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

1

J Cardiopulm Rehabil Prev

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. 2025 Apr 2.

doi: 10.1097/HCR.0000000000000940. Online ahead of print.

[Combined Physical Exercise in Pulmonary Rehabilitation Does Not Alter Endothelial Function and Vascular Structure in Chronic Obstructive Pulmonary Disease: A Randomized Clinical Trial](#)

[Talmir Nolasco¹, Renata Figueiredo, Priscila Zanella, Francini Porcher, Ricardo Gass, Melina Hauck, Marli Knorst](#)

Affiliations Expand

- PMID: 40167498
- DOI: [10.1097/HCR.0000000000000940](#)

Abstract

Purpose: The aim of this study was to analyze the effect of exercise on endothelial function and other cardiovascular risk factors in patients with chronic obstructive pulmonary disease (COPD).

Methods: Forty patients were randomized to an 8-week pulmonary rehabilitation (PR) program or usual care. Symptoms, exercise capacity, and quality of life were measured at baseline and after intervention or observation. Flow-mediated brachial artery dilation (FMD), ankle-brachial index, intermittent claudication questionnaire, cardiovascular risk score, blood pressure, daily steps count, glucose, lipids, and C-reactive protein were evaluated before and after intervention.

Results: Participants had a mean age of 64.2 ± 6.7 years in the PR group and 62.2 ± 8.0 years in the usual care group. The forced expiratory volume in the first second was $45.5 \pm 15.4\%$ predicted in the PR group and $48.1 \pm 24.3\%$ predicted in the usual care group. Attending PR was associated with reduced symptoms, improved exercise capacity and quality of life in patients with COPD ($P < .005$ for all). Endothelial function did not improve after PR (FMD% at baseline 9.38 ± 4.40 vs 9.67 ± 6.56 post PR; $P = .87$), and there was no difference between the 2 groups ($P = .61$). However, exercise reduced C-reactive protein, triglycerides, and glucose and improved cardiovascular risk score, systemic blood pressure, and ankle-brachial index ($P < .005$ for all).

Conclusions: Pulmonary rehabilitation elicited improvement in symptoms, exercise capacity, quality of life, and parameters related to cardiorespiratory fitness. The endothelial function measured by FMD did not change with exercise. However, other cardiovascular risk factors such as blood markers, systemic blood pressure, and lower limb blood flow improved after PR.

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Conflict of interest statement

The authors declare no conflicts of interest.

- [46 references](#)

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ERJ Open Res

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. 2025 Mar 31;11(2):00735-2024.

doi: 10.1183/23120541.00735-2024. eCollection 2025 Mar.

[Anti-inflammatory effects of tiotropium in COPD: a randomised double-blind trial](#)

[Lisa H van Smoorenburg](#)^{1,2}, [Tatiana Karp](#)^{1,2}, [Benedikt Ditz](#)^{1,2,3}, [Wouter H van Geffen](#)⁴, [Victor Guryev](#)^{1,2}, [Ali Almusa](#)¹, [Loes Kistemaker](#)^{5,6}, [Reinoud Gosens](#)^{5,6}, [Maarten van den Berge](#)^{1,2}, [Huib A M Kerstjens](#)^{1,2}

Affiliations Expand

- PMID: 40166051
- PMCID: [PMC11955910](#)
- DOI: [10.1183/23120541.00735-2024](#)

Abstract

Background: COPD is a major global health issue characterised by respiratory symptoms and exacerbations, significantly impacting mortality and quality of life. Muscarinic antagonists are known to prevent exacerbations, possibly by mitigating airway inflammation. This study evaluated the anti-inflammatory effects of tiotropium in patients with COPD by examining inflammatory protein profiles in sputum and blood, and genome-wide expression in sputum.

Methods: We conducted the prospective, double-blind, randomised controlled ANTIOFLAM trial. Patients with COPD Global Initiative for Chronic Obstructive Lung Disease stage II or worse, aged ≥ 40 years and a smoking history of ≥ 10 pack-years were included. After a 4-week washout period of inhaled corticosteroids and anticholinergics, participants were randomised to 6 weeks of treatment with placebo or tiotropium (soft mist inhaler, 5 μg daily). Our primary end-point was a decrease of sputum interleukin (IL)-6 and IL-8 levels in the tiotropium group when compared to the placebo group.

Results: We evaluated samples of 33 participants (n=17 placebo and n=16 tiotropium). Changes in sputum proteins IL-6 and IL-8 were significantly higher after treatment with tiotropium when compared to placebo (p<0.05). Differential expression analysis did not reveal gene expression differences including IL-6 and IL-8.

Conclusion: We did not find tiotropium to have anti-inflammatory effects in sputum or blood of patients with COPD. In contrast, we found 6 weeks of treatment with tiotropium to increase the concentration of almost all tested sputum inflammatory proteins when compared to placebo, while RNA expression levels did not change.

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Conflict of interest statement

Conflict of interest: L.H. van Smoorenburg reports support for the present study from Boehringer Ingelheim and grants from GlaxoSmithKline. W.H. van Geffen reports leadership roles with the European Respiratory Society and NVALT (Dutch Society of Respiratory Physicians), and the following financial (or non-financial) interests: there have been trials run by his department funded by Roche and MSD. R. Gosens reports support for the present study from Boehringer Ingelheim, and

grants from Boehringer Ingelheim, Aquilo and Chiesi. M. van den Berge reports grants from Boehringer Ingelheim, GlaxoSmithKline, Chiesi and Roche. H.A.M. Kerstjens reports support for the present study from Boehringer Ingelheim, grants from GlaxoSmithKline and Novartis, and participation on a data safety monitoring or advisory board with GlaxoSmithKline, Novartis, AstraZeneca and Sanofi. The remaining authors have no further conflicts of interest to disclose.

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

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Case Reports

Am J Case Rep

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. 2025 Apr 1:26:e946280.

doi: [10.12659/AJCR.946280](https://doi.org/10.12659/AJCR.946280).

[Early-Onset COPD and Lung Cancer: Case Studies Highlighting Diagnostic Challenges in Younger Patients](#)

[Robert Uliński^{1,2}](#), [Piotr Korczyński³](#), [Joanna Domagała-Kulawik⁴](#)

Affiliations Expand

- PMID: 40165352
- DOI: [10.12659/AJCR.946280](https://doi.org/10.12659/AJCR.946280)

Abstract

BACKGROUND The coexistence of lung cancer with COPD has received increasing attention in recent years. These 2 entities are attributed to older age, with a mean age of around 70 years old. Here, we present 3 fatal cases of lung cancer and COPD in uncommonly young patients (45-55 years old). **CASE REPORT** The first patient, 46-year-old man, reported progressive tiredness, and recurrent sub-febrile states, without recovery despite empiric treatment with 3 antibiotics. He was diagnosed

with SCC and referred for chemoradiotherapy, but he died within 6 months. The second patient was 53-year-old women with hemoptysis, tiredness, loss of weight, spine pain, and cough, who was first diagnosed with pneumonia. Her first bronchoscopy was not diagnostic. A second bronchoscopy performed 2 weeks later was successful and she was diagnosed with large-cell carcinoma. She was referred for chemoradiotherapy, but died within 1 month. The third patient was 50-year-old women with chest pain radiating to her left shoulder and hoarseness. She was diagnosed with advanced SCLC, and was referred immediately for chemotherapy with immunotherapy, but did not respond well to treatment and died a few months later. **CONCLUSIONS** Age seems to be one of the factors that can delay cancer diagnosis. To the best of our knowledge, the literature contains no reports about young patients with coexistence of lung cancer and COPD. We emphasize the importance of these diseases in differential diagnosis in younger patients when reported with systemic symptoms.

Supplementary info

Publication types, MeSH termsExpand

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Meta-Analysis

BMC Pulm Med

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. 2025 Mar 31;25(1):146.

doi: 10.1186/s12890-025-03595-z.

[The impact of frailty on clinical outcomes among individuals with COPD: a systematic review and meta-analysis](#)

[Mathew Cherian](#) ^{#1}, [Pouya Masoudian](#) ^{#2}, [Kednapa Thavorn](#) ³⁴, [Jacqueline Sandoz](#) ², [Risa Shorr](#) ⁵, [Sunita Mulpuru](#) ⁶⁷⁸

Affiliations Expand

- PMID: 40165150

- DOI: [10.1186/s12890-025-03595-z](https://doi.org/10.1186/s12890-025-03595-z)

Abstract

Background: Frailty is a prevalent and robust predictor of poor outcomes for older adults and those with chronic disease. We performed a systematic review and meta-analysis of the literature to understand the association between frailty and clinical outcomes for people with COPD.

Methods: We searched MEDLINE, EMBASE, Cochrane Central, CINAHL, and Web of Science from inception to February 2022, for observational studies evaluating the association between frailty and clinical outcomes among individuals with COPD. Included studies defined COPD by spirometry, used a validated frailty assessment tool, and compared dyspnea, symptom burden, health related quality of life, exacerbations, hospitalization, or mortality between frail and non-frail individuals. Risk of bias was assessed using the Newcastle Ottawa Scale. Mean differences or hazard ratios were calculated using inverse variance (IV) methods, odds ratios were calculated using Mantel-Haenszel methods, and homogeneity was assessed using I^2 statistics. Results were pooled using a random effects model.

Results: Of 1385 identified studies, 16 studies were included with 7 studies included in the meta-analyses, representing 5903 individuals. The Fried Frailty Phenotype instrument was used in 50% of included studies. When comparing frail vs. non-frail people with COPD, pooled estimates revealed frail people with COPD had higher dyspnea scores [modified Medical Research Council (mMRC) score standardized mean difference (95% CI): 1.67 (1.40-1.92), $I^2 = 24\%$]; higher symptom burden [COPD Assessment Test (CAT) score mean difference (95% CI): 10.24 (8.30-12.17), $I^2 = 31\%$]; more COPD exacerbations in the prior year [mean difference (95% CI): 1.09 (0.62-1.56), $I^2 = 0\%$], and increased odds of being hospitalized in the previous year [OR (95% CI): 2.94 (1.57-5.50); $I^2 = 0\%$]. The largest study with longest follow up period showed increased mortality risk among frail vs. non-frail individuals with COPD, [HR (95% CI): 1.83 (1.24-2.68)].

Conclusions: People with COPD and frailty experience increased dyspnea, symptom burden, exacerbation history, and hospitalizations compared to non-frail patients with COPD. Frailty is a robust predictor of outcomes among people with COPD and should be considered a treatable trait. Additional work is needed to standardize screening methods for frailty, and to understand the optimal timing of non-pharmacologic interventions to treat frailty among people with COPD.

Prospero registry id: CRD42022329893.

Keywords: COPD; Frailty; Pre-frailty; Treatable trait.

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Conflict of interest statement

Declarations. Ethics approval and consent to participate: Not applicable. Consent for publication: Not applicable. Competing interests: The authors declare no competing interests.

- [39 references](#)

Supplementary info

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Ann Intern Med

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. 2025 Apr 1.

doi: 10.7326/ANNALS-25-00797. Online ahead of print.

[Pulmonology: What You May Have Missed in 2024](#)

[Namarik Alenezy](#)¹, [Yusing Gu](#)¹, [Rana Saleh](#)¹, [Laura Sheriff](#)¹, [Michael Unger](#)²

Affiliations Expand

- PMID: 40163874
- DOI: [10.7326/ANNALS-25-00797](#)

Abstract

The past year saw many important publications in the specialty of pulmonology. We screened more than 750 articles published in 2024 and carefully selected 10 that feature important advancements in the management of several respiratory conditions. We highlight 4 articles that describe management options for patients with chronic obstructive pulmonary disease (COPD) beyond pharmacotherapy, including breathing techniques, duration of long-term oxygen therapy, high-intensity compared with low-intensity noninvasive ventilation for exacerbations, and the potential harmful effect of gabapentinoids. Two articles delved into the evidence for various biologic therapies and inhaled relievers used in asthma. We include a randomized trial examining treatment of acute eosinophilic COPD and asthma exacerbations with benralizumab. One article explores dual glucagon-like peptide-1 and glucose-dependent insulinotropic polypeptide receptor agonists as a novel treatment option for obstructive sleep apnea. Another discusses the efficacy of inhaled antibiotics in bronchiectasis. Finally, a meta-analysis examines the evidence for postexposure prophylaxis antiviral agents to reduce transmission and severity of influenza infections.

Conflict of interest statement

Disclosures: Disclosure forms are available with the article online.

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Clin Respir J

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. 2025 Apr;19(4):e70070.

doi: 10.1111/crj.70070.

[Implication of Admission Eosinophil Count and Prognosis of Coronavirus Disease 2019 \(COVID-19\) in Elderly Patients With COPD: A Territory-Wide Cohort Study](#)

[Wang Chun Kwok¹](#), [Yat Fung Shea¹](#), [James Chung Man Ho¹](#), [David Chi Leung Lam¹](#), [Terence Chi Chun Tam¹](#), [Anthony Raymond Tam¹](#), [Mary Sau Man Ip¹](#), [Ivan Fan Ngai Hung¹](#)

Affiliations Expand

- PMID: 40143637
- PMCID: [PMC11947431](#)
- DOI: [10.1111/crj.70070](#)

Abstract

Objectives: This study aims to investigate the association between elderly patients with COPD with different blood eosinophil on admission and those without COPD and the prognosis of COVID-19.

Method: A territory-wide retrospective study was conducted to investigate the association between elderly COPD patients with different blood eosinophil on admission and the prognosis of COVID-19. Elderly patients admitted to public hospitals and community treatment facility in Hong Kong for COVID-19 from

January 23, 2020, to September 31, 2021, were included in the study. Severe diseases were defined as those who develop respiratory complications, systemic complications and death.

Results: Among the 1925 patients included, 133 had COPD. Forty had admission blood eosinophil count ≥ 150 cells/ μL , and 93 had blood eosinophil count < 150 cells/ μL . Patients with COPD and admission blood eosinophil count ≥ 150 cells/ μL , but not those with admission blood eosinophil count < 150 cells/ μL , had severe COVID-19 with the development of respiratory and systemic complications. They were more likely to develop respiratory failure (OR = 5.235, 95% CI = 2.088-13.122, $p < 0.001$) and require invasive mechanical ventilation (OR = 2.433, 95% CI = 1.022-5.791, $p = 0.045$) and intensive care unit admission (OR = 2.214, 95% CI = 1.004-4.881, $p = 0.049$).

Discussion: Our study suggested that the blood eosinophil count on admission could have significant prognostic implications among elderly patients with COPD. Patients with COPD and admission blood eosinophil count ≥ 150 cells/ μL , but not those with admission blood eosinophil count < 150 cells/ μL , have significantly increased risks of developing respiratory and systemic complications from COVID-19, when compared with non-COPD patients.

Keywords: COVID-19; SARS-CoV-2; chronic obstructive pulmonary disease; eosinophilic phenotype.

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Conflict of interest statement

The authors declare no conflicts of interest.

- [52 references](#)

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Randomized Controlled Trial

Health Expect

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. 2025 Apr;28(2):e70181.

doi: 10.1111/hex.70181.

Experiences of Home-Based Pulmonary Rehabilitation With mHealth and Centre-Based Pulmonary Rehabilitation in People With Chronic Obstructive Pulmonary Disease: A Qualitative Study

Hannah Rutherford^{1,2}, Marita Dale¹, Sally Wootton^{1,3}, Rashmi Pithavadian⁴, Sarah Dennis^{1,5,6}, Sarah Brown^{1,3,7}, Jennifer A Alison^{1,8}, Andrew S L Chan^{3,9,10}, Ian A Yang¹¹, Zoe McKeough¹

Affiliations Expand

- PMID: 40019189
- PMCID: [PMC11869189](#)
- DOI: [10.1111/hex.70181](#)

Abstract

Background: Mobile health (mHealth) provides innovative solutions to improve access to pulmonary rehabilitation (PR). This study aimed to explore the experiences of people with chronic obstructive pulmonary disease (COPD) who undertook either an 8-week home-based PR with a mHealth application (app) (m-PR) or centre-based PR (CB-PR).

Methods: Convenience then purposive sampling was used to recruit participants enrolled in a randomised controlled trial after completion or withdrawal from either m-PR or CB-PR. Participants undertook individual, semi-structured interviews. Interview transcripts were inductively coded and thematically analysed using a critical realist approach.

Results: Thirteen m-PR and 12 CB-PR participants were interviewed (mean age (SD) 75 (8) years, 52% male). Four themes were conceptualised: internal motivators influence uptake and adherence, external motivators influence uptake and adherence, programme structure impacts practicality and experience, and living with and managing COPD and other health issues. Motivators for both programmes included improved fitness levels, feeling accountable to the programme and reinforcement from staff and peers. The m-PR in-app functionalities such as the daily task list were additionally motivational. m-PR participants arranged the programme around their schedule while centred-based participants arranged their schedule around the programme. Multi-morbidity and illness were barriers to adherence in both programmes. The social network, environment and resources available to participants impacted their enjoyment.

Conclusion: This study adds important information for service providers considering implementation of mHealth PR models.

Patient or public contribution: Consumers co-designed and user-tested the m-PR app. The qualitative data presented in this manuscript was obtained through interviews with consumers.

Keywords: COPD; mHealth; pulmonary rehabilitation; qualitative study.

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Conflict of interest statement

The authors declare no conflicts of interest.

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

Supplementary info

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Review

Adv Ther

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. 2025 Apr;42(4):1627-1641.

doi: 10.1007/s12325-025-03129-3. Epub 2025 Feb 19.

[Pulmonary Hypertension Associated with Interstitial Lung Disease \(PH-ILD\): Back to the Future](#)

[Giordano Fiorentù¹](#), [Nicol Bernardinello²](#), [Giacomo Giulianelli¹](#), [Elisabetta Cocconcelli¹](#), [Elisabetta Balestro^{#1}](#), [Paolo Spagnolo^{#1}](#)

Affiliations Expand

- PMID: 39969780
- PMCID: [PMC11929637](#)
- DOI: [10.1007/s12325-025-03129-3](#)

Abstract

Pulmonary hypertension (PH) is a progressive syndrome characterized by increased pulmonary artery pressure. PH often complicates chronic lung diseases, thus contributing to a substantial disease burden and poor prognosis. The WHO Group 3 Pulmonary Hypertension has many subcategories, including sleep-hypoventilation PH, high altitude-PH, chronic obstructive pulmonary disease (COPD)-PH, and interstitial lung disease (PH-ILD), the latter carrying the worst prognosis. ILD is a heterogeneous group of disorders characterized by cough and shortness of breath and, in progressive forms, irreversible loss of function and respiratory failure. The development of PH in patients with ILD worsens exercise capacity and exertional dyspnea and impairs quality of life. Thus, suspicion and early detection of PH following thorough cardiologic evaluation (i.e., echocardiography, pro-BNP, and right heart catheterization) is paramount for appropriate patient management. For PH secondary to chronic respiratory diseases, current guidelines recommend optimizing the treatment of the underlying respiratory condition and offering long-term oxygen therapy. In recent years, several clinical trials have failed to identify drugs beneficial for group 3 PH. Conversely, the INCREASE trial of inhaled treprostinil has recently provided hope for treating PH-ILD. In this review, we summarize and critically discuss the present and future of the pharmacological management of PH-ILD.

Keywords: Chronic lung diseases; Interstitial lung disease; Pulmonary hypertension; Therapy; Treatment; Treprostinil.

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Conflict of interest statement

Declarations. Conflict of Interest: Paolo Spagnolo is an Editorial Board member of *Advances in Therapy*. Paolo Spagnolo was not involved in the selection of peer reviewers for the manuscript or any of the subsequent editorial decisions. Giordano Fiorentu, Nicol Bernardinello, Elisabetta Cocconelli, and Elisabetta Balestro have no competing interests to declare. **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.

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

Supplementary info

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Editorial

Ann Am Thorac Soc

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. 2025 Apr;22(4):478-479.

doi: 10.1513/AnnalsATS.202502-146ED.

[Lung Volumes in Smokers without Chronic Obstructive Pulmonary Disease: A Pointer to Disease Development?](#)

[Peter M A Calverley¹](#)

Affiliations Expand

- PMID: 39965164
- DOI: [10.1513/AnnalsATS.202502-146ED](#)

No abstract available

Comment on

- [Phenotypes and Trajectories of Tobacco-exposed Persons with Preserved Spirometry: Insights from Lung Volumes.](#)

Arjomandi M, Zeng S, Barjaktarevic I, Bleecker ER, Bowler RP, Criner GJ, Comellas AP, Couper DJ, Curtis JL, Dransfield MT, Drummond MB, Fortis S, Han MK, Hansel NN, Hoffman EA, Kaner RJ, Kanner RE, Krishnan JA, Labaki W, Ortega VE, Peters SP, Rennard SI, Cooper CB, Tashkin DP, Paine R 3rd, Woodruff PG. Ann Am Thorac Soc. 2025 Apr;22(4):494-505. doi: 10.1513/AnnalsATS.202405-527OC.PMID: 39586032

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Review

Aust N Z J Psychiatry

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. 2025 Apr;59(4):322-338.

doi: 10.1177/00048674251317336. Epub 2025 Feb 10.

[Depression and comorbid chronic physical health diseases in the Australian population: A scoping review](#)

[Gouri Srinivasan](#)¹, [Srinivas Kondalsamy-Chennakesavan](#)¹, [Matthew McGrail](#)², [Vikas Garg](#)^{1,3,4}, [Bushra Nasir](#)¹

Affiliations Expand

- PMID: 39925186
- PMCID: [PMC11924293](#)
- DOI: [10.1177/00048674251317336](#)

Abstract

Objective: Chronic diseases are a major challenge in Australia, contributing to disability, premature mortality, and a significant healthcare burden. This burden is intensified when depression, a common mental health issue, co-occurs with chronic diseases. This scoping review aimed to investigate the relationship between

depression and comorbid chronic diseases, namely cardiovascular disease (CVD), diabetes, asthma, and chronic obstructive pulmonary disease (COPD) in the Australian population.

Methods: Following Joanna Briggs Institute (JBI) methodology, this scoping review searched for English-language articles published between January 2013 and December 2023. The review targeted studies examining depression and selected comorbid chronic diseases within the Australian population. Two independent reviewers conducted data screening and extraction, with results synthesised into tables and summarised narratively.

Results: The search yielded 31 quantitative studies, highlighting a high prevalence of depression co-occurring with chronic diseases. Key findings included the worsening of chronic disease severity by depression, compounded by gender and age disparities, and the impact of socioeconomic factors impairing the quality of life. The review also identified significant challenges in the provision of care, particularly in rural areas, emphasising the need for integrated care models, and enhanced healthcare training.

Conclusion: This review revealed critical research gaps in understanding the relationship between depression and chronic diseases, particularly regarding underrepresented groups such as younger adults and rural populations. It highlights the need for improved diagnostic criteria, treatment approaches, and professional training, advocating for targeted research and policy interventions to improve outcomes and quality of life for individuals with depression and selected comorbid chronic diseases.

Keywords: Australia; chronic disease; comorbidity; depression.

Conflict of interest statement

Declaration of conflicting interestsThe author(s) declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

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

Supplementary info

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Review

Respir Med

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. 2025 Apr;239:107985.

doi: 10.1016/j.rmed.2025.107985. Epub 2025 Feb 6.

[The impact of electronic cigarette use on chronic obstructive pulmonary disease: A systematic review and meta-analysis](#)

[Chunyan Song](#)¹, [Xiaoning Hao](#)², [Elena Critselis](#)³, [Demosthenes Panagiotakos](#)⁴

Affiliations Expand

- PMID: 39921069
- DOI: [10.1016/j.rmed.2025.107985](#)

Abstract

Objectives: Electronic cigarette (or e-cigarette) use is increasing globally. To date, there are limited pooled estimates regarding the impact of e-cigarette use on chronic obstructive pulmonary disease (COPD). The present meta-analysis of large-scale population-based observational studies evaluates the impact of e-cigarette use on COPD.

Methods: A systematic search of observational studies published between 1/2020-1/2024 was conducted in MEDLINE and Scopus based on PRISMA Guidelines.

Results: Of 3670 originally retrieved papers, 7 observational studies (including 4 cross-sectional studies and 3 prospective cohort studies) fulfilled all search criteria and were used for the present meta-analysis which encompassed in total, 3,552,424 participants, including 138,698 cases with COPD. The findings from the random-effects meta-analysis ($I^2 = 22\%$, Cochran Q (6) = 7.19, $p = 0.307$) suggested that use of e-cigarette among non-cigarette users was associated with (pooled Relative Risk, pRR) 1.50-times higher likelihood of COPD (95 % Confidence Interval (CI): 1.27, 1.73). Sensitivity analysis by leave-one-out analysis confirmed the aforementioned results (range of pRR values: 1.46 to 1.61, all $p < 0.001$). Stratified pooled effect estimates of cross-sectional studies only (pOR = 1.55, 95 % CI: 1.26, 1.84) and of prospective cohort studies only (pRR = 1.52, 95 % CI: 0.98-2.06), revealed that the e-cigarette users exhibit between 52 % and 55 % significantly higher likelihood of COPD.

Conclusions: The current meta-analysis highlights that e-cigarette users face an increased risk of developing COPD. Therefore, public health interventions aimed at diminishing e-cigarette are necessary for preventing COPD.

Keywords: Adult; Chronic obstructive pulmonary disease; Electronic cigarette; Public health.

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Conflict of interest statement

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

Supplementary info

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Case Reports

Radiol Case Rep

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. 2025 Jan 16;20(4):1863-1866.

doi: 10.1016/j.radcr.2025.01.009. eCollection 2025 Apr.

[Severe bullous emphysema: exploring risk factors and the importance of radiography](#)

[Mark A Colantonio¹](#), [Joshua Wiley¹](#)

Affiliations Expand

- PMID: 39897754

- PMID: [PMC11786998](#)
- DOI: [10.1016/j.radcr.2025.01.009](#)

Abstract

Bullous emphysema, a subtype of emphysema, is characterized by the irreversible enlargement of air-filled airways greater than 1cm in size. Often time, practitioners focus on smoking duration in pack years, and smoking frequency, rather than smoking onset, when assessing risk for development of bullous emphysema. Distinct radiographic findings on CT imaging can differentiate bullae from other lung pathologies, including lung cysts. Here, we present a young female with diffuse, bullous emphysema without an extensive smoking history. We aim to highlight the importance of smoking onset when determining risk for development bullous emphysema, as well as the role of CT imaging in the diagnosis of lung pathologies.

Keywords: Bullous emphysema; Chronic obstructive pulmonary disease; Computer tomography imaging; Tobacco use.

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- [1 figure](#)

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Review

Gen Thorac Cardiovasc Surg

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. 2025 Apr;73(4):201-208.

doi: 10.1007/s11748-025-02116-3. Epub 2025 Jan 23.

[Off-pump versus on-pump coronary artery bypass grafting in patients with chronic obstructive pulmonary disease: a systematic review and meta-analysis](#)

[Anelise Poluboiarinov Cappellaro](#)¹, [Luiz F Costa de Almeida](#)², [Manoela Lenzi Pinto](#)³, [Marcelo Albuquerque Barbosa Martins](#)⁴, [Augusto Graziani E Sousa](#)⁵, [Júlia Gonçalves Gadelha](#)⁶, [Ana Carolina Putini Vieira](#)⁷, [Luís Fernando Rosati Rocha](#)², [Myat Soe Thet](#)⁸

Affiliations Expand

- PMID: 39847261
- PMCID: [PMC11914329](#)
- DOI: [10.1007/s11748-025-02116-3](#)

Abstract

Introduction: Off-pump coronary artery bypass graft surgery (OPCAB) has been suggested as superior to on-pump coronary artery bypass graft surgery (ONCAB) in certain high-risk subgroups, but its benefit in patients with chronic obstructive pulmonary disease (COPD) remains controversial. This meta-analysis aimed to evaluate OPCAB versus ONCAB outcomes in COPD patients.

Methods: We followed PRISMA guidelines and searched PubMed, Embase, and the Cochrane Library in August 2024 for studies comparing OPCAB and ONCAB in COPD patients. Statistical analysis was conducted using Review Manager 5.4.1 and Rstudio with a fixed or random effects model.

Results: Six studies with a total of 1,687 patients were included, of which 1,062 (62.95%) underwent OPCAB. The mean patient age was 63.6 years. OPCAB did not significantly affect all-cause mortality compared to ONCAB (OR 1.14; 95% CI 0.65-1.99). There were no significant differences in reintubation (OR 0.81; 95% CI 0.53-1.23), prolonged ventilation (OR 0.54; 95% CI 0.24-1.22), post-operative atrial fibrillation (OR 0.90; 95% CI 0.70-1.15), or ARDS (OR 0.43; 95% CI 0.14-1.33). However, ventilation time was significantly shorter in the OPCAB group (MD - 5.30 h; 95% CI - 7.22 to - 3.38).

Conclusion: OPCAB is associated with reduced ventilation time in COPD patients though it shows no significant difference in all-cause mortality or other post-operative complications compared to ONCAB.

Keywords: Chronic obstructive pulmonary disease; Coronary artery bypass grafting; Meta-analysis; Off-pump; On-pump.

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Conflict of interest statement

Declarations. Conflict of interest: The authors declare that they have no competing interests. **Ethical approval and consent to participate:** Not applicable as this study is a systematic review and meta-analysis of previously published studies. **Consent for publication:** Not applicable.

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. 2025 Apr:132:112681.

doi: 10.1016/j.nut.2024.112681. Epub 2024 Dec 31.

[Segmental phase angle can predict incidence of severe exacerbation in male patients with COPD](#)

[Takeshi Kobayashi](#)¹, [Tomoyuki Murakami](#)², [Hiroto Ono](#)³, [Shintaro Togashi](#)⁴, [Tsuneyuki Takahashi](#)⁵

Affiliations [Expand](#)

- PMID: 39826429
- DOI: [10.1016/j.nut.2024.112681](#)

Abstract

Objective: To investigate whether segmental phase angle (PhA) is a useful predictor of severe chronic obstructive pulmonary disease (COPD) exacerbation.

Research methods and procedures: This prospective cohort study enrolled consecutive patients with COPD with a follow-up period of 3 years. The primary outcome was incidence of severe exacerbation. PhA was measured for the whole body and segmental body sites (trunk and upper and lower limbs). We used receiver operating characteristic (ROC) curves to determine the cut-off values and area under the curve (AUC) for predicting exacerbation based on PhA. We applied Cox proportional hazard regression analyses to estimate the independent prognostic effect of PhA on the incidence of severe exacerbation.

Results: We analyzed 108 male participants (mean age 75.1 ± 7.9 years) and the median follow-up period was 1082 [643-1103] days, with an annual severe exacerbation incidence rate of 0.23 per person-year. ROC analysis revealed that the AUC for Whole-body and segmental PhA were as follows: Whole-body: AUC = 0.69 (95% confidence interval [CI] = 0.59-0.79); right arm: AUC = 0.65 (95% CI = 0.53-0.77); left arm: AUC = 0.68 (95% CI = 0.56-0.79); right leg: AUC = 0.73 (95% CI = 0.64-0.82); left leg: AUC = 0.71 (95% CI = 0.62-0.81); trunk: AUC = 0.58 (95% CI = 0.46-0.69). Cox proportional hazard analysis demonstrated that PhA of the right leg (hazard ratio [HR]=3.50, 95% CI=1.33-9.20), left leg (HR=3.26, 95% CI=1.18-9.04), and left arm (HR=2.61, 95% CI=1.17-6.80) were independently and significantly associated with incidence of severe exacerbation. Whole and trunk PhA were not significantly associated with the incidence of severe exacerbation.

Conclusions: Segmental PhA may serve as a valuable predictive indicator of severe exacerbation in male patients with COPD. Notably, both leg PhA were strongly associated with the occurrence of severe exacerbations.

Registry number: UMIN000044824.

Keywords: Bioelectrical impedance analysis; Chronic obstructive pulmonary disease; Segmental phase angle; Severe exacerbation.

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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:224:112024.

doi: 10.1016/j.mad.2024.112024. Epub 2025 Jan 14.

[The effect of torque teno virus \(TTV\) infection on clinical outcomes, genomic integrity, and mortality in COPD patients](#)

[Patrizia Russo¹](#), [Francesca Milani²](#), [Dolores Limongi³](#), [Carla Prezioso⁴](#), [Federica Novazzi⁵](#), [Francesca Drago Ferrante⁶](#), [Fabrizio Maggi⁷](#), [Guido Antonelli⁸](#), [Stefano Bonassi⁹](#)

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- PMID: 39818252
- DOI: [10.1016/j.mad.2024.112024](https://doi.org/10.1016/j.mad.2024.112024)

Free article

Abstract

Introduction: Torque Teno Virus (TTV), an "orphan" virus with unclear pathology, has been associated with various diseases and immune dysfunctions. This study investigates the link between TTV viremia and clinical markers in patients with severe to very severe COPD undergoing respiratory rehabilitation.

Methods: We analyzed 102 elderly COPD patients, stratified by TTV viremia levels (< or $\geq 4 \log_{10}$ copies/mL). Clinical markers-including mortality, inflammatory-oxidative parameters (Lymphocyte/Monocyte, Neutrophil/Lymphocyte, and Platelet/Lymphocyte ratios), IL-6 (measured via ELISA assay), and DNA damage (assessed via comet assay)-were evaluated.

Results: Of the patients, 62.75 % had TTV viremia levels $> 4 \log_{10}$ copies/mL. No associations were found between TTV levels and sex or obesity. However, higher TTV viremia correlated with increased DNA damage and significantly lower 5-year survival probability.

Conclusion: Patients with TTV levels $\geq 4 \log_{10}$ copies/mL exhibited the lowest survival probability, though DNA damage emerged as a stronger determinant of outcomes. This study raises key scientific questions on the role of TTV in COPD. Specifically, it explores whether TTV may serve as a potential marker for poor

prognosis in COPD and whether rehabilitation strategies for these patients could be customized based on DNA damage and/or viremia.

Keywords: COPD; DNA damage; Respiratory outcome; Survival; TTV.

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Conflict of interest statement

Declaration of Competing Interest The authors declare no conflict of interest.

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Editorial

Am J Respir Crit Care Med

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. 2025 Apr;211(4):543-544.

doi: 10.1164/rccm.202410-2041ED.

[Navigating the Progression of Chronic Obstructive Pulmonary Disease](#)

[Carrie Pistenmaa¹](#), [George R Washko¹](#)

Affiliations Expand

- PMID: 39805088
- DOI: [10.1164/rccm.202410-2041ED](#)

No abstract available

Comment on

- [Temporal Exploration of Chronic Obstructive Pulmonary Disease Phenotypes: Insights from the COPDGene and SPIROMICS Cohorts.](#)

Bell AJ, Ram S, Labaki WW, Murray S, Kazerooni EA, Galban S, Martinez FJ, Hatt CR, Wang JM, Ivanov V, McGettigan P, Khokhlovich E, Maiorino E, Suryadevara R, Boueiz A, Castaldi PJ, Mirkes EM, Zinovyev A, Gorban AN, Galban CJ, Han MK. Am J Respir Crit Care Med. 2025 Apr;211(4):569-576. doi: 10.1164/rccm.202401-0127OC.PMID: 39269427

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Am J Emerg Med

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. 2025 Apr:90:23-30.

doi: 10.1016/j.ajem.2025.01.012. Epub 2025 Jan 6.

[Evaluating the prognostic value of DECAF score and procalcitonin in patients with COPD exacerbation](#)

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- PMID: 39798183
- DOI: [10.1016/j.ajem.2025.01.012](#)

Abstract

Objectives: Acute exacerbations of chronic obstructive pulmonary disease (AECOPD) frequently result in emergency department (ED) visits, necessitating accurate risk stratification. The aim of this study was to evaluate and compare the prognostic utility of the DECAF score and serum procalcitonin levels in predicting clinical outcomes in patients with AECOPD.

Methods: This retrospective cohort study encompassed AECOPD patients presenting to the ED over a three-year period who had serum procalcitonin levels measured. The primary outcome was one-month mortality, with secondary outcomes including ED re-admission, hospitalization, and intensive care unit (ICU) admission. Receiver operating characteristic (ROC) curve analysis was employed to assess the prognostic performance of DECAF score and procalcitonin, and differences between areas under the curve (AUC) were compared.

Results: A total of 130 patients were analyzed, comprising 105 survivors and 25 non-survivors. The median DECAF score was significantly higher in non-survivors [4 (IQR: 3-4)] compared to survivors [3 (IQR: 2-4)] ($p < 0.001$). Similarly, median procalcitonin levels were elevated in non-survivors [0.26 ng/mL (IQR: 0.11-2.77)] relative to survivors [0.08 ng/mL (IQR: 0.04-0.21)] ($p < 0.001$). The AUC for the DECAF score was 0.758 (95 % CI: 0.673-0.842), while that for procalcitonin was 0.764 (95 % CI: 0.668-0.860). The difference between AUCs was 0.006 (95 % CI: -0.140 to 0.127), ($p = 0.927$). The negative predictive value (NPV) was 90.6 % for the 4-point DECAF score and 96.2 % for a 0.075 ng/mL procalcitonin cut-off. Notably, when used in combination, the NPV reached 100 % (95 % CI: 89.1-100).

Conclusions: The DECAF score and serum procalcitonin levels both exhibit robust prognostic capabilities in excluding adverse outcomes in AECOPD patients, with their predictive accuracy enhanced when used in tandem.

Keywords: Chronic obstructive pulmonary disease; DECAF score; Emergency department (MeSH database); Exacerbation; Procalcitonin.

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Conflict of interest statement

Declaration of competing interest The authors have no commercial associations or sources of support that might pose a conflict of interest.

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Meta-Analysis

Eur J Emerg Med

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. 2025 Apr 1;32(2):87-99.

doi: 10.1097/MEJ.0000000000001205. Epub 2024 Dec 3.

[Contribution of point-of-care ultrasound in the prehospital management of patients with non-trauma acute dyspnea: a systematic review and meta-analysis](#)

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Affiliations Expand

- PMID: 39630617
- PMCID: [PMC11855997](#)
- DOI: [10.1097/MEJ.0000000000001205](#)

Abstract

Acute dyspnea is a common symptom whose management is challenging in prehospital settings. Point-of-care ultrasound (POCUS) is increasingly accessible because of device miniaturization. To assess the contribution of POCUS in the prehospital management of patients with acute nontraumatic dyspnea, we performed a systematic review on nontrauma patients of any age managed in the prehospital setting for acute dyspnea and receiving a POCUS examination. We searched seven databases and gray literature for English-language studies published from January 1995 to November 2023. Two independent reviewers completed the study selection, data extraction, and risk of bias assessment. The primary outcome was the assessment of the contribution of POCUS to feasibility, diagnostic, therapeutic, prognosis, patient referral, and transport vector modification. Twenty-three studies were included. The risk of bias assessment identified 3 intermediate-risk, 18 serious-risk, and 2 critical-risk studies. Three studies reported moderate to excellent feasibility for lung POCUS, and three studies reported poor to mediocre feasibility for cardiac POCUS. The median duration of the POCUS examination was less than 5 minutes (six studies). POCUS improved diagnostic identification (seven studies). The diagnostic accuracy of POCUS was excellent for pneumothorax (sensitivity = 100%, specificity = 100%, two studies),

very good for acute heart failure (sensitivity = 71-100%, specificity = 72-95%, eight studies), good for pneumonia (sensitivity = 88%, specificity = 59%, one study), and moderate for pleural effusion (sensitivity = 26-53%, specificity = 83-92%, two studies). Treatment was modified in 11 to 54% of the patients (seven studies). POCUS had no significant effect on patient prognosis (two studies). POCUS contributed to patient referrals and transport vectors in 51% (four studies) and 25% (three studies) of patients, respectively. The evidence supports the use of POCUS for managing acute nontraumatic dyspnea in the prehospital setting in terms of feasibility, overall diagnostic contribution, and, particularly, lung ultrasound for acute heart failure diagnosis. Moreover, POCUS seems to have a therapeutic contribution. There is not enough evidence supporting the use of POCUS for pneumonia, pleural effusion, pneumothorax, chronic obstructive pulmonary disease, or asthma exacerbation diagnosis, nor does it support prognostic, patient referral, and transport vector contribution. A high level of evidence is lacking and needed.

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Conflict of interest statement

There are no conflicts of interest.

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Ann Am Thorac Soc

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. 2025 Apr;22(4):494-505.

doi: 10.1513/AnnalsATS.202405-527OC.

Phenotypes and Trajectories of Tobacco-exposed Persons with Preserved Spirometry: Insights from Lung Volumes

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Affiliations Expand

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- DOI: [10.1513/AnnalsATS.202405-527OC](https://doi.org/10.1513/AnnalsATS.202405-527OC)

Abstract

Rationale: Among tobacco-exposed persons with preserved spirometry (TEPSs), we previously demonstrated that different lung volume indices—specifically, elevated total lung capacity (TLC) versus elevated ratio of functional residual capacity to TLC (FRC/TLC)—identify different lung disease characteristics in the COPD Gene cohort. **Objective:** We sought to determine differential disease characteristics and trajectories associated with lung volume indices among TEPSs in the SPIROMICS cohort. **Methods:** We categorized TEPSs ($n = 814$) by tertiles (low, intermediate, and high) of TLC or residual volume-to-TLC ratio (RV/TLC) derived from baseline computed tomography images and then examined clinical and spirometric disease trajectories in mutually exclusive categories of participants with high TLC without high RV/TLC ([TLC]^{high}) versus high RV/TLC without high TLC ([RV/TLC]^{high}). We examined differences in computed tomography-measured emphysema (Hounsfield units [HU] ≤ -950 ; parametric response mapping [PRM] of emphysema), air trapping (HU ≤ -856 ; PRM of functional small airway disease; a disease probability measure for non-emphysematous gas trapping), airway geometry (the mean square root of wall area of a hypothetical airway with 10 mm internal perimeter), respiratory symptoms (on the modified Medical Research Council Dyspnea Scale; COPD Assessment Test [CAT]; St. George's Respiratory Questionnaire [SGRQ]; and Short Form-12 [SF12]), and outcomes (annualized exacerbation rate) between the two categories at baseline and over follow-up time up to 8.5 years, using regression modeling adjusted for age, sex, height, weight, and smoking status (current vs. former smoker) and burden (pack-years). **Results:** In TEPSs, the pattern of spirometric disease progression differed between participants with [TLC]^{high} and those with [RV/TLC]^{high}: There was increased forced vital capacity with stable forced expiratory volume in 1 second in participants with [TLC]^{high}, versus unchanged forced vital capacity but nominally decreased forced expiratory volume in 1 second in those with [RV/TLC]^{high}. Compared with participants with [TLC]^{high}, TEPSs with [RV/TLC]^{high} had less emphysema (by HU ≤ -950) but more airway disease (by HU ≤ -856 ; PRM of functional small airway disease; disease probability measure for gas trapping, and mean square root of wall area of a hypothetical airway with 10 mm internal perimeter), more respiratory symptoms (on the modified Medical Research Council Dyspnea Scale, CAT, SGRQ, and SF12), and more severe exacerbations at

baseline. Over an average follow-up of 4.1 ± 2.4 years (range = 0.5-8.5 yr), TEPSs with $[RV/TLC]^{high}$ also had a higher likelihood of developing more severe spirometric disease (preserved ratio impaired spirometry or Global Initiative for Chronic Obstructive Lung Disease Classification 2) and worsening of their respiratory symptoms (on the CAT and SGRQ). Although the incidence rates of respiratory exacerbations, hospitalizations, and mortality were not significantly different between the two categories over the follow-up period, TEPSs with $[RV/TLC]^{high}$ were more likely to have been prescribed a respiratory inhaler at their last follow-up visit. Conclusions: In these TEPSs from the SPIROMICS cohort, lung volume stratification by TLC versus RV/TLC identifies two pre-COPD phenotypes with distinct respiratory symptoms, radiographic features, and clinical trajectories. The characteristics of these pre-COPD phenotypes match those previously described in the COPDGene cohort using TLC versus FRC/TLC stratification.

Keywords: COPD; air trapping; lung volumes; pre-COPD; smoking.

Comment in

- [Lung Volumes in Smokers without Chronic Obstructive Pulmonary Disease: A Pointer to Disease Development?](#)

Calverley PMA. Ann Am Thorac Soc. 2025 Apr;22(4):478-479. doi: 10.1513/AnnalsATS.202502-146ED.PMID: 39965164 No abstract available.

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Comparative Study

Am J Med

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. 2025 Apr;138(4):650-659.e10.

doi: 10.1016/j.amjmed.2024.11.007. Epub 2024 Nov 18.

[Effectiveness of Single Versus Multiple Inhaler Triple Therapy on Mortality and Cardiopulmonary Risk Reduction in COPD: The SKOPOS-MAZI Study](#)

[Michael Pollack](#)¹, [Eleni Rapsomaniki](#)², [Antonio Anzueto](#)³, [Kirsty Rhodes](#)², [Nathaniel M Hawkins](#)⁴, [Claus F Vogelmeier](#)⁵, [Jonathan Marshall](#)⁶, [Hana Müllerová](#)⁷

Affiliations Expand

- PMID: 39566703
- DOI: [10.1016/j.amjmed.2024.11.007](https://doi.org/10.1016/j.amjmed.2024.11.007)

Free article

Abstract

Background: Patients with chronic obstructive pulmonary disease (COPD) have elevated cardiopulmonary and mortality risk, particularly following exacerbations. While single inhaler triple therapies (SITTs), such as budesonide/glycopyrrolate/formoterol fumarate (BGF), reduce cardiopulmonary risk versus dual bronchodilator therapy, there is limited evidence comparing outcomes with SITTs versus multiple inhaler triple therapies (MITTs).

Methods: SKOPOS-MAZI was a retrospective comparative effectiveness study in patients with COPD aged ≥ 40 years using US administrative claims data from Optum's deidentified Clinformatics® Data Mart Database. The primary and secondary endpoints were time to all-cause mortality and time to first severe cardiopulmonary event following initiation of BGF or MITT (identification period: October 1, 2020-June 30, 2023; index date: first prescription fill). Relative hazards of outcomes were assessed until a censoring event using Cox proportional hazards models, with inverse propensity treatment weighting accounting for between-group imbalances (standardized mean difference >0.1) in baseline characteristics.

Results: In the primary cohort, risk (hazard ratio [95% confidence intervals]) of all-cause mortality and a first severe cardiopulmonary event were 18% (0.82 [0.75, 0.91]) and 12% (0.88 [0.83, 0.93]) lower in patients initiating BGF versus MITT; results were consistent across censoring definitions, landmark periods, and sensitivity cohorts.

Conclusion: In this real-world comparative effectiveness study of patients with COPD initiating BGF or MITT, BGF was associated with lower all-cause mortality and severe cardiopulmonary event risk versus MITT after accounting for between-group differences in baseline sociodemographic and clinical characteristics. This study supports the benefits of BGF over MITT and the need to consider proactive use of SITTs in COPD management.

Keywords: All-cause mortality; Budesonide/glycopyrrolate/formoterol fumarate; Cardiopulmonary; Chronic obstructive pulmonary disease; Comparative effectiveness study; Multiple inhaler triple therapy; Real-world evidence; Single inhaler triple therapy.

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ESC Heart Fail

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. 2025 Apr;12(2):900-911.

doi: 10.1002/ehf2.15127. Epub 2024 Nov 7.

[Phenotyping patients with chronic obstructive pulmonary disease and heart failure](#)

[Peter Moritz Becher](#)^{1,2,3}, [Felix Lindberg](#)³, [Lina Benson](#)³, [Camilla Hage](#)³, [Ulf Dahlström](#)⁴, [Stephan Rosenkranz](#)⁵, [Francesco Cosentino](#)^{3,6}, [Giuseppe M C Rosano](#)⁷, [Stefan Blankenberg](#)^{1,2,8}, [Paulus Kirchhof](#)^{1,2,9}, [Frieder Braunschweig](#)^{3,6}, [Lars H Lund](#)^{3,6}, [Gianluigi Savarese](#)^{3,6}

Affiliations Expand

- PMID: 39509556
- PMCID: [PMC11911629](#)
- DOI: [10.1002/ehf2.15127](#)

Abstract

Aims: Chronic obstructive pulmonary disease (COPD) and heart failure (HF) are prevalent comorbidities associated with significant morbidity/mortality. We assessed prevalence of, patient profiles and outcomes associated with COPD across the ejection fraction (EF) spectrum.

Methods: HF patients enrolled in the Swedish HF registry between 2005 and 2021 were considered. Multivariable logistic regression models were fitted to assess patient characteristics independently associated with COPD and Cox regression models for investigating the associations between COPD and outcomes, that is, morbidity/mortality.

Results: Among 97 904 HF patients, COPD prevalence was 13%, highest in HF with preserved EF [HFpEF: 16%, HF with mildly reduced EF (HFmrEF): 12%, HF with reduced EF (HFrEF): 11%]. Key patient characteristics independently associated with a diagnosis of COPD included higher EF, female sex, smoking, obstructive sleep disorder, peripheral artery disease, a lower educational level, more severe HF, more likely mineralocorticoid receptor antagonist and diuretic use but less likely use of angiotensin-converting enzyme inhibitors/angiotensin receptor blockers/angiotensin-receptor-neprilysin inhibitors (not in HFrEF), beta-blockers, HF device therapies, and follow-up in HF nurse-led clinics. COPD was independently associated with a 15% higher risk of cardiovascular (CV) death/HF hospitalization [hazard ratio: 1.15 (95% confidence interval: 1.11-1.18)], CV death, non-CV death, all-cause death and HF hospitalizations, regardless of EF.

Conclusions: COPD was present in every eight patient with HF, and more common with preserved EF. Patients with COPD had more severe HF, heavier comorbidity burden and worse morbidity/mortality regardless of EF. Our results call for improved diagnostic and management strategies in patients with HF and COPD.

Keywords: COPD; HFmrEF; HFpEF; HFrEF; SwedeHF; heart failure.

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Conflict of interest statement

Dr. Becher reports personal fees from AstraZeneca, Ingelheim Boehringer and the German Research Foundation, all outside the submitted work. Dr. Dahlström reports grants outside the present work from Boehringer Ingelheim, AstraZeneca, Pfizer, Vifor, Boston Scientific and Roche Diagnostics and consultancies from Amgen and Novartis and speaker fees from AstraZeneca, all outside the submitted work. Dr. Rosenkranz reports personal fees from Abbott, Acceleron, Actelion, Aerovate, Altavant, AOP, AstraZeneca, Bayer, Boehringer-Ingelheim, Edwards, Ferrer, Gossamer, Inari, Janssen, Lilly, Liquidia, MSD and United Therapeutics, all outside the submitted work; and research grants to his institution from AstraZeneca, Bayer, Janssen, MSD and Lempo, all outside the submitted work.

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Dr. Blankenberg reports grants and personal fees from Abbott Diagnostics, Bayer, Siemens and Thermo Fisher; grants from Singulex; and personal fees from Abbott,

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Dr. Kirchhof received research support for basic, translational and clinical research projects from European Union, British Heart Foundation, Leducq Foundation, Medical Research Council (UK) and German Center for Cardiovascular Research, from several drug and device companies active in atrial fibrillation and has received honoraria from several such companies in the past, but not in the last 3 years. Dr. Kirchhof is listed as inventor on two issued patents held by University of Hamburg (Atrial Fibrillation Therapy WO 2015140571, Markers for Atrial Fibrillation WO 2016012783), all outside the submitted work. Dr. Braunschweig has served as a committee member in trials sponsored by Medtronic and Biotronik. The employer of Dr. Braunschweig has been paid for industry related activities as chair or speaker. No payment has been directly transferred to Dr. Braunschweig as a result of these activities, all outside the submitted work. Dr. Lund reports personal fees from Merck, grants and personal fees from Vifor-Fresenius, grants and personal fees from AstraZeneca, grants and personal fees from Relypsa, personal fees from Bayer, grants from Boston Scientific, personal fees from Pharmacosmos, personal fees from Abbott, personal fees from Medscape, personal fees from Myokardia, grants and personal fees from Boehringer Ingelheim, grants and personal fees from Novartis, personal fees from Sanofi and personal fees from Lexicon, all outside the submitted work. Dr. Savarese reports grants and personal fees from CSL Vifor, Boehringer Ingelheim, AstraZeneca, Servier, Novartis, Cytokinetics and Pharmacosmos and personal fees from Roche, Abbott, Edwards Lifescience, Medtronic, TEVA and INTAS and grants from Boston Scientific, Merck and Bayer, all outside the submitted work. Dr. Lindberg, Dr. Benson, Dr. Hage and Dr. Rosano have no conflicts of interest to disclose related to this work.

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Review

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. 2025 Apr;81(4):1700-1716.

doi: 10.1111/jan.16493. Epub 2024 Oct 18.

[The Experiences and Perceptions of Telehealth in Patients Living With Advanced Chronic Obstructive Pulmonary Disease: A Qualitative Evidence Synthesis](#)

[Úna O'Connor](#)¹, [Geraldine Crilly](#)²

Affiliations Expand

- PMID: 39420778
- PMCID: [PMC11896827](#)
- DOI: [10.1111/jan.16493](#)

Abstract

Aim: To systematically identify, appraise and synthesise qualitative research evidence which examined the impact of telehealth on the experiences and perceptions of patients living with advanced chronic obstructive pulmonary disease, to inform the development of patient-centred telehealth.

Design: Qualitative evidence synthesis.

Database searches: CINAHL, Cochrane, Embase, PUBMED, MEDLINE, ETHOS, Web of Science, PsycINFO, Lenus, DART, RIAN and ProQuest were searched for primary qualitative studies undertaken between 2008 and 2023.

Methods: A thematic synthesis of studies was undertaken to identify descriptive themes relating to patient views. Methodological quality was assessed using the Critical Appraisal Skills Programme framework, and confidence in review findings was assessed using the GRADE-CERQual approach.

Findings: Nine studies met the inclusion criteria and were included in the final synthesis. Four analytical themes were generated (1) telehealth as a facilitator of independence, (2) the influence of patient and healthcare provider relationship on successful engagement with telehealth, (3) usability of telehealth to patients living with advanced chronic obstructive pulmonary disease and (4) trusting virtual health services and facilitating confidence in the patient/service user. Five descriptive themes emerged: (i) individualised telehealth chronic obstructive pulmonary disease care (ownership and control), (ii) managing chronic obstructive pulmonary disease exacerbations, (iii) being heard and feeling understood, (iv) telehealth as an education aid and (v) aging and virtual technology.

Conclusion: Understanding the experiences of patients with chronic obstructive pulmonary disease and their engagement with telehealth is a necessary determinant of how best to utilise telehealth in this population and may serve to inform policymakers to further develop and implement telehealth into practice. Future research on patients and healthcare professionals' views on telehealth use in the palliative stage of this illness may also be valuable.

Impact: Findings add value by providing healthcare providers with additional evidence to improve understanding of both telehealth complexity and human experiences and perceptions. It is anticipated that a deeper understanding of chronic obstructive pulmonary disease patients' experiences and perceptions will inform the development of strategies to maximise and enhance the application of patient-centred telehealth within the context of coping and living with a debilitating condition.

Patient or public contribution: No patient or public contribution was utilised in this study.

Keywords: chronic obstructive pulmonary disease; nursing; patient perspectives; qualitative evidence synthesis; remote monitoring; telehealth; thematic synthesis.

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Conflict of interest statement

The authors declare no conflicts of interest.

- [65 references](#)
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Am J Respir Crit Care Med

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. 2025 Apr;211(4):569-576.

doi: 10.1164/rccm.202401-0127OC.

Temporal Exploration of Chronic Obstructive Pulmonary Disease Phenotypes: Insights from the COPDGene and SPIROMICS Cohorts

[Alexander J Bell](#)¹, [Sundaresh Ram](#)¹, [Wassim W Labaki](#)², [Susan Murray](#)³, [Ella A Kazerooni](#)¹, [Stefanie Galban](#)¹, [Fernando J Martinez](#)⁴, [Charles R Hatt](#)⁵, [Jennifer M Wang](#)², [Vladimir Ivanov](#)⁶, [Paul McGettigan](#)⁶, [Edward Khokhlovich](#)⁶, [Enrico Maiorino](#)⁷, [Rahul Suryadevara](#)⁷, [Adel Boueiz](#)⁷, [Peter J Castaldi](#)⁷, [Evgeny M Mirkes](#)⁸, [Andrei Zinovyev](#)⁹, [Alexander N Gorban](#)^{8,10}, [Craig J Galban](#)¹, [MeiLan K Han](#)²

Affiliations Expand

- PMID: 39269427
- DOI: [10.1164/rccm.202401-0127OC](https://doi.org/10.1164/rccm.202401-0127OC)

Abstract

Rationale: Chronic obstructive pulmonary disease (COPD) exhibits considerable progression heterogeneity. We hypothesized that elastic principal graph analysis (EPGA) would identify distinct clinical phenotypes and their longitudinal relationships. **Objectives:** Our primary objective was to create a map of COPD phenotypes and their connectivity using EPGA. **Secondarily,** we used longitudinal and external data sets to test the validity and reproducibility of this map. **Methods:** Cross-sectional data from 8,972 tobacco-exposed COPDGene participants, with and without COPD, were used to train a model with EPGA, using thirty clinical, physiologic and CT features. 4,585 participants from COPDGene Phase 2 were used to test longitudinal trajectories. 2,652 participants from SPIROMICS tested external reproducibility. **Measurements and Main Results:** Our analysis used cross-sectional data to create an elastic principal tree, where time is associated with distance on the tree. Six clinically distinct tree segments were identified that differed by lung function, symptoms, and CT features: Subclinical (SC); Parenchymal Abnormality (PA); Chronic Bronchitis (CB); Emphysema Male (EM); Emphysema Female (EF); and Severe Airways (SA) disease. 5-year data from COPDGene mapped longitudinal changes onto the tree, and longitudinal trajectories demonstrated a net flow of patients from SC towards EM and EF, including trajectories through airway disease predominant phenotypes, CB and SA. Cross-sectional SPIROMICS data projected onto the tree showed clinically similar patient groupings. **Conclusions:** This novel analytic methodology provides an approach to defining longitudinal phenotypic trajectories using cross sectional data. These insights are clinically relevant and could facilitate precision therapy and future trials to modify disease progression. Clinical trial registered with www.clinicaltrials.gov ([NCT00608764](https://clinicaltrials.gov/ct2/show/study/NCT00608764) and [NCT01969344](https://clinicaltrials.gov/ct2/show/study/NCT01969344)).

Keywords: COPD; airway disease; disease progression; emphysema; phenotypes.

Comment in

- [Navigating the Progression of Chronic Obstructive Pulmonary Disease.](#)

Pistenmaa C, Washko GR. Am J Respir Crit Care Med. 2025 Apr;211(4):543-544. doi: 10.1164/rccm.202410-2041ED. PMID: 39805088 No abstract available.

Supplementary info

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Randomized Controlled Trial

J Sleep Res

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. 2025 Apr;34(2):e14334.

doi: 10.1111/jsr.14334. Epub 2024 Sep 12.

[Respiratory safety of lemborexant in adult and elderly subjects with moderate-to-severe chronic obstructive pulmonary disease](#)

[Jocelyn Y Cheng](#)¹, [Daniel Lorch](#)², [Nancy Hall](#)¹, [Margaret Moline](#)¹

Affiliations [Expand](#)

- PMID: 39266012
- PMCID: [PMC11911032](#)
- DOI: [10.1111/jsr.14334](#)

Abstract

Because some hypnotics worsen respiratory conditions, it was important to determine the respiratory safety of lemborexant, a competitive dual orexin-receptor antagonist approved to treat adults with insomnia, in subjects with moderate-to-severe chronic obstructive pulmonary disease. E2006-A001-113 (Study 113; [NCT04647383](#)) was a multicentre, multiple-dose, randomised, double-blind, placebo-controlled, two-period crossover study in adult subjects with moderate or severe chronic obstructive pulmonary disease (per spirometry-based Global Initiative for Chronic Obstructive Lung Disease [GOLD] criteria). Subjects (N = 30) were randomised to two treatment sequences comprising 8-night treatment periods (washout \geq 14 days) with lemborexant 10 mg or placebo. Peripheral oxygen saturation (SpO₂; primary endpoint), apnea-hypopnea index, objective sleep parameters and sleep architecture measures were assessed after single (Day 1) and multiple (Day 8) doses. There was no significant difference in least-squares mean SpO₂ after a single dose of lemborexant (91.1%) versus placebo (91.5%). Although a statistically significant difference in SpO₂ was observed after multiple doses (least-squares mean: lemborexant, 91.3%; placebo, 90.8%) favouring lemborexant, this was not considered clinically meaningful. Apnea-hypopnea index was not significantly different between treatments after single or multiple doses. Total sleep time and total rapid eye movement sleep were significantly greater on Days 1 and 8 with lemborexant versus placebo. Treatment-emergent adverse events were reported in five (16.7%) subjects when taking lemborexant and four (13.3%) subjects when taking placebo; treatment-emergent adverse events were mostly mild. Lemborexant was well tolerated and did not adversely impact SpO₂ or apnea-hypopnea index after single and multiple doses relative to placebo in subjects with moderate-to-severe chronic obstructive pulmonary disease.

Keywords: chronic obstructive; insomnia; lemborexant; orexins; pulmonary disease.

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Conflict of interest statement

JYC, NH and MM are employees of Eisai Inc. DL is a paid clinical trial investigator for Eisai Inc.

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

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Am J Phys Med Rehabil

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. 2025 Apr 1;104(4):e49-e57.

doi: 10.1097/PHM.0000000000002612. Epub 2024 Aug 26.

[Impact of Leisure-Time Physical Activity and Sedentary Behavior on Mortality in Patients With Chronic Obstructive Pulmonary Disease](#)

[Lindong Yuan](#)¹, [Lihai Zhang](#), [Yan Wang](#), [Peige Zhao](#), [Xiang Xie](#), [Dongming Cao](#)

Affiliations Expand

- PMID: 39235866
- DOI: [10.1097/PHM.0000000000002612](#)

Abstract

Objective: This study sought to examine the association between inactive time, leisure-time physical activity and mortality in individuals diagnosed with chronic obstructive pulmonary disease.

Design: This study utilized a nationally representative sample of patients with chronic obstructive pulmonary disease from National Health and Nutrition Examination Survey (n = 1817; weighted population, 23,698,840). Mortality was tracked from the date of interview and examination. Leisure-time physical activity and sedentary time were assessed using a Global Physical Activity Questionnaire.

Results: The study found that only 28% of patients with chronic obstructive pulmonary disease achieved sufficient leisure-time physical activity (leisure-time physical activity ≥ 150 mins/wk), while 58% reported no physical activity and 47% sat for over 6 hrs per day. Over a 9-yr follow-up period, 501 deaths occurred, with 101 due to heart diseases. Adequate leisure-time physical activity levels were associated with a decreased risk of mortality from any cause. Moreover, patients who engaged in sufficient leisure-time physical activity and reduced sitting time had a lower risk of mortality from any cause compared to those who did not engage in sufficient leisure-time physical activity.

Conclusions: Participating in an adequate amount of leisure-time physical activity was linked to a reduced risk of death from any cause in patients with chronic obstructive pulmonary disease. However, irrespective of the extent of the leisure-time physical activity, there was no significant correlation between sedentary behavior and the risk of mortality.

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Conflict of interest statement

Financial disclosure statements have been obtained, and no conflicts of interest have been reported by the authors or by any individuals in control of the content of this article.

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ESC Heart Fail

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. 2025 Apr;12(2):799-808.

doi: 10.1002/ehf2.14958. Epub 2024 Jul 12.

[Association of COPD with adverse outcomes in heart failure patients with preserved ejection fraction](#)

[Shuo Xu](#)¹, [Zhenbang Gu](#)², [Wengen Zhu](#)², [Shenghui Feng](#)³

Affiliations Expand

- PMID: 38993173
- PMCID: [PMC11911644](#)

- DOI: [10.1002/ehf2.14958](https://doi.org/10.1002/ehf2.14958)

Abstract

We performed a systematic review and meta-analysis to detect the impact of chronic obstructive pulmonary disease (COPD) on the prognosis of heart failure patients with preserved ejection fraction (HFpEF). We systematically screened eligible literature from three electronic databases, PubMed, EMBASE and Cochrane Library, up to April 2023. Two researchers participated in data collection independently. Risk ratios (RRs) from included studies with 95% confidence intervals (CIs) were pooled in the Review Manager version 5.40 software using a random-effects model for analysis. A total of 11 studies (3 post hoc analyses of RCTs and 8 observational studies) with 18 602 participants were included in this meta-analysis. After pooling all the data from eligible studies, our results indicated that COPD was associated with an increased risk of hospitalization (RR = 1.66, 95% CI, 1.47-1.87, $P < 0.00001$), mortality (RR = 1.62, 95% CI, 1.34-1.95, $P < 0.00001$), and the composition of hospitalization or mortality (RR = 1.84, 95% CI, 1.35-2.51, $P < 0.001$) in patients with HFpEF. In a subgroup analysis, the risks of cardiovascular-related mortality (RR = 1.59, 95% CI, 1.30-1.93, $P < 0.00001$) and post-discharge mortality risk (RR = 2.57, 1.34-4.93, $P < 0.01$) were increased in HFpEF patients comorbid with COPD, and these associations were also detected in HF-caused hospitalization (RR = 1.64, 95% CI, 1.44-1.87, $P < 0.00001$). Evidence from existing studies supported that COPD was an independent prognostic risk factor for patients with HFpEF. Developing rapid clinical diagnostic indicators and early use of novel drugs such as SGLT-2 and ARNI may improve the prognosis of this population, deserving further study.

Keywords: COPD; HFpEF; adverse outcomes; hospitalization; mortality.

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. 2025 Apr;41(4):861-871.

doi: 10.1080/09593985.2024.2374053. Epub 2024 Jul 2.

[Effects of whole-body vibration exercise on functional capacity, muscle strength, and quality of life in individuals with severe chronic obstructive pulmonary disease: a systematic review and meta-analysis](#)

[Beatriz Luiza Marinho Cunha¹, Layane Santana P Costa¹, Pedro Vinicius Porfírio², Diego de Sousa Dantas¹, Patrícia Erika de Melo Marinho¹](#)

Affiliations Expand

- PMID: 38953511
- DOI: [10.1080/09593985.2024.2374053](https://doi.org/10.1080/09593985.2024.2374053)

Abstract

Background: Whole body vibration (WBV) exercise is a therapy used for individuals with low tolerance to conventional exercises, such as patients with chronic obstructive pulmonary disease (COPD). This study aimed to assess the impact of WBV exercise on the functional capacity, muscle strength, and health-related quality of life (HRQoL) in severe COPD patients.

Methods: Studies published until March 2024 were reviewed, encompassing randomized clinical trials (RCTs) without temporal or linguistic constraints, comparing WBV exercise with other interventions. The PubMed/MEDLINE, Scopus, Cochrane Airways Trials Register, and CINAHL databases were queried. The Revised Cochrane risk-of-bias tool for randomized trials 2.0A was employed for quality assessment.

Results: Among 351 screened studies, 7 met the criteria, totaling 356 participants (WBV group, $n = 182$; control group, $n = 174$). Meta-analysis revealed a significant mean difference of 41.36 m [95%CI (13.28-69.44); $p = .004$] in the 6-minute walk test distance favoring the WBV group for functional capacity. Lower limb muscle strength improved in 57.14% of included studies. HRQoL meta-analysis demonstrated a 1.13-point difference [95%CI -1.24-3.51; $p = .35$] favoring WBV, although group differences were not significant. A mean difference of 2.31 points favored the control group in health condition [95%CI (-1.32-5.94); $p = .021$].

Conclusion: WBV exercise is recognized as a promising therapeutic modality for severe COPD patients, notably enhancing functional capacity. Although heterogeneous study protocols weaken the evidence for clinically relevant outcomes, improvements in lower limb muscle strength and HRQoL were also observed, differences between groups were not significant.

Keywords: Chronic obstructive pulmonary disease; dyspnea; exercise tolerance; muscle strength; quality of life.

Supplementary info

Publication types, MeSH termsExpand

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

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BMC Med Res Methodol

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. 2025 Apr 1;25(1):84.

doi: 10.1186/s12874-025-02536-y.

[Understanding multimorbidity: insights with graphical models](#)

[Erika Banzato](#)¹, [Alberto Roverato](#)², [Alessandra Buja](#)³, [Giovanna Boccuzzo](#)²

Affiliations Expand

- PMID: 40169960
- DOI: [10.1186/s12874-025-02536-y](https://doi.org/10.1186/s12874-025-02536-y)

Abstract

Background: The use of graphical models in the multimorbidity context is increasing in popularity due to their intuitive visualization of the results. A comprehensive understanding of the model itself is essential for its effective utilization and optimal application. This article is a practical guide on the use of graphical models to better understand multimorbidity. It provides a tutorial with a

focus on the interpretation of the model structure and of the parameter values. In this study, we analyze data related to a cohort of 214,401 individuals, who were assisted by the Local Health Unit of the province of Padova (north-eastern Italy), collecting information from hospital discharge forms.

Methods: We explain some fundamental concepts, with special attention to the difference between marginal and conditional associations. We emphasize the importance of considering multimorbidity as a network, where the variables involved are part of an interconnected system of interactions, to correct for spurious effects in the analysis. We show how to analyze the network structure learned from the data by introducing and explaining some centrality measures. Finally, we compare the model obtained by adjusting for population characteristics with the results of a stratified analysis.

Results: Using examples from the estimated model, we demonstrate the key differences between marginal and conditional associations. Specifically, we show that, marginally, all variables appear associated, while this is not the case when considering conditional associations, where many variables appear to be conditionally independent given the others. We present the results from the analysis of centrality indices, revealing that cardiovascular diseases occupy a central position in the network, unlike more peripheral conditions such as sensory organ diseases. Finally, we illustrate the differences between networks estimated in subpopulations, highlighting how disease associations vary across different groups.

Conclusion: Graphical models are a versatile tool for analyzing multimorbidity, offering insights into disease associations while controlling for the effects of other variables. This paper provides an overview of graphical models without focusing on detailed methodology, highlighting their utility in understanding network structures and potential subgroup differences, such as gender-related variations in multimorbidity patterns.

Keywords: Conditional independence; Graphical model; Marginal and conditional associations; Multimorbidity; Odds ratio.

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Conflict of interest statement

Declarations. Ethics approval and consent to participate: The data analysis was performed on anonymized data. The study complied with the Declaration of Helsinki and with Italian Law n. 196/2003 on the protection of personal data. The study has been approved by the Ethic Committee of ULSS6 Euganea, Resolution of the General Director n. 462 of 07/07/2023. The anonymized data were made available by ULSS6 within the STheP (State of Health in Padova) agreement between ULSS6 Euganea and the Department of Statistical Sciences of the University of Padova. The data were subjected to a rigorous anonymization process, with no chance of individuals being identifiable, as required by Italian legislation for the use of data for scientific research purposes. **Consent for publication:** This is a large observation retrospective cohort study using fully anonymized data. Written informed consent for participation was not required for this study in accordance with the national legislation and the institutional requirements. **Competing interests:** The authors declare no competing interests.

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Supplementary info

Grants and fundingExpand

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BJGP Open

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. 2025 Mar 31:BJGPO.2024.0255.

doi: 10.3399/BJGPO.2024.0255. Online ahead of print.

[Declining number of home visits to older adults by general practitioners - an observational study using data from electronic health records in the Netherlands: 2017-2023](#)

[Chantal J Leemrijse](#)¹, [Marianne J Heins](#)¹, [Bart J Knottnerus](#)¹, [Mariette Hooiveld](#)¹, [Judith N de Boer](#)², [Ron F Schipper](#)², [Joost W Vanhommerig](#)³

Affiliations Expand

- PMID: 40164495
- DOI: [10.3399/BJGPO.2024.0255](#)

Free article

Abstract

Background: Despite an aging population that have higher care demand, home visits by general practitioners (GPs) have been declining.

Aim: To analyze the number of GP home visits from 2017 to 2023 in the Netherlands, and to investigate whether this trend differed according to age, sex, multimorbidity, and neighborhood deprivation. In addition, the most common reasons for home visits between 2017 and 2023 are presented.

Design & setting: Data were derived from Nivel Primary Care Database (Nivel-PCD), containing routinely recorded data from approximately 500 Dutch GP practices.

Method: The number of home visits was calculated by age, sex, multimorbidity, and neighborhood deprivation. Visual inspection was used to investigate the relation between the trend in number of home visits and age, sex, multimorbidity, and neighborhood deprivation of patients.

Results: A large decrease in the overall number of home visits was observed between 2017 and 2023 (-32%). The largest decrease was between 2019 and 2020, (-15%), but the downward trend continued in 2021 through 2023 (-5% per year). The most profound decline between 2023 and 2017 was found in the number of short home visits (-52%). The number of home visits for intensive GP care increased by 12% between 2017 and 2023.

Conclusion: We report a continuing decline in the number of home visits by GPs, comparing 2023 to 2017. Home visits for intensive GP care, often for patients at the end of life, increased since 2017. GPs may be forced to make choices due to the increasing workload.

Keywords: GPs; electronic health record data; home visits.

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Health Expect

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. 2025 Apr;28(2):e70207.

doi: 10.1111/hex.70207.

[Older Adults' Experiences and Expectations of Doctor-Patient Interactions During Early Hospital Care](#)

[George Wells](#)¹, [Kate White](#)², [Vasi Naganathan](#)^{1,3,4}, [Natalie Ambrose](#)¹, [Janani Thillainadesan](#)^{1,3,4}

Affiliations Expand

- PMID: 40150878

- PMID: [PMC11949844](#)
- DOI: [10.1111/hex.70207](#)

Abstract

Background: 'People-centered care' is one of the World Health Organization's six defining features of quality care and recognizes the importance of tailoring healthcare to individual needs. This is particularly important for older patients who are more vulnerable to complications during their hospitalization. The initial medical assessment in hospital is a vital part of any admission, however, the older patient's experience of this is not well understood.

Objective: The aim of this study was to investigate the perspectives of older patients, exploring their experience and expectations during these critical encounters.

Methods: This was a qualitative study. Semi-structured interviews were conducted at a major teaching hospital in Sydney, Australia with adult inpatients who were > 75 years old, admitted from the Emergency Department, and had multimorbidity, polypharmacy or frailty. Interviews were transcribed and data were thematically analyzed.

Results: The 20 study participants had a median (range) age of 85 (75-95) years and 13 (65%) were frail. Six themes were identified: (1) addressing the presenting complaint, (2) implicit trust, (3) being understood as an individual, (4) kindness and respect, (5) well-informed and sometimes shared decision-making and (6) willingness for challenging conversations.

Conclusions: Our findings highlight that older patients expect holistic and individualized care, extending beyond clinical expertise to encompass key professional and interpersonal characteristics such as effective communication, respect and kindness. The next steps are developing ways to upskill doctors in these aspects and involve older people in the development of training and standards to support the delivery of medical care that aligns with their experiences, expectations and preferences.

Patient or public contribution: The study design and interview guide were shaped by feedback from a patient and public involvement (PPI) workshop, which informed the interview process. Study findings were also shared with a PPI panel, whose insights were incorporated into this manuscript. As part of a larger research program, these findings will contribute to the co-design of educational interventions aimed at improving health professionals' assessment and management of older hospital patients.

Keywords: communication; frailty; hospital; older adult; qualitative.

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Conflict of interest statement

The authors declare no conflicts of interest.

- [36 references](#)

Supplementary info

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Review

Arch Gerontol Geriatr

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. 2025 Apr;131:105760.

doi: 10.1016/j.archger.2025.105760. Epub 2025 Jan 14.

[Association between multimorbidity and the risk of dementia: A systematic review and meta-analysis](#)

[Bo Xin](#)¹, [Di Zhang](#)², [Hong Fu](#)¹, [Wenhui Jiang](#)³

Affiliations Expand

- PMID: 39854918
- DOI: [10.1016/j.archger.2025.105760](#)

Abstract

Background: Multimorbidity has become increasingly prevalent and poses challenges in managing cognitive function. This study aimed to (1) systematically review and perform a meta-analysis to understand the relationship between multimorbidity and the risk of dementia and (2) examine the impact of different multimorbidity patterns on this relationship.

Method: A systematic review was conducted using PubMed, Embase, PsychINFO, CINAHL, and Cochrane Central to gather studies published up to December 16, 2023. For the meta-analysis, studies with consistent study designs, multimorbidity definitions, and stages of dementia were included. Heterogeneity was assessed using the I² statistic, and Egger's and Begg's tests were used to evaluate publication bias.

Results: Of the 12,074 studies identified, 11 were deemed suitable for systematic review, and eight were included in the meta-analysis. Meta-analysis of the longitudinal studies revealed that baseline multimorbidity was significantly associated with an increased risk of dementia compared with individuals without multimorbidity (HR: 1.34, 95 % CI: 1.08-1.68). Meta-analysis of the cross-sectional studies indicated that multimorbidity was significantly associated with a higher risk of being in the prodromal stages of dementia than in individuals without multimorbidity (OR: 1.32, 95 % CI: 1.16-1.51). The risk of dementia varied according to diverse multimorbidity patterns, and the cardiovascular-metabolic condition-related patterns were the most common and associated with high dementia risk.

Conclusions: Our findings provide quantitative evidence of a significant association between multimorbidity and the risk of dementia. To develop effective dementia prevention strategies, an in-depth understanding of specific multimorbidity patterns is invaluable for managing cognitive function.

Keywords: Cognitive impairment; Dementia; Multimorbidity; Multiple chronic conditions.

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Conflict of interest statement

Declaration of competing interest The authors declare no conflicts of interest.

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Publication types, MeSH termsExpand

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Ann Am Thorac Soc

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. 2025 Apr;22(4):598-608.

doi: 10.1513/AnnalsATS.202406-587OC.

Multimorbidity and Its Impact in Older U.S. Veterans Newly Treated for Advanced Non-Small Cell Lung Cancer

Joseph R Larsen^{1,2,3}, Chunlei Zheng^{1,4}, Jennifer La^{1,2}, Julie Tsu-Yu Wu^{5,6}, Michael Kelley⁷, J Michael Gaziano^{1,2,3}, Mary Brophy^{1,4}, Nhan V Do^{1,4}, Dae H Kim^{2,8}, Jane A Driver^{9,2,3}, Clark DuMontier^{9,2,3,10}, Nathanael R Fillmore^{1,2,4,10}

Affiliations Expand

- PMID: 39680869
- DOI: [10.1513/AnnalsATS.202406-587OC](https://doi.org/10.1513/AnnalsATS.202406-587OC)

Abstract

Rationale: Older adults make up the majority of patients with advanced non-small cell lung cancer (NSCLC) and often carry multiple other comorbidities (multimorbidity) when initiating treatment. The nature and impact of multimorbidity remain largely unknown, given the limitations of standard count-based comorbidity indices in aging patients and their exclusion from clinical trials. **Objectives:** Our objective is to identify and define multimorbidity patterns in older U.S. veterans newly treated for advanced NSCLC in the national Veterans Affairs healthcare system between 2002 to 2020, and whether they are associated with mortality and healthcare use. **Methods:** We measured 63 chronic conditions in 10,160 veterans aged ≥ 65 years newly treated for NSCLC in the national Veterans Affairs healthcare system from 2002 to 2020. Latent class analysis was used to identify patterns of multimorbidity among these conditions, with final patterns determined on the basis of model fit and clinical meaningfulness. Kaplan-Meier and Cox proportional hazards regression analyses were used to evaluate the association of multimorbidity patterns with overall survival (primary outcome) and with emergency department visits and unplanned hospitalizations (secondary outcomes). **Results:** Five multimorbidity patterns arose from the latent class analysis, with overall survival varying across patterns (log-rank two-sided $P < 0.001$). Veterans with metabolic diseases (24.7% of all patients; hazard ratio [HR] [95% confidence interval (CI)], 1.10 [1.04-1.16]), psychiatric and substance use disorders (16.0%; HR [95% CI], 1.17 [1.10-1.24]), cardiovascular disease (14.4%; HR [95% CI], 1.22 [1.15-1.30]), and multisystem impairment (10.7%; HR [95% CI], 1.36 [1.26-1.46]) had a higher hazard of death than veterans with common conditions of aging beyond their NSCLC (34.2%, reference), controlling for age, sex, race, days between diagnosis and treatment, date of diagnosis, and NSCLC stage and histology. Associations held after adjusting for the count-based Charlson comorbidity index. Multimorbidity patterns were also independently associated with emergency department visits and unplanned hospitalizations. **Conclusions:** Our findings reveal that the numerous chronic conditions present in older veterans with late-stage NSCLC cluster together into distinct multimorbidity patterns; the nature of conditions in these patterns carries value beyond their number.

Keywords: aging; carcinoma; chronic conditions; comorbidity; lung neoplasms.

Supplementary info

MeSH terms, Grants and funding Expand

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Review

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. 2025 Apr;51(2):212-215.

doi: 10.1016/j.encep.2024.05.004. Epub 2024 Sep 7.

[Accepting multiple conditions in psychiatry: From comorbidity to multimorbidity](#)

[Christophe Gauld](#)¹, [Emmanuel D'Incau](#)², [Pauline Espi](#)³, [Pierre Fourneret](#)¹, [Aileen McGonigal](#)⁴, [Jean-Arthur Micoulaud-Franchi](#)⁵

Affiliations Expand

- PMID: 39245595
- DOI: [10.1016/j.encep.2024.05.004](https://doi.org/10.1016/j.encep.2024.05.004)

Abstract

The concept of multimorbidity in psychiatry refers to the coexistence of multiple health conditions without conceptualizing a central disorder referring to a patient-centered approach that views every diagnosis equally. It emphasizes a shift from focusing on an index disorder to considering interrelated symptoms crucial in psychiatry due to frequent multimorbidity patterns. In clinical practice, multimorbidity guides patient-centered care helping to address the holistic needs of patients and challenging the organization of mental health care. In research,

multimorbidity reshapes study outcomes and promotes the development of patient-reported outcome questionnaires, also posing ethical challenges and advocating for the inclusion of multimorbid patients in personalized interventions. Finally, multimorbidity in psychiatry has public health implications aligning with the socioecological systems perspective. This notion aims to improve prognosis, care, and health costs while impacting global mortality and challenging the conceptualization and organization of psychiatric care.

Keywords: Comorbidity; Comorbidité; Methodology; Multimorbidity; Multimorbidité; Méthodologie; Psychiatrie; Psychiatry; Public health; Santé publique.

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J Adv Nurs

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. 2025 Apr;81(4):1953-1965.

doi: 10.1111/jan.16403. Epub 2024 Aug 16.

[Exploring physical activity experiences of community-dwelling oldest-old adults with chronic multimorbidity: A qualitative study](#)

[Irene López-Novis¹](#), [Elena Marques-Sule²](#), [Pallav Deka³](#), [Iria Dobarrio-Sanz⁴](#), [Leonie Klompstra⁵](#), [José Manuel Hernández-Padilla⁴](#)

Affiliations Expand

- PMID: 39152567
- PMCID: [PMC11896943](#)

- DOI: [10.1111/jan.16403](https://doi.org/10.1111/jan.16403)

Abstract

Aim: To explore the physical activity experiences of community-dwelling oldest-old adults with chronic multimorbidity.

Design: Descriptive qualitative study.

Method: Data collection was conducted through semi-structured interviews with 19 community-dwelling oldest-old adults with chronic multimorbidity. The study was conducted between December 2022 and May 2023. ATLAS.ti software was used for data analysis.

Results: Three main themes with their respective sub-themes and units of meaning were developed from the data analysis: (1) motivational factors for engaging in physical activity; (2) fear of getting hurt during physical activity and (3) confidence in being physically active.

Conclusion: Motivation, kinesiophobia and confidence are three core elements that influence the experience of physical activity in oldest-old adults with chronic multimorbidity. Interventions tailored to meet the needs of the oldest-old adults are important for promotion and development of active ageing.

Implications for the profession and/or patient care: Nurses and other healthcare professionals should design, implement and evaluate interventions that aim to increase oldest-old adults' motivation and confidence, while decreasing their fear to engage in physical activity.

Impact: This study provides insights into the way community-dwelling oldest-old adults with chronic multimorbidity experience physical activity in their daily lives. Our findings suggest that motivation, kinesiophobia and confidence are key factors for oldest-old adults to engage in physical activity. These findings could contribute to the design and implementation of interventions that specifically aim at raising the physical activity levels of community-dwelling oldest-old adults with chronic multimorbidity.

Reporting method: The study findings are reported according to the COREQ guidelines.

Patient or public contribution: No patient or public contribution.

Keywords: chronic illness; community; experiences; multimorbidity; older people; physical activity; qualitative study.

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Conflict of interest statement

No conflict of interest has been declared by the author(s).

- [64 references](#)

Supplementary info

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J Racial Ethn Health Disparities

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. 2025 Apr;12(2):919-928.

doi: 10.1007/s40615-024-01929-x. Epub 2024 Feb 21.

[Multimorbidity Patterns, Hospital Uses and Mortality by Race and Ethnicity Among Oldest-Old Patients](#)

[Jinmyoung Cho](#)^{1,2}, [Heather Allore](#)^{3,4}, [Gelareh Rahimighazikalayeh](#)⁵, [Ivana Vaughn](#)^{6,7,8}

Affiliations Expand

- PMID: 38381325
- DOI: [10.1007/s40615-024-01929-x](https://doi.org/10.1007/s40615-024-01929-x)

Abstract

Backgrounds: Adults aged 85 years and older ("oldest-old") are perceived as survivors resilient to age-related risk factors. Although considerable heterogeneity has been often observed in this population, less is known about the unmet needs in health and healthcare service utilization for diverse patients in healthcare systems. We examined racial-ethnic variation in patterns of multimorbidity associated with emergency department (ED), clinic visits, and mortality among the oldest-old patients with multimorbidity.

Methods: Administrative and clinical data from an integrated healthcare system for five years included 25,801 oldest-old patients with two or more chronic conditions. Hierarchical cluster analysis identified patterns of multimorbidity by four racial-

ethnic groups (White, Black, Hispanic, & Other). Clusters associated with ED and clinic visits, and mortality were analyzed using generalized estimation equations and proportional hazards survival model, respectively.

Results: Hypothyroidism, Alzheimer's disease and related dementia, bone & joint conditions, metabolism syndrome, and pulmonary-vascular clusters were commonly observed across the groups. While most clusters were significantly associated with ED and clinic visits among White patients, bone & joint conditions cluster was the most significantly associated with ED and clinic visits among Black (RR = 1.32, p <.01 for ED; RR = 1.67, p <.0001 for clinic) and Hispanic patients (RR = 1.36, p <.0001 for ED; RR = 1.39, p <.0001 for clinic). Similar patterns were observed in the relationship between multimorbidity clusters and mortality.

Conclusions: Patterns of multimorbidity and its significant association with the uses of ambulatory and emergency care varied by race-ethnicity. More studies are needed to explore barriers when minoritized patients are faced with the use of hospital services.

Keywords: Healthcare Service Utilization; Multiple Chronic Conditions; Racial-ethnic Variations.

© 2024. W. Montague Cobb-NMA Health Institute.

Conflict of interest statement

Declarations. Conflict of Interest: The authors have no conflicts.

- [55 references](#)

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Child Psychiatry Hum Dev

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. 2025 Apr;56(2):299-311.

doi: 10.1007/s10578-023-01564-3. Epub 2023 Jun 26.

[Longitudinal Association Between Youth Multimorbidity and Psychological Distress: Impact of the COVID-19 Pandemic](#)

[Mark A Ferro](#)¹, [Alene Toulany](#)^{2,3}

Affiliations Expand

- PMID: 37358802
- DOI: [10.1007/s10578-023-01564-3](https://doi.org/10.1007/s10578-023-01564-3)

Abstract

This research examined longitudinal associations between youth physical-mental multimorbidity and psychological distress before and during the COVID-19 pandemic; assessed the contextual impact of the pandemic on these associations; and, investigated potential moderating factors. The Multimorbidity in Youth across the Life-course, an ongoing study of youth aged 2-16 years (mean 9.4; 46.9% female) with physical illness, was used as the sampling frame for this COVID-19 sub-study, in which 147 parent-youth dyads participated. Psychological distress was measured using the Kessler-6 (K6). Multimorbidity was associated with higher pre-pandemic, but not with intra-pandemic distress. Disability moderated pre-pandemic distress-multimorbidity was associated with higher K6 among youth with high disability, but not among youth with low disability. Age moderated intra-pandemic distress-multimorbidity was associated with higher K6 in older youth, but not among younger youth.

Keywords: Adolescent; Child; Chronic disease; Comorbidity; Mental health; Physical illness; Psychiatric disorder.

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Conflict of interest statement

Declarations. Competing Interests: The authors have no relevant financial or non-financial interests to disclose. **Ethics approval and consent to participate:** Ethics approval for this study was obtained from the Waterloo Human Research Ethics Board (#31010) and Hamilton Integrated Research Ethics Board (#2797). **Consent to Participate:** Informed Consent was obtained from all individual participants included in this study. All participants 16 years and older provided informed consent, children 7–15 provided assent, and children 6 and younger were consented by their parents. **Consent for publication:** Not applicable.

- [96 references](#)

Supplementary info

MeSH terms, Grants and funding Expand

Full text links



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

1

Br J Clin Pharmacol

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. 2025 Apr 2.

doi: 10.1002/bcp.70027. Online ahead of print.

[Safety, tolerability, pharmacokinetics and pharmacodynamics of HSK31858, a novel oral dipeptidyl peptidase-1 inhibitor, in healthy volunteers: An integrated phase 1, randomized, double-blind, placebo-controlled, single- and multiple-ascending dose study](#)

[Yuhao Wang¹, Chao Yu¹, Mengyue Hu¹, Lu Wang², Meixia Chen¹, Hanmo Liu¹, Nan Wu¹, Jie Hou²](#)

Affiliations Expand

- PMID: 40170587
- DOI: [10.1002/bcp.70027](#)

Abstract

Aim: Dipeptidyl peptidase-1 (DPP-1) inhibitors have been studied for the treatment of neutrophil-mediated inflammatory diseases including bronchiectasis, bronchial asthma and cystic fibrosis. This study evaluated the pharmacokinetics, pharmacodynamics, safety and tolerability of DPP-1 inhibitor HSK31858 in healthy Chinese volunteers.

Methods: Volunteers in Part A randomly received single doses of HSK31858 (15, 40, 60 and 80 mg) or placebo in fasted states. The 40-mg cohort also received HSK31858 40 mg or placebo in fed states. In Part B, volunteers randomly received HSK31858 10, 20 and 40 mg or placebo once daily for 28 days in fasted states. The primary endpoints were safety and tolerability of HSK31858.

Results: Among 38 volunteers in Part A and 36 in Part B, HSK31858 was well tolerated; no deaths, serious adverse events, or discontinuations due to adverse events occurred. The median T_{max} was 0.75 to 1.0 h and the mean terminal $t_{1/2}$ was 16.5 to 21.0 h in the fasted state with single doses of HSK31858. Both C_{max} and AUC_{0-t} exhibited a dose-dependent rise. Food had no effect on AUC. Multiple doses of HSK31858 demonstrated a similar pharmacokinetics profile, with about 2-fold accumulation in AUC. HSK31858 dose-dependently inhibited neutrophil count-normalized neutrophil elastase (NE_{norm}) activity. The maximal percentage decrease

in NE_{norm} activity relative to baseline during 28 days of HSK31858 treatments was 13.6% and 76.4% with HSK31858 10 and 40 mg once-daily, respectively.

Conclusion: HSK31858 was safe and well tolerated. The pharmacokinetics and pharmacodynamics profile of HSK31858 supports further clinical development for the treatment of neutrophil-mediated inflammatory diseases.

Trial registration: [NCT05663593](#).

Keywords: HSK31858; bronchiectasis; dipeptidyl peptidase 1; neutrophil elastase; pharmacokinetics; safety.

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- [26 references](#)

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Review

Eur J Med Res

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. 2025 Apr 1;30(1):223.

doi: 10.1186/s40001-025-02492-9.

[Chronic airway inflammatory diseases and e-cigarette use: a review of health risks and mechanisms](#)

[Xing Yang](#)¹, [Wengi Che](#)¹, [Lu Zhang](#)¹, [Huanping Zhang](#)^{2 3 4}, [Xiaoxue Chen](#)^{5 6}

Affiliations Expand

- PMID: 40170170

- DOI: [10.1186/s40001-025-02492-9](https://doi.org/10.1186/s40001-025-02492-9)

Abstract

Chronic airway inflammatory diseases, which primarily include chronic obstructive pulmonary disease (COPD), asthma, allergic rhinitis, and chronic sinusitis, continue to have a high global prevalence, highlighting their significant public health impact. Concurrently, the use of e-cigarettes (tobacco e-cigarettes) has been rising worldwide, with many users perceiving them as a safer alternative to traditional cigarettes. However, accumulating evidence from international studies suggests that e-cigarettes pose substantial health risks. This review aims to explore recent research on the relationship between e-cigarette use and chronic airway inflammatory diseases. The findings indicate that e-cigarette usage increases the risk of developing these conditions. Specifically, studies have shown that e-cigarettes exacerbate airway inflammatory responses, elevate levels of type 2 inflammatory cytokines such as IL-4, IL-5, and IL-13, increase cellular oxidative stress, and impair lung function. These mechanisms may collectively contribute to an increased risk of chronic airway inflammatory diseases potentially associated with e-cigarette use.

Keywords: Airway inflammation; Asthma; Chronic obstructive pulmonary disease; E-cigarettes; Inflammatory mediators.

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Conflict of interest statement

Declarations. Ethics approval: Not applicable. Consent to participate: Not applicable. Consent for publication: Not applicable. Competing interests: The authors declare no competing interests.

- [106 references](#)

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Publication types, MeSH terms, Substances, Grants and fundingExpand

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Emerg Med J

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. 2025 Apr 1:emermed-2024-214699.

doi: 10.1136/emered-2024-214699. Online ahead of print.

[Inhaled or nebulised salbutamol for exacerbations of asthma and chronic obstructive pulmonary disease?](#)

[Ame Kumba Saidy](#)^{1,2}, [Bethany Foo](#)^{3,2}

Affiliations Expand

- PMID: 40169239
- DOI: [10.1136/emered-2024-214699](#)

Abstract

A short review of the literature was conducted to compare the length of emergency department (ED) stay and hospital admission rates in patients with exacerbations of asthma or chronic obstructive pulmonary disease (COPD) treated with salbutamol via a metered dose inhaler with a spacer (MDIS) versus nebulisation. Database searches were conducted using Cochrane, EMBASE, MEDLINE and Google Scholar. Six papers met our inclusion criteria and underwent analysis. Our results suggest that delivery of salbutamol via MDIS may reduce hospital admissions and ED length of stay in this patient cohort.

Keywords: Chronic Obstructive Pulmonary Disease; Emergency Medicine; asthma; management.

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Conflict of interest statement

Competing interests: None declared.

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Arch Dis Child

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. 2025 Mar 31:archdischild-2024-327447.

doi: 10.1136/archdischild-2024-327447. Online ahead of print.

[Home use of short-acting beta agonists by children with asthma: a multicentre digital prospective study](#)

[Apolline Gonsard¹](#), [Lisa Giovannini-Chami²](#), [Pierrick Cros³](#), [Alexandra Masson⁴](#), [Celine Menetrey⁴](#), [Clémence Mordacq⁵](#), [Camille Cisterne⁵](#), [Johan Personnic⁶](#), [Charlotte Roy¹](#), [Clément Poirault¹](#), [Rola Abou Taam¹](#), [Alice Hadchouel^{1,7}](#), [Alexandra Pirojoc⁸](#), [Christophe Delacourt^{1,7}](#), [David Drummond^{9,7,10}](#)

Affiliations Expand

- PMID: 40169179
- DOI: [10.1136/archdischild-2024-327447](#)

Abstract

Objective: To investigate real-life salbutamol use by children with asthma at home and compare it with their written asthma action plans (WAAPs).

Design: Multicentre, observational prospective study.

Setting: Five tertiary care hospitals in France.

Patients: 120 children aged 3-11 years with asthma.

Interventions: Parents used a smartphone application connected to a smart inhaler via Bluetooth to record salbutamol use and answer questionnaires about their child's asthma symptoms over 6 months.

Main outcome measures: The primary outcome was the median number of salbutamol puffs used in the first 2 hours after an asthma symptom occurred, depending on symptom type. Secondary outcomes included how families operationalised WAAP instructions and the proportion who administered more or less salbutamol than prescribed.

Results: 43 families used the smart inhaler for asthma symptoms, recording 124 episodes of salbutamol use. The median number of puffs used in the first 2 hours was 3 (IQR 2-4, range 1-26), varying between 2 and 4 depending on the initial symptom type. The number of puffs used did not differ significantly between episodes with and without symptom resolution. 18 (42%) families used a number of salbutamol puffs similar to that in their WAAP, while 21 (49%) used fewer and only 4 (9%) used more.

Conclusions: Families typically use 2-4 puffs of salbutamol in the first 2 hours after an asthma symptom. Adjusting WAAPs to start with 2-4 puffs of salbutamol, to be repeated if necessary, would be more in line with family practice, and effective in most situations.

Trial registration number: [NCT04810169](#).

Keywords: Paediatrics; Respiratory Medicine; Technology.

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Conflict of interest statement

Competing interests: None declared.

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Review

J Asthma

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. 2025 Apr 1:1-24.

doi: 10.1080/02770903.2025.2487986. Online ahead of print.

[Understanding how sleep disorders are managed in people with asthma: A scoping review of the literature](#)

[Emma Yau Dr¹](#), [Janet M Y Cheung Professor^{1,2}](#), [Bandana Saini Dr^{1,3}](#), [Stephen Hughes¹](#)

Affiliations Expand

- PMID: 40167616
- DOI: [10.1080/02770903.2025.2487986](https://doi.org/10.1080/02770903.2025.2487986)

Abstract

Objective: People with asthma may experience sleep disturbances due to uncontrolled asthma symptoms and/or co-occurring sleep disorders. Asthma shares pathophysiological pathways with sleep disorders including insomnia and obstructive sleep apnea and the interrelationship between asthma and sleep disorders is bi-directional. Insufficient sleep in general and in people with asthma leads to worsened mental and physical health. How this is managed in people with asthma is less known.

Data sources: This scoping review examines current literature around sleep health management employed by people with asthma and their care providers. Peer reviewed journal articles on sleep health interventions/management in adults with comorbid asthma were searched for in 4 databases, across 10 years, in a search strategy developed with medical librarians.

Study selection: The search led to the inclusion of 13 studies that met the review criteria, which reported sleep management interventions tested in people with sleep disorders comorbid with asthma.

Results: For people with obstructive sleep apnea and asthma, continuous positive pressure devices, oral appliances and bariatric surgery improved sleep and asthma outcomes. Improvements in other sleep disorders and asthma were shown with behavioral interventions and digital interventions including fitness tracker use.

Conclusion: The limited studies retrievable on this topic suggest management of sleep disorders in people with asthma is an under-researched area. Future research directed at how and when to assess sleep management in people with asthma will better inform specific guidelines and achieve improved sleep health in this population.

Keywords: asthma guidelines; asthma management; insomnia; primary apnea; sleep interventions.

Supplementary info

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Clin Exp Allergy

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. 2025 Mar 31.

doi: 10.1111/cea.70043. Online ahead of print.

[Differential Expression of Type 1 and Type 17 Immune Pathways and Chemokines in Mild-to-Severe Asthma With Mid to High Neutrophilic Inflammation](#)

[Elisa Arrigo¹, Vitina Carriero¹, Francesca Bertolini¹, Stefano Levra¹, Camilla Demasi¹, Antonino Di Stefano², Daniela Miglietta³, Gino Villetti³, Fabio Luigi Massimo Ricciardolo^{1 4 5}](#)

Affiliations Expand

- PMID: 40165433
- DOI: [10.1111/cea.70043](https://doi.org/10.1111/cea.70043)

No abstract available

Keywords: CCR-5; IL-8; atopy; bronchial biopsies; neutrophilic asthma; type 1 immunity; type 17 immunity.

Supplementary info

Grants and fundingExpand

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Meta-Analysis

BMC Public Health

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. 2025 Mar 31;25(1):1225.

doi: [10.1186/s12889-025-22382-3](https://doi.org/10.1186/s12889-025-22382-3).

[The odds of developing asthma and wheeze among children and adolescents exposed to particulate matter: asystematic review and meta-analysis](#)

[Awoke Keleb](#)¹, [Eyob Tilahun Abeje](#)², [Chala Daba](#)^{3,4}, [Abel Endawkie](#)², [Yawkal Tsega](#)⁵, [Giziew Abere](#)⁶, [Yimer Mamaye](#)⁷, [Anmut Endalkachew Bezie](#)⁷

Affiliations Expand

- PMID: 40165124
- PMCID: [PMC11959839](https://pubmed.ncbi.nlm.nih.gov/PMC11959839/)

- DOI: [10.1186/s12889-025-22382-3](https://doi.org/10.1186/s12889-025-22382-3)

Abstract

Background: Exposure to air pollution specifically particulate matter causes significant health risk to children which increases their susceptibility to respiratory diseases.

Objectives: This review aimed to pool the association between particulate matter exposure and childhood asthma and wheeze among children and adolescents.

Methods: This review included observational study articles retrieved from electronic data bases such as PubMed, Google Scholar, Hinari, Science Direct, and Semantic Scholar from 1996 to June 17, 2024. Data were extracted and analyzed using Microsoft Excel 16 and STATA version 17, respectively. Joanna Briggs Institute evaluation criteria and I^2 test statistics were used for quality and heterogeneity assessment, respectively.

Results: Fourty seven studies with a total of 417,874 of children and adolescents met the inclusion criteria. The pooled odd ratio (OR) of the association between Particulate Matter with a diameter of 10 micrometers or less (PM10) and Particulate Matter with a diameter of 2.5 micrometers or less (PM2.5) with asthma were 1.04 (95% CI: 1.03-1.06, $p < 0.001$) with significant extreme heterogeneity ($I^2 = 82.7\%$, $p < 0.001$) and 1.05 (95% CI 1.04-1.07, $p < 0.001$) with high heterogeneity ($I^2 = 80.6\%$, $p < 0.001$) among the included studies, respectively. The overall pooled estimate indicates a statistically significant association between PM10 and wheeze, with OR of 1.06 (95% CI: 1.05, 1.07) and moderate heterogeneity among included studies ($I^2=57.5\%$, $p < 0.007$) where as more association was observed between PM2.5 and wheeze with OR of 1.15. (95% CI: 1.10, 1.20) with an ($I^2 =72.8\%$, $p < 0.001$).

Conclusion: The findings of this systematic review and meta-analysis demonstrated a statistically significant association between exposure to both PM10 and PM2.5 and the occurrence of asthma and wheezing in children and adolescents. Both PM10 and PM2.5 are associated with increased odds of asthma and wheezing, with PM2.5 showing a stronger relationship. The significant levels of heterogeneity observed suggest variations across studies, which may be due to differences in study designs, exposure level and outcome measurement types. These findings indicate the need for strategies to reduce particle air pollution to mitigate its adverse effects on children's respiratory health.

Keywords: Adolescent; Air pollution; Asthma; Children; Particulate matter; Systematic review and Meta-analysis; Wheezing.

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Conflict of interest statement

Declarations. Ethics approval and consent to participate: Ethical approval and informed consent were not applicable. However, the review protocol was registered with the International Prospective Register of Systematic Reviews (PROSPERO: CRD42024562670). Consent for publication: Not applicable. Competing interests: The authors declare no competing interests.

- [114 references](#)

- [13 figures](#)

Supplementary info

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Semin Respir Crit Care Med

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. 2025 Mar 31.

doi: 10.1055/a-2531-1104. Online ahead of print.

[The Interplay between Asthma, Obesity, and Obstructive Sleep Apnea](#)

[Lucia R Rodriguez](#)¹, [Sunita Sharma](#)²

Affiliations Expand

- PMID: 40164119
- DOI: [10.1055/a-2531-1104](#)

Abstract

The interrelationship between asthma, obesity, and obstructive sleep apnea (OSA) presents a critical area of investigation within sleep medicine, given the rising prevalence of these conditions globally. This article explores the multifactorial interactions among these three disorders that contribute to significant morbidity. Asthma, a chronic inflammatory condition of the airways, is one of the most common chronic respiratory conditions globally. Asthma in people with obesity is associated with poor asthma control, increased asthma severity, and an increased frequency of exacerbations. Obesity, characterized by excessive fat accumulation, is a well-established risk factor for the development of OSA. This sleep-related breathing disorder disrupts airflow during sleep due to pharyngeal collapse. Conversely, OSA may worsen asthma symptoms through intermittent hypoxia and sleep fragmentation, further complicating asthma management. This review analyzes existing literature to illustrate the bidirectional relationships among these conditions. It discusses the role of systemic inflammation, hormone dysregulation, and lifestyle factors, such as diet and physical inactivity, in the development and

persistence of asthma and OSA in obese patients. Furthermore, it highlights the importance of comprehensive management strategies that address these overlapping disorders. Clinical implications are examined, with consideration given to the potential for targeted therapies and lifestyle interventions that could mitigate symptoms and improve the quality of life for affected individuals. Understanding these complex interactions is essential for healthcare practitioners in optimizing the management of patients with asthma, obesity, and OSA. By recognizing the interconnectedness of these conditions, clinicians can adopt a more holistic approach to treatment, leading to improved outcomes and a better understanding of the patient's overall health trajectory. Future research directions are suggested to investigate potential therapeutic interventions and the influence of socioeconomic factors on these chronic conditions.

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Conflict of interest statement

None declared.

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Review

Pediatr Pulmonol

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. 2025 Apr;60(4):e71064.

doi: 10.1002/ppul.71064.

[Controversies in Pediatric Asthma: A Bibliometric Evaluation](#)

[Kadeliya Abulimiti](#)^{1,2}, [Kutiluke Shoukeer](#)¹, [Xinhui Luo](#)²

Affiliations Expand

- PMID: 40152094

- DOI: [10.1002/ppul.71064](https://doi.org/10.1002/ppul.71064)

Abstract

Objective: Pediatric asthma is a common chronic inflammatory airway disease in children. This paper analyzes research literature on pediatric asthma and its treatment over the past decade using bibliometric methods, discussing research hotspots and trends to guide future studies.

Method: The Web of Science database was selected as the data source, with the retrieval period from January 1, 2014, to January 1, 2025. This study collected and analyzed literature on pediatric asthma and its treatment from the past decade, covering aspects such as publication volume, countries, institutions, journals, authors, and keywords.

Results: The search yielded 640 documents involving 68 countries and 1208 institutions, authored by 3506 researchers and published across 259 journals. The global annual average publication volume of 56.8 articles indicates active research in this field. China ranks second globally in publication volume, yet there is a gap in research quality and international influence compared to Western countries. Pediatric asthma treatment remains a core challenge in the pediatric and respiratory fields, making it a central research focus for the future.

Conclusion: Asthma has become a major health issue among children. Over the past decade, substantial progress has been made globally in the research of pediatric asthma and its treatment. Despite surpassing many developed countries in publication volume, China needs to enhance the quality and impact of its research. There is a hope that China will increase investment in scientific research and publish more high-quality articles in both domestic and international prestigious journals, advancing the country's development in this field.

Keywords: Bibliometrics; asthma; pediatric asthma; respiratory diseases; visual analysis.

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- [30 references](#)

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Editorial

World Allergy Organ J

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. 2025 Mar 13;18(4):101042.

doi: 10.1016/j.waojou.2025.101042. eCollection 2025 Apr.

[Obesity in severe asthma: Unveiling challenges and exploring new therapeutic options](#)

[Mona Al-Ahmad](#)^{1,2}, [Asmaa Ali](#)^{3,2,4}

Affiliations Expand

- PMID: 40151673
- PMCID: [PMC11938057](#)
- DOI: [10.1016/j.waojou.2025.101042](#)

No abstract available

Conflict of interest statement

None of the authors has any competing interests.

- [10 references](#)

Supplementary info

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J Asthma

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. 2025 Apr 1:1-11.

doi: 10.1080/02770903.2025.2482998. Online ahead of print.

[Asthma incidence, prevalence, and mortality in the United States and worldwide, 1990-2019: Findings from the Global Burden of Disease study](#)

[Hamza Ashraf](#)¹, [Mahad Butt](#)¹, [Shanzay Akhtar](#)², [Aimen Nadeem](#)³, [Rutaab Kareem](#)³, [Haider Ashfaq](#)¹, [Zain Ali Nadeem](#)¹, [Maurish Fatima](#)³, [Ali Ashraf](#)⁴, [Jenish Bhandari](#)⁵

Affiliations Expand

- PMID: 40135766
- DOI: [10.1080/02770903.2025.2482998](https://doi.org/10.1080/02770903.2025.2482998)

Abstract

Introduction: Asthma is a serious global health issue, contributing to premature deaths and reduced quality of life.

Objective: This study examines trends in the incidence, prevalence, and mortality of asthma in the US and globally from 1990 to 2019.

Methods: Data from the Global Burden of Disease database were used to calculate age-standardized incidence (ASIR), prevalence (ASPR), and mortality (ASMR) rates per 100,000 individuals, stratified by gender. Joinpoint regression analysis determined annual percent changes (APCs), and average annual percentage changes (AAPCs) were calculated as weighted averages of these trends.

Results: In the US, ASIR increased by 10.2%, rising from 1404.6 in 1990 to 1547.2 in 2019, with an overall AAPC of 0.33. Globally, ASIR decreased by 13%, declining from 580.1 to 504.3, with an overall AAPC of -0.46. ASPR in the US rose from 9374.0 to 10399.3, reflecting a 0.37% annual increase, whereas globally, ASPR dropped by 24.1%, decreasing from 4496.9 to 3415.5 with an overall AAPC of -0.91. Females consistently exhibited higher ASPR rates than males in both settings. US asthma mortality decreased by 50%, with ASMR dropping from 1.66 to 0.87 and an AAPC of -2.15. Globally, ASMR decreased by 51.3%, falling from 11.91 to 5.80, with an overall AAPC of -2.47.

Conclusion: Males globally showed higher ASMR, whereas in the US, females had higher rates. While asthma incidence and prevalence increased in the US, global rates declined. Both the US and global populations experienced substantial

reductions in asthma-related mortality, highlighting the need for targeted interventions and international collaboration.

Keywords: Asthma; Global Burden of Disease; USA; incidence; mortality; prevalence; sex.

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NEJM Evid

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. 2025 Apr;4(4):EVIDoa2400229.

doi: 10.1056/EVIDoa2400229. Epub 2025 Mar 25.

[Associations between Class I, II, or III Obesity and Health Outcomes](#)

[Zhiqi Yao](#)¹, [Beverly G Tchang](#)², [Michael Albert](#)³, [Roger S Blumenthal](#)¹, [Khurram Nasir](#)⁴, [Michael J Blaha](#)¹

Affiliations Expand

- PMID: 40130972
- DOI: [10.1056/EVIDoa2400229](https://doi.org/10.1056/EVIDoa2400229)

Abstract

Background: The burden of obesity-related health conditions remains incompletely explored. Previous studies have been underpowered to study severe obesity, focused on a limited set of health outcomes, and lacked diversity in study populations.

Methods: We studied 270,657 participants from the All of Us research program with linked electronic health records and body mass index (the weight in kilograms divided by the square of the height in meters) greater than or equal to 18.5. We investigated the prevalence and incidence of 16 a priori-identified outcomes covering cardiovascular-kidney-metabolic syndrome and others: hypertension, type

2 diabetes mellitus, hyperlipidemia/dyslipidemia, heart failure, atrial fibrillation, atherosclerotic cardiovascular disease, chronic kidney disease, pulmonary embolism, deep vein thrombosis, gout, metabolic dysfunction-associated steatotic liver disease, biliary calculus, obstructive sleep apnea, asthma, gastroesophageal reflux disease, and osteoarthritis. Adjusted hazard ratios were calculated for each BMI category and compared with normal weight. The population-attributable fraction was calculated for different obesity classifications.

Results: The included population was 62.0% women and 22.0% Black. Class I, II, and III obesity was observed in 21.2%, 11.3%, and 9.8% of participants, respectively. Obesity was strongly associated with all incident outcomes, with graded associations across higher classes of obesity. Class III obesity was most strongly associated with obstructive sleep apnea, type 2 diabetes mellitus, and metabolic dysfunction-associated steatotic liver disease (hazard ratio [95% confidence interval {CI}], 10.94 [9.97 to 12.00], 7.74 [7.03 to 8.53], and 6.72 [6.01 to 7.50], respectively), with weaker associations for asthma, osteoarthritis, and atherosclerotic cardiovascular disease (hazard ratio [95% CI], 2.14 [1.95 to 2.35], 2.06 [1.94 to 2.19], and 1.96 [1.70 to 2.25], respectively). Associations were consistent across sex and race. The obesity-related population-attributed fraction ranged from 14.0% (osteoarthritis) to 51.5% (obstructive sleep apnea) in this population.

Conclusions: Obesity, particularly severe obesity, was strongly associated with the incidence of 16 common health outcomes.

Supplementary info

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Review

Allergol Int

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. 2025 Apr;74(2):177-186.

doi: 10.1016/j.alit.2025.02.001. Epub 2025 Mar 9.

[Neuroimmune mechanisms of type 2 inflammation in the skin and lung](#)

[Masato Tamari](#)¹, [Aaron M Ver Heul](#)²

Affiliations Expand

- PMID: 40064568
- DOI: [10.1016/j.alit.2025.02.001](#)

Free article

Abstract

Type 2 inflammation has a major role in barrier tissues such as the skin and airways and underlies common conditions including atopic dermatitis (AD) and asthma. Cytokines including interleukin 4 (IL-4), IL-5, and IL-13 are key immune signatures of type 2 inflammation and are the targets of multiple specific therapeutics for allergic diseases. Despite shared core immune mechanisms, the distinct structures and functions of the skin and airways lead to unique therapeutic responses. It is increasingly recognized that the nervous system has a major role in sensing and directing inflammatory processes. Indeed, crosstalk between type 2 immune activation and somatosensory functions mediates tissue-specific signatures such as itching in the skin. However, neuroimmune interactions are shaped by distinct neuronal and immune landscapes, and differ between the skin and airways. In the skin, dorsal root ganglia-derived neurons mediate pruritus via type 2 cytokines and neurogenic inflammation by mast cell or basophil activation. Conversely, vagal ganglia-derived neurons regulate airway immune responses by releasing neuropeptides/neurotransmitters such as calcitonin gene-related peptides, neuromedin U, acetylcholine, and noradrenaline. Sensory neuron-derived vasoactive intestinal peptide forms a feedback loop with IL-5, amplifying eosinophilic inflammation in the airways, a mechanism that is absent in the skin. These differences influence the efficacy of cytokine-targeted therapies. For instance, IL-4/IL-13-targeted therapies like dupilumab demonstrate efficacy in AD and allergic airway diseases, whereas IL-5-targeted therapies are effective in eosinophilic asthma but not AD. Understanding these neuroimmune interactions underscores the need for tailored therapeutic approaches to address allergic diseases where barrier tissues are involved.

Keywords: Cytokine; Neuroimmune interaction; Neuropeptide; Neurotransmitter; Peripheral nervous system.

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Conflict of interest statement

Conflict of interest AMV has received contracted research funding from Amgen and Celldex, and consulting or advisory fees from Galderma, Novartis, Sanofi-Regeneron, and Target PharmaSolutions. The rest of the authors have no conflict of interest.

Supplementary info

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Expert Rev Respir Med

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. 2025 Apr;19(4):399-405.

doi: 10.1080/17476348.2025.2474140. Epub 2025 Mar 5.

[Demographic and regional trends in asthma mortality in the United States, 1999-2020](#)

[Ahsan Raza Raja](#)¹, [Fareeha Faizan Ghori](#)², [Dua Batool Zaide](#)³, [Ali Bin Sarwar Zubairi](#)^{4 5}

Affiliations Expand

- PMID: 40022292
- DOI: [10.1080/17476348.2025.2474140](https://doi.org/10.1080/17476348.2025.2474140)

Abstract

Background: Asthma remains a public health concern in the United States, with mortality disproportionately affecting demographic groups. This study aimed to describe national trends in asthma mortality from 1999 to 2020 and identify demographic and regional disparities.

Research design and methods: We retrospectively analyzed mortality data from the CDC WONDER database using International Classification of Diseases, Tenth Revision (ICD-10) codes J45 and J46. Age-adjusted mortality rates (AAMRs) were calculated by sex, race, age group, US Census region, state, and urban-rural classification. Joinpoint regression was employed to detect changes over time.

Results: A total of 82,686 asthma-related deaths were identified (37.2% males, 62.8% females). Overall, the AAMR declined from 1.72 in 1999 to 1.14 in 2020. Joinpoint analysis revealed a significant decline from 1999 to 2009, a plateau from 2009 to 2014, a further decline from 2014 to 2018, and a significant increase from 2018 to 2020. Non-Hispanic Black individuals (AAMR 2.73) and older adults (≥ 65 years) had the highest mortality rates, with females exhibiting higher rates than males (1.30 vs 0.95).

Conclusions: Despite declining trends, persistent disparities in asthma mortality underscore the need for targeted interventions, improved healthcare access, and ongoing surveillance.

Keywords: Asthma; United States; demographics; disparities; mortality; trends.

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Maturitas

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. 2025 Apr;195:108218.

doi: 10.1016/j.maturitas.2025.108218. Epub 2025 Feb 20.

[Menstrual disorders and the risk of asthma: A prospective study of women from their early twenties to their mid-forties](#)

[Chuyao Jin](#)¹, [Shyamali Dharmage](#)², [Annette Dobson](#)¹, [Gita D Mishra](#)³

Affiliations Expand

- PMID: 39985949
- DOI: [10.1016/j.maturitas.2025.108218](https://doi.org/10.1016/j.maturitas.2025.108218)

Abstract

Aim: To examine whether experiencing menstrual disorders during reproductive years is associated with current asthma among women in their 40s.

Methods: Data were from 1240 participants (born between 1973 and 1978) in the Australian Longitudinal Study on Women's Health. Information on menstrual disorders was collected in 1996 and every three years from 2000 to 2018. Current asthma was defined as (1) ever having doctor-diagnosed asthma, and (2) experiencing an asthma attack, and/or using asthma medication in the last 12 months. Logistic regression with generalised estimating equations was used to link current asthma to repeated measures of menstrual disorders, adjusting for socio-demographic characteristics, health behaviours, reproductive factors, preterm birth, and asthma before menarche.

Results: Among the participants, 14.2 % had current asthma in their 40s. After adjusting for covariates, report of heavy menstrual bleeding (OR: 1.62 [1.10 to 2.39]), severe period pain (OR: 1.67 [1.10, 2.55]), or premenstrual syndrome (OR: 1.66 [1.20 to 2.31]) across reproductive years was associated with higher odds of current asthma. There was an interaction between report of irregular periods and survey time, with irregular periods being increasingly associated with current asthma in later surveys.

Conclusions: Women who experienced heavy menstrual bleeding, severe period pain, and premenstrual syndrome at any point from their 20s to 40s had higher odds of current asthma in their 40s. In contrast, irregular periods were associated with current asthma only when reported during their 40s. These results suggest that women's menstrual characteristics in their reproductive years may reflect their lung health in middle age.

Keywords: Asthma; Longitudinal study; Menstrual disorder.

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Conflict of interest statement

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

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Respir Med

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. 2025 Apr;239:108004.

doi: 10.1016/j.rmed.2025.108004. Epub 2025 Feb 18.

[Validation of probable COPD as proposed by the Lancet Commission at a smoking cessation clinic](#)

[Esra Ertan Yazar](#)¹, [Elif Hazal Karadağ](#)², [Furkan Alp Eren](#)³, [Busra Demirci](#)⁴, [Burcu Arpinar Yigitbas](#)⁵, [Hacer Hicran Mutlu](#)⁶, [Handan Ankarali](#)⁷

Affiliations Expand

- PMID: 39978605
- DOI: [10.1016/j.rmed.2025.108004](https://doi.org/10.1016/j.rmed.2025.108004)

Abstract

Aims: The recently published recommendations of the Lancet Commission, the presence of respiratory symptoms or exacerbation in risky people, and the COPD assessment test (CAT) score ≥ 10 points could be defined as possible COPD without using computed tomography and spirometry, particularly in low-income countries. We aimed to validate this recommendation by spirometry in patients applying to our smoking cessation clinic.

Methods: Subjects aged ≥ 40 years with a smoking history of ≥ 15 pack-years were included in the study. Individuals with known chronic lung diseases, except childhood asthma, were excluded. All participants completed a detailed case report form, including the CAT questionnaire, and underwent spirometry testing.

Results: A total of 224 participants, with a mean age of 53.2 ± 8.7 years of which 49.6 % were female, were enrolled in the study. According to the Lancet Commission's definition, 90 participants were identified as having probable COPD. Among these individuals, 21 (23.3 %) were also diagnosed with COPD based on the pre-bronchodilator FEV1/FVC ratio. In contrast, out of the 134 subjects, who did not meet the criteria for probable COPD, 12 (9 %) were diagnosed with COPD ($P = 0.003$).

Conclusion: This study is the first pilot study to validate the probable COPD definition recommended by the Lancet Commission using spirometry. Approximately 25 % of at-risk patients identified as having probable COPD were diagnosed with COPD based on the pre-bronchodilator FEV1/FVC ratio. Future studies are needed to assess the cost-effectiveness of the diagnostic approach outlined in the algorithm proposed by the Lancet Commission.

Keywords: CAT; COPD; Early diagnosis; Exacerbation; Lancet commission; Screening.

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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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Review

Aust N Z J Psychiatry

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. 2025 Apr;59(4):322-338.

doi: 10.1177/00048674251317336. Epub 2025 Feb 10.

[Depression and comorbid chronic physical health diseases in the Australian population: A scoping review](#)

[Gouri Srinivasan¹](#), [Srinivas Kondalsamy-Chennakesavan¹](#), [Matthew McGrail²](#), [Vikas Garg^{1,3,4}](#), [Bushra Nasir¹](#)

Affiliations Expand

- PMID: 39925186
- PMCID: [PMC11924293](#)

- DOI: [10.1177/00048674251317336](https://doi.org/10.1177/00048674251317336)

Abstract

Objective: Chronic diseases are a major challenge in Australia, contributing to disability, premature mortality, and a significant healthcare burden. This burden is intensified when depression, a common mental health issue, co-occurs with chronic diseases. This scoping review aimed to investigate the relationship between depression and comorbid chronic diseases, namely cardiovascular disease (CVD), diabetes, asthma, and chronic obstructive pulmonary disease (COPD) in the Australian population.

Methods: Following Joanna Briggs Institute (JBI) methodology, this scoping review searched for English-language articles published between January 2013 and December 2023. The review targeted studies examining depression and selected comorbid chronic diseases within the Australian population. Two independent reviewers conducted data screening and extraction, with results synthesised into tables and summarised narratively.

Results: The search yielded 31 quantitative studies, highlighting a high prevalence of depression co-occurring with chronic diseases. Key findings included the worsening of chronic disease severity by depression, compounded by gender and age disparities, and the impact of socioeconomic factors impairing the quality of life. The review also identified significant challenges in the provision of care, particularly in rural areas, emphasising the need for integrated care models, and enhanced healthcare training.

Conclusion: This review revealed critical research gaps in understanding the relationship between depression and chronic diseases, particularly regarding underrepresented groups such as younger adults and rural populations. It highlights the need for improved diagnostic criteria, treatment approaches, and professional training, advocating for targeted research and policy interventions to improve outcomes and quality of life for individuals with depression and selected comorbid chronic diseases.

Keywords: Australia; chronic disease; comorbidity; depression.

Conflict of interest statement

Declaration of conflicting interestsThe author(s) declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

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- [1 figure](#)

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Review

Immunology

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. 2025 Apr;174(4):423-433.

doi: 10.1111/imm.13898. Epub 2025 Jan 12.

[Efficacy of Subcutaneous, Sublingual and Oral Immunotherapy for Allergens: A Comparative Study](#)

[Maria Zofia Lisiecka¹](#)

Affiliations Expand

- PMID: 39800671
- DOI: [10.1111/imm.13898](#)

Abstract

The purpose of this study was to compare the efficacy and safety of subcutaneous, sublingual, oral specific immunotherapy in patients who suffer from allergic conditions to pollen from trees, grasses and weeds, house dust mites and *Alternaria alternata* spores. A literature search was performed separately for each type of allergen and each administration route of the drug. As a result, it was found that all administration routes were quite effective. However, each type of immunotherapy was most effective for certain allergens. Subcutaneous and sublingual immunotherapy have proven effective for aeroallergens such as pollen from grass, trees, weeds and house dust mites. Despite this, subcutaneous immunotherapy had a number of disadvantages in the form of the duration of treatment and a greater prevalence of side effects. Some authors suggest that for allergies to house dust mites, the most effective method of immunotherapy was the subcutaneous method of administration, compared with sublingual and nasal. Sublingual therapy was safe enough for all types of allergens under study, however, to achieve the same effect as the subcutaneous method of administration. In addition, oral immunotherapy has been shown to be effective for food allergies with obvious symptoms of gastrointestinal disorders. In addition, oral immunotherapy is

the only approved treatment for allergies in the elderly, due to the low risk of side effects. The time-accelerated and dosage-enhanced immunotherapy was also effective and safe. These data prove the effectiveness and safety of each administration route of specific allergens for specific immunotherapy in patients suffering from allergic rhinitis, bronchial asthma and even atopic dermatitis.

Keywords: aetiological treatment; allergic rhinitis; alternative treatment; immunoglobulin; sensitisation.

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- [65 references](#)

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Review

Expert Rev Pharmacoecon Outcomes Res

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. 2025 Apr;25(4):459-471.

doi: 10.1080/14737167.2024.2441867. Epub 2024 Dec 24.

[Disparities in Respiratory Syncytial Virus Risk Factors, Diagnosis, and Outcomes in Adults by Race, Ethnicity, and Other Social Determinants of Health in the United States](#)

[Emily K Horn](#)¹, [Elizabeth M La](#)¹, [Meryem Bektas](#)², [Shahnaz Khan](#)², [Susan I Gerber](#)³

Affiliations Expand

- PMID: 39690951

- DOI: [10.1080/14737167.2024.2441867](https://doi.org/10.1080/14737167.2024.2441867)

Free article

Abstract

Introduction: Respiratory syncytial virus (RSV) vaccination could improve health equity by protecting individuals who are disproportionately at increased risk of RSV infection and severe RSV-related outcomes. However, limited information is available about RSV-related disparities among United States (US) adults.

Areas covered: We reviewed US-specific literature regarding disparities across adult populations in having risk factors for severe RSV disease (cardiopulmonary disease, diabetes, liver disease, kidney disease). We summarize available evidence regarding disparities in having or being diagnosed with RSV, as well as experiencing severe RSV-related health outcomes. Disparities are analyzed by race, ethnicity, socioeconomic status, and other social determinants of health.

Expert opinion: RSV-related disparities are observed across all outcomes of interest, although RSV-specific data are limited in some cases. Racial and ethnic minority groups and socioeconomically disadvantaged populations are more likely to have risk factors for severe RSV disease, overall and at younger ages, yet individuals from these groups are more often underdiagnosed. Disparities in RSV-related hospitalizations, emergency department visits, and deaths are observed, especially among adults from racial and ethnic minority groups, of lower socioeconomic status, and in poorer or more crowded neighborhoods. Findings highlight the importance of RSV vaccination among these groups to improve health equity.

Keywords: Acute respiratory illness; health disparities; health equity; race and ethnicity; respiratory syncytial virus; social determinants of health; socioeconomic status; vaccination.

Plain language summary

In most adults, respiratory syncytial virus (RSV) causes mild symptoms. However, older adults and adults with health conditions, such as heart disease, asthma, or diabetes, are more likely to have more severe symptoms and be hospitalized, and may even die from their RSV infection. RSV vaccines, which are available in the US for older adults, protect against severe RSV disease. It is important to identify the specific groups of people who could benefit from RSV vaccination. In this study, we summarize differences between groups of US adults who have health conditions that may place them at higher risk of severe RSV disease. We also summarize differences between groups in becoming infected with RSV and having more severe outcomes from RSV infection. Existing studies show that adults who are from racial and ethnic minority groups, who are poorer, who have a low level of education, or who have no health insurance are more likely to have chronic diseases, putting them at higher risk of severe RSV disease than other adults. Adults from these disadvantaged groups are also more likely to be infected with RSV than those from more advantaged groups. Additionally, adults who are from racial and ethnic minority groups, who live in poor or crowded neighborhoods, or who have Medicaid or no health insurance are more likely to be hospitalized, visit the emergency

department, or die from their RSV infection. One way to reduce health disparities is to ensure that disadvantaged adults are vaccinated against RSV.

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J Behav Med

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. 2025 Apr;48(2):317-330.

doi: 10.1007/s10865-024-00538-7. Epub 2024 Dec 13.

[The relationship between depressive symptoms and coping style on asthma outcomes in older adults](#)

[Naomi Greenfield](#)¹, [Matthew Wysocki](#)², [Kimberly Arcoleo](#)³, [Juliana Rodriguez](#)², [Sunit Jariwala](#)⁴, [Paula Busse](#)⁵, [Alex Federman](#)⁶, [Juan Wisnivesky](#)^{6,7}, [Jonathan M Feldman](#)^{8,9}

Affiliations Expand

- PMID: 39672992
- DOI: [10.1007/s10865-024-00538-7](https://doi.org/10.1007/s10865-024-00538-7)

Abstract

Objective: To examine the impact of coping styles in older adults with asthma on the prospective relationship between depressive symptoms and asthma outcomes, and how their perceptions of social support influenced their coping styles.

Methods: Adults 60 and over with asthma were recruited and interviewed about their experiences of asthma, depression, and other psychosocial factors over three time points (Baseline, 6-month, and 12-month visits). Structural equation models

examined the mediating roles of coping styles in the relationship between depressive symptoms (assessed by BDI-II) and asthma outcomes (i.e., asthma control, asthma quality of life, asthma-related distress, asthma-related hospitalizations, and oral corticosteroid use) and the mediating role of perceived social support in the relationship between depressive symptoms and coping style.

Results: 455 participants were included in this study. Overall, 33.9% of the study population self-identified as Black and 32.8% as Hispanic. Depressive symptoms at baseline predicted less spiritual coping at 6 months ($\beta = -0.15$, $p = 0.03$), more negative coping at 6 months ($\beta = 0.44$, $p < .0001$), and worse asthma outcomes at 12 months ($\beta = 0.31$, $p < .0001$). None of the coping styles significantly mediated the relationship between depressive symptoms and asthma outcomes. Perceived social support mediated the relationship between depressive symptoms and positive coping, such that more depressive symptoms predicted less perceived social support, which in turn resulted in less positive coping engagement ($\beta = -0.06$, $p = 0.03$).

Conclusions: This study demonstrates that in older adults with asthma depressive symptoms impact perceived social support, coping strategy selection (including spiritual coping), and subsequent asthma outcomes.

Keywords: Asthma control; Asthma quality of life; Depression; Social support; Spirituality.

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Conflict of interest statement

Declarations. Conflict of interest: No conflict of interests among the authors. **Ethics approval:** The study was approved by the Icahn School of Medicine at Mount Sinai Institutional Review Board. **Consent to participate:** Informed consent was obtained from all individual participants included in the study. **Human and animal rights and Informed Consent:** All procedures followed were in accordance with ethical standards of the responsible committee on human experimentation (institutional and national) and with the Helsinki Declaration of 1975, as revised in 2000. Informed consent was obtained from all patients for being included in the study.

- [81 references](#)

Supplementary info

MeSH terms, Grants and fundingExpand

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Meta-Analysis

Eur J Emerg Med

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. 2025 Apr 1;32(2):87-99.

doi: 10.1097/MEJ.0000000000001205. Epub 2024 Dec 3.

[Contribution of point-of-care ultrasound in the prehospital management of patients with non-trauma acute dyspnea: a systematic review and meta-analysis](#)

[Omide Taheri](#)^{1 2 3}, [Julie Samain](#)¹, [Frédéric Mauny](#)^{2 3 4}, [Marc Puyraveau](#)^{2 3 4}, [Thibaut Desmettre](#)⁵, [Tania Marx](#)^{1 2 3}

Affiliations Expand

- PMID: 39630617
- PMCID: [PMC11855997](#)
- DOI: [10.1097/MEJ.0000000000001205](#)

Abstract

Acute dyspnea is a common symptom whose management is challenging in prehospital settings. Point-of-care ultrasound (POCUS) is increasingly accessible because of device miniaturization. To assess the contribution of POCUS in the prehospital management of patients with acute nontraumatic dyspnea, we performed a systematic review on nontrauma patients of any age managed in the prehospital setting for acute dyspnea and receiving a POCUS examination. We searched seven databases and gray literature for English-language studies published from January 1995 to November 2023. Two independent reviewers completed the study selection, data extraction, and risk of bias assessment. The primary outcome was the assessment of the contribution of POCUS to feasibility, diagnostic, therapeutic, prognosis, patient referral, and transport vector modification. Twenty-three studies were included. The risk of bias assessment identified 3 intermediate-risk, 18 serious-risk, and 2 critical-risk studies. Three studies reported moderate to excellent feasibility for lung POCUS, and three studies reported poor to mediocre feasibility for cardiac POCUS. The median duration of the POCUS examination was less than 5 minutes (six studies). POCUS improved diagnostic identification (seven studies). The diagnostic accuracy of POCUS was excellent for pneumothorax (sensitivity = 100%, specificity = 100%, two studies),

very good for acute heart failure (sensitivity = 71-100%, specificity = 72-95%, eight studies), good for pneumonia (sensitivity = 88%, specificity = 59%, one study), and moderate for pleural effusion (sensitivity = 26-53%, specificity = 83-92%, two studies). Treatment was modified in 11 to 54% of the patients (seven studies). POCUS had no significant effect on patient prognosis (two studies). POCUS contributed to patient referrals and transport vectors in 51% (four studies) and 25% (three studies) of patients, respectively. The evidence supports the use of POCUS for managing acute nontraumatic dyspnea in the prehospital setting in terms of feasibility, overall diagnostic contribution, and, particularly, lung ultrasound for acute heart failure diagnosis. Moreover, POCUS seems to have a therapeutic contribution. There is not enough evidence supporting the use of POCUS for pneumonia, pleural effusion, pneumothorax, chronic obstructive pulmonary disease, or asthma exacerbation diagnosis, nor does it support prognostic, patient referral, and transport vector contribution. A high level of evidence is lacking and needed.

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Conflict of interest statement

There are no conflicts of interest.

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

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Randomized Controlled Trial

J Asthma

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. 2025 Apr;62(4):694-704.

doi: 10.1080/02770903.2024.2438094. Epub 2024 Dec 9.

[Budesonide/formoterol turbuhaler vs pMDI salbutamol for acute asthma in outpatient emergency department: a prospective, randomized, open-label study](#)

[Hock Peng Koh](#)¹, [Sin Nan Lai](#)², [Woon Wee Chong](#)², [Zulsairi Mohd Pauzi](#)³

Affiliations Expand

- PMID: 39629659
- DOI: [10.1080/02770903.2024.2438094](https://doi.org/10.1080/02770903.2024.2438094)

Abstract

Background: The Global Initiative for Asthma (GINA) has suggested the need for more studies on inhaled corticosteroid (ICS)-formoterol in the Emergency Department (ED).

Objectives: We aimed to compare the outcomes of budesonide/formoterol (160/4.5 mcg/inhalation) turbuhaler versus pressurized metered-dose inhaler (pMDI) salbutamol (100 mcg/puff) in acute asthma in the outpatient ED.

Methods: This single-centre, prospective, randomized, and open-label study involved adult asthma patients with mild to moderate asthma exacerbation who attended the outpatient ED of a tertiary hospital in Malaysia. The intervention arm received budesonide/formoterol (Symbicort® 160/4.5 mcg) turbuhaler, while the control arm received pMDI salbutamol with a valved holding chamber. Stratified randomization with variable baseline ICS use was employed. Direct discharge rate from outpatient ED was the primary outcome. Vital signs pre- and post-treatment between the two arms were also compared.

Results: Seventy-four ($n = 37$ for each arm) asthma patients were recruited. Baseline clinical characteristics were comparable between the two arms. Direct discharge rates from ED were comparable between the intervention (94.6%) and the control (91.9%) arms ($p = 1.000$). Post-treatment outcomes (respiratory rate, oxygen saturation, peak expiratory flow rate) were similar between the two arms, except for the higher increment of heart rate ($p < 0.001$) and lesser reduction of blood pressure in the control arm ($p = 0.013$). Intravenous hydrocortisone use was significantly higher in the control arm ($n = 19, 51.4%$) than in the budesonide/formoterol arm ($n = 6, 16.2%$) ($p = 0.001$).

Conclusion: Budesonide/formoterol turbuhaler is as effective as pMDI salbutamol in treating asthma exacerbation in the outpatient ED with less effect on heart rate and lower usage of intravenous corticosteroids.

Keywords: ICS-formoterol; Symbicort; acute asthma; budesonide-formoterol; emergency department.

Supplementary info

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Case Reports

J Asthma

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. 2025 Apr;62(4):737-740.

doi: 10.1080/02770903.2024.2434507. Epub 2024 Dec 9.

[Differentiating asthma and tracheal stenosis: why confirmation of the diagnosis of asthma should precede treatment](#)

[Ananna Kazi](#)¹, [Sarah Shidid](#)¹, [Anna Katrina Gutierrez](#)², [Denisa Ferastraoaru](#)³

Affiliations Expand

- PMID: 39585201
- DOI: [10.1080/02770903.2024.2434507](https://doi.org/10.1080/02770903.2024.2434507)

Abstract

Introduction: Asthma is a common respiratory condition; however, its symptoms often overlap with other diseases, posing diagnostic challenges. Tracheal stenosis, often seen in patients with a history of intubation, can mimic asthma symptoms, leading to misdiagnosis.

Case study: This case study discusses a 58-year-old female with hypertension, type 2 diabetes, and obesity. She was initially treated for presumed asthma for over a year without confirming the diagnosis with pulmonary function tests (PFTs). Despite multiple steroid treatments for exacerbations, her condition deteriorated, leading to hospitalization. During hospitalization, her symptoms were minimally improved with steroid and nebulizer treatments. Examination revealed inspiratory stridor, and a subsequent CT scan identified subglottic tracheal stenosis. Flexible bronchoscopy

confirmed the stenosis, successfully treated with balloon dilation. Post-procedure, her PFTs showed mild obstruction without bronchodilator response, her shortness of breath resolved, and her exercise tolerance improved markedly without ongoing asthma treatment.

Discussion: Asthma symptoms, including dyspnea, wheezing, cough, and chest tightness, frequently overlap with tracheal stenosis. Early differentiation is crucial to avoid misdiagnosis, reduce unnecessary treatments, and prevent complications. Recognizing risk factors, such as obesity, diabetes, female gender, and prior intubation, and employing diagnostic tools, such as PFTs and CT scan of the neck help diagnose tracheal stenosis. Prompt bronchoscopy and appropriate intervention can dramatically improve patient outcomes.

Conclusion: This case underscores the importance of heightened clinical suspicion and comprehensive diagnostic evaluation in patients with persistent treatment-resistant asthma-like symptoms, particularly those with a history of intubation, for timely diagnosis of tracheal stenosis.

Keywords: Asthma misdiagnosis; asthma mimicker; bronchoscopy; diagnostic challenges; hospital medicine; intubation complication; pulmonary medicine; subglottic stenosis; tracheal stenosis.

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J Asthma

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. 2025 Apr;62(4):655-673.

doi: 10.1080/02770903.2024.2430368. Epub 2024 Nov 26.

[Allergic diseases and T2DM: a bidirectional multivariable Mendelian randomization study and mediation analysis](#)

[Shukun Zhan](#)¹, [Jinhua Chen](#)², [Lingxue Wei](#)¹, [Siyu Gan](#)¹, [Qi Zhang](#)¹, [Haiying Fu](#)³

Affiliations Expand

- PMID: 39541335
- DOI: [10.1080/02770903.2024.2430368](https://doi.org/10.1080/02770903.2024.2430368)

Abstract

Background: Clinical studies involving observation have uncovered a mutual relationship between allergic disorders and diabetes, yet the precise causal link remains undetermined.

Methods: We conducted two-sample bidirectional Mendelian randomization analyses using single nucleotide polymorphisms (SNPs) associated with allergic conditions (asthma, allergic rhinitis, atopic dermatitis) from genome-wide studies and SNPs related to type 2 diabetes from FinnGen. Initially, we evaluated the causal link between allergic disorders and type 2 diabetes through a univariate Mendelian randomization study, incorporating inverse variance weighting, MR-Egger, and the weighted median estimator. To address potential confounding, we employed multivariate Mendelian randomization. Finally, we validated mediators influencing the correlation between asthma and type 2 diabetes.

Results: The Inverse variance weighted method showed that asthma genetically increased the risk of type 2 diabetes [Asthma-type 2 diabetes: $\beta(95\%CI)=0.892$ (0.152-1.632), $p = 0.018$]. Allergic rhinitis and type 2 diabetes exhibit a mutual protective effect: $\beta(95\% CI)=-1.333$ (-2.617 to -0.049), $p = 0.042$; type 2 diabetes-Allergic rhinitis: $\beta(95\%CI)=-0.002$ (-0.004 to -0.000), $p = 0.018$. The Multivariable Mendelian randomization study results showed that after excluding confounding factors, asthma still demonstrates statistical significance in relation to type 2 diabetes. Through mediation analysis, it was discovered that lung function and the percentage of monocytes in leukocytes exert an inhibitory effect on the mediation between asthma and type 2 diabetes.

Conclusion: The Multivariable Mendelian randomization study indicates asthma as a risk factor for type 2 diabetes. Lung function, and the percentage of monocytes in leukocytes, play an inhibitory role in asthma and type 2 diabetes mediating effects.

Keywords: Asthma; mediation analysis; multivariable Mendelian randomization study; type 2 diabetes.

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25

Review

Curr Opin Allergy Clin Immunol

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. 2025 Apr 1;25(2):75-82.

doi: 10.1097/ACI.0000000000001043. Epub 2024 Oct 23.

[New mechanisms in diisocyanate-mediated allergy/toxicity: are microRNAs in play?](#)

[Chen-Chung Lin](#)¹, [Brandon F Law](#), [Justin M Hettick](#)

Affiliations Expand

- PMID: 39450940
- PMCID: [PMC11867871](#)
- DOI: [10.1097/ACI.0000000000001043](#)

Abstract

Purpose of review: To describe recent findings of diisocyanate-mediated mechanisms in allergy and toxicology by addressing the role of microRNA (miR) in immune responses that may contribute to the development of occupational asthma (OA).

Recent findings: Studies of diisocyanate asthma have traditionally focused on the immune and inflammatory patterns associated with diisocyanate exposures; however, recognized knowledge gaps exist regarding the detailed molecular mechanism(s) of pathogenesis. Recent studies demonstrate the critical role endogenous microRNAs play as gene regulators in maintaining homeostasis of the human body, and in the pathophysiology of many diseases including asthma. Given that diisocyanate-OA shares many pathophysiological characteristics with asthma, it is likely that miR-mediated mechanisms are involved in the pathophysiology of diisocyanate-OA. Recent reports have shown that changes in expression of endogenous miRs are associated with exposure to the occupationally relevant diisocyanates, toluene diisocyanate (TDI) and methylene diphenyl diisocyanate (MDI). Continued mechanistic study of these relevant miRs may lead to the development of novel biomarkers of occupational exposure and/or provide efficacious targets for therapeutic strategies in diisocyanate asthma.

Summary: The molecular mechanisms underlying diisocyanate-OA pathophysiology are heterogeneous and complicated. In this review, we highlight recent research into the roles and potential regulation of miRs in diisocyanate-OA.

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Conflict of interest statement

Conflicts of interest

The authors declare that they have no conflicting financial interests. The findings and conclusions in this report are those of the authors and do not necessarily represent the official position of the National Institute for Occupational Safety and Health, Centers for Disease Control and Prevention.

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

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Randomized Controlled Trial

Monaldi Arch Chest Dis

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. 2025 Mar 31;95(1).

doi: 10.4081/monaldi.2024.2685. Epub 2024 Jan 11.

[Evaluation of the effectiveness of Tadalafil on improving pulmonary function and asthma severity in severe asthmatic patients: a randomized controlled trial study](#)

[Seyed Hamid Borsi¹](#), [Seyed Ali Asghar Fakhr Mousavi¹](#), [Mehrdad Dargahi Mal-Amir¹](#), [Heshmatollah Tavakol¹](#), [Hanieh Raji¹](#)

Affiliations Expand

- PMID: 38213275
- DOI: [10.4081/monaldi.2024.2685](#)

Free article

Abstract

Phosphodiesterase inhibitors elevate the levels of cyclic adenosine monophosphate and cyclic guanosine monophosphate, which have been associated with various anti-inflammatory effects that can help alleviate asthma symptoms. This study aims to assess the impact of Tadalafil, a selective phosphodiesterase inhibitor, on pulmonary function in patients with asthma. This study was a randomized, double-blind clinical trial conducted in 2021 at Imam Khomeini Hospital in Ahvaz, Iran. The study enrolled 44 patients with severe asthma, who were divided equally into a Tadalafil group and a placebo group. The Tadalafil group received 20 mg/day of Tadalafil, while the placebo group received a placebo at the same dose. The patients' spirometry tests, asthma quality of life questionnaire, 6-minute walking distance, and quality of life were measured at the beginning of the study and one month later. The study results indicated that there was no statistically significant difference between the Tadalafil group and the placebo group in terms of pulmonary parameters ($p>0.05$). Furthermore, the scores for patients' quality of life ($p=0.167$) and the 6-minute walking test ($p=0.148$) at the end of the study did not show any statistically significant improvement compared to the placebo group. Results showed that the use of Tadalafil (20 mg) once daily for one month in patients with severe asthma did not affect clinical and laboratory outcomes.

Supplementary info

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

1

Review

Eur J Med Res

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. 2025 Apr 1;30(1):223.

doi: 10.1186/s40001-025-02492-9.

[Chronic airway inflammatory diseases and e-cigarette use: a review of health risks and mechanisms](#)

[Xing Yang](#)¹, [Wenqi Che](#)¹, [Lu Zhang](#)¹, [Huanping Zhang](#)^{2 3 4}, [Xiaoxue Chen](#)^{5 6}

Affiliations Expand

- PMID: 40170170
- DOI: [10.1186/s40001-025-02492-9](#)

Abstract

Chronic airway inflammatory diseases, which primarily include chronic obstructive pulmonary disease (COPD), asthma, allergic rhinitis, and chronic sinusitis, continue to have a high global prevalence, highlighting their significant public health impact. Concurrently, the use of e-cigarettes (tobacco e-cigarettes) has been rising worldwide, with many users perceiving them as a safer alternative to traditional cigarettes. However, accumulating evidence from international studies suggests that e-cigarettes pose substantial health risks. This review aims to explore recent research on the relationship between e-cigarette use and chronic airway inflammatory diseases. The findings indicate that e-cigarette usage increases the risk of developing these conditions. Specifically, studies have shown that e-cigarettes exacerbate airway inflammatory responses, elevate levels of type 2 inflammatory cytokines such as IL-4, IL-5, and IL-13, increase cellular oxidative stress, and impair lung function. These mechanisms may collectively contribute to an increased risk of chronic airway inflammatory diseases potentially associated with e-cigarette use.

Keywords: Airway inflammation; Asthma; Chronic obstructive pulmonary disease; E-cigarettes; Inflammatory mediators.

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Conflict of interest statement

Declarations. Ethics approval: Not applicable. Consent to participate: Not applicable. Consent for publication: Not applicable. Competing interests: The authors declare no competing interests.

- [106 references](#)

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Curr Opin Allergy Clin Immunol

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. 2025 Apr 2.

doi: 10.1097/ACI.0000000000001069. Online ahead of print.

[Local allergic rhinitis in Asia: rethinking the allergy landscape](#)

[Aneeza W Hamizan](#)^{1,2}, [Salina Husain](#)^{1,2}, [Pongsakorn Tantilipikorn](#)^{3,4}

Affiliations Expand

- PMID: 40167188
- DOI: [10.1097/ACI.0000000000001069](https://doi.org/10.1097/ACI.0000000000001069)

Abstract

Purpose of review: Local allergic rhinitis (LAR) is increasingly recognized as a distinct phenotype of chronic rhinitis, yet its prevalence and characteristics in Asia remain underexplored. Given the variability in reported LAR prevalence across regions, this review re-evaluates the allergy landscape in Asia, considering environmental and immunological factors, as well as study methodology that may contribute to differences from Western populations.

Recent findings: There were more Asian studies which reported lower prevalence (0-20%), in contrast to higher rates in Europe, particularly Mediterranean countries. Urbanization, air pollution, and high dust mite exposure may be important factors of nonatopic rhinitis in Asia. Diagnostic approaches, including nasal-specific IgE and provocation tests, vary across studies, impacting prevalence estimates.

Summary: The lower reported LAR prevalence in Asia suggests potential differences in underlying mechanisms or diagnostic limitations. Further research is needed to refine diagnostic criteria, explore environmental triggers, and assess the clinical relevance of LAR in Asian populations. A better understanding of LAR in

Asia could guide targeted management strategies and improve recognition of this condition in clinical practice.

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Laryngoscope Investig Otolaryngol

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. 2025 Mar 21;10(2):e70123.

doi: 10.1002/lio2.70123. eCollection 2025 Apr.

[Systemic Hormonal Contraceptive Use and Rhinitis Among Adult Women: An All of Us Database Analysis](#)

[Richard G Chiu](#)¹, [Kamal Eldeirawi](#)², [Anthony I Dick](#)¹, [Sharmilee M Nyenhuis](#)³, [Thasarat Sutabutr Vajaranant](#)⁴, [Rachel Caskey](#)⁵, [Victoria S Lee](#)¹

Affiliations Expand

- PMID: 40124254
- PMCID: [PMC11926567](#)
- DOI: [10.1002/lio2.70123](#)

Abstract

Objectives: The role of sex hormones in the pathogenesis of allergic and inflammatory conditions such as rhinitis has been receiving increased attention, with evidence supporting an inflammation-modulating role of estrogen and progesterone in the nasal mucosa. However, the specific influence of hormonal contraceptives in rhinitis has been sparsely studied. As such, we sought to investigate the association of systemic hormonal contraceptives with both allergic (AR) and nonallergic rhinitis (NAR) using a national data set of adults in the United States.

Methods: This study was conducted using data from 46,205 female participants aged 20-40 in the *All of Us* Research Program. Rhinitis diagnoses, systemic hormonal contraceptive use, and covariate data were extracted for all participants. These variables were included in multivariable logistic regression models assessing the association of any systemic hormonal contraceptive use with rhinitis, both AR and NAR. Separate models were conducted to examine the association of progestin-only contraceptives (POCs) and estrogen-containing contraceptives (ECCs) on the odds of rhinitis. Adjusted odds ratios (OR) and 95% confidence intervals (CI) were calculated.

Results: Systemic hormonal contraceptives were associated with AR (OR: 1.32; 95% CI: 1.20-1.44) but not NAR (OR: 1.20; 95% CI: 0.90-1.56) after controlling for covariates. When analyzing POCs and ECCs separately, both were associated with AR compared to those not taking any systemic hormonal contraceptives (OR: 1.29; 95% CI: 1.12-1.48 for POC, OR: 1.35; 95% CI: 1.21-1.51 for ECC) but were not significantly associated with NAR (OR: 1.04; 95% CI: 0.66-1.57 for POC, OR: 1.33; 95% CI: 0.95-1.81 for ECC).

Conclusion: Systemic hormonal contraceptive use was independently associated with AR, with no significant difference between POCs and ECCs, while not being associated with NAR. Our findings may support a hormonal role in the pathogenesis of AR, but further research is needed to establish causation and understand the underlying mechanisms linking systemic hormonal contraceptive use to AR.

Level of evidence: 3.

Keywords: all of us research program; allergic rhinitis; contraceptives; nonallergic rhinitis; rhinitis.

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Conflict of interest statement

The authors declare no conflicts of interest.

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Review

Curr Opin Allergy Clin Immunol

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. 2025 Apr 1;25(2):129-133.

doi: 10.1097/ACI.0000000000001064. Epub 2025 Feb 4.

[The impact of climate change in pollen food allergy syndrome](#)

[Isabel J Skypala](#)^{1,2}

Affiliations Expand

- PMID: 39903212
- DOI: [10.1097/ACI.0000000000001064](#)

Abstract

Purpose of review: To evaluate the effect of climate change on pollen allergenicity, lengthening of the pollen season, and the spread of invasive species such as ragweed. To assess evidence to determine whether these effects are impacting the prevalence of pollen food syndrome (PFS).

Recent findings: There is good evidence to demonstrate that markers of climate change, including rising temperatures and to some extent greenhouse gases, are responsible for a rise in the allergenicity of pollen and an increase in the duration of the pollen season, especially for trees. These changes are likely to be linked to the increase in the prevalence of seasonal allergic rhinitis (SAR), especially in children. Sensitization to pollen, especially tree pollen, is also a risk factor for the development of PFS. Thought to mainly affect adults, recent evidence suggests that there is a rise in the prevalence of PFS in children, linked to an increase in SAR.

Summary: Increasing SAR due to climate change could lead to a greater number of children and adults developing PFS. Although PFS is generally considered to be a mild condition, severe reactions can occur and there might be numerous plant food triggers, which can adversely affect dietary choice and nutritional intake.

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Review

Expert Rev Clin Immunol

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. 2025 Apr;21(4):473-492.

doi: 10.1080/1744666X.2025.2459929. Epub 2025 Jan 31.

[Biological therapy in chronic rhinosinusitis with nasal polyps](#)

[Zeyi Jin](#)^{1,2,3}, [Bing Yan](#)^{1,2,3}, [Luo Zhang](#)^{1,2,3,4}, [Chengshuo Wang](#)^{1,2,3}

Affiliations Expand

- PMID: 39862235
- DOI: [10.1080/1744666X.2025.2459929](https://doi.org/10.1080/1744666X.2025.2459929)

Abstract

Introduction: Chronic rhinosinusitis with nasal polyps (CRSwNP) is a heterogeneous disease. High proportions of patients with CRSwNP characterized by type 2 inflammation fail to gain adequate control with conventional treatment. The application of biologics in clinics and assessments of novel biologics in clinical trials are blooming in expectations to fulfill the unmet medical needs of patients with CRSwNP with type 2 inflammation.

Areas covered: After an extensive search of PubMed, Medline, and EMBASE for the most recent evidence, we thoroughly summarize current advances in biological therapies for treating patients with CRSwNP.

Expert opinion: In recent years, biological therapy has been in the spotlight in clinical studies on CRSwNP. Biologics have proven to be efficacious in reducing nasal polyp size, alleviating CRSwNP-related symptoms, improving quality of life, and reducing the need for systemic corticosteroids or endoscopic sinus surgery for nasal polyps. The considerable efficacy and safety profile of biologics has offered patients with refractory CRSwNP another treatment option. However, some concerns remain to be addressed. Aspects such as the position of biological therapy in the management of CRSwNP, traits of patients suitable for certain

biologics, etc. necessitate efforts to elucidate these unknowns in order to provide patients with tailored therapy.

Keywords: Biologics; chronic rhinosinusitis with nasal polyps (CRSwNP); efficacy; monoclonal antibody (mAb); type 2 inflammation.

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Observational Study

Eur Arch Otorhinolaryngol

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. 2025 Apr;282(4):1891-1900.

doi: 10.1007/s00405-024-09139-1. Epub 2024 Dec 19.

[Impact of FESS on symptomatology and quality of life of patients with CRSsNP](#)

[A Romano](#)¹, [Simona Barone](#)², [G Borriello](#)¹, [G R De Fazio](#)¹, [S Paesano](#)³, [G Grassia](#)³, [P Bonavolontà](#)¹, [G Dell'Aversana Orabona](#)¹, [S Sivero](#)⁴

Affiliations Expand

- PMID: 39702803
- DOI: [10.1007/s00405-024-09139-1](https://doi.org/10.1007/s00405-024-09139-1)

Abstract

Purpose: Chronic rhinosinusitis (CRS) has an impact on health related quality of life (HRQOL). The objective of this study was to examine generic and disease specific HRQOL and symptoms in CRS patients before and 6 months after sinus surgery.

Methods: This prospective, observational study consisted of 30 patients with chronic sinusitis. Generic and disease specific HRQOL were measured using the Short Form Health Survey (SF 36) and Sino Nasal Outcome Test (SNOT 22).

Results: The results revealed that chronic sinusitis has a significant impact on a person's quality of life reflected in the vitality, mental health, social activities, physical pain and perceived health status of patients also a positive correlation emerged between functional endoscopic sinus surgery (FESS) and improvement not only in symptomatology but also overall quality of life.

Conclusions: FESS turns out to be a useful and necessary intervention for the improvement of symptomatology related to chronic sinusitis but also for the improvement of the quality of life of individuals who appear to be severely affected by the condition.

Keywords: Chronic rhinosinusitis; Functional endoscopic sinus surgery; Quality of life of patients; SF 36; SNOT20.

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Case Reports

Eur Arch Otorhinolaryngol

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. 2025 Apr;282(4):2169-2172.

doi: 10.1007/s00405-024-09125-7. Epub 2024 Dec 7.

[Dupilumab in chronic rhinosinusitis with nasal polyposis and concomitant cystic fibrosis: a real-life experience](#)

[Marco Govoni](#)¹, [Arianna Soncini](#)², [Maria Luce Bardon](#)³, [Enrico Pasanisi](#)³, [Gabriele Oretti](#)¹

Affiliations Expand

- PMID: 39643811
- DOI: [10.1007/s00405-024-09125-7](#)

Abstract

Purpose: Chronic rhinosinusitis (CRS) has been distinguished in primary CRS, a primary inflammatory disorder limited to airways and secondary CRS, in which the sinonasal pathology is caused by a systemic disease or a local pathologic condition. Primary CRS is in turn classified in Type 2 and Non-type 2 on the basis of the endotype and of the pattern of the immune response. Advance in the knowledge of CRS has led to new therapeutic options, among which Dupilumab (anti-IL4R). We report the clinical response to Dupilumab in two patients with cystic fibrosis and nasal polyposis, in which the coexistence of a primary and secondary CRS could not be excluded.

Methods: Nasal endoscopy, smell and quality of life of the patients were evaluated at each follow-up.

Results: In the first case, increased blood eosinophils, allergy to inhalants and NSAIDs intolerance supported the suspect of primary CRS with type 2 inflammatory pattern, in addition to cystic fibrosis and the therapy was effective. In the second case the patient did not show atopy or peculiar blood test and even if the phenotype could suggest a primary CRS combined with a secondary one, the treatment was ineffective and it was suspended.

Conclusion: Even though classifications can be helpful, they can be reductive in cases where different aetiologies overlap. The presence of a concomitant primary CRS must not be excluded a priori in patients affected by secondary CRS. Each patient must be investigated to identify endotype characteristics and select the most appropriate therapeutic option.

Keywords: Cystic fibrosis; Dupilumab; Nasal polyposis; Primary chronic rhinosinusitis; Secondary chronic rhinosinusitis; Type 2 inflammation.

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Conflict of interest statement

Declarations. Informed consent: Written informed consent was obtained from all the patients who agreed to participate to the study. **Conflict of interest:** The authors declare that there is no conflict of interests regarding the publication of this paper.

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Observational Study

Ann Diagn Pathol

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. 2025 Apr;75:152415.

doi: 10.1016/j.anndiagpath.2024.152415. Epub 2024 Nov 26.

[Fungal Rhinosinusitis: An integrated diagnostic approach](#)

[R Soundarya](#)¹, [H C Deepa](#)², [Peralam Yegneswaran Prakash](#)³, [V Geetha](#)⁴

Affiliations Expand

- PMID: 39615372
- DOI: [10.1016/j.anndiagpath.2024.152415](https://doi.org/10.1016/j.anndiagpath.2024.152415)

Free article

Abstract

Classification of fungal rhinosinusitis (FRS) based on histomorphology and clinical presentation aids in early diagnosis and prompt patient management. In this retrospective observational study, clinicopathologic findings in patients diagnosed with fungal rhinosinusitis between January 2019 and December 2021 were evaluated. Clinical and imaging findings were retrieved from hospital records; slides from routine and histochemical studies were reviewed, and the cases were classified into non-invasive [fungal ball (FB) and allergic fungal rhinosinusitis (AFRS)] and invasive FRS [acute invasive fungal rhinosinusitis (AIFRS), chronic

invasive fungal rhinosinusitis (CIFRS) and chronic invasive granulomatous fungal rhinosinusitis (CGFRS)]. Fungal cultures were also compared with histopathology. Of the 85 patients in the study, 34% were non-invasive (86% FB, 10% AFRS, and 4% unclassified), and 66% were invasive (70% AIFRS, 21% CGFRS, and 9% CIFRS). The mean age of patients was 51 years, with a male-to-female ratio of 1.5:1. The most common comorbidity was diabetes with COVID-19 co-infection. Culture reports were available for 77 patients, of which 36 cases had growth, the majority of which were *Aspergillus*; 7 patients had coinfection with *Aspergillus* and Mucorales. Comparing histopathology to the gold standard mycology for *Aspergillus*, a sensitivity of 90%, specificity of 96%, and Cohen's Kappa of 0.8 was achieved. This study emphasizes the value of an integrated diagnostic approach in arriving at an appropriate diagnosis. In resource-limited settings, histopathological evaluation can be a valuable screening tool, aiding in early diagnosis.

Keywords: Allergic fungal sinusitis; *Aspergillus*; COVID-19; Invasive fungal infections; Mucorales; Rhinosinusitis.

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Conflict of interest statement

Declaration of competing interest None.

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Laryngoscope

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. 2025 Apr;135(4):1326-1334.

doi: 10.1002/lary.31899. Epub 2024 Nov 27.

[Blood Eosinophil Count is the Dominant Clinical Marker for type 2 Inflammatory Severity in CRSwNP](#)

[Pei-Wen Wu](#)^{1,2}, [Chi-Che Huang](#)^{1,2}, [Po-Hung Chang](#)¹, [Ta-Jen Lee](#)^{1,2,3}, [Yu-Hsi Fan](#)¹, [Chien-Chia Huang](#)^{1,2}

Affiliations Expand

- PMID: 39601113
- DOI: [10.1002/lary.31899](https://doi.org/10.1002/lary.31899)

Abstract

Objective: Severe type 2 eosinophilic chronic rhinosinusitis with nasal polyps (CRSwNP) is challenging to treat and susceptible to recurrence post-surgery. This study aimed to evaluate the relationship between clinical markers and tissue type 2 inflammatory severity in patients with CRSwNP.

Methods: Adult patients who underwent endoscopic sinus surgery for bilateral CRSwNP were prospectively enrolled. Tissue eosinophil count (TEC) was evaluated. Expression levels of type 2 cytokines, including IL-5 and IL-13, in nasal polyps were determined using real-time PCR. Correlations between clinical markers and tissue type 2 inflammation were also assessed.

Results: In total, 150 participants were recruited. Ninety-five (63.3%) exhibited type 2 eosinophilic CRSwNP defined by TEC ≥ 10 /high power field. Weak to moderate correlations were observed between clinical and tissue markers of type 2 inflammation. Among the clinical markers, blood eosinophil count (BEC) exhibited the highest correlation with tissue type 2 inflammatory severity, as determined by TEC, IL-5, and IL-13 expression levels in nasal polyps. Comorbid asthma, nonsmoking status, ethmoid/maxillary sinuses (E/M) ratio, and BEC were significant predictors of eosinophilic CRSwNP in the regression analysis.

Conclusions: BEC, a dominant clinical marker, exhibits the highest correlation with tissue type 2 inflammatory severity, as determined by TEC, IL-5, and IL-13 in nasal polyps. Comorbid asthma, nonsmoking status, E/M ratio, and BEC were significant predictors of eosinophilic CRSwNP. This could help clinicians better evaluate the severity of type 2 inflammation in patients with CRSwNP and provide optimal therapeutic strategies.

Level of evidence: 4 Laryngoscope, 135:1326-1334, 2025.

Keywords: IL-13; IL-5; chronic rhinosinusitis with nasal polyp; eosinophil; type 2 inflammation.

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Review

Indian J Ophthalmol

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. 2025 Apr 1;73(4):526-536.

doi: 10.4103/IJO.IJO_2853_23. Epub 2024 Sep 19.

[Immunotherapy: Current indications and recommendations in the management of ocular allergy](#)

[Padukudru Anand Mahesh](#)¹, [Shambo Samrat Samajdar](#)², [Sowmya Arudi Nagarajan](#)³, [Greeshma Mandya Venkatesh Murthy](#)⁴, [Saibal Moitra](#)⁵

Affiliations Expand

- PMID: 39297491
- DOI: [10.4103/IJO.IJO_2853_23](#)

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Abstract

Allergic diseases, including allergic conjunctivitis (AC), pose a significant health burden, affecting both developed and developing nations. Despite its importance, AC is often underreported, leading to underestimated incidence and prevalence. The coexistence of AC with allergic rhinitis and its comorbidity with asthma underscore its clinical relevance. The prevalence of nasal symptoms with eye symptoms related to eye allergy varies among different age groups and regions worldwide. Climatic factors, aeroallergens, and environmental exposure play significant roles in the prevalence of ocular allergies. Allergen immunotherapy (AIT) represents the only disease-modifying treatment for IgE-mediated allergic diseases. This review provides a comprehensive overview of the history, mechanisms, and evidence of AIT for ocular allergies, with a focus on AC. The primary routes of AIT,

subcutaneous immunotherapy (SCIT), and sublingual immunotherapy (SLIT) are discussed in detail. The evidence for AIT in treating AC is extensive and demonstrates its effectiveness in alleviating ocular symptoms, reducing medication usage, and improving the quality of life in patients. Both SCIT and SLIT have shown positive results, with SLIT having a more favorable safety profile. Considerations for initiating and maintaining AIT, including adherence, financial burden, and treatment duration, are highlighted. In summary, AIT is a valuable treatment option for AC, offering long-term symptom relief and potential cost-effectiveness. By understanding the history, mechanisms, and evidence of AIT, healthcare providers can better manage ocular allergies and improve patient outcomes.

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- [51 references](#)

Supplementary info

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chronic cough

1

Case Reports

Am J Case Rep

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. 2025 Apr 1:26:e946280.

doi: 10.12659/AJCR.946280.

[Early-Onset COPD and Lung Cancer: Case Studies Highlighting Diagnostic Challenges in Younger Patients](#)

[Robert Uliński^{1,2}](#), [Piotr Korczyński³](#), [Joanna Domagała-Kulawik⁴](#)

Affiliations Expand

- PMID: 40165352

- DOI: [10.12659/AJCR.946280](https://doi.org/10.12659/AJCR.946280)

Abstract

BACKGROUND The coexistence of lung cancer with COPD has received increasing attention in recent years. These 2 entities are attributed to older age, with a mean age of around 70 years old. Here, we present 3 fatal cases of lung cancer and COPD in uncommonly young patients (45-55 years old). **CASE REPORT** The first patient, 46-year-old man, reported progressive tiredness, and recurrent sub-febrile states, without recovery despite empiric treatment with 3 antibiotics. He was diagnosed with SCC and referred for chemoradiotherapy, but he died within 6 months. The second patient was 53-year-old women with hemoptysis, tiredness, loss of weight, spine pain, and cough, who was first diagnosed with pneumonia. Her first bronchoscopy was not diagnostic. A second bronchoscopy performed 2 weeks later was successful and she was diagnosed with large-cell carcinoma. She was referred for chemoradiotherapy, but died within 1 month. The third patient was 50-year-old women with chest pain radiating to her left shoulder and hoarseness. She was diagnosed with advanced SCLC, and was referred immediately for chemotherapy with immunotherapy, but did not respond well to treatment and died a few months later. **CONCLUSIONS** Age seems to be one of the factors that can delay cancer diagnosis. To the best of our knowledge, the literature contains no reports about young patients with coexistence of lung cancer and COPD. We emphasize the importance of these diseases in differential diagnosis in younger patients when reported with systemic symptoms.

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Observational Study

Eur Arch Otorhinolaryngol

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. 2025 Apr;282(4):2009-2013.

doi: 10.1007/s00405-025-09258-3. Epub 2025 Feb 24.

[The role of an anti-reflux diet in the treatment of chronic cough caused by laryngopharyngeal reflux](#)

[Viktória Hránková^{1,2}](#), [Tomáš Balner^{3,4}](#), [Adéla Kondé^{5,6}](#), [Patrícia Gubová⁷](#), [Karol Zeleník^{7,8}](#), [Pavel Komínek^{7,8}](#), [Lucia Staníková^{7,8}](#)

Affiliations Expand

- PMID: 39994032
- PMCID: [PMC11950133](#)
- DOI: [10.1007/s00405-025-09258-3](#)

Abstract

Purpose: To evaluate the role of an anti-reflux diet in the treatment of patients with chronic cough caused by laryngopharyngeal reflux (LPR).

Methods: This prospective observational study included patients with chronic cough (lasting over 3 months) and laryngopharyngeal reflux (LPR) confirmed by hypopharyngeal-esophageal 24-h multichannel intraluminal impedance-pH monitoring (HEMII-pH), according to Dubai criteria. Participants were categorized based on cough severity using a visual analog scale (VAS) from 1 to 10. A VAS < 5 was considered to indicate mild cough, whereas a VAS ≥ 5 were considered to indicate severe cough. Patients with mild cough were treated by anti-reflux diet only, while those with severe cough received additional treatment with proton pump inhibitors (PPIs) and alginates. After 3 months, treatment effectiveness was evaluated by assessing the reduction in cough severity.

Results: In patients with mild cough, anti-reflux diet alone proved to be effective, yielding improvement in 83.3% of cases. Among patients with severe cough, a combination of anti-reflux diet, proton pump inhibitors (PPIs), and alginates proved was effective in 81.8% of cases.

Conclusion: Diet alone is an effective and sufficient treatment for mild chronic cough in patients with LPR. For patients with severe chronic cough with LPT, combined anti-reflux measures are effective.

Keywords: Bronchial asthma; Chronic cough; Diet; Laryngopharyngeal reflux; Proton pump inhibitors; Proximal acid exposure time.

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Conflict of interest statement

Declarations. Conflict of interest: The authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

- [15 references](#)

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Int Dent J

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. 2025 Apr;75(2):496-501.

doi: 10.1016/j.identj.2024.07.003. Epub 2024 Jul 26.

[Association Between Masticatory Difficulty and Chronic Cough in a Korean Population](#)

[Chang Wan Kim](#)¹, [Tae Sic Lee](#)², [Chun Sung Byun](#)¹, [Yon Chul Park](#)³

Affiliations Expand

- PMID: 39068122
- DOI: [10.1016/j.identj.2024.07.003](https://doi.org/10.1016/j.identj.2024.07.003)

Free article

Abstract

Objective: Chronic cough, a common outpatient symptom, has various aetiologies, including upper airway cough syndrome, asthma, and gastroesophageal reflux. The potential link between dental issues and respiratory diseases has recently garnered attention. This study aims to investigate the association between masticatory difficulty and chronic cough using data from the 2011-2015 Korean National Health and Nutrition Examination Survey (KNHANES).

Methods: Analysis included 9706 individuals from KNHANES. Participants self-reported masticatory function and chronic cough. Covariates included age, sex, underlying diseases, socioeconomic status, lifestyle factors, and laboratory

markers. Binary logistic regression analysed odds ratios for chronic cough covariates. Multiple logistic regression assessed adjusted odds ratios for masticatory difficulty.

Results: Masticatory difficulty prevalence was 32.2%, with chronic cough higher in this group (4.8%) than in the group without masticatory difficulty (3.0%). After adjusting for socioeconomic status, lifestyle factors, and laboratory markers, masticatory difficulty was significantly associated with greater chronic cough prevalence (odds ratio, 1.137; 95% confidence interval, 1.134-1.140).

Conclusions: Masticatory difficulty was linked with an elevated chronic cough risk in Korean healthy adults. Further research, including prospective studies and detailed investigations into gastroesophageal reflux disease and microbiological studies, is warranted to elucidate the impact of mastication on respiratory health. As masticatory difficulty may serve as a clinical indicator for chronic cough interdisciplinary collaboration between dental and respiratory health professionals can facilitate early intervention and enhance patient care.

Keywords: Chronic cough; Masticatory difficulty; Oral health; Respiratory health.

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Conflict of interest statement

Conflict of interest None disclosed.

Supplementary info

MeSH termsExpand

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

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Br J Clin Pharmacol

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. 2025 Apr 2.

doi: 10.1002/bcp.70027. Online ahead of print.

[Safety, tolerability, pharmacokinetics and pharmacodynamics of HSK31858, a novel oral dipeptidyl peptidase-1 inhibitor, in healthy volunteers: An integrated phase 1,](#)

[randomized, double-blind, placebo-controlled, single- and multiple-ascending dose study](#)

[Yuhao Wang](#)¹, [Chao Yu](#)¹, [Mengyue Hu](#)¹, [Lu Wang](#)², [Meixia Chen](#)¹, [Hanmo Liu](#)¹, [Nan Wu](#)¹, [Jie Hou](#)²

Affiliations Expand

- PMID: 40170587
- DOI: [10.1002/bcp.70027](#)

Abstract

Aim: Dipeptidyl peptidase-1 (DPP-1) inhibitors have been studied for the treatment of neutrophil-mediated inflammatory diseases including bronchiectasis, bronchial asthma and cystic fibrosis. This study evaluated the pharmacokinetics, pharmacodynamics, safety and tolerability of DPP-1 inhibitor HSK31858 in healthy Chinese volunteers.

Methods: Volunteers in Part A randomly received single doses of HSK31858 (15, 40, 60 and 80 mg) or placebo in fasted states. The 40-mg cohort also received HSK31858 40 mg or placebo in fed states. In Part B, volunteers randomly received HSK31858 10, 20 and 40 mg or placebo once daily for 28 days in fasted states. The primary endpoints were safety and tolerability of HSK31858.

Results: Among 38 volunteers in Part A and 36 in Part B, HSK31858 was well tolerated; no deaths, serious adverse events, or discontinuations due to adverse events occurred. The median T_{max} was 0.75 to 1.0 h and the mean terminal $t_{1/2}$ was 16.5 to 21.0 h in the fasted state with single doses of HSK31858. Both C_{max} and AUC_{0-t} exhibited a dose-dependent rise. Food had no effect on AUC. Multiple doses of HSK31858 demonstrated a similar pharmacokinetics profile, with about 2-fold accumulation in AUC. HSK31858 dose-dependently inhibited neutrophil count-normalized neutrophil elastase (NE_{norm}) activity. The maximal percentage decrease in NE_{norm} activity relative to baseline during 28 days of HSK31858 treatments was 13.6% and 76.4% with HSK31858 10 and 40 mg once-daily, respectively.

Conclusion: HSK31858 was safe and well tolerated. The pharmacokinetics and pharmacodynamics profile of HSK31858 supports further clinical development for the treatment of neutrophil-mediated inflammatory diseases.

Trial registration: [NCT05663593](#).

Keywords: HSK31858; bronchiectasis; dipeptidyl peptidase 1; neutrophil elastase; pharmacokinetics; safety.

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J Imaging Inform Med

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. 2025 Apr 1.

doi: 10.1007/s10278-025-01486-7. Online ahead of print.

[Machine learning-based model assists in differentiating Mycobacterium avium Complex Pulmonary Disease from Pulmonary Tuberculosis: A Multicenter Study](#)

[Jiacheng Zhang](#)¹, [Tingting Huang](#)², [Xu He](#)¹, [Dingsheng Han](#)¹, [Qian Xu](#)¹, [Fukun Shi](#)¹, [Lan Zhang](#)³, [Dailun Hou](#)⁴

Affiliations Expand

- PMID: 40169471
- DOI: [10.1007/s10278-025-01486-7](#)

Abstract

The number of Mycobacterium avium-intracellulare complex pulmonary disease patients is increasing globally. Distinguishing Mycobacterium avium-intracellulare complex pulmonary disease from pulmonary tuberculosis is difficult due to similar manifestations and characteristics. We aimed to build and validate a machine learning model using clinical data and computed tomography features to differentiate them. This multi-centered, retrospective study included 169 patients diagnosed with Mycobacterium avium-intracellulare complex and pulmonary tuberculosis from date to date. Data were analyzed, and logistic regression, random forest, and support vector machine models were established and validated. Performance was evaluated using receiver operating characteristic and precision-recall curves. In total, 84 patients with Mycobacterium avium-intracellulare complex pulmonary disease and 85 with pulmonary tuberculosis were analyzed. Patients with Mycobacterium avium-intracellulare complex pulmonary disease were older. Hemoptysis rate, cavity number and morphology, bronchiectasis type, and distribution differed. The support vector machine model performed better. In the training set, the area under the curve was 0.960, and in the validation set it was 0.885. The precision-recall curve showed high accuracy and low recall for the support vector machine model. The support vector machine learning-based model,

which integrates clinical data and computed tomography imaging features, exhibited excellent diagnostic performance and can assist in differentiating Mycobacterium avium-intracellulare complex pulmonary disease from pulmonary tuberculosis.

Keywords: Mycobacterium avium complex pulmonary disease; Computed tomography; Differentiate; Machine learning; Pulmonary tuberculosis.

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Conflict of interest statement

Declarations. Research Involving Human Participants and/or Animals: The authors are accountable for all aspects of the work in ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved. This retrospective cohort study was conducted following the Declaration of Helsinki (as revised in 2013) and was approved by the Institutional Review Board of Beijing Chest Hospital and the First Affiliated Hospital of Henan University of Chinese Medicine (No. 2022HL-212). **Informed Consent:** Written informed consent was waived due to the retrospective nature of the study. **Consent to Publish:** Not applicable. **Competing Interests:** The authors declare no competing interests.

- [27 references](#)

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Ann Intern Med

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. 2025 Apr 1.

doi: 10.7326/ANNALS-25-00797. Online ahead of print.

[Pulmonology: What You May Have Missed in 2024](#)

[Namarik Alenezy¹](#), [Yusing Gu¹](#), [Rana Saleh¹](#), [Laura Sheriff¹](#), [Michael Unger²](#)

Affiliations Expand

- PMID: 40163874

- DOI: [10.7326/ANNALS-25-00797](https://doi.org/10.7326/ANNALS-25-00797)

Abstract

The past year saw many important publications in the specialty of pulmonology. We screened more than 750 articles published in 2024 and carefully selected 10 that feature important advancements in the management of several respiratory conditions. We highlight 4 articles that describe management options for patients with chronic obstructive pulmonary disease (COPD) beyond pharmacotherapy, including breathing techniques, duration of long-term oxygen therapy, high-intensity compared with low-intensity noninvasive ventilation for exacerbations, and the potential harmful effect of gabapentinoids. Two articles delved into the evidence for various biologic therapies and inhaled relievers used in asthma. We include a randomized trial examining treatment of acute eosinophilic COPD and asthma exacerbations with benralizumab. One article explores dual glucagon-like peptide-1 and glucose-dependent insulinotropic polypeptide receptor agonists as a novel treatment option for obstructive sleep apnea. Another discusses the efficacy of inhaled antibiotics in bronchiectasis. Finally, a meta-analysis examines the evidence for postexposure prophylaxis antiviral agents to reduce transmission and severity of influenza infections.

Conflict of interest statement

Disclosures: Disclosure forms are available with the article online.

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Int J Tuberc Lung Dis

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. 2025 Mar 31;29(4):153-158.

doi: 10.5588/ijtld.24.0544.

[Contribution of post-infectious bronchiolitis obliterans to non-cystic fibrosis bronchiectasis in children](#)

[A Gie](#)¹, [C Le Roux](#)², [M M van der Zalm](#)³, [C Jacobs](#)¹, [N Parker](#)¹, [E Eber](#)⁴, [P Goussard](#)¹

Affiliations Expand

- PMID: 40155792
- DOI: [10.5588/ijtld.24.0544](https://doi.org/10.5588/ijtld.24.0544)

Abstract

BACKGROUND Post-infectious bronchiolitis obliterans (PIBO) is a complication of severe childhood respiratory infection resulting in small airway injury, bronchiectasis, and prolonged respiratory consequences. Risk factors for PIBO and PIBO-associated bronchiectasis are unclear.

METHODS This retrospective study identified all children with PIBO at a South African tertiary hospital between 1 January 2016 and 31 December 2022. The clinical characteristics, chest CT findings, and details of prior hospitalisation for respiratory infection were collected, and the characteristics of those with and without bronchiectasis were compared.

RESULTS A total of 59 children were included (median age at primary lung insult: 10 months, IQR 6-17; median age at PIBO diagnosis: 16 months, IQR 11-28). Twenty-three had comorbidities, most frequently premature birth (30.5%) and HIV infection (6.8%). The most common pathogen was adenovirus ($n = 41$; 69.5%). At initial lung insult, 19 (32.2%) required mechanical ventilation. Mosaic attenuation on the chest CT was present in all. Thirty-three (55.9%) had bronchiectasis. The clinical characteristics, ventilation, causative pathogen, and comorbidity were similar in those with and without bronchiectasis.

CONCLUSION Bronchiectasis occurs frequently in paediatric PIBO and is present within months of initial respiratory insult with no identified risk factors. Premature birth is common and may contribute to PIBO development.

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Diagn Microbiol Infect Dis

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. 2025 Apr;111(4):116752.

doi: 10.1016/j.diagmicrobio.2025.116752. Epub 2025 Feb 15.

[Isolation of nontuberculous mycobacteria and Nocardia via mycobacterial culture from pulmonary specimens](#)

[Hongli Sun¹](#), [Wenjing Liu¹](#), [Lingli Liu¹](#), [Xuefeng Sun²](#)

Affiliations Expand

- PMID: 39965479
- DOI: [10.1016/j.diagmicrobio.2025.116752](#)

Abstract

Nontuberculous mycobacteria (NTM) and Nocardia are often isolated via mycobacterial culture, yet their prevalence in various pulmonary specimens is uncertain. We retrieved mycobacterial culture results from pulmonary specimens from a tertiary hospital in China between January 2017 and July 2021. The prevalence of non-Mycobacterium tuberculosis (non-Mtb, including NTM and Nocardia) has surpassed Mtb, accounting for 1.7 times the rate of Mtb among all isolates. The frequency of non-Mtb positivity in sputum specimens was significantly higher compared to that in bronchoscopy specimens (3.7% vs 1.9%, $P < 0.001$). Furthermore, NTM accounted for 59.8% of all Mycobacterium isolates and 42.1% of patients with positive acid-fast staining. Multivariate logistic regression analysis identified several risk factors significantly associated with non-Mtb isolates compared to Mtb, including age over 45 years (adjusted odds ratio [aOR] 2.27), bronchiectasis (aOR 4.52), pulmonary interstitial disorder (aOR 2.11), chronic obstructive pulmonary disease (aOR 1.94), and non-diabetes (aOR 2.10).

Keywords: Diagnosis; Nocardia; Nontuberculous mycobacterium; Tuberculosis.

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Conflict of interest statement

Declaration of competing interest The authors have no conflicts of interest to declare.

Supplementary info

MeSH termsExpand

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Semin Respir Crit Care Med

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. 2025 Mar 31.

doi: 10.1055/a-2531-1018. Online ahead of print.

[Sleep and Respiratory Infections](#)

[Ignacio Boira¹](#), [Eusebi Chiner¹](#)

Affiliations Expand

- PMID: 39900109
- DOI: [10.1055/a-2531-1018](#)

Abstract

Sleep disorders that involve circadian rhythm disruption and sleep-disordered breathing (SDB) such as obstructive sleep apnea (OSA) are closely linked to respiratory infections. SDB leads to a proinflammatory state due to intermittent hypoxia, sleep fragmentation, increased oxidative stress, and elevation of inflammatory mediators such as tumor necrosis factor (TNF), interleukin-6 (IL-6), and C-reactive protein (CRP). Furthermore, inflammatory mediator levels correlate with SDB severity, especially in people with OSA. Nocturnal microaspiration, gastroesophageal reflux, and associated comorbidities (e.g., obesity) increase the risk of community-acquired pneumonia, viral infections such as SARS-CoV-2, respiratory complications, and death. OSA has been associated with post-COVID syndrome. It also increases the risk of postoperative complications in both adults and children. Circadian rhythm disorders such as insomnia predispose to immune disorders and increase the risk of infection. Chronic conditions such as bronchiectasis, with or without concomitant cystic fibrosis, can lead to structural sleep changes and increase the risk of OSA due to chronic cough, arousals, aspirations, hypoxia, upper airway edema, and overexpression of proinflammatory cytokines. The protective effect of treatment for sleep disorders against respiratory infection is currently unknown. However, in people presenting with respiratory infection, it is important to test for SDB to prevent complications.

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Conflict of interest statement

None declared.

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Ann Am Thorac Soc

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. 2025 Apr;22(4):523-532.

doi: 10.1513/AnnalsATS.202404-446OC.

[Airway Remodeling in Cystic Fibrosis Is Heterogeneous](#)

[Astrid Vermaut^{1,2,3}](#), [Vincent Geudens¹](#), [Lynn Willems¹](#), [Gitte Aerts¹](#), [Pieterjan Kerckhof¹](#), [Charlotte Hooft¹](#), [Hanne Beeckmans^{1,4}](#), [Janne Kaes¹](#), [Xin Jin^{1,5}](#), [Charlotte De Fays¹](#), [Yousry Mohamady¹](#), [Jan Van Slambrouck^{1,5}](#), [Lucia Aversa¹](#), [Janne Verhaegen¹](#), [Emanuela E Cortesi¹](#), [Birgit Weynand⁶](#), [Matthieu N Boone⁷](#), [John E McDonough⁸](#), [Dirk E Van Raemdonck^{1,5}](#), [Laurens J Ceulemans^{1,5}](#), [Wim A Wuyts^{1,4}](#), [Robin Vos^{1,4}](#), [Ghislaine Gayan-Ramirez¹](#), [Francois Vermeulen³](#), [Marijke Proesmans³](#), [Bart M Vanaudenaerde¹](#), [Lieven J Dupont^{1,4}](#), [Mieke Boon^{2,3}](#)

Affiliations Expand

- PMID: 39700513
- DOI: [10.1513/AnnalsATS.202404-446OC](#)

Abstract

Rationale: Cystic fibrosis (CF) is characterized by bronchiectasis on imaging, while functionally evolving toward obstructive impairment. Despite its assumed importance in CF, small airway remodeling and its relation to bronchiectasis remains poorly understood. **Objectives:** The aim of our study was to explore both large and small airway disease morphometrically, by using detailed imaging techniques, such as *ex vivo* high-resolution computed tomography (HRCT) and micro-computed tomography (μ CT), and histological analysis in advanced

CF. Methods: On HRCT (600 μm ; CF, $n = 21$; control, $n = 6$) and μCT (150 μm ; CF, $n = 3$; control, $n = 1$) scans of inflated explanted lungs, the ratio of visible airway volume to total lung volume (AV%) was calculated as a marker of bronchiectasis, while airway segmentation was used for generation analysis. Clinical data were retrospectively collected. On μCT (8.5 μm) images of lung cores ($\pm 2.8 \text{ cm}^3$), extracted randomly from each lobe (three per lobe), distal airway (DA) diameter, number of airway collapses, and number of open terminal bronchioles per milliliter were analyzed. Morphometric analysis was supplemented with histological analysis of DA collapse. Results: AV% on HRCT was heterogeneous among CF lungs (0.7-4.6%), overlapping with controls (0.4-1.2%). However, the pattern of airway loss on μCT was homogeneous among CF lungs and most pronounced from generations 9-16. AV% did not correlate with the number of open terminal bronchioles per milliliter or percentage predicted forced expiratory volume in 1 second, which correlated with each other. Open DAs in CF lungs were narrowed compared with DA in controls. On the other hand, collapsed DAs in CF lungs showed varying degrees of proximal dilation, with DA diameter correlating with AV%. On histology, collapsed CF DAs showed constrictive bronchiolitis. Conclusions: Airway remodeling in end-stage CF is heterogeneous, ranging from minimal bronchiectasis, overlapping with control lungs, to extensive bronchiectasis with small airway dilation. However, the degree of bronchiectasis is unrelated to functional impairment or the amount of small airway loss, underscoring the importance of small airway disease.

Keywords: bronchiectasis; cystic fibrosis; small airway disease.

Supplementary info

MeSH terms, Grants and fundingExpand

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Randomized Controlled Trial

Ann Am Thorac Soc

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. 2025 Apr;22(4):506-514.

doi: 10.1513/AnnalsATS.202407-751OC.

Psychometric Validation and Determination of the Minimal Clinically Important Difference for the Bronchiectasis Health Questionnaire in Adults with Bronchiectasis

Jin-Fu Xu^{1,2}, Surinder S Birring^{3,4}, Yuan-Yuan Li⁵, Ming-Xin Shi⁶, Hai-Wen Lu^{1,2}, Shu-Yi Gu^{1,2}, Jie-Ming Qu^{7,8}, Yong-Hua Gao^{1,2}, Wei-Jie Guan^{6,9}, Nan-Shan Zhong^{6,9}

Affiliations Expand

- PMID: 39589283
- DOI: [10.1513/AnnalsATS.202407-751OC](https://doi.org/10.1513/AnnalsATS.202407-751OC)

Abstract

Rationale: The Bronchiectasis Health Questionnaire (BHQ) is a concise, self-administered, and disease-specific instrument for measuring health-related quality of life in bronchiectasis. **Objectives:** We sought to investigate the psychometric properties of a simplified Mandarin BHQ and determine the minimum clinically important difference (MCID) as a reliable clinical endpoint for assessing the efficacy of bronchiectasis treatments. **Methods:** A longitudinal, randomized controlled trial cohort of 357 patients treated with tobramycin inhalation solution or saline inhalation for *Pseudomonas aeruginosa* infection and a cross-sectional observational cohort of 436 patients with bronchiectasis were analyzed. Psychometric analyses encompassed convergent validity, known-groups validity, internal consistency, test-retest reliability, and responsiveness. Both anchor-based and distribution-based approaches were utilized to calculate the MCID for therapeutic response. **Results:** There were significant positive correlations between scores on the BHQ and those on the Quality of Life-Bronchiectasis Respiratory Symptom Scale, with correlation coefficients of 0.698 in the trial cohort and 0.567 in the clinical cohort (both P s < 0.0001). Known-groups validity indicated significant differences in BHQ scores stratified by baseline Bronchiectasis Severity Index. BHQ scores correlated modestly with both forced expiratory volume in 1 second percent predicted and exacerbation frequency within the previous year. In the trial cohort, the BHQ demonstrated excellent internal consistency (Cronbach's α = 0.893) and test-retest reliability (intraclass correlation coefficient = 0.853). An 8-point improvement in scores on the Quality of Life-Bronchiectasis Respiratory Symptom Scale corresponded to a mean increase of 5.49 points in BHQ scores after 4-week treatment. The MCID for BHQ was consistently 3 points. **Conclusions:** The BHQ (MCID: 3 points) represents a clinically meaningful tool for evaluating therapeutic intervention outcomes and patient-centered outcomes in patients with bronchiectasis.

Keywords: Bronchiectasis Health Questionnaire; bronchiectasis; health-related quality of life; minimal clinically important difference; patient-reported outcome measures.

Supplementary info

Publication types, MeSH terms, Substances, Grants and fundingExpand

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