 2 inflammatory pathway. However, there are limited data comparing cytokine changes in CRS sinonasal tissue to non-CRS patients as it relates to PM_{2.5} exposure. We hypothesized that long-term exposure preferentially increases the risk of manifesting CRS with nasal polyposis (CRSwNP).

Methods: We performed a retrospective analysis of 376 patients (308 CRS, 68 controls) who underwent endoscopic sinus or skull base surgery. A spatiotemporal machine-learning model estimated daily PM_{2.5} levels for 1 year prior to each patient's surgery date. Cytokines were quantified using a multiplex flow cytometric bead assay and compared to estimated PM_{2.5} exposure using Spearman correlation and multivariate regression. Patients with high and low 12-month PM_{2.5} exposures were matched across age, sex, income, and rurality using a nearest neighbor algorithm. Multivariate adjusted logistic regression was used to estimate the odds of CRS based on PM_{2.5} exposure.

Results: Reduced IL-10 levels were associated with higher PM_{2.5} exposures in control patients ($\beta = -0.735$, $p = 0.0196$). In exposure-matched logistic regression analysis, high 12-month PM_{2.5} exposure was an independent predictor of CRSwNP ($\beta = 1.97$, OR: 7.22, $p = 0.0001$) after adjustment for age, income, rurality, and comorbid asthma/allergic rhinitis. A similar relationship was not identified for CRSsNP.

Conclusions: PM_{2.5} exposure is associated with reduced IL-10 in control patients compared to CRS and may increase odds of CRSwNP development.

Keywords: aeroallergens; air pollution; allergic rhinitis; chronic rhinosinusitis; particulate matter.

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Comparative Study

J Investig Allergol Clin Immunol

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. 2025 Apr 22;35(2):114-121.

doi: 10.18176/jiaci.0968. Epub 2024 Jan 4.

[Differences in Molecular Sensitization Profiles Between Spanish and Latin American Mite-Allergic Patients](#)

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- PMID: 38174976
- DOI: [10.18176/jiaci.0968](#)

Free article

Abstract

Background and objectives: To analyze sensitization to *Dermatophagoides pteronyssinus* and to investigate the association between diagnostic findings and clinical severity in 218 allergic patients from 2 continents.

Methods: Mite-allergic patients were recruited by allergology departments in Latin America (n=88: Colombia, Costa Rica, and Guatemala) and Spain (n=130). All patients had allergic rhinitis with or without asthma and positive skin prick test results to *D pteronyssinus*. Specific IgE levels to *D pteronyssinus*, *Dermatophagoides farinae*, Der p 1, Der p 2, and Der p 23 were quantified using ImmunoCAP (Thermo Fisher Scientific). The allergenic profile was also determined by Western blotting. A comparative statistical analysis was performed using GraphPad software.

Results: Patients most frequently recognized Der p 2 (79%), followed by Der p 1 (73%) and Der p 23 (69%). The percentage of patients with asthma increased with the number of sensitizations; however, no statistically significant differences were found. Interestingly, patients with asthma presented the highest median levels of total IgE and specific IgE for *D pteronyssinus* and molecular allergens, mainly Der p 2. Analysis of both populations revealed that Spanish patients were predominantly sensitized to Der p 2 (88.46%) and Der p 1 (83.84%), whereas Latin American patients were more sensitized to Der p 23.

Conclusions: Our data support the relevance of Der p 2 as the major allergen in mite allergy. A large percentage of patients are sensitized to this allergen, which plays a key role in the development of asthma. Sensitization to Der p 23 was more relevant in Latin America.

Keywords: Allergic asthma; Component-resolved molecular diagnosis; *Dermatophagoides pteronyssinus*; House dust mites; Sensitization profile; Specific IgE.

Supplementary info

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chronic cough

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Case Reports

Int J Surg Case Rep

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. 2025 Apr 23:131:111349.

doi: 10.1016/j.ijscr.2025.111349. Online ahead of print.

[Chronic cough due to laryngeal hamartoma: A case report](#)

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Affiliations Expand

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- DOI: [10.1016/j.ijscr.2025.111349](https://doi.org/10.1016/j.ijscr.2025.111349)

Free article

Abstract

Introduction: Laryngeal hamartomas (LHs) are rare, benign tumor-like growths arising from disorganized mature tissues. Bardet-Biedl syndrome (BBS) is a ciliopathy with multisystem manifestations. This article presents a rare case of LH presented with chronic cough.

Presentation of case: A male in his 30s with BBS presented with a six-month history of persistent productive cough unresponsive to standard treatments. Video rhinolaryngoscopy and CT imaging identified a polyp on the anterior wall of the epiglottis. Histopathology confirmed the diagnosis of a hamartoma. Initial surgical excision was performed, preceded by a single IV dose of Hydrocortisone. Systemic corticosteroid therapy with oral Prednisolone tablets were prescribed postoperatively. Despite initial symptom resolution, the lesion recurred, necessitating re-excision and cautery. Histopathology suggested an inflammatory reaction rather than true recurrence.

Discussion: LHs are uncommon, with fewer than 35 cases documented. They often mimic other laryngeal lesions, making diagnosis reliant on histopathological evaluation. This case marks the first reported instance of LH in a BBS patient. Management approaches, including careful surgical excision and post-operative care, are crucial to preserving laryngeal function.

Conclusion: LH is a rare but important consideration in cases of chronic cough, especially when common causes have been ruled out.

Keywords: Bardet-biedl syndrome; Case report; Chronic cough; Histopathology; Laryngeal hamartoma; Larynx.

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Conflict of interest statement

Declaration of competing interest None.

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. 2025 Apr 22;11(2):00887-2024.

doi: 10.1183/23120541.00887-2024. eCollection 2025 Mar.

[Prevalence and risk factors of chronic cough in an adult community-dwelling Portuguese population](#)

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Affiliations Expand

- PMID: 40264459
- PMCID: [PMC12012907](#)
- DOI: [10.1183/23120541.00887-2024](#)

Abstract

Background: Chronic cough is associated with high individual and social costs, mainly due to doctor visits and diagnostic investigations. The aim of the present study was to estimate the prevalence of chronic cough and identify risk factors associated with chronic cough in a community-based sample in the scope of the EpiCOUGH study.

Methods: From 1 June to 31 August 2023, we recruited adults from the largest primary healthcare centres in Lisbon, Portugal, and invited them to participate in an online survey. Participants aged ≥ 20 years with a registered email address were eligible. Data collection included a health questionnaire that recorded the presence,

duration, frequency and impact of cough on daily activities. Chronic cough was defined as lasting longer than 8 weeks.

Results: Of the 7285 adult healthcare users who agreed to participate, 2309 (31.7%) completed the questionnaire. Most were female (59.2%) and the mean±sd age was 51.6±13.5 years. The estimated prevalence of chronic cough was 7.23% (95% CI 6.24-8.36%). Chronic cough was associated with older age, being divorced/widowed, current smoking, obesity, asthma, working in a dusty environment and pet ownership. No cause was diagnosed in 23.36% of patients who consulted a doctor.

Conclusion: Chronic cough was relatively common in the population studied. Our data emphasise the need to treat patients with chronic cough with strategies that address risk factors. This study also highlights the complexity of chronic cough management and the need for further research and diagnostic tools to improve patient outcomes.

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Conflict of interest statement

Conflict of interest: R. Dezerto is employee of MSD Portugal, who may own stock and/or hold stock options in Merck & Co., Inc., Rahway, NJ, USA. All other authors report no conflicts of interest.

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

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

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Health Sci Rep

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. 2025 Apr 23;8(4):e70749.

doi: 10.1002/hsr2.70749. eCollection 2025 Apr.

[Pulmonary Nontuberculous Mycobacteria Infection in Bronchiectasis: A Narrative Review of Current Status and Future](#)

[Masaki Fujita](#)¹

Affiliations Expand

- PMID: 40276131
- PMCID: [PMC12018276](#)
- DOI: [10.1002/hsr2.70749](#)

Abstract

Background and aims: Pulmonary nontuberculous mycobacteria (NTM) infection and bronchiectasis are two distinct respiratory conditions, but bronchiectasis and pulmonary NTM infections are closely associated. NTM can cause bronchiectasis. However, bronchiectasis can create a favorable environment for NTM colonization and exacerbate the progression of NTM. Managing both conditions typically requires a comprehensive approach that addresses infection and the underlying structural lung damage.

Methods: To perform this review, the author retrieved and assessed relevant articles related to NTM and bronchiectasis that have been published to date from databases, including PubMed/MEDLINE, Scopus, and Google Scholar.

Results: In this review, the close relationship between pulmonary NTM and bronchiectasis is described from the viewpoints of diagnosis, epidemiology, *Pseudomonas aeruginosa*, host susceptibility, females and NTM, and treatment.

Conclusion: Timely diagnosis and management of NTM infections, especially in individuals with underlying risk factors, are essential to prevent disease progression and improve the quality of life of affected individuals.

Keywords: Mycobacterium avium complex; host susceptibility; macrolides; sex.

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Conflict of interest statement

The author declares no conflicts of interest.

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Respir Med

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. 2025 Apr 22:108110.

doi: 10.1016/j.rmed.2025.108110. Online ahead of print.

[Pulmonary rehabilitation utilization in patients with chronic respiratory diseases: 2014-2019](#)

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Affiliations Expand

- PMID: 40273996
- DOI: [10.1016/j.rmed.2025.108110](https://doi.org/10.1016/j.rmed.2025.108110)

Abstract

Background: Chronic respiratory diseases are associated with significant disability and death. Pulmonary rehabilitation (PR) is recommended in the management of chronic respiratory diseases. There is limited population level data comparing PR utilization and completion among patients with chronic respiratory diseases.

Methods: A retrospective, cross sectional analysis concerning PR use in adults residing in the U.S. with chronic obstructive pulmonary disease (COPD), interstitial lung disease (ILD), idiopathic pulmonary fibrosis (IPF), pulmonary hypertension, and bronchiectasis was conducted using the Merative™ MarketScan® Research Databases. PR use was identified using current procedural terminology (CPT) and healthcare common procedure coding system (HCPCS) codes. Demographics, comorbidities, oxygen use, medications, initiation and participation of PR by disease state were collected. Analysis involved chi-square tests and generalized estimating equations.

Results: From 2014 to 2019, we identified 892,741 adults with chronic respiratory diseases and COPD was the most prevalent. PR initiation occurred in 2.3% and annual participation ranged from 1.5 % to 1.7 %. The IPF group had the largest proportion of patients that initiated PR compared to other groups. Completion of ≥ 8 sessions was greatest for the group with IPF (60.8 %), followed by non IPF ILD (56.2 %), bronchiectasis (55.3 %), pulmonary hypertension (55.1 %) and COPD (53.9 %). Completion of ≥ 8 sessions was significantly greater for the IPF group compared to the COPD group, (p <0.0001).

Conclusion: PR was underutilized among individuals with chronic respiratory disease, however the group with IPF demonstrated the greatest proportion of PR initiation and completion compared with other groups.

Keywords: COPD; ILD; IPF; Pulmonary rehabilitation; chronic respiratory disease; pulmonary hypertension.

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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: Alexander Duarte reports a relationship with Simply Speaking Pulmonary Arterial Hypertension - Rush University that includes: speaking and lecture fees and travel reimbursement. 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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[Blood eosinophil counts, airway infections and inhaled antibiotic treatment in bronchiectasis](#)

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Affiliations Expand

- PMID: 40268503

- DOI: [10.1183/13993003.00518-2025](https://doi.org/10.1183/13993003.00518-2025)

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Editorial

N Engl J Med

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. 2025 Apr 24;392(16):1649-1652.

doi: 10.1056/NEJMe2500787.

[Defanging the Neutrophil to Treat Bronchiectasis](#)

[Adam T Hill](#)¹

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- PMID: 40267432

- DOI: [10.1056/NEJMe2500787](https://doi.org/10.1056/NEJMe2500787)

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Editorial

N Engl J Med

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. 2025 Apr 24;392(16):1647-1648.

doi: 10.1056/NEJMe2502618.

[Brensocatib in Bronchiectasis - A New Sheriff in Town?](#)

[Scott C Bell](#)^{1,2}, [Keith Grimwood](#)^{1,3}

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- PMID: 40267431
- DOI: [10.1056/NEJMe2502618](#)

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Clinical Trial

N Engl J Med

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. 2025 Apr 24;392(16):1569-1581.

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[Phase 3 Trial of the DPP-1 Inhibitor Brensocatib in Bronchiectasis](#)

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Collaborators, Affiliations Expand

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- DOI: [10.1056/NEJMoa2411664](https://doi.org/10.1056/NEJMoa2411664)

Abstract

Background: In bronchiectasis, neutrophilic inflammation is associated with an increased risk of exacerbations and disease progression. Brensocatib, an oral, reversible inhibitor of dipeptidyl peptidase 1 (DPP-1), targets neutrophil serine proteases, key mediators of neutrophilic inflammation.

Methods: In a phase 3, double-blind trial, we randomly assigned patients with bronchiectasis (in a 1:1:1 ratio for adults and a 2:2:1 ratio for adolescents) to receive brensocatib (10 mg or 25 mg once per day) or placebo. The primary end point was the annualized rate of adjudicated pulmonary exacerbations over a 52-week period. The secondary end points, listed in hierarchical testing order, were the time to the first exacerbation during the 52-week period; the percentage of patients remaining exacerbation-free at week 52; the change in forced expiratory volume in 1 second (FEV₁); the annualized rate of severe exacerbations; and change in quality of life.

Results: A total of 1721 patients (1680 adults and 41 adolescents) underwent randomization and received brensocatib or placebo. The annualized rate of pulmonary exacerbations was 1.02 in the 10-mg brensocatib group, 1.04 in the 25-mg brensocatib group, and 1.29 in the placebo group (rate ratio, brensocatib vs.

placebo, 0.79 [95% confidence interval {CI}, 0.68 to 0.92; adjusted P = 0.004] with the 10-mg dose and 0.81 [95% CI, 0.69 to 0.94; adjusted P = 0.005] with the 25-mg dose). The hazard ratio for the time to the first exacerbation was 0.81 (95% CI, 0.70 to 0.95; adjusted P = 0.02) with the 10-mg dose and 0.83 (95% CI, 0.70 to 0.97; adjusted P = 0.04) with the 25-mg dose. In each brensocatib group, 48.5% of patients remained exacerbation-free at week 52, as compared with 40.3% in the placebo group (rate ratio, 1.20 [95% CI, 1.06 to 1.37; adjusted P = 0.02] with the 10-mg dose and 1.18 [95% CI, 1.04 to 1.34; adjusted P = 0.04] with the 25-mg dose). At week 52, FEV₁ had declined by 50 ml with the 10-mg dose, 24 ml with the 25-mg dose, and 62 ml with placebo (least-squares mean difference vs. placebo, 11 ml [95% CI, -14 to 37; adjusted P = 0.38] with the 10-mg dose and 38 ml [95% CI, 11 to 65; adjusted P = 0.04] with the 25-mg dose). The incidence of adverse events was similar across groups, except for a higher incidence of hyperkeratosis with brensocatib.

Conclusions: Among patients with bronchiectasis, once-daily treatment with brensocatib (10 mg or 25 mg) led to a lower annualized rate of pulmonary exacerbations than placebo, and the decline in FEV₁ was less with the 25-mg dose of brensocatib than with placebo. (Funded by Insmmed; ASPEN ClinicalTrials.gov number, [NCT04594369](https://clinicaltrials.gov/ct2/show/study/NCT04594369); EudraCT number, 2020-003688-25.).

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Supplementary info

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