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

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BMC Med Inform Decis Mak

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. 2025 Feb 13;25(1):77.

doi: 10.1186/s12911-025-02870-7.

[Applications of digital health technologies and artificial intelligence algorithms in COPD: systematic review](#)

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Affiliations Expand

- PMID: 39948530
- DOI: [10.1186/s12911-025-02870-7](https://doi.org/10.1186/s12911-025-02870-7)

Free article

Abstract

Background: Chronic Obstructive Pulmonary Disease (COPD) represents a significant global health challenge, placing considerable burdens on healthcare systems. The rise of digital health technologies (DHTs) and artificial intelligence (AI) algorithms offers new opportunities to improve COPD predictive capabilities, diagnostic accuracy, and patient management. This systematic review explores the

types of data in COPD under DHTs, the AI algorithms employed for data analysis, and identifies key application areas reported in the literature.

Methods: A systematic search was conducted in PubMed and Web of Science for studies published up to December 2024 that applied AI algorithms in digital health for COPD management. Inclusion criteria focused on original research utilizing AI algorithms and digital health technologies for COPD, while review articles were excluded. Two independent reviewers screened the studies, resolving discrepancies through consensus.

Results: From an initial pool of 265 studies, 41 met the inclusion criteria. Analysis of these studies highlighted a diverse range of data types and modalities collected from DHTs in the COPD context, including clinical data, patient-reported outcomes, and environmental/lifestyle data. Machine learning (ML) algorithms were employed in 34 studies, and deep learning (DL) algorithms in 16. Support vector machines and boosting were the most frequently used ML models, while deep neural networks (DNN) and convolutional neural networks (CNN) were the most commonly used DL models. The review identified three key application domains for AI in COPD: screening and diagnosis (10 studies), exacerbation prediction (22 studies), and patient monitoring (9 studies). Disease progression prediction was a prevalent focus across three domains, with promising accuracy and performance metrics reported.

Conclusions: Digital health technologies and AI algorithms have a wide range of applications and promise for COPD management. ML models, in particular, show great potential in improving digital health solutions for COPD. Future research should focus on enhancing global collaboration to explore the cost-effectiveness and data-sharing capabilities of DHTs, enhancing the interpretability of AI models, and validating these algorithms through clinical trials to facilitate their safe integration into the routine COPD management.

Keywords: Artificial intelligence; Chronic obstructive pulmonary disease; Deep learning; Digital health; Machine learning.

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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.

- [91 references](#)

Supplementary info

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Eur Respir J

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. 2025 Feb 13:2401586.

doi: 10.1183/13993003.01586-2024. Online ahead of print.

[Preventing oxygen desaturation during bronchoscopy in COPD patients using high flow oxygen versus standard management: the randomised controlled PROSA 2 Trial](#)

[Andrei M Darie](#)¹, [Leticia Grize](#)², [Kathleen Jahn](#)¹, [Anna Salina](#)^{2,3,4}, [Jonathan Röcken](#)¹, [Matthias J Herrmann](#)¹, [Maria Pascarella](#)⁵, [Vivian Suarez](#)¹, [Werner Strobel](#)¹, [Michael Tamm](#)¹, [Daiana Stolz](#)^{6,7}

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- PMID: 39947667
- DOI: [10.1183/13993003.01586-2024](https://doi.org/10.1183/13993003.01586-2024)

Abstract

Background: Patients with chronic obstructive pulmonary disease (COPD) are at increased risk for developing additional respiratory comorbidities associated with smoking, and are thus prone to undergo flexible bronchoscopy. However, COPD patients have increased periprocedural complications risk and lower oxygen saturation during bronchoscopy.

Methods: This was an investigator-initiated, single centre, open-label randomised controlled trial designed to assess the benefits of high flow nasal oxygen compared to conventional low flow oxygen by nasal cannula during conscious sedation for bronchoscopy in patients with COPD. Low flow was supplied at a starting rate of 4 L / min and gradually increased up to 12 L / min to maintain the oxygen saturation (SpO₂) above 90%. High flow delivered using LM Flow 100 (Löwenstein Medical GmbH, Bad Ems, Germany) starting at a rate of 60 L / min and an inspired fraction of oxygen (FiO₂) of 0.6 was increased up to 80 L / min to preserve the SpO₂ above 90%. The primary endpoint was cumulative hypoxaemia time.

Results: We randomised 600 COPD cases with a median age of 69.0 (62.0-76.0) years to either high flow (295) or low flow (305). The cumulative hypoxaemia time

was 53% lower in the high flow group (1.8% [95%CI 1.5-2.2] *versus* 3.8% [95%CI 3.2-4.5] of monitoring time, $p<0.001$). Additionally, the high flow group experienced 3.0 (1.0-6.0) hypoxaemia events ($SpO_2<90\%$) as compared to 6.0 (3.0-10.0) in the low flow group ($p<0.001$). The low flow group had five-fold higher odds of experiencing hypoxaemia during bronchoscopy (OR 5.1 [95%CI 3.2-8.2], $p<0.001$).

Conclusion: High flow is feasible, decreases cumulative hypoxaemia time and reduces hypoxaemia events during bronchoscopy in patients with COPD but does not impact patient comfort.

Clinical trial registration: This trial was registered on the International Clinical Trials Registry Platform, ISRCTN18159882.

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Respir Med

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. 2025 Feb 11:107993.

doi: 10.1016/j.rmed.2025.107993. Online ahead of print.

[MHR as a Promising Predictor for Coronary Artery Disease in COPD Patients: Insights from a Retrospective Nomogram Study](#)

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Affiliations Expand

- PMID: 39947304
- DOI: [10.1016/j.rmed.2025.107993](https://doi.org/10.1016/j.rmed.2025.107993)

Abstract

Background and objective: Chronic obstructive pulmonary disease (COPD) frequently co-occurs with coronary artery disease (CAD), adversely affecting patients morbidity and mortality. Identifying new risk factors for CAD in COPD patients is essential for improving clinical management and patients outcomes.

Methods: This retrospective case-control study analyzed 406 COPD patients who underwent coronary artery computed tomography angiography (CCTA). Patients were categorized into co-CAD and non-CAD groups based on CCTA findings. Demographic and laboratory data were assessed to determine independent risk factors for CAD in COPD patients using univariate and multivariate logistic regression analyses.

Results: The co-CAD group was significantly older, had a higher prevalence of males, and included a higher proportion of individuals with hypertension, diabetes, cardiovascular diseases, as well as cerebrovascular diseases, exhibiting lower FEV1 values ($P < 0.05$). This group also exhibited higher levels of HbA1c, IL-6, monocyte count, and MHR ($P < 0.05$). Multivariate logistic regression identified age, hypertension, and MHR as independent predictors of CAD. A nomogram incorporating these predictors demonstrated robust predictive accuracy with an area under the ROC curve of 0.758 (95% CI: 0.704-0.814), effectively stratifying patients into high and low risk for CAD.

Conclusion: The identification of MHR as an independent predictor of CAD in COPD patients opens new avenues for understanding cardiovascular comorbidities. The nomogram's integration of MHR with age and hypertension provides an effective tool for early CAD detection and management, promising to enhance clinical outcomes and decrease mortality rates in COPD patients. These insights may inform future preventative strategies against CAD in COPD.

Keywords: Chronic obstructive pulmonary disease; Monocyte-to-High-Density Lipoprotein Ratio; coronary artery disease; nomogram; predictive model.

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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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Am J Respir Crit Care Med

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. 2025 Feb 13.

doi: 10.1164/rccm.202401-0023OC. Online ahead of print.

[Respiratory Exacerbations and Lung Function Decline in People with Smoking History and Normal Spirometry](#)

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- PMID: 39946437
- DOI: [10.1164/rccm.202401-0023OC](#)

Abstract

Rationale: The impact of respiratory exacerbation on chronic obstructive pulmonary disease (COPD) is well established. The effects of respiratory exacerbations in people with cigarette smoking but normal spirometry are unknown.

Objective: To assess the association of respiratory exacerbations with lung function decline and mortality in people with normal spirometry and current or former cigarette smoking history.

Methods: We analyzed data from COPDGene participants with ≥ 10 pack-years cigarette smoking and normal spirometry at enrollment (Visit 1) defined as post-bronchodilator forced expiratory volume in 1 second (FEV_1)/forced vital capacity (FVC) \geq lower limit of normal (LLN) and $FEV_1 \geq LLN$. We examined whether respiratory exacerbations occurring between Visits 1 and the 5-year follow-up visit (Visit 2) were associated with FEV_1 decline, and all-cause mortality.

Measurements and main results: Among 2,939 participants with cigarette smoking history and normal lung function at Visit 1, each additional exacerbation between visit 1 and 2 was associated with a 2.96 ml/year FEV_1 decline (95%CI 1.81 to 4.12; $P < 0.001$) at Visit 2. Experiencing ≥ 1 severe exacerbation between Visits 1 and 2 was associated with 14.6 ml/year FEV_1 decline relative to those with no severe exacerbations (95% CI 8.56 to 20.6; $P < 0.001$). Individuals with ≥ 1 severe exacerbation between Visits 1 and 2 had increased mortality compared to those with no severe exacerbations (17.1% vs. 9.8%; adjusted hazard ratio 1.97; 95% CI 1.40 to 2.77; $P < 0.001$).

Conclusions: Respiratory exacerbations in people with cigarette smoking but normal spirometry were associated lung function decline. Experiencing a severe respiratory exacerbation was associated with increased mortality.

Keywords: COPD; death; exacerbation; normal spirometry; smoking.

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Am J Respir Crit Care Med

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. 2025 Feb 13.

doi: 10.1164/rccm.202412-2541ED. Online ahead of print.

[Physicians and Pharma: Uneasy Bedfellows?](#)

[Andrew Bush](#)¹

Affiliations Expand

- PMID: 39946408
- DOI: [10.1164/rccm.202412-2541ED](https://doi.org/10.1164/rccm.202412-2541ED)

No abstract available

Keywords: Asthma; Chronic obstructive pulmonary disease; Inhaler; Pharmaceutical industry.

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Editorial

Thorax

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. 2025 Feb 12:thorax-2024-222734.

doi: 10.1136/thorax-2024-222734. Online ahead of print.

[Targeting daytime normocapnia with nocturnal NIV in chronic hypercapnic COPD: the new paradigm?](#)

[Sarah Bettina Stanzel](#)¹, [Wolfram Windisch](#)²

Affiliations Expand

- PMID: 39939168
- DOI: [10.1136/thorax-2024-222734](https://doi.org/10.1136/thorax-2024-222734)

No abstract available

Keywords: Non invasive ventilation; Pulmonary Disease, Chronic Obstructive; Respiratory Muscles.

Conflict of interest statement

Competing interests: The Cologne study group (SBS, WW) received open research grants from Löwenstein Medical/Germany and GCE group/UK and by the Innovation Fund for Health Services Research (01VSF1905) of the German Federal Joint Committee. SBS received travel grants from companies dealing with mechanical ventilation products.

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Review

Expert Opin Drug Discov

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. 2025 Feb 12.

doi: 10.1080/17460441.2025.2466704. Online ahead of print.

[Animal models of chronic obstructive pulmonary disease and their role in drug discovery and development: a critical review](#)

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- PMID: 39939153
- DOI: [10.1080/17460441.2025.2466704](#)

Abstract

Introduction: To understand the mechanisms of COPD and to discover and test new drugs, laboratory animals are essential. However, the complex changes associated with the disease in humans are difficult to fully replicate in animal models.

Areas covered: This review examines the most recent literature on animal models of COPD and their implications for drug discovery and development.

Expert opinion: Recent advances in animal models have included the introduction of transgenic mice with an increased propensity to develop COPD-associated features, such as emphysema, and animals exposed to relevant environmental agents other than cigarette smoke, such as biomass smoke and other air pollutants. Additionally, other animal species, including zebrafish, pigs, ferrets and non-human primates, are also increasingly being used to gain insights into human COPD. Furthermore, three-dimensional organoids and humanized mouse models are emerging as technologies for evaluating novel therapeutics in more human-like models. However, despite some notable advances, no model developed to date fully captures the heterogeneity and progression of COPD observed in patients.

Therefore, further research is needed to develop improved models that incorporate humanized elements in experimental animals that may better predict therapeutic responses in the clinic and accelerate the development of new treatments for this debilitating disease.

Keywords: COPD; Emphysema; Smoke-induced COPD models; animal models; genetically modified models; inflammation models; large animal models for COPD; murine models of COPD; preclinical COPD models.

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Am J Respir Crit Care Med

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. 2025 Feb 12.

doi: 10.1164/rccm.202407-1379CI. Online ahead of print.

[Current Smoker: A Clinical COPD Phenotype Affecting Disease Progression and Response to Therapy](#)

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Affiliations Expand

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- DOI: [10.1164/rccm.202407-1379CI](https://doi.org/10.1164/rccm.202407-1379CI)

Abstract

Chronic obstructive pulmonary disease (COPD) is a heterogeneous condition of the lungs, characterized by chronic respiratory symptoms, primarily dyspnea, cough, and sputum production, due to airway and/or alveoli abnormalities that cause persistent, and often progressive, airflow obstruction. Although the underlying mechanisms responsible for COPD remain poorly understood, over the last several decades, clinical phenotypes and endotypes have been suggested. These include frequent exacerbator and eosinophilic groups that guide tailored therapies for patients with that clinical expression. In the developed world, smoking is the main known cause of COPD, responsible for ~80% of cases. Active smokers have more severe disease, with more rapid lung function decline and impaired quality of life, than former smokers. Unfortunately, smoking is still highly prevalent. Rates range between 3% and 37% globally, with factors including sex, age, race, education level, and geography influencing the rate of addiction. Importantly, several studies have shown that smoking detrimentally affects treatment efficacy of COPD medications; this is particularly true of inhaled corticosteroids and macrolides. In this review, we discuss the effects of smoking on the pathophysiology of COPD and the clinical impact of smoke exposure in patients with COPD.

Keywords: COPD; clinical phenotypes; endotypes; smoking.

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JMIR Form Res

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. 2025 Feb 12:9:e59533.

doi: 10.2196/59533.

[Activity Trackers in Physical Therapy for People With Chronic Obstructive Pulmonary Disease in the Netherlands: Cross-Sectional Study on Current Use and Implementation Determinants](#)

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Affiliations Expand

- PMID: 39937970

- DOI: [10.2196/59533](https://doi.org/10.2196/59533)

Free article

Abstract

Background: In the Netherlands, 545,900 people experienced chronic obstructive pulmonary disease (COPD) in 2022. Physical therapy following the Royal Dutch Society for Physiotherapy (Koninklijk Nederlands Genootschap voor Fysiotherapie) guidelines for COPD treatment is a proven effective treatment for people with COPD. The revised guidelines include a new recommendation: a patient's physical activity level should be assessed with an activity tracker (AT). Literature shows that the implementation of eHealth in clinical practice, in this case, ATs, is challenging.

Objective: This study aims (1) to assess how and why ATs are currently used in physical therapy in patients with COPD and (2) to determine which barriers and facilitators are of relevance for optimal implementation of ATs during the clinical reasoning process of physical therapists in patients with COPD.

Methods: A cross-sectional study was used to evaluate the implementation of ATs in physical therapy. Included participants were physical therapists who were affiliated with Chronisch ZorgNet and had a specialization in COPD treatment. The survey content was based on the Consolidated Framework for Implementation Research, the theory of planned behavior, the framework "experiences of patients with commercially available ATs," and the Koninklijk Nederlands Genootschap voor Fysiotherapie guidelines for COPD. Physical therapists were questioned via a digital survey.

Results: In total, 211 completed surveys were analyzed. Of the 211 participating physical therapists, 108 (51.2%) used ATs, whereas most of them (n=82, 75.9%) already used ATs before it was advised in the guidelines. Physical therapists indicated that the most important reason to use ATs is that they experience it as an added health care value. Both users and nonusers indicated that the most important reason why they do not use ATs is because their patients do not want to use an AT. The second reason was a lack of knowledge in the nonuser group. Moreover, both users and nonusers indicated that the implementation of ATs was not prepared and planned for within their center.

Conclusions: Overall, these results show that ATs are not yet fully implemented in the Dutch general physical therapy practice in patients with COPD, as recommended by current evidence-based guidelines. Physical therapists need guidance for the successful implementation of ATs. This could be accomplished by providing training for physical therapists, integrating ATs into the education of (future) physical therapists, and providing support during the implementation process of ATs for both the physical therapists and management.

Keywords: COPD; Netherlands; active lifestyle; activity tracker; barriers; chronic obstructive pulmonary disease; eHealth; health measurement; implementation; meaningful use; physical activity; physical therapy; technology; therapy.

© Darcy Ummels, Esther Bols, Roel Johannes Anna Frantzen, Tim Frantzen, Levy Robeerts, Emmylou Beekman. Originally published in JMIR Formative Research (<https://formative.jmir.org>).

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PLoS One

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. 2025 Feb 12;20(2):e0313539.

doi: 10.1371/journal.pone.0313539. eCollection 2025.

[Clinical status and cytokine profiles in patients with asthma or chronic obstructive pulmonary disease vaccinated against influenza](#)

[Mikhail Kostinov](#)^{1,2}, [Alexander Chuchalin](#)³, [Anna Chebykina](#)⁴, [Isabella Khrapunova](#)², [Alexander Cherdantsev](#)⁵, [Irina Solov'eva](#)⁵, [Nelli Akhmatova](#)¹, [Valentina Polishchuk](#)¹, [Nadezhda Kryukova](#)³, [Aristitsa Kostinova](#)², [Anna Vlasenko](#)⁶, [Marina Loktionova](#)², [Yvette Albahansa](#)², [Anna Shmit'ko](#)¹, [Lyudmila Shogenova](#)³

Affiliations Expand

- PMID: 39937802
- PMCID: [PMC11819544](#)
- DOI: [10.1371/journal.pone.0313539](#)

Abstract

Background: Influenza vaccine is a tool for preventing infection and reducing exacerbations in patients with asthma and chronic obstructive pulmonary disease (COPD). However, the associations between clinical outcomes and changes in the levels of inflammation markers have not been fully delineated. The purpose of this study was to investigate the clinical course and the changes in the levels of inflammation markers in patients with asthma or chronic obstructive pulmonary disease for one year after vaccination against influenza.

Methods: The prospective study for one year included 34 patients with asthma, 20 patients with COPD vaccinated against influenza, both groups being under a basic maintenance therapy, and 26 healthy individuals vaccinated with the trivalent polymer-subunit (adjuvanted) vaccine, containing 5 µg of influenza virus strains and 500 µg of azoximer bromide. The levels of C-reactive protein (CRP) and serum cytokines (IL-2, IL-6, IL-10, and IL-17) were measured by enzyme-linked immunosorbent assay (ELISA) at baseline and 6 and 12 months after vaccination.

Results: Over a year after vaccination against influenza, the frequency and duration of bronchopulmonary exacerbations significantly decreased both in patients with asthma and those with COPD: by 1.9-2 and 2.2-2.5 times, respectively. There was also a significant reduction in the frequency and duration of hospitalization (by 2.0-2.5 and 2.3-3 times, respectively). Other changes observed over the one-year follow-up period included a 1.6-fold reduction ($p < 0.01$) in the need for outpatient care and a reduction in the number of courses of systemic corticosteroids (by 16.7%; $p < 0.05$) in asthma patients; and a 3.6-fold decrease ($p < 0.05$) in the number of courses of antibiotics in COPD patients. Twelve months after vaccination against influenza, the study participants had significantly lower IL-6 levels, and COPD patients, additionally, showed a reduction in IL-10 levels compared to baseline. Our study identified certain correlations between positive clinical outcomes of vaccination and levels of inflammation markers.

Discussion: Analysis of the immunological, clinical and functional parameters in asthma and COPD patients showed that vaccination not only reduces the risk of influenza and other respiratory infections due to activation of non-specific protection, but also improves the clinical course of asthma and COPD.

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Conflict of interest statement

The authors have declared that no competing interests exist.

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Am J Respir Crit Care Med

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. 2025 Feb 12.

doi: 10.1164/rccm.202406-1267RL. Online ahead of print.

[Association Between Industry Payments and Prescription of Inhaled Medications](#)

[Hasan Nadeem](#)¹, [Lucas M Donovan](#)^{2,3}, [Laura C Feemster](#)^{4,2}, [David H Au](#)⁵, [William B Feldman](#)^{6,7,8}, [Kevin I Duan](#)⁹

Affiliations Expand

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No abstract available

Keywords: Asthma; COPD; Health Policy; Inhaler.

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Respirology

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. 2025 Feb 11.

doi: 10.1111/resp.70000. Online ahead of print.

[A Two-Stage, Risk-Stratified Strategy Combining FEV₁/FEV₆ and COPD Diagnostic Questionnaire Acts as an Accurate and Cost-Effective COPD Case-Finding Method](#)

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Affiliations Expand

- PMID: 39933794
- DOI: [10.1111/resp.70000](#)

Abstract

Background and objective: Symptom-based questionnaires and handheld lung function devices are widely used for COPD case finding, but the optimal combination remains unclear. This study aimed to compare the diagnostic accuracy (DA) of various combinations of handheld lung function devices and questionnaires and develop a COPD case-finding strategy.

Methods: This cross-sectional, prospective, observational study enrolled participants aged ≥ 40 years with respiratory symptoms and ≥ 10 smoking pack-years. Participants completed three questionnaires (COPD diagnostic questionnaire [CDQ], lung function questionnaire; COPD Population Screener) and 2 handheld lung function devices (peak flow meter, microspirometer), followed by spirometry to confirm COPD (post-bronchodilation FEV₁/FVC < 0.7). DA is assessed using the area under the ROC curve (AUROC).

Results: Among 224 participants, COPD incidence was 29%. Individually, handheld devices showed significantly higher DA than questionnaires (AUROC 0.678-0.69 for questionnaires vs. 0.807 for peak expiratory flow rate [PEFR] and 0.888 for FEV₁/FEV₆; all pairwise $p < 0.05$). FEV₁/FEV₆-based combinations outperformed PEFR-based combinations (all $n = 224$; AUROC 0.897-0.903 vs. 0.810-0.818; $p < 0.05$). The CDQ and FEV₁/FEV₆ combination reached the highest DA (AUROC 0.903). FEV₁/FEV₆ < 0.76 was the optimal cutoff value. A two-staged strategy (sensitivity/specificity 0.82/0.84) was proposed: low-risk participants (CDQ ≤ 13) need no further testing; middle-risk (CDQ 14-26) should undergo FEV₁/FEV₆; and high-risk (CDQ ≥ 27) and middle-risk with FEV₁/FEV₆ < 0.76 require confirmatory spirometry. This approach would reduce misdiagnoses and save costs and time compared to FEV₁/FEV₆ alone.

Conclusion: FEV₁/FEV₆ and CDQ combination achieves the highest DA. A two-staged, risk-stratified strategy combining CDQ and FEV₁/FEV₆ can be accurate and cost-effective to detect at-risk, undiagnosed COPD subjects. External validation is required.

Keywords: FEV1/FEV6; combined modality; diagnostic accuracy; handheld lung function device; peak expiratory flow rate; predictive performance; symptom-based questionnaire.

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Editorial

Thorax

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. 2025 Feb 10:thorax-2024-222805.

doi: 10.1136/thorax-2024-222805. Online ahead of print.

[Home-based pulmonary rehabilitation during outpatient-managed acute COPD exacerbation: the latest new PR model?](#)

[Carolyn L Rochester](#)^{1 2}

Affiliations [Expand](#)

- PMID: 39929714
- DOI: [10.1136/thorax-2024-222805](#)

No abstract available

Keywords: COPD Exacerbations; Exercise; Pulmonary Rehabilitation.

Supplementary info

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JAMA Intern Med

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. 2025 Feb 10:e247811.

doi: 10.1001/jamainternmed.2024.7811. Online ahead of print.

[Glucose-Lowering Medications and Risk of Chronic Obstructive Pulmonary Disease Exacerbations in Patients With Type 2 Diabetes](#)

[Avik Ray](#)¹, [Julie M Paik](#)^{1,2,3}, [Deborah J Wexler](#)⁴, [Sushama K Sreedhara](#)¹, [Katsiaryna Bykov](#)¹, [William B Feldman](#)^{1,5}, [Elisabetta Patorno](#)¹

Affiliations Expand

- PMID: 39928303
- PMID: PMC11811870 (available on 2026-02-10)
- DOI: [10.1001/jamainternmed.2024.7811](https://doi.org/10.1001/jamainternmed.2024.7811)

Abstract

Importance: Recent studies have suggested that sodium-glucose cotransporter-2 inhibitors (SGLT-2is), glucagon-like peptide-1 receptor agonists (GLP-1RAs), and dipeptidyl peptidase 4 inhibitors (DPP-4is) may benefit patients with chronic obstructive pulmonary disease (COPD). However, clinical evidence is lacking on their comparative association with COPD exacerbations in US patients with type 2 diabetes (T2D).

Objective: To compare the risk of moderate or severe COPD exacerbations among SGLT-2is, GLP-1RAs, and DPP-4is.

Design, setting, and participants: This comparative effectiveness research study used data from three 1:1 propensity score-matched cohort studies that emulated 3 target trials comparing patients 40 years or older with T2D and active COPD who initiated treatment with SGLT-2is vs DPP-4is, GLP-1RAs vs DPP-4is, and SGLT-2is vs GLP-1RAs. Data were from 3 US insurance claims databases: the Optum deidentified Clinformatics Data Mart Database (2013-2023), IBM Health MarketScan (2013-2021), and Medicare fee for service (2013-2020). The data analysis was conducted from January to June 2024.

Exposures: Initiation of SGLT-2i or DPP-4i, GLP-1RA or DPP-4i, and SGLT-2i or GLP-1RA for the 3 target trials, respectively.

Main outcomes and measures: First occurrence of a moderate or severe COPD exacerbation, defined as a filled prescription for oral glucocorticoids in association with an outpatient COPD visit or hospitalization for COPD. Incidence rates, incidence rate differences (IRDs), and hazard ratios (HRs) with 95% CIs were calculated.

Results: There were 27 991, 32 107, and 36 218 pairs in the SGLT-2i vs DPP-4i, GLP-1RA vs DPP-4i, and SGLT-2i vs GLP-1RA propensity score-matched cohorts, respectively (mean [SD] age, 70.8 [8.6] and 70.7 [8.8], 70.4 [8.5] and 70.4 [8.2], and 69.8 [8.7] years, respectively; 13 767 [49.2%] and 13 847 [49.5%], 17 622 [54.9%] and 17 620 [54.9%], and 18 807 [51.9%] and 18 854 [52.1%] female individuals, respectively). During a median follow-up of 145 (IQR, 61-355) days of treatment, the risk of moderate or severe COPD exacerbation was lower among those treated with SGLT-2is vs DPP-4is (9.26 vs 11.4 per 100 person-years [PYs]; HR, 0.81; 95% CI, 0.76-0.86; IRD/100 PYs, -2.20; 95% CI, -2.83 to -1.58) and among those treated with GLP-1RAs vs DPP-4is (9.89 vs 11.49 per 100 PYs; HR, 0.86; 95% CI, 0.81-0.91; IRD/100 PYs, -1.60; 95% CI, -2.18 to -1.02), with minimal differences among those treated with SGLT-2is vs GLP-1RAs (9.47 vs 10.00 per 100 PYs; HR, 0.94; 95% CI, 0.89-1.00; IRD/100 PYs, -0.55; 95% CI, -1.09 to -0.01). Results were consistent across sensitivity and subgroup analyses.

Conclusions and relevance: The results of this comparative effectiveness research study suggest that SGLT-2is and GLP-1RAs were associated with a reduced risk of moderate or severe COPD exacerbations compared with DPP-4i in adults with T2D and active COPD. This may inform prescribing of glucose-lowering medications among patients with T2D and active COPD.

Conflict of interest statement

Conflict of Interest Disclosures: Dr Wexler reported service on the data monitoring committee for Novo Nordisk outside the submitted work. Dr Bykov reported grants from the National Institutes of Health during the conduct of the study. Dr Feldman reported grants from the National Institutes of Health during the conduct of the study as well as personal fees from Alosa Health and service as an expert witness in litigation against inhaler manufacturers outside the submitted work. Dr Patorno reported grants from the National Institute of Diabetes and Digestive and Kidney Diseases, Patient-Centered Outcomes Research Institute, US Food and Drug

Administration, and Boehringer Ingelheim outside the submitted work. No other disclosures were reported.

Comment in

- doi: [10.1001/jamainternmed.2024.7812](https://doi.org/10.1001/jamainternmed.2024.7812)
- [61 references](#)

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Review

Expert Rev Respir Med

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. 2025 Feb 12:1-11.

doi: [10.1080/17476348.2025.2465853](https://doi.org/10.1080/17476348.2025.2465853). Online ahead of print.

[Inhaled corticosteroids in chronic obstructive pulmonary disease: a systematic review and meta-analysis on mortality protection - making a long story short](#)

[Paola Rogliani](#)¹, [Gan Marco Manzetti](#)¹, [Shima Gholamalishahi](#)¹, [Mona Bafadhel](#)², [Luigino Calzetta](#)³

Affiliations Expand

- PMID: 39925228
- DOI: [10.1080/17476348.2025.2465853](https://doi.org/10.1080/17476348.2025.2465853)

Abstract

Introduction: Chronic obstructive pulmonary disease (COPD) is a leading cause of mortality worldwide, primarily due to persistent airflow limitation from tobacco and biomass smoke exposure. While inhaled corticosteroids (ICS) combined with long-

acting bronchodilators, namely long-acting β_2 -adrenoreceptor agonists (LABA) and long-acting muscarinic antagonists (LAMA), are recommended for symptom control and exacerbation reduction, their effect on mortality remains uncertain. Recent randomized controlled trials (RCTs) suggest potential mortality benefits with triple ICS/LABA/LAMA therapy, though findings are not definitive.

Methods: We conducted a systematic review and network meta-analysis (NMA) to evaluate the impact of ICS-containing therapies on all-cause mortality in COPD. Searches were performed across ClinicalTrials.gov, Cochrane Library, EMBASE, MEDLINE, and SCOPUS, focusing on RCTs measuring mortality as an efficacy outcome.

Results: A total of 42,784 COPD patients from five high-quality studies were included. Pairwise meta-analysis showed a significant reduction in all-cause mortality with ICS-containing therapies (RR 0.80, 95% CI 0.68-0.95), particularly with ICS/LABA and ICS/LABA/LAMA combinations. The NMA ranked ICS/LABA/LAMA as the most effective treatment (SUCRA 0.89).

Conclusions: This study provides compelling evidence that ICS-containing therapies, particularly triple therapy, significantly reduce all-cause mortality in COPD patients. Future research should identify patient subgroups most likely to benefit while minimizing adverse effects.

Registration: PROSPERO registration ID: CRD42024607568.

Keywords: Bronchodilators; COPD; inhaled corticosteroids; mortality; quantitative synthesis.

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Review

Aust N Z J Psychiatry

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. 2025 Feb 10:48674251317336.

doi: 10.1177/00048674251317336. Online ahead of print.

[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
- 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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Respirology

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. 2025 Feb 9.

doi: 10.1111/resp.14883. Online ahead of print.

[**Association Between the Visceral Fat-to-Muscle Ratio and Severe Exacerbation of COPD: A Prospective Cohort Study**](#)

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Affiliations Expand

- PMID: 39924332
- DOI: [10.1111/resp.14883](https://doi.org/10.1111/resp.14883)

Abstract

Background and objective: An imbalanced fat and muscle mass ratio might impact exacerbation of chronic obstructive pulmonary disease (COPD). We investigated the association of visceral fat-to-muscle ratio (VMR) with severe COPD exacerbation requiring hospitalisation.

Methods: This prospective cohort study in COPD patients was performed along with the Xinjiang Multi-Ethnic Cohort study between May 2018 and December 2023.

Baseline VMR was calculated from visceral fat area and muscle mass measured by bioelectrical impedance analysis. Numbers of COPD exacerbation hospitalizations were monitored. Associations between various variables and exacerbation were assessed by logistics regression and Zero-inflated Poisson regression analyses.

Results: A total of 631 COPD patients were included, with 186 (29.48%) and 304 (48.18%) severe COPD exacerbation within 1 and 5 years, respectively. Compared with body mass index and other obesity indicators, VMR had stronger associations with severe exacerbation. A higher VMR was associated with increased risks of 1-year and 5-year exacerbation (odds ratio [OR] = 1.34 and 1.44, respectively). The subgroup female and overweight individuals showed a strong association (female OR = 1.89 and 1.99, overweight OR = 1.80 and 1.88, for 1 and 5-year exacerbation, respectively). The number of COPD exacerbation increased by 46% for each one-point VMR increase. These results remained unchanged in the sensitivity analyses after removing underweight patients or smoke influence, as well as in the competing risk analysis when considering other causes for death.

Conclusion: VMR was a risk factors of severe COPD exacerbation. Proactive assessment of VMR might be helpful to guide management of COPD patients.

Keywords: chronic obstructive pulmonary disease; muscle mass; severe exacerbation; visceral fat.

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J Med Chem

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. 2025 Feb 13;68(3):3837-3857.

doi: 10.1021/acs.jmedchem.4c02969. Epub 2025 Jan 23.

[Design, Synthesis, and Evaluation of Selective PDE4 Inhibitors for the Therapy of Pulmonary Injury](#)

[Mengjie Li](#)¹, [Gang Li](#)¹, [Yuanhui Liu](#)^{1,2}, [Jiayu Li](#)¹, [Yanghui Ou](#)¹, [Wen Guan](#)¹, [Zhijun Zeng](#)¹, [Haiyang Tang](#)³, [Dan Bai](#)³, [Guoping Zhang](#)¹, [Peiming Huang](#)¹, [Liyang Song](#)¹, [Lianbao Ye](#)², [Hengming Ke](#)⁴, [Hongliang Yao](#)¹

Affiliations Expand

- PMID: 39847693
- DOI: [10.1021/acs.jmedchem.4c02969](https://doi.org/10.1021/acs.jmedchem.4c02969)

Abstract

Pulmonary inflammation is the main cause of lung injury. Phosphodiesterase 4 (PDE4) is a promising anti-inflammatory target for the treatment of respiratory diseases. Herein, we designed and synthesized 43 compounds in two novel series of benzimidazole derivatives as PDE4 inhibitors. Among them, compound A5 showed highly selective inhibition of PDE4, good safety, and liver microsomal stability *in vitro*. A5 administration remarkably attenuated inflammatory infiltration and pathologic injury of the lung in models of acute lung injury in mice and chronic obstructive pulmonary disease (COPD) in mice. In addition, A5 enhanced sputum secretion, relieved cough in mice, and inhibited phosphorylation of p38 MAP kinase, an important protein in the regulation of lung injury. Overall, A5, as an effective PDE4 inhibitor without acute toxicity and gastrointestinal reaction, may be a potent candidate for the treatment of pulmonary injury.

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J Med Chem

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. 2025 Feb 13;68(3):2444-2465.

doi: 10.1021/acs.jmedchem.4c02062. Epub 2024 Dec 5.

Discovery of CHF-6523, an Inhaled Selective PI3K δ Inhibitor for the Treatment of Chronic Obstructive Pulmonary Disease

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Affiliations Expand

- PMID: 39635891
- DOI: [10.1021/acs.jmedchem.4c02062](https://doi.org/10.1021/acs.jmedchem.4c02062)

Abstract

The design of inhaled selective phosphatidylinositol 3-kinase delta (PI3K δ) inhibitors for the treatment of inflammatory lung diseases was pursued. Knowledge-based design of a novel isocoumarin scaffold that was able to adopt a *propeller-shape* topology ensured the desired PI3K δ selectivity. Achievement of low nanomolar cellular potencies through hinge binder group optimization, reduction of intrinsic permeability through head group optimization to extend lung retention, and screening of crystalline forms suitable for administration as dry powders culminated in the identification of compound 18. This novel inhaled selective PI3K δ inhibitor displayed durable anti-inflammatory activity in a disease-relevant rat model of Th-2-driven acute lung inflammation and safe *in vitro* and *in vivo* preclinical profiles. Therefore, compound 18 showed the appropriate discovery profile and was progressed to clinical trials in healthy volunteers and chronic obstructive pulmonary disease (COPD) patients as CHF-6523.

Supplementary info

MeSH terms, SubstancesExpand

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

Psychiatr Rehabil J

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. 2025 Feb 13.

doi: 10.1037/prj0000637. Online ahead of print.

[Prevalence of chronic physical conditions and physical multimorbidity among young adults with serious mental health conditions](#)

[Jessica A Jonikas](#)¹, [Frances Aranda](#)¹, [Jane K Burke-Miller](#)¹, [Kathryn Sabella](#)², [Michelle G Mullen](#)², [Maryann Davis](#)², [Judith A Cook](#)¹

Affiliations Expand

- PMID: 39946580
- DOI: [10.1037/prj0000637](https://doi.org/10.1037/prj0000637)

Abstract

Objective: There is minimal research on the prevalence of chronic medical conditions among young adults with mental health conditions. This exploratory study assessed the prevalence and number of chronic medical conditions and their association with mental health status.

Methods: A cross-sectional, online survey was completed in March-June 2021, by 967 U.S. young adults (age 18-25 years) with self-identified serious mental health conditions, recruited nationally via social media, email, and websites. Medical conditions were assessed using items from the National Health Interview Survey and National Health and Nutrition Examination Survey; mental health was assessed with the Generalized Anxiety Disorder-7 and Patient Health Questionnaire-9 scales. Multivariable regression analysis examined associations between mental health and the six most prevalent medical conditions, as well as the number of conditions, controlling for background characteristics.

Results: We found notable prevalence of obesity (18.5%), migraines (18.2%), allergies (14.8%), asthma (9.2%), and gastrointestinal disorders (9.2%). Controlling for all other factors, high levels of anxiety were associated with greater likelihood of obesity and gastrointestinal disorders, while high levels of depression were associated with lower likelihood of obesity. While 23.2% reported two or more medical conditions, anxiety but not depressive symptoms was associated with a greater number of co-occurring medical conditions.

Conclusions and implications for practice: A notable prevalence of chronic conditions puts young adults with mental health conditions at significant risk of adverse physical health outcomes from a young age. Results can inform the design of tailored health promotion and self-management programs to improve outcomes

among this population. (PsycInfo Database Record (c) 2025 APA, all rights reserved).

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. 2025 Feb 13;22(2):e1004532.

doi: 10.1371/journal.pmed.1004532. eCollection 2025 Feb.

[Depression and physical multimorbidity: A cohort study of physical health condition accrual in UK Biobank](#)

[Kelly J Fleetwood](#)¹, [Bruce Guthrie](#)², [Caroline A Jackson](#)¹, [Paul A T Kelly](#)³, [Stewart W Mercer](#)¹, [Daniel R Morales](#)⁴, [John D Norrie](#)¹, [Daniel J Smith](#)⁵, [Cathie Sudlow](#)^{1,6}, [Regina Prigge](#)¹

Affiliations Expand

- PMID: 39946376
- DOI: [10.1371/journal.pmed.1004532](https://doi.org/10.1371/journal.pmed.1004532)

Free article

Abstract

Background: Depression is associated with a range of adverse physical health outcomes. We aimed to quantify the association between depression and the subsequent rate of accrual of long-term physical health conditions in middle and older age.

Methods and findings: We included 172,556 participants from the UK Biobank (UKB) cohort study, aged 40-71 years old at baseline assessment (2006-2010), who had linked primary care data available. Using self-report, primary care, hospital admission, cancer registry, and death records, we ascertained 69 long-term physical health conditions at both UKB baseline assessment and during a mean

follow-up of 6.9 years. We used quasi-Poisson models to estimate associations between history of depression at baseline and subsequent rate of physical condition accrual. Within our cohort, 30,770 (17.8%) had a history of depression. Compared to those without depression, participants with depression had more physical conditions at baseline (mean 2.9 [SD 2.3] versus 2.1 [SD 1.9]) and accrued additional physical conditions at a faster rate (mean 0.20 versus 0.16 additional conditions/year during follow-up). After adjustment for age and sex, participants with depression accrued physical morbidities at a faster rate than those without depression (RR 1.32, 95% confidence interval [CI] [1.31, 1.34]). After adjustment for all sociodemographic characteristics, the rate of condition accrual remained higher in those with versus without depression (RR 1.30, 95% CI [1.28, 1.32]). This association attenuated but remained statistically significant after additional adjustment for baseline condition count and social/lifestyle factors (RR 1.10, 95% CI [1.09, 1.12]). The main limitation of this study is healthy volunteer selection bias, which may limit generalisability of findings to the wider population.

Conclusions: Middle-aged and older adults with a history of depression have more long-term physical health conditions at baseline and accrue additional physical conditions at a faster rate than those without a history of depression. Our findings highlight the importance of integrated approaches to managing both mental and physical health outcomes.

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Conflict of interest statement

The authors have declared that no competing interests exist.

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. 2025 Jan 27;11(3):e42179.

doi: 10.1016/j.heliyon.2025.e42179. eCollection 2025 Feb 15.

Ineffective health maintenance behaviors in people with chronic conditions: Systematic review of etiology and risk

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Affiliations Expand

- PMID: 39944341
- PMCID: [PMC11815654](#)
- DOI: [10.1016/j.heliyon.2025.e42179](#)

Abstract

Background: Ineffective health maintenance behaviors (00292) is an important nursing diagnosis in the context of chronic conditions. However, it is observed that the etiology of this phenomenon is not well defined for this population. For nurses to infer this diagnosis early and, consequently, develop effective care plans, further studies are needed to facilitate the understanding of the factors related to the phenomenon.

Objective: To analyze the factors related to the ineffective health maintenance behaviors nursing diagnosis in people with chronic conditions.

Methods: A systematic review of related factors conducted in Scopus (Elsevier), Web of Science, Science Direct (Elsevier), Medical Literature Analysis and Retrieval System Online (MEDLINE/PubMed), CINAHL with Full Text (EBSCO), EMBASE (Elsevier) and Google Scholar. The last access date in the data sources was August 31, 2023. For the critical assessment of eligible studies, the checklists for quantitative studies from the JBI Manual for Evidence Synthesis were adopted. PROSPERO: CRD42022378870.

Results: A total of 21 studies were included and 18 related factors were retrieved. Regarding study characterization, the majority were published in 2022 (33.3 %), North America was the continent with the highest number of studies (42.8 %) and 85.7 % of studies were cross-sectional. Cardiovascular diseases was the most prevalent chronic condition in the studies at 76.1 %. The five main related factors identified were low self-efficacy, individuals with a low level of education, multimorbidity, economically disadvantaged individuals and inadequate health literacy. Of the 18 related factors identified, 11 are not included in the NANDA-International taxonomy classification.

Conclusion: A total of 18 factors related to ineffective health maintenance behaviors in people with chronic conditions were identified in the studies. This study may assist nursing professionals' clinical practice by providing support in relation to the early detection of the phenomenon through the identification of new related factors.

Keywords: Causality; Chronic disease; Health behavior; Nursing diagnosis; Systematic review.

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Conflict of interest statement

The authors declare the following financial interests/personal relationships which may be considered as potential competing interests: Ana Clara Dantas reports financial support was provided by Coordination of Higher Education Personnel Improvement. If there are other authors, they declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

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J Public Health (Oxf)

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. 2025 Feb 13:fdaf007.

doi: 10.1093/pubmed/fdaf007. Online ahead of print.

[The association between healthy lifestyle and multimorbidity of non-communicable chronic diseases trajectory: evidence from a perspective study in UK biobank](#)

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Affiliations Expand

- PMID: 39940081

- DOI: [10.1093/pubmed/fdaf007](https://doi.org/10.1093/pubmed/fdaf007)

Abstract

Background: Although a few studies have found that healthy lifestyle is linked to a range of non-communicable chronic diseases (NCDs), its association with the onset, progression, and prognosis of multimorbidity of NCDs (MNCDs) has never been studied.

Method: A total of 332 444 adults aged 39-73 years who were free of heart disease, stroke, diabetes, and cancer at baseline were selected. Then we used multi-state model to analyze the associations between healthy lifestyle and transition trajectory were analyzed with results expressed as hazard ratio (HR) and 95% confidence interval.

Results: A total of 62 994 participants developed first NCDs (FNCDs). After adjustment for potential confounders, healthy lifestyle was negatively associated with the transition trajectory from baseline to FNCD (HR = 0.38), from FNCDs to MNCDs (HR = 0.30), etc. Further, the transition trajectory from FNCDs to MNCDs became more pronounced among the offspring who aged <60 (HRFNCDs → MNCDs = 0.29), who never took medicine (HRFNCDs → MNCDs = 0.25). Besides, possessing all five healthy lifestyle factors could extend the life expectancy of MNCD participants.

Conclusion: This study suggests that healthy lifestyle is associated with almost all transition phases of MNCDs development and decreases the mortality risk of MNCDs.

Keywords: UK biobank; healthy life expectancy; healthy lifestyle; multimorbidity pattern.

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Eur J Heart Fail

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. 2025 Feb 11.

doi: 10.1002/ejhf.3601. Online ahead of print.

[Comorbidity trajectories before and after the diagnosis of heart failure: A UK Biobank cohort study](#)

[Hugo MacGowan](#) ^{#1}, **[Oliver I Brown](#)** ^{#1}, **[Michael Drozd](#)** ¹, **[Andrew M N Walker](#)** ¹, **[Marilena Giannoudi](#)** ¹, **[Sam Straw](#)** ¹, **[Maria F Paton](#)** ¹, **[John Gierula](#)** ¹, **[Melanie McGinlay](#)** ¹, **[Kathryn J Griffin](#)** ¹, **[Klaus K Witte](#)** ¹, **[Mark T Kearney](#)** ¹, **[Richard M Cubbon](#)** ¹

Affiliations Expand

- PMID: 39935109
- DOI: [10.1002/ejhf.3601](https://doi.org/10.1002/ejhf.3601)

Abstract

Aims: Heart failure (HF) is frequently associated with multiple comorbidities. We aimed to define their trajectory of accrual to identify opportunities for disease prevention.

Methods and results: We identified all participants in the UK Biobank cohort study diagnosed with HF prior to enrolment or during follow-up, who had disease occurrence data available from both primary and secondary care records (n = 9824). We established the time between diagnosis of HF and 16 common comorbidities to determine the rate and sequence of comorbidity accrual in relation to HF. Stratified analyses considered associations with sex and age at diagnosis of HF. In chronological sequence, HF was the median fourth diagnosis for men and women. As the age at HF diagnosis increased, HF came later in the sequence of diseases (median second in under 50 years to fifth in those aged 80-90 years). In all age strata, comorbidities accumulated for over a decade before HF and this accelerated in the years immediately before HF. The median time between comorbidity and HF diagnoses ranged from depression preceding HF by 10.7 years to dementia preceding HF by 0.7 years; all comorbidities presented earlier in women. Atrial fibrillation/flutter was the commonest disease to immediately precede HF, followed by hypertension, cancer, myocardial infarction and osteoarthritis.

Conclusion: Heart failure is most often diagnosed in people with established multiple long-term conditions. There is a protracted window of opportunity during which interventions to prevent HF could be applied, often in disease contexts where this is not routine care, such as cancer and osteoarthritis.

Keywords: Comorbidity; Heart failure; Multimorbidity; Multiple long-term conditions.

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

J Asthma

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. 2025 Feb 12:1-8.

doi: [10.1080/02770903.2025.2463962](https://doi.org/10.1080/02770903.2025.2463962). Online ahead of print.

[Association between asthma and risk of cardiovascular disease in Korean adults](#)

[Jihye Jung](#)¹, [Jimin Sung](#)¹, [Sunwoo Kim](#)¹, [Jeonghu Kim](#)¹, [Chanbin Park](#)², [Minsu Sung](#)¹, [Sol Choi](#)², [Mi Ah Han](#)³

Affiliations [Expand](#)

- PMID: [39907320](https://pubmed.ncbi.nlm.nih.gov/39907320/)
- DOI: [10.1080/02770903.2025.2463962](https://doi.org/10.1080/02770903.2025.2463962)

Abstract

Objectives: Cardiovascular disease (CVD) is a major cause of death in Korea, and studies have reported that asthma can have a negative impact on CVD. This study aimed to identify the association between asthma and CVD, including the current status, treatment status, and duration of asthma in Korean adults.

Methods: The Korea National Health and Nutrition Examination Survey (2016-2021) was used, and 34,384 adults aged 19 years or older were included. Exposures were asthma-related characteristics, and outcomes were hypertension, ischemic heart disease, and stroke. The association between asthma characteristics and CVD was analyzed using the chi-square test and multiple logistic regression analysis.

Results: The asthma diagnosis experience rate of the population was 3.1%; 1.6% were currently suffering from asthma, 1.0% were receiving asthma treatment, 0.6% were receiving regular medication, and 1.5% had a disease duration of 11 years or more. The CVD diagnosis rates in the population were 20.2% for hypertension, 2.3%

for ischemic heart disease, and 1.8% for stroke. Compared to those who had no asthma diagnosis, those who had been diagnosed with asthma (OR = 2.06, 95% CI = 1.47-2.87), received asthma treatment (OR = 1.93, 95% CI = 1.22-3.04), and had a long duration of asthma (OR = 3.54, 95% CI = 1.71-7.33) had a significantly higher risk of ischemic heart disease. However, hypertension and stroke were not significantly correlated with asthma-related characteristics.

Conclusions: Asthma diagnosis and asthma-related characteristics were associated with an increased risk of ischemic heart disease. Our study suggests that research on risk assessment and management of CVD in patients with asthma would be needed.

Keywords: Angina pectoris; asthma; cardiovascular diseases; hypertension; myocardial infarction; stroke.

Full text links



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

1

Review

Allergy Asthma Clin Immunol

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. 2025 Feb 10;20(Suppl 3):81.

doi: 10.1186/s13223-025-00949-4.

[Asthma](#)

[Andrew O'Keefe](#)¹, [Lori Connors](#)², [Ling Ling](#)³, [Harold Kim](#)^{4 5}

Affiliations Expand

- PMID: 39930536
- PMCID: [PMC11808942](#)
- DOI: [10.1186/s13223-025-00949-4](#)

Abstract

Asthma is one of the most common respiratory disorders in Canada, however, many Canadians with asthma remain poorly controlled. In most patients, control can be achieved through appropriate therapy, including: inhaled corticosteroids (ICS), combination ICS/long-acting beta₂-agonists (LABA), "triple therapy" with ICS/LABA/long-acting muscarinic receptor antagonist (LAMA), and biologic therapies. The medical management of severe asthma, in particular, has changed dramatically with the incorporation of biologics in asthma treatment plans. Allergen-specific immunotherapy represents a potentially disease-modifying therapy for many patients with asthma; it must only be prescribed by physicians with appropriate training in allergy. Other essential components of asthma management include: regular monitoring of asthma control and risk of exacerbations; patient education and written asthma action plans; assessing barriers to treatment and adherence to therapy; adequate management of comorbidities (e.g., allergic rhinitis) and reviewing inhaler device technique. This article provides a review of current literature and guidelines for the appropriate diagnosis and management of asthma in adults and children.

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Conflict of interest statement

Declarations. Ethics approval and consent to participate: Not applicable. Consent for publication: Not applicable. Competing interests: Dr. Andrew O’Keefe has acted as a consultant for, received honoraria from, or participated in advisory boards for AstraZeneca, ALK Abello, CSL Behring, GlaxoSmithKline, Sanofi, and Takeda. Dr. Lori A. Connors has participated in advisory boards and has received consulting fees and honoraria from Astra Zeneca, GSK, Novartis and Sanofi. Dr. Ling Ling has received honoraria from or participated in advisory boards for Novartis, Medexus, ALK Abello and Bausch. Dr. Harold Kim has participated in speakers’ bureaus and/or advisory boards for ALK, AstraZeneca, Bausch Health, CSL Behring, GSK, Miravo, Novartis, Pediapharm, Pfizer, Sanofi, Shire, and Takeda.

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. 2025 Feb 15:371:164-169.

doi: 10.1016/j.jad.2024.11.018. Epub 2024 Nov 7.

[Risk of postpartum depression in women with allergic disorders: A nationwide cohort study involving 1,017,507 women](#)

[Chih-Yi Yang](#)¹, [Cherry Yin-Yi Chang](#)², [Chih-Hsin Muo](#)³, [Vivian Chia-Rong Hsieh](#)⁴, [Fung-Chang Sung](#)⁵, [Pei-Chun Chen](#)⁶

Affiliations Expand

- PMID: 39521068
- DOI: [10.1016/j.jad.2024.11.018](https://doi.org/10.1016/j.jad.2024.11.018)

Abstract

Background: Allergic symptoms and depression are prevalent ailments in childbearing age women. This study assessed the risk of maternal postpartum depression (PPD) associated with prenatal allergic disorders.

Methods: From 1,017,507 eligible women of 20-49 years old with singleton live births and 20-week or more gestational age in the birth registry of Taiwan, from 2011 to 2020, we identified cohorts with and without allergic disorders matched by propensity score in the size of 457,826. Cumulative incident PPDs in one year after births were assessed from insurance claims data. Odds ratios (OR) of PPD were measured by each allergic type and multiple types, comparing with the controls.

Results: With an overall cumulative PPD incidence 1.25-fold higher in the allergic cohort than in the controls (0.69 % versus 0.55 %), the rate was the highest in women with asthma: 0.94 % with an adjusted OR of 1.71 (95 % CI = 1.49-1.95), followed by those with allergic rhinitis, allergic conjunctivitis and atopic dermatitis. The rate increased from 0.65 % for those with one allergic disorder to 1.06 % for those with 4 or 5 disorders, and the corresponding adjusted OR increased from 1.17 (95 % CI = 1.10-1.24) to 1.92 (95 % CI = 1.36-2.69).

Limitation: The claims data lack detailed information on socio-demographic status, lifestyle, laboratory result, physical activity, and family medical history.

Conclusions: Women with prenatal allergic disorder(s) are at an increased risk of PPD in addition to the impact of pregnancy. Prompt and efficient intervention for PPD prevention is needed for women with allergic disorders, particularly for those with asthma and multiple disorders.

Keywords: Allergic disorders; Asthma; Postpartum depression (PPD); Pregnancy; Retrospective cohort study.

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Conflict of interest statement

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

Supplementary info

MeSH termsExpand

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chronic cough

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Am J Respir Crit Care Med

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. 2025 Feb 12.

doi: 10.1164/rccm.202407-1379CI. Online ahead of print.

[Current Smoker: A Clinical COPD Phenotype Affecting Disease Progression and Response to Therapy](#)

[Bartolome R Celli^{1,2}, Stephanie A Christenson³, Klaus F Rabe^{4,5}, MeiLan K Han⁶, Maarten van den Berge^{7,8}, Gerard J Criner⁹, Xavier Soler¹⁰, Michel Djandji¹¹, Amr Radwan¹⁰, Paul J Rowe¹², Yamo Deniz¹⁰, Juby A Jacob-Nara¹²](#)

Affiliations Expand

- PMID: 39938077
- DOI: [10.1164/rccm.202407-1379CI](https://doi.org/10.1164/rccm.202407-1379CI)

Abstract

Chronic obstructive pulmonary disease (COPD) is a heterogeneous condition of the lungs, characterized by chronic respiratory symptoms, primarily dyspnea, cough, and sputum production, due to airway and/or alveoli abnormalities that cause persistent, and often progressive, airflow obstruction. Although the underlying

mechanisms responsible for COPD remain poorly understood, over the last several decades, clinical phenotypes and endotypes have been suggested. These include frequent exacerbator and eosinophilic groups that guide tailored therapies for patients with that clinical expression. In the developed world, smoking is the main known cause of COPD, responsible for ~80% of cases. Active smokers have more severe disease, with more rapid lung function decline and impaired quality of life, than former smokers. Unfortunately, smoking is still highly prevalent. Rates range between 3% and 37% globally, with factors including sex, age, race, education level, and geography influencing the rate of addiction. Importantly, several studies have shown that smoking detrimentally affects treatment efficacy of COPD medications; this is particularly true of inhaled corticosteroids and macrolides. In this review, we discuss the effects of smoking on the pathophysiology of COPD and the clinical impact of smoke exposure in patients with COPD.

Keywords: COPD; clinical phenotypes; endotypes; smoking.

Full text links



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Review

Lung

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. 2025 Feb 12;203(1):32.

doi: 10.1007/s00408-025-00786-7.

[Reframing Refractory Chronic Cough: The Role of Interoception](#)

[Laurie J Slovarp](#)¹, [Jane E Reynolds](#)², [Amanda I Gillespie](#)³, [Marie E Jetté](#)⁴

Affiliations Expand

- PMID: 39937307
- PMCID: [PMC11821735](#)

- DOI: [10.1007/s00408-025-00786-7](https://doi.org/10.1007/s00408-025-00786-7)

Abstract

Refractory chronic cough (RCC) remains a persistent clinical challenge, often resistant to traditional treatments. Emerging evidence now positions RCC as a disorder rooted in hypersensitivity, driven primarily by central neural processes rather than external physiological causes. Central to this understanding is the concept of interoception—the brain's ability to perceive and interpret internal bodily signals. Neuroimaging research has identified abnormalities in brain regions associated with interoception and inhibitory control among RCC patients. Interestingly, RCC shares neurophysiological characteristics with other disorders like overactive bladder and urinary urge incontinence (OAB/UUI), which also involve dysregulated interoceptive and inhibitory mechanisms. Behavioral treatments for OAB/UUI are highly effective and are regarded as the first-line treatment in many consensus guidelines. OAB/UUI behavioral treatments have been shown to induce central neuroplastic changes, further underscoring their efficacy and potential parallel for RCC interventions. Behavioral cough suppression therapy (BCST), an efficacious treatment for RCC, may leverage similar neuroplastic adaptations, enhancing interoceptive processing and inhibitory control. Given the multi-dimensional nature of interoception, which encompasses sensory perception shaped by learning, memory, and emotional context, BCST's engagement of multiple neural pathways offers an alternative therapeutic option compared to single-mechanism pharmacological treatments. Future research should prioritize exploring the mechanistic underpinnings of BCST and other interoception-based therapies for developing more comprehensive and effective treatment options. Such research holds promise for improving patient outcomes, alleviating the significant healthcare burden associated with RCC, and advancing our understanding of central hypersensitivity disorders.

Keywords: Chronic cough; Cough hypersensitivity; Cough suppression therapy; Interoception; Speech-language pathology.

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Conflict of interest statement

Declarations. Competing interest: Authors L.S. and J.R. are paid consultants of Hyfe, Inc., the makers of the CoughPro cough frequency monitor, which is not mentioned in this article. Authors A.G. and M.J. have no conflicts or competing interests to disclose.

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- [1 figure](#)

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. 2025 Feb 10;11(1):00670-2024.

doi: 10.1183/23120541.00670-2024. eCollection 2025 Jan.

[Cough frequency has a high daily variation in patients with chronic cough](#)

[Alyn Morice](#)¹, [Mitja Alge](#)², [Laura Kuett](#)², [Simon Hart](#)¹, [Alan Rigby](#)¹, [David Elkayam](#)³

Affiliations Expand

- PMID: 39931663
- PMCID: [PMC11808934](#)
- DOI: [10.1183/23120541.00670-2024](#)

Abstract

Continuous cough monitoring using a wearable device analysed by machine learning for automated cough detection has revealed considerable day-to-day variability in cough counts. Single-day recording is thus subject to error. <https://bit.ly/3yYCRbX>.

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Conflict of interest statement

Conflict of interest: A. Morice has received consulting fees from Bellus, Merck, NeRRi, Trevi; lecture fees from Merck; and grant support from Bellus, Merck, Nacion, Philips, NeRRi and Trevi. He is founder and CEO of Tussogenics Ltd and holds a share option with SIVA Health. He is an associate editor of this journal. Conflict of interest: M. Alge and L. Kuett are employees of SIVA Health. Conflict of

interest: S. Hart and A. Rigby are associate editors of this journal. Conflict of interest: D. Elkayam has received grant support from SIVA Health.

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- [1 figure](#)

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Review

Zhonghua Jie He He Hu Xi Za Zhi

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. 2025 Feb 12;48(2):164-169.

doi: [10.3760/cma.j.cn112147-20241122-00695](https://doi.org/10.3760/cma.j.cn112147-20241122-00695).

[\[Annual advances in clinical studies of chronic cough \(2024\)\]](#)

[Article in Chinese]

[M T Lin¹](#), [T T Xu¹](#), [J Y Li¹](#), [K F Lai¹](#)

Affiliations Expand

- PMID: 39914843
- DOI: [10.3760/cma.j.cn112147-20241122-00695](https://doi.org/10.3760/cma.j.cn112147-20241122-00695)

Abstract

in [English, Chinese](#)

Chronic cough is a common complaint in respiratory specialist outpatient clinics and primary care, having a significant impact on patients' lives, work and studies. In recent years, the treatment, and pathogenesis of chronic cough has become a research hotspot. This article reviews the epidemiology, pathogenesis, assessment, and treatment of chronic cough from October 1, 2023 to September 30, 2024. Fund

program: National Natural Science Foundation of China (82370036, 82170034); The Major Project of Guangzhou National Laboratory (GZNL2024A02001).

Supplementary info

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

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PLoS One

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. 2025 Feb 14;20(2):e0316721.

doi: 10.1371/journal.pone.0316721. eCollection 2025.

[Evaluating elexacaftor/tezacaftor/ivacaftor \(ETI; Trikafta™\) for treatment of patients with non-cystic fibrosis bronchiectasis \(NCFBE\): A clinical study protocol](#)

[Colin E Swenson](#)¹, [William R Hunt](#)¹, [Candela Manfredi](#)², [Diana J Beltran](#)³, [Jeong S Hong](#)², [Brian R Davis](#)⁴, [Shingo Suzuki](#)⁴, [Cristina Barillá](#)⁴, [Andras Rab](#)², [Cynthia Chico](#)³, [Joy Dangerfield](#)², [Ashleigh Streby](#)², [Erin Barton](#)¹, [Elizabeth M Cox](#)¹, [Arlene A Stecenko](#)², [Adrianna Westbrook](#)², [Rebecca Kapolka](#)¹, [Eric J Sorscher](#)²

Affiliations Expand

- PMID: 39951444
- DOI: [10.1371/journal.pone.0316721](https://doi.org/10.1371/journal.pone.0316721)

Abstract

Background: Non-cystic fibrosis bronchiectasis (NCFBE) is a disease that exhibits dilatation of airways, airflow obstruction, persistent cough, excessive sputum production, and refractory respiratory infections. NCFBE exhibits clinical and pathological manifestations similar to key features of cystic fibrosis (CF) lung disease. In CF, pathogenesis results from dysfunction of the cystic fibrosis transmembrane conductance regulator (CFTR), and diagnosis is made by demonstrating elevated sweat chloride concentrations (typically ≥ 60 mEq/L), two

CFTR mutations known to be causal, multi-organ tissue injury, or combination(s) of these findings.

Objective: Based on a considerable body of evidence, we believe many patients with NCFBE have disease likely to benefit from drugs such as elexacaftor/tezacaftor/ivacaftor (ETI) that activate CFTR-dependent ion transport. ETI is currently prescribed solely for treatment of CF and has not been adequately tested or proposed for patients with NCFBE, many of whom exhibit decreased CFTR function. Accordingly, we are conducting a clinical trial of ETI in subjects carrying a diagnosis of NCFBE.

Methods: Participants will exhibit one disease-causing CFTR mutation and/or sweat chloride measurements of 30-59 mEq/L. Cutaneous punch biopsy or blood samples will be obtained for iPSC cell differentiation into airway epithelial monolayers-which will then be tested for response to ETI. Each patient will be given CFTR modulator treatment for approximately four weeks, with monitoring of clinical endpoints that include FEV1 (forced expiratory volume in one second), sweat chloride, quality of life questionnaire, and weight. The study will evaluate response of patients with NCFBE to ETI, and test usefulness of iPSC-derived airway epithelial monolayers as a novel in vitro technology for predicting clinical benefit.

Trial registration: This trial is registered at clinicaltrials.gov (Identifier: [NCT05743946](https://clinicaltrials.gov/ct2/show/study/NCT05743946). Date: 02/23/2023).

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Conflict of interest statement

The authors have read the journal's policy and have the following competing interests: Eric J. Sorscher is a member of the Board of Trustees for the Cystic Fibrosis Foundation. His laboratory develops drugs for the treatment of airway diseases. Emory University has filed a patent application (PCT/US23/60828; Treatment of Bronchiectasis) listing Sorscher, William R. Hunt, and Arlene A. Stecenko as inventors. Authors of this manuscript are also listed as inventors on previous patents: (1.) CFTR activator compounds intended primarily for treatment of cystic fibrosis [CM, JSH, AR, EJS; PCT/US2021/043956: Cystic Fibrosis Transmembrane Conductance Regulator (CFTR) Modulators, Pharmaceutical Compositions, and Uses Thereof] and (2.) derivation of airway basal cells from iPSCs [BRD, SS, CB; US 11,401,510 B2: Generation of Airway Basal Stem Cells from Human Pluripotent Stem Cells]. All other authors have declared no competing interests exist. This does not alter our adherence to PLOS ONE policies on sharing data and materials.

Supplementary info

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. 2025 Feb 14;138(1609):86-97.

doi: 10.26635/6965.6747.

[Bronchiectasis cough during the COVID-19 pandemic: a qualitative study](#)

[Julie Blamires](#)¹, [Mandie Foster](#)², [Wendy McRae](#)³, [Sarah Mooney](#)⁴

Affiliations Expand

- PMID: 39946572
- DOI: [10.26635/6965.6747](#)

Abstract

Aim: Cough and airway secretions are part of daily life for people living with bronchiectasis. During the COVID-19 pandemic, infections associated with airway inflammation and cough amplified the health-related stigma and social unacceptability of coughing. This study explored the experiences and perceptions of adults with bronchiectasis during the pandemic to better understand the holistic impact of cough on their lives.

Method: A qualitative, interpretive descriptive study was undertaken using semi-structured interviews with 15 adults living with bronchiectasis resident in Counties Manukau, Aotearoa New Zealand.

Results: Insights into the lives of adults living with bronchiectasis during the pandemic highlighted how they were impacted on multiple levels. Four key themes were developed that described participants' struggle: "feeling vulnerable but keeping safe"; "being treated differently"; adjusting to "becoming a virtual patient"; and participants articulating an increased focus on "self-care and supportive communities" as key strategies. Communication with health teams became crucial, offering essential support for respiratory health, medication access, reassurance and social connectivity.

Conclusions: Health professionals play a key role in increasing public awareness around bronchiectasis and cough, helping to reduce stigma. While it is unknown when another disease outbreak mirroring that of COVID-19 will occur, the stigma of cough continues and warrants improved understanding.

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Conflict of interest statement

Nil.

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Am J Respir Crit Care Med

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. 2025 Feb 12.

doi: 10.1164/rccm.202408-1545OC. Online ahead of print.

[Broad Immunomodulatory Effects of the Dipeptidyl-peptidase-1 Inhibitor Brensocatib in Bronchiectasis: Data from the Phase 2, Double-Blind, Placebo-controlled WILLOW Trial](#)

[Emma D Johnson](#)¹, [Merete B Long](#)¹, [Lidia Perea](#)^{2 1}, [Vivian H Shih](#)³, [Carlos Fernandez](#)³, [Ariel Teper](#)³, [David Cipolla](#)³, [Eve McIntosh](#)⁴, [Rachel Galloway](#)¹, [Zsofia Eke](#)¹, [Morven Shuttleworth](#)⁵, [Rebecca Hull](#)¹, [Arietta Spinou](#)^{6 7}, [Anthony De Soyza](#)⁸, [Felix C Ringshausen](#)⁹, [Pieter Goeminne](#)¹⁰, [Natalie Lorent](#)¹¹, [Charles Haworth](#)¹², [Michael R Loebinger](#)¹³, [Francesco Blasi](#)¹⁴, [Michal Shteinberg](#)^{15 16}, [Stefano Aliberti](#)^{17 18}, [Eva Polverino](#)¹⁹, [Oriol Sibila](#)²⁰, [Amelia Shoemark](#)^{21 22}, [Kevin Mange](#)²³, [Jeffrey T J Huang](#)²⁴, [Jamie Stobo](#)⁴, [James D Chalmers](#)²⁵

Affiliations Expand

- PMID: 39938076
- DOI: [10.1164/rccm.202408-1545OC](https://doi.org/10.1164/rccm.202408-1545OC)

Abstract

Rationale: In the WILLOW trial, the Dipeptidyl peptidase-1 inhibitor brensocatib reduced neutrophil serine protease (NSP) activity and prolonged time to first exacerbation in patients with bronchiectasis.

Objectives: We hypothesized that, by reducing NSPs, brensocatib would affect antimicrobial peptides, mucins, and cytokines throughout the inflammatory cascade.

Methods: The WILLOW trial was a phase 2 randomized trial of brensocatib (10mg and 25mg) versus placebo. Sputum was collected at baseline, week 4, week 24 (end of treatment) and week 28 (4 weeks post-treatment). The antimicrobial peptides secretory leukoprotease inhibitor (SLPI) and α -defensin-3 were measured by ELISA, mucin-5AC (MUC5AC) by liquid chromatography mass spectrometry, myeloperoxidase by immunoassay and 45 inflammatory cytokines by Olink® Target 48 assay. The relationship between these markers and sputum neutrophil elastase was validated using the EMBARC-BRIDGE bronchiectasis cohort.

Measurements and main results: Of 82 patients randomized to 10mg brensocatib, 87 to 25mg brensocatib, and 87 to placebo, 71, 71 and 73 with sputum available for at least two time points were included. SLPI and α -defensin-3 increased significantly with brensocatib compared to placebo at both week 4 and week 24. MUC5AC reduced in response to treatment. Sub-analysis showed this was primarily among patients with high baseline neutrophil elastase. Myeloperoxidase did not change. 15 cytokines and chemokines increased significantly compared to placebo at week 4 or 28. CXCL10, CCL8, CCL7, CCL3 and IL-6 increased at both doses at both timepoints. In the EMBARC-BRIDGE cohort neutrophil elastase correlated inversely with SLPI, CCL13, IL7, CCL11, CXCL10, CCL8, CCL7, all markers increased by brensocatib.

Conclusions: Brensocatib exerts broad anti-inflammatory effects beyond its known effects on serine proteases. Clinical trial registration available at www.clinicaltrials.gov.

Clinicaltrials: gov, ID: [NCT03218917](https://clinicaltrials.gov/ct2/show/study/NCT03218917).

Keywords: brensocatib; bronchiectasis; inflammation.

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Review

Zhonghua Jie He He Hu Xi Za Zhi

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. 2025 Feb 12;48(2):158-163.

doi: 10.3760/cma.j.cn112147-20241121-00691.

[\[Annual review of bronchiectasis 2024\]](#)

[Article in Chinese]

[R Jiang¹](#), [A J Yao¹](#), [Y Q Wang¹](#), [Abudukeyoumu Sayina¹](#), [H Z Zheng¹](#), [J F Xu²](#)

Affiliations Expand

- PMID: 39914842
- DOI: [10.3760/cma.j.cn112147-20241121-00691](#)

Abstract

in [English, Chinese](#)

Bronchiectasis (BE) is a chronic airway disease characterized by bronchial abnormalities and persistent dilation due to a variety of underlying causes. Over the past year, significant advances have been made in the study of bronchiectasis, particularly in the areas of epidemiology, microbiology, pathogenesis, comorbidities, and treatment. Recent studies have identified sputum color and nitrate/nitrite levels as prognostic biomarkers for exacerbations, while advances in exhaled breath biomarkers have improved screening and diagnosis, providing new insights into preventive and therapeutic targets for bronchiectasis. Significant progress has also been made in therapeutic research, including the development of dipeptidyl peptidase-1 inhibitors, inhaled colistimethate sodium and epithelial calcium channel blockers, all of which are helping to the advancement of precision medicine in bronchiectasis. The development of new-generation genome sequencing technology can further explore the pathogenesis of bronchiectasis from various aspects including genetics, epigenetics, transcriptomics and metabolomics. In conclusion, this review provides a concise overview of the major advances in bronchiectasis research from October 1, 2023 to September 30, 2024, with the aim of providing new perspectives for future research directions.

Supplementary info

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