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

1

Eur J Intern Med

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. 2025 Jun 20:S0953-6205(25)00256-0.

doi: 10.1016/j.ejim.2025.06.018. Online ahead of print.

[Efficacy and safety of beta-blockers in patients with comorbid chronic obstructive pulmonary disease and cardiovascular disease](#)

[Tejuss Kakarla](#)¹, [Yash Vardhan Trivedi](#)², [Parth Munjal](#)³, [Avi Kumar](#)⁴, [Rohit Jain](#)⁵

Affiliations Expand

- PMID: 40544070
- DOI: [10.1016/j.ejim.2025.06.018](https://doi.org/10.1016/j.ejim.2025.06.018)

No abstract available

Keywords: Cardioselective beta-blockers; Cardiovascular disease (CVD); Chronic obstructive pulmonary disease (COPD); Inflammation; Major adverse cardiac events; pulmonary function tests.

Conflict of interest statement

Declaration of competing interest All authors declare that they have no conflict of interests, affiliations with or involvement in any organization or entity with any financial or non-financial interest in the subject matter or materials discussed in this manuscript.

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Int J Infect Dis

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. 2025 Jun 18:107949.

doi: 10.1016/j.ijid.2025.107949. Online ahead of print.

[Estimating Global Antibiotic Needs for Chronic Obstructive Pulmonary Disease and Community- and Hospital- acquired Pneumonia in 20 Countries: A Modelling Analysis](#)

[Amit Summan](#)¹, [Katherine Klemperer](#)², [Erta Kalanxhi](#)³, [Anthony McDonnell](#)², [Ramanan Laxminarayan](#)⁴

Affiliations Expand

- PMID: 40541770
- DOI: [10.1016/j.ijid.2025.107949](https://doi.org/10.1016/j.ijid.2025.107949)

Abstract

Introduction: Antibiotic stewardship advocates for prudent antibiotic use. However, estimates of 'appropriate' antibiotic use remain limited.

Methods: We estimated the total antibiotics required to treat chronic obstructive pulmonary disease (COPD) exacerbations and pneumonia in 2019 across the 20

most populous countries. Antibiotic needs were determined according to World Health Organization AWaRe guidelines. The proportion of cases requiring antibiotics was based on bacterial etiology averages. Patients not responding to first-line treatment were assumed to either recover after second-line treatment, discontinue further care, or die during treatment. Where two treatment options were available, patients were assumed to be evenly split.

Results: Penicillins (76.1%) and cephalosporins (22.6%) were the most frequently needed antibiotics, for treatment of community-acquired pneumonia, followed by hospital-acquired pneumonia, and COPD exacerbations. India and China were estimated as the greatest consumers of penicillins (37% and 21% of total use, respectively), followed by the U.S., Brazil, and Indonesia (15% combined). Per capita penicillin consumption was highest in India, Brazil, and Germany. In total, 2,276,046 and 676,098 million mg of penicillins and cephalosporins, respectively, were needed.

Conclusions: Prudent antibiotic use is essential to curb antimicrobial resistance. This framework offers a method for estimating needs and informing global planning.

Keywords: Antibiotic stewardship; COPD; antimicrobial resistance; pneumonia.

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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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BMJ Open Respir Res

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. 2025 Jun 20;12(1):e002373.

doi: 10.1136/bmjresp-2024-002373.

[Chronic obstructive pulmonary disease is a risk factor for non-tuberculous mycobacterial pulmonary disease: a population-based matched cohort study](#)

[Jong Geol Jang¹](#), [Hyun Lee²](#), [Min Gu Kang^{3,4}](#), [Youlim Kim⁵](#), [Kwang Ha Yoo⁵](#), [Kyung Hoon Min⁶](#), [June Hong Ahn¹](#), [Kyung Soo Hong¹](#), [Jong Seung Kim^{#3,7}](#), [Ji-Yong Moon^{#8}](#)

Affiliations Expand

- PMID: 40541276
- PMCID: [PMC12182194](#)
- DOI: [10.1136/bmjresp-2024-002373](#)

Abstract

Background: Longitudinal studies comprehensively evaluating the direction of the relationship between chronic obstructive pulmonary disease (COPD) and non-tuberculous mycobacterial pulmonary disease (NTM-PD) are scarce. Therefore, this study aimed to evaluate whether COPD influences the development of NTM-PD even after considering various confounders by using a nationwide longitudinal cohort study.

Methods: Data from the National Health Insurance Service National Sample Cohort between 2002 and 2019 were analysed. Participants ≥ 20 years of age with COPD and no previous NTM diagnosis were included in the study. The incidence of NTM-PD was compared between participants with COPD (n=8939) and 1:4 fully matched control participants (n=32 355). Participants were followed until the date of NTM-PD incidence, death, or December 2019.

Results: During a median follow-up of 9.0 years (IQR, 5.0-12.9 years), participants with COPD (55.5 per 100 000 person-years) had a higher incidence of NTM-PD than matched control cohorts (25.4 per 100 000 person-years), with a HR of 2.16 (95% CI, 1.45 to 3.23). Age, sex, smoking history, asthma, bronchiectasis and corticosteroid use did not affect the association between COPD and the risk of incident NTM-PD (P for interaction >0.05 for all). Among patients with COPD, being underweight and having bronchiectasis were significantly associated with NTM-PD development.

Conclusions: Individuals with COPD had approximately a twofold increased risk of developing NTM-PD compared with matched controls. Being underweight and having bronchiectasis were identified as risk factors for developing NTM-PD.

Keywords: Atypical Mycobacterial Infection; COPD epidemiology; Pulmonary Disease, Chronic Obstructive.

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Conflict of interest statement

Competing interests: None declared.

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Am J Respir Cell Mol Biol

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. 2025 Jun 20.

doi: [10.1165/rcmb.2024-0453OC](https://doi.org/10.1165/rcmb.2024-0453OC). Online ahead of print.

[Interferon Mediated Bronchial Epithelium Cellular Senescence in Chronic Obstructive Pulmonary Disease](#)

[Hong Guo-Parke](#)¹, [Oisin Cappa](#)¹, [Dermot A Linden](#)¹, [Ben S Barksby](#)², [Rachel A Burgoyne](#)², [Lee A Borthwick](#)², [Andrew J Fisher](#)³, [Sinead Weldon](#)¹, [David A Simpson](#)¹, [Clifford C Taggart](#)¹, [Joseph C Kidney](#)⁴

Affiliations Expand

- PMID: 40540688
- DOI: [10.1165/rcmb.2024-0453OC](https://doi.org/10.1165/rcmb.2024-0453OC)

Abstract

Cellular senescence has been implicated in the pathogenesis of chronic obstructive pulmonary disease (COPD). The mechanisms of senescence in the bronchial epithelium, however, remain largely unknown. This study aimed to elucidate whether cellular senescence in COPD epithelial cells contributes to the pathogenesis of the disease and investigated the potential molecular mechanisms involved. Single cell RNA sequencing was performed on well differentiated primary bronchial epithelial cells from COPD and healthy subjects. We evaluated the abundance and distribution of senescence markers in key epithelial differentiated subtypes and senescence-associated secretory phenotype involved in airway epithelial dysfunction. The effects of interferon pathway inhibitors on cellular

senescence were also investigated. There was increased expression of cellular senescence genes in the COPD cohort, which was predominantly in basal and club cells. Enhanced expression of cellular senescence markers, p16 and p21, was observed in COPD cultures, which was histologically confirmed in the lung tissue of COPD patients. There was also a notable increase in IFN- β and IFN- γ . Senescence associated secretory phenotype productions were increased in COPD and was attenuated by JAK-STAT or cGAS-STING pathway inhibitors (baricitinib or C-176). These inhibitors also effectively suppressed expression of senescence markers. COPD bronchial epithelium displays a senescence driven phenotype which is mediated by type I/II interferons. Inhibition of JAK-STAT or STING-cGAS interferon pathways may represent targets to alleviate cellular senescence and chronic inflammation in COPD.

Keywords: COPD , bronchial epithelium , senescence , single cell sequencing , inflammation.

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Editorial

Eur Respir J

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. 2025 Jun 19:2500896.

doi: 10.1183/13993003.00896-2025. Online ahead of print.

[How systemic antibodies prevent severe respiratory infections in COPD: A Viewpoint](#)

[Carl Persson](#)¹

Affiliations Expand

- PMID: 40537180

- DOI: [10.1183/13993003.00896-2025](https://doi.org/10.1183/13993003.00896-2025)

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Editorial

COPD

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. 2025 Dec;22(1):2517622.

doi: 10.1080/15412555.2025.2517622. Epub 2025 Jun 19.

[Pharmacologic Treatment of COPD: Disparities Between Evidence and Recommendations in GOLD 2023/4](#)

[Samy Suissa](#) ^{1 2 3}

Affiliations Expand

- PMID: 40536359
- DOI: [10.1080/15412555.2025.2517622](https://doi.org/10.1080/15412555.2025.2517622)

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Review

Expert Rev Respir Med

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. 2025 Jun 18.

doi: 10.1080/17476348.2025.2522754. Online ahead of print.

[Effect of fixed-dose tiotropium/olodaterol combined therapy on exercise-related outcome measures in individuals with chronic obstructive pulmonary disease: a systematic review and meta-analysis](#)

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Affiliations Expand

- PMID: 40530954
- DOI: [10.1080/17476348.2025.2522754](https://doi.org/10.1080/17476348.2025.2522754)

Abstract

Introduction/objectives: This systematic review aimed to summarize the evidence on the effect of the fixed-dose combination of tiotropium/olodaterol (Tio/Olo 5/5 µg FDC) on exercise-related outcome measures.

Methods: We included randomized clinical trials (RCTs) from four databases that investigated the effectiveness of Tio/Olo 5/5 µg FDC on exercise tolerance, breathlessness, lung function, and physical activity from inception to October 2024.

Results: Findings from eight RCTs indicated that Tio/Olo 5/5 µg FDC was superior to Tio 5 µg or placebo for the following outcomes: exercise tolerance [Tio 5 µg: 3 RCTs, mean difference (MD) = 16.6 m, 95% CI: 5.2 - 28.1, $p < 0.001$], exercise

endurance time [Placebo: 2 RCTs, SMD = 0.29, 95% CI: 0.19 - 0.39, $p < 0.001$], inspiratory capacity [Tio 5 μg : 3 RCTs, MD = 0.13 L, 95% CI: 0.07 - 0.19, $p < 0.001$], and forced expiratory volume in 1 second (FEV₁) [Tio 5 μg : 4 RCTs, MD = 0.12 L, 95% CI: 0.11 - 0.14, $p < 0.001$; Placebo: 2 RCTs, MD = 0.33 L, 95% CI: 0.3 - 0.35, $p < 0.001$], with no effect on physical activity levels.

Conclusion: Tio/Olo 5/5 μg FDC compared to Tio 5 μg or placebo may improve exercise tolerance and lung function, but not physical activity levels in COPD.

Protocol registration: The systematic review protocol is registered on PROSPERO (International Prospective Register of Systematic Reviews): number CRD42024598553.

Keywords: Breathlessness; Olodaterol; Tiotropium; chronic obstructive pulmonary disease; exercise tolerance; physical activity; pulmonary function.

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PLoS One

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. 2025 Jun 17;20(6):e0326267.

doi: 10.1371/journal.pone.0326267. eCollection 2025.

[Inflammatory cells and remodeling in bronchial biopsies from COPD patients and controls](#)

[Tomas M Eagan](#)^{1,2}, [Rune Nielsen](#)^{1,2}, [Ingvild Haaland](#)¹, [Gunnar R Husebø](#)¹, [Sverre Lehmann](#)^{1,2}, [Jon A Ward](#)³, [Susan J Wilson](#)³

Affiliations [Expand](#)

- PMID: 40526700

- PMID: [PMC12173230](#)
- DOI: [10.1371/journal.pone.0326267](#)

Abstract

Background: The understanding of inflammation and remodeling in the bronchial wall of COPD patients with varying disease severity remains incomplete.

Methods: 35 healthy controls and 47 volunteer COPD patients underwent bronchoscopy with bronchoalveolar lavage (BAL) and sampling by endobronchial biopsies in 2014-2015 as part of the MicroCOPD Study. Biopsies were embedded in glycol methyl acrylate (GMA) resin and examined by immunohistochemistry and staining for enumeration of CD3 + , CD4 + , CD8 + , CD20 + , CD68 + , EG2 + , and NE+ inflammatory cells, as well as endothelial cells (EN4) and smooth muscle actin (SMA). Mucus cells were stained by periodic acid-schiff (PAS), and toluidine blue to visualize the reticular basement membrane (RBM).

Results: The numbers of macrophages and eosinophils were higher, and vascularity increased in the submucosa in COPD patients compared with healthy controls. In healthy smokers there were lower numbers of lymphocytes (CD3 + , CD4 + , CD8 + , CD20+) than never smokers. However, COPD patients with GOLD I/II had higher numbers of eosinophils and larger smooth muscle area compared with GOLD III/IV. COPD exacerbations the last year, blood eosinophils, and use of inhaled corticosteroids did not affect levels of inflammation or remodeling.

Conclusion: Smoking alters inflammation in healthy controls, while specific patterns of macrophages, eosinophils, and vascularity distinguish COPD from non-COPD in bronchial biopsies.

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Conflict of interest statement

"Tomas Eagan declares research grant from GSK and lecture fees from Boehringer Ingelheim and AstraZeneca. Rune Nielsen declares grants from Sanofi and AstraZeneca. This does not alter our adherence to PLOS ONE policies on sharing data and materials."

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. 2025 Jun 16;11(3):01091-2024.

doi: 10.1183/23120541.01091-2024. eCollection 2025 May.

[The sustained increase of cardiovascular risk following COPD exacerbations: meta-analyses of the EXACOS-CV studies](#)

[Clementine Nordon](#)¹, [Sami O Simons](#)², [Jonathan Marshall](#)¹, [Hana Müllerová](#)¹, [Michael Pollack](#)³, [Camilla Bengtsson](#)⁴, [Fabian Hoti](#)⁵, [Muriel Lobier](#)⁵, [Aaro Salosensaari](#)⁶, [Ana Cristina Santos](#)⁷, [Claus Franz Vogelmeier](#)⁸, [Kirsty Rhodes](#)¹

Affiliations Expand

- PMID: 40524923
- PMCID: [PMC12168178](#)
- DOI: [10.1183/23120541.01091-2024](#)

Abstract

Background: The EXAcerbations of COPD and their OutcomeS on CardioVascular disease (EXACOS-CV) multi-database studies have consistently shown an increased risk of serious cardiovascular event following COPD exacerbations, but with some risk temporality variations. EXACOS-CV results were meta-analysed to increase their generalisability and improve precision.

Methods: Studies conducted in Canada, the United States, Germany, the Netherlands, Spain, Italy, Japan and England were meta-analysed, amounting to 1 030 875 individuals. Generally, each study included individuals aged ≥ 40 years with a COPD diagnosis in 2014-2019; primary outcome was the composite of non-fatal acute coronary syndrome, decompensated heart failure, ischaemic stroke, arrhythmias and all-cause death. Pooled hazard ratios (HR_p) of risks in post-

exacerbation periods (*versus* periods outside exacerbations) were obtained through random effects meta-analysis.

Results: Time periods following an exacerbation (any severity) were associated with increased and sustained risks of the composite outcome: HR_p 10.22 (95% CI 5.34-19.57) in days 1-7 and HR_p 1.24 (95% CI 1.09-1.40) in days 181-365. Risks were elevated for 6 months (HR_p 1.25, 95% CI 1.01-1.55 in days 31-180) and 1 year (HR_p 1.48, 95% CI 1.11-1.96 in days 181-365) following a moderate or a severe exacerbation, respectively. In newly diagnosed individuals, risks were increased until days 31-180: HR_p 1.66 (95% CI 1.14-2.42) and HR_p 1.61 (95% CI 1.28-2.02) following the first and the second post-diagnosis exacerbation, respectively.

Conclusion: Risk of severe cardiovascular events is sustainably increased following an exacerbation of COPD, even early and moderate ones. Cardiopulmonary risk reduction should be a global core target of COPD management.

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Conflict of interest statement

Conflict of interest: C. Nordon, J. Marshall, H. Müllerová, M. Pollack and K. Rhodes are employees and shareholders of AstraZeneca. S.O. Simons reports grants from Roche, the Dutch Research Council and the Lung Foundation Netherlands; consulting fees from AstraZeneca, Chiesi and GlaxoSmithKline; payment for presentations and lectures from AstraZeneca and Chiesi; and support for attending meetings from AstraZeneca and Chiesi; all within the time frame of the past 36 months and paid to his institution. C. Bengtsson, F. Hoti, M. Lobier, A. Salosensaari and A.C. Santos are employees of IQVIA, a contract research organisation that performs financially supported studies for pharmaceutical companies and have no commercial interest to disclose. C.F. Vogelmeier gave presentations at symposia and/or served on scientific advisory boards sponsored by Aerogen, AstraZeneca, Boehringer Ingelheim, Chiesi, CSL Behring, GlaxoSmithKline, Grifols, Insmmed, Menarini, Novartis, Nuaira, Roche and Sanofi.

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Nutr Clin Pract

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. 2025 Jun 16.

doi: 10.1002/ncp.11333. Online ahead of print.

[Biological sex and age-associated changes in muscle and brain health in Chronic Obstructive Pulmonary Disease: A large cross-sectional study](#)

[Minchae C Kang](#)¹, [Nicolaas E P Deutz](#)^{1,2}, [Krista L Haines](#)³, [Mariëlle P K J Engelen](#)^{1,2}

Affiliations Expand

- PMID: 40524405
- DOI: [10.1002/ncp.11333](https://doi.org/10.1002/ncp.11333)

Abstract

Background: Biological sex plays a role in systemic features of patients with Chronic Obstructive Pulmonary Disease (COPD). We investigated whether male and female COPD patients show distinct trajectories in muscle and brain health decline during aging.

Methods: In total 228 patients (age >50 years) with stable COPD (GOLD: II-IV) were stratified into four groups based on their sex and age (50-70 years vs ≥70 years). Body composition (DXA), muscle strength (dynamometry), cognitive function and well-being (assessments and questionnaires), and risk factors of poor systemic health were analyzed in these groups.

Results: Body weight and lean mass remain unchanged with aging. The ≥70 years males showed higher visceral adipose tissue and lower muscle strength whereas females showed lower fat mass and fat-free mass index, and worse cognitive performance compared with their younger counterparts ($P < 0.04$). In males, lower physical activity was associated with higher visceral adipose tissue and lower muscle function, whereas poor cognition was associated with low O₂ saturation. In females, lower muscle function was associated with higher age, dyspnea and lower caloric intake and physical activity, whereas mood disturbance and poor cognition were associated with smoking pack years ($P < 0.05$).

Conclusion: Aging in male COPD patients is characterized by metabolic syndrome features and muscle weakness whereas aging in female COPD patients is associated with weight loss, sarcopenia, and cognitive decline. The observed systemic changes were influenced by different combinations of risk factors in male and female COPD patients. Our findings indicate that sex-specific therapies need to be considered when treating older patients with COPD.

Keywords: COPD; aging; cognition; muscle function; risk factors; sex differences.

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JAMA Intern Med

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. 2025 Jun 16:e251853.

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[Diseases Common in Persons With Cystic Fibrosis Among CFTR Heterozygotes](#)

[Chenjie Zeng](#)¹, [Sangwoo T Han](#)², [Thomas A Cassini](#)³, [Karen S Raraigh](#)⁴, [Tam C Tran](#)¹, [James Yang](#)¹, [Garry R Cutting](#)⁴, [Joshua C Denny](#)^{1,5}

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- PMCID: PMC12171962 (available on 2026-06-16)
- DOI: [10.1001/jamainternmed.2025.1853](#)

Abstract

Importance: Cystic fibrosis is one of the most commonly diagnosed autosomal recessive disorders in the US. It is estimated that more than 10 million individuals are heterozygous for a pathogenic CFTR gene variant in the US (heterozygotes). The phenotypic risk of these heterozygotes is not well defined, particularly among populations of predominantly non-European genetic ancestry. Understanding disease risk across each population can improve management strategies for all.

Objective: To examine associations of diseases across the phenome with CFTR heterozygotes.

Design, setting, and participants: The All of Us Research Program is a US-based ongoing longitudinal cohort study whose enrollment started nationally in 2018. In this genetic association study, whole-genome sequencing data were linked to electronic health records (EHRs) and surveys. Participants were 18 years and older. Similarity to genetic ancestral groups was genetically inferred using All of Us data and 2 large reference datasets, the 1000 Genomes Project and Human Genome Diversity Project. This analysis was conducted between February and April 2025.

Exposures: A single pathogenic CFTR variant.

Main outcomes and measures: The main variables included clinical diagnoses documented in EHRs. Multivariable-adjusted phenome-wide association studies were performed. The main measures were odds ratios (ORs), indicating risk for a particular disease or condition.

Results: Overall, 363 pathogenic variants were identified in the cohort. Among 317 964 adult participants (55.7% female; mean [SD] last age in EHR, 56.1 [16.9] years), 7957 heterozygotes and 280 995 noncarriers were identified. Participants were followed up through EHRs with a mean (SD) follow-up of 12.4 (9.0) years. The genetically inferred ancestral distribution of the cohort was 18.0% African, 16.2% American or Admixed American, 2.1% East Asian, 53.4% European, 0.3% South Asian, and 0.4% West Asian. Frequencies of heterozygotes varied by groups of genetic similarity to reference populations: 3.62% in participants most genetically similar to a European reference population (n = 169 812), 1.35% in participants most genetically similar to an African reference population (n = 57 297), and 1.86% in participants most genetically similar to an Admixed American reference population (n = 51 483). A total of 2909 phenotypes were analyzed. No statistically significant associations were identified in heterozygotes of all populations combined or within each genetic ancestral group. Among 52 cystic fibrosis-associated diseases, although an elevated risk of respiratory diseases and infections was observed in some heterozygotes (allergic bronchopulmonary aspergillosis [OR, 2.50; 95% CI, 1.27-4.95]; bronchiectasis [OR, 1.21; 95% CI, 1.00-1.47]; pneumonia due to *Streptococcus pneumoniae* [OR, 1.54; 95% CI, 1.05-2.26]; chronic obstructive pulmonary disease [OR, 1.14; 95% CI, 1.05-1.24]; asthma [OR, 1.08; 95% CI, 1.01-1.15]; and *Pseudomonas* infection [OR, 1.34; 95% CI, 1.03-1.74]), effect sizes of these associations were several orders of magnitude lower than those found in homozygotes or predicted compound heterozygotes.

Conclusions and relevance: In this genetic association study, most heterozygotes did not appear to have a substantially higher risk of cystic fibrosis-associated diseases during their adulthood compared to noncarriers. Additional studies are needed to investigate the underlying factors for the elevated risk of respiratory and infectious diseases in some heterozygotes.

Conflict of interest statement

Conflict of Interest Disclosures: Dr Cassini reported personal fees from American College of Medical Genetics and Genomics and National Organization for Rare Disorders outside the submitted work. Dr Raraigh reported grants from the Cystic Fibrosis Foundation during the conduct of the study; grants from Vertex

Pharmaceuticals outside the submitted work; and BillionToOne consultancy. Dr Cutting reported grants from the National Institutes of Health (NIH) during the conduct of the study; grants from the US Cystic Fibrosis Foundation and Spruance Foundation outside the submitted work. No other disclosures were reported.

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BMJ Open Respir Res

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. 2025 Jun 15;12(1):e002656.

doi: 10.1136/bmjresp-2024-002656.

[Glycopyrrolate/formoterol fumarate MDI in mild-to-moderate chronic obstructive pulmonary disease \(PIONEER\): a protocol for a randomised, double-blind, placebo-controlled trial](#)

[Feng-Yan Wang](#)¹, [Zi-Hui Wang](#)¹, [Jia-Xuan Xu](#)¹, [Zhen-Yu Liang](#)¹, [Pi-Xin Ran](#)^{1,2}, [Yu-Min Zhou](#)^{1,2}, [Yi Gao](#)¹, [Wei-Juan Shi](#)¹, [Wan-Yi Jiang](#)¹, [Yu-Qi Li](#)¹, [Dong-Ying Zhang](#)¹, [Rong-Chang Chen](#)^{1,3}, [Wei-Jie Guan](#)^{4,2}, [Nan-Shan Zhong](#)^{4,2}, [Jin-Ping Zheng](#)^{4,2}

Affiliations Expand

- PMID: 40518293
- DOI: [10.1136/bmjresp-2024-002656](#)

Free article

Abstract

Introduction: Patients with mild-to-moderate chronic obstructive pulmonary disease (COPD) often experience rapid declines in lung function but are rarely treated early. The Prospect of early InterventiON in the managEment of chronic obstructivE

pulmonary disease (PIONEER) study aims to evaluate the efficacy of long-term glycopyrrolate/formoterol fumarate (GFF) metered dose inhaler (MDI) as an initial therapy on lung function and disease progression in individuals with mild-to-moderate COPD.

Methods and analysis: This is a multicentre, randomised, double-blind, placebo-controlled, parallel-group study. Approximately 318 patients with COPD in Global Initiative for Chronic Obstructive Lung Disease stages 1 (mild) or 2 (early moderate), with no history of severe exacerbations in the previous year, will be randomised in a 2:1 ratio to receive two times per day GFF MDI (14.4/10 µg) or placebo for 52 weeks. Clinical assessments will include pulmonary function tests, symptom scores, quality-of-life measures, recording of COPD exacerbations and chest CT. The primary endpoint is the between-group difference in the change from baseline in forced expiratory volume in 1 s (FEV₁) after 2 hours of bronchodilator over 24 weeks. Secondary endpoints include the between-group difference in the change from baseline in morning pre-dose trough FEV₁ over 24 weeks, morning post-dose 2 hour FEV₁ over 52 weeks and time to minimal clinically important deterioration. The safety endpoint is the incidence of adverse events. An extension study with rerandomisation will follow the PIONEER study to explore the long-term need for GFF MDI use.

Trial registration number: ChiCTR2200064765; Chinese Clinical Trial Registry, www.chictr.org.cn.

Ethics and dissemination: The study protocol has been approved by the Ethics Committee of The First Affiliated Hospital, Guangzhou Medical University (2022-23, 2024-K-005), and all collaborating centres have obtained approval from their respective ethics committees. Results will be presented at national and international meetings and submitted for publication in peer-reviewed journals within the field.

Keywords: COPD Pharmacology; Inhaler devices; Pulmonary Disease, Chronic Obstructive; Respiratory Function Test.

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Conflict of interest statement

Competing interests: None declared.

Supplementary info

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. 2025 Jun 18;57(3):537-544.

doi: 10.19723/j.issn.1671-167X.2025.03.018.

[\[Prospective association between physical activity and mortality in patients with chronic obstructive pulmonary disease\]](#)

[Article in Chinese]

[S Zhang](#)¹, [Y Lan](#)¹, [D Sun](#)^{1 2 3}, [P Pei](#)², [H DU](#)⁴, [J Chen](#)⁵, [Z Chen](#)⁴, [J Lv](#)^{1 2 3 6}, [L Li](#)^{1 2 3}, [C Yu](#)^{1 2 3}

Affiliations Expand

- PMID: 40509832
- PMCID: [PMC12171607](#)
- DOI: [10.19723/j.issn.1671-167X.2025.03.018](#)

Abstract

in [English, Chinese](#)

Objective: To explore the prospective association between physical activity level and mortality risk in Chinese adults with chronic obstructive pulmonary disease (COPD).

Methods: Based on the China Kadoorie Biobank (CKB) who had COPD at the baseline survey, this study employed the Cox proportional hazards regression model to estimate the prospective associations between the overall physical activity, different intensities (low-level, moderate-to-vigorous-level), and types (occupational, non-occupational) of physical activity level and the risks of all-cause and cause-specific mortality, such as vascular diseases, cancer, and respiratory diseases. Based on the quintiles of physical activity level, participants were divided into five groups (Q1-Q5), with the lowest quintile group (Q1) as the reference group. Hazard ratio (*HR*) and 95% confidence interval (95%*CI*) were calculated for the remaining. In our study, we also performed sensitivity and subgroup analyses, including age, gender, self-rated health status, severity of COPD, etc.

Results: Among 33 588 COPD patients at the baseline survey, 8 314 (22.2%) deaths were documented during an average follow-up of (11.1±3.1) years. Negative linear associations between the overall physical activity level and mortality risk from all-

cause, vascular, and respiratory diseases were observed (*P* trend for linear correlation being < 0.001, 0.002, < 0.001). Compared with the lowest quintile group of total physical activity (Q1), the hazard ratios (*HR*) and 95% confidence intervals (*CI*) for all-cause mortality, vascular disease mortality, and respiratory disease mortality in the highest quintile group (Q5) were 0.77 (0.70, 0.85), 0.77 (0.65, 0.91), and 0.58 (0.48, 0.71), respectively. The low-level and moderate-to-vigorous-level physical activity were negatively associated with all-cause mortality in the COPD patients (*P* trend for linear correlation: 0.002, < 0.001, respectively). Compared with the lowest quintile group of low-intensity and moderate-to-vigorous intensity physical activity (Q1), the *HRs* (95%*CI*) for all-cause mortality in the highest quintile group (Q5) were 0.89 (0.82, 0.97) and 0.79 (0.72, 0.87), respectively. The occupational and non-occupational physical activity were also found to have a linear inverse association with all-cause mortality risk among the COPD patients (*P* trend < 0.001 and 0.015, respectively). Compared with the lowest quintile group of occupational and non-occupational physical activity (Q1), the *HR* (95%*CI*) for all-cause mortality in the highest quintile group (Q5) were 0.69 (0.61, 0.78) and 0.91 (0.84, 0.98), respectively. The associations between overall physical activity and all-cause mortality risk were stronger for patients aged 60 and above, female, and who reported poor health status (*P* for interaction: 0.028, 0.012, 0.010). The protective effect of total physical activity was also applicable to the COPD patients of varying severity.

Conclusion: Physical activity could reduce the mortality risk in a dose-response relationship among COPD patients, regardless of its intensity and type, especially among individuals aged 60 and above, females, and those with poor self-report health status.

Keywords: Chronic obstructive pulmonary disease; Mortality; Physical activity; Prospective association.

Conflict of interest statement

利益冲突 所有作者均声明不存在利益冲突。

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Multicenter Study

Thorax

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. 2025 Jun 16;80(7):466-477.

doi: 10.1136/thorax-2024-222699.

[Incidence and prevalence of asthma, chronic obstructive pulmonary disease and interstitial lung disease between 2004 and 2023: harmonised analyses of longitudinal cohorts across England, Wales, South-East Scotland and Northern Ireland](#)

[Hannah Whittaker¹, Adriana Kramer Fiala Machado^{#2}, Sara Hatam^{#3}, Sarah Cook^{#4}, Sean Scully^{#5}, Hywel Turner T Evans^{#6}, Thomas Bolton^{7,8}, Constantinos Kallis⁹, John Busby¹⁰, Liam G Heaney¹¹, Aziz Sheikh¹², Jennifer K Quint¹³; CVD-COVID-UK/COVID-IMPACT Consortium](#)

Collaborators, Affiliations Expand

- PMID: 40199588
- DOI: [10.1136/thorax-2024-222699](#)

Free article

Abstract

Background: We describe the epidemiology of asthma, chronic obstructive pulmonary disease (COPD) and interstitial lung disease (ILD) from 2004 to 2023 in England, Wales, Scotland and Northern Ireland (NI) using a harmonised approach.

Methods: Data from the National Health Service England (NHSE), Clinical Practice Research Datalink Aurum in England, Secure Anonymised Information Linkage Databank in Wales, DataLoch in South-East Scotland and the Honest Broker Service in NI were used. A harmonised approach to COPD, asthma and ILD case definitions, study designs and study populations across the four nations was performed. Age-sex-standardised incidence rates and point prevalence were calculated between 2004 and 2023 depending on data availability. Logistic and negative binomial regression compared incidence and prevalence rates between the start and end of each study period. Linear extrapolation projected incidence rates between 2020 and 2023 to illustrate how observed and projected rates differed.

Results: Incidence rates were lower in 2019 versus 2005 for asthma (England: incidence rate ratio 0.89, 95% CI 0.88 to 0.90; Wales: 0.66, 0.65 to 0.68; Scotland: 0.67, 0.64 to 0.71; NI: 0.84, 0.81 to 0.86), COPD (England: 0.83, 0.82 to 0.85; Wales:

0.67, 0.65 to 0.69) and higher for ILD (England: 3.27, 3.05 to 3.50; Wales: 1.39, 1.27 to 1.53; Scotland: 1.63, 1.36 to 1.95; NI: 3.03, 2.47 to 3.72). In NHSE, the incidence of asthma was similar in June 2023 versus November 2019, but lower for COPD and higher for ILD. Prevalence of asthma in 2019 in England, Wales, Scotland and NI was 9.7%, 15.9%, 13.2% and 7.0%, respectively, for COPD 4.5%, 5.1%, 4.4% and 3.0%, and for ILD 0.4%, 0.5%, 0.6% and 0.3%. Projected incidence rates were 2.8, 3.4 and 1.8 times lower for asthma, COPD and ILD compared with observed rates at the height of the pandemic.

Interpretation: Asthma, COPD and ILD affect over 10 million people across the four nations, and a substantial number of diagnoses were missed during the pandemic.

Keywords: Asthma Epidemiology; COPD epidemiology; Interstitial Fibrosis.

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Conflict of interest statement

Competing interests: HW reports a grants from NIHR BRC for work conducted in the NHSE SDE. SH reports employment from DataLoch for the submitted work. SS reports grants from Industrial Strategy Challenge Fund, MRC and HDR UK for the submitted work. AS reported grants from HDR UK and ISCF for the submitted work and from asthma and lung UK outside the submitted work. JKQ reports grants from Industrial Strategy Challenge Fund, MRC and HDR UK for the submitted work and from GSK, Evidera, Chiesi and AZ outside the submitted work. SC, HTTE, TB, AKFM, LGH, JB and CK have no conflicts of interest.

Supplementary info

Publication types, MeSH termsExpand

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

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BMJ Open

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. 2025 Jun 20;15(6):e101315.

doi: 10.1136/bmjopen-2025-101315.

[Medicines support and social prescribing to address patient priorities in multimorbidity \(MIDAS\): protocol for a definitive, multi-arm, cluster randomised, controlled trial in Irish general practice](#)

[Farah Tahsin¹](#), [Paul Doody¹](#), [Barbara Clyne²](#), [Bridget Kiely³](#), [Frank Moriarty⁴](#), [Paddy Gillespie⁵](#), [Eanna Kenny¹](#), [Fiona Boland⁶](#), [Molly Byrne⁷](#), [Laura O'Connor⁸](#), [Andrew W Murphy⁸](#), [Susan M Smith⁹](#)

Affiliations Expand

- PMID: 40541442
- PMCID: [PMC12182153](#)
- DOI: [10.1136/bmjopen-2025-101315](#)

Abstract

Background: There is increasing awareness of the impact of living with multiple long-term conditions (referred to as multimorbidity) on patients and health systems. Managing multimorbidity remains a challenge for primary care providers; necessitating tailored interventions that are both clinically and cost effective. In the Irish health system, two pilot trials have demonstrated promising results for patients living with multimorbidity. The first, Multimorbidity COLlaborative Medication Review And DEcision making (*MyComrade*), involved pharmacists supporting the management of polypharmacy, and the second, Link MultiMorbidity (*LinkMM*), involved link workers delivering social prescribing. This definitive trial aims to evaluate the clinical and cost effectiveness of both these interventions, as well as conduct a process evaluation.

Methods: This is a pragmatic, multi-arm, definitive, cluster randomised controlled trial in Irish general practices. The trial will include three arms: (1) *MyComrade*; (2) *LinkMM* and (3) usual care, acting as an efficient shared control arm for both interventions. For this trial, 672 patients will be recruited from 48 general practices. The eligibility criteria for the patients will be: (1) over 18 years of age; (2) has two or more chronic conditions; (3) taking 10 or more regular medicines and (4) attending their general practice team for chronic disease management. Outcome data will be collected for all participants, across all trial arms at baseline and 6 months. Primary outcomes include the number of medicines (reflecting the *MyComrade* intervention) and patient capability (reflecting the *LinkMM* intervention). Secondary outcomes include proportions and types of potentially inappropriate medications, patient experience of care, patient activation, self-rated health, health-related quality of life, mortality and healthcare utilisation. Quantitative and qualitative data will be collected to inform the process evaluation. Additionally, an economic evaluation will be conducted to evaluate the cost-effectiveness of both interventions compared with the control arm.

Ethics and dissemination: The trial protocol was approved by the Irish College of General Practice (ICGP) Ethical Review Board (ref: ICGP_Rec_2023_016). A formal knowledge dissemination plan has been developed for the trial, which includes

peer-reviewed publications, conference presentations and reports to healthcare professionals, commissioners and policymakers.

Trial registration number: ISRCTN11585238.

Keywords: Multimorbidity; Polypharmacy; Primary Care.

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Conflict of interest statement

Competing interests: None declared.

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. 2025 Jun 15:205:112754.

doi: 10.1016/j.exger.2025.112754. Epub 2025 Apr 14.

[Multimorbidity frailty index and clinical outcomes among 42,989 older heart failure patients directly discharged from emergency departments: A nationwide retrospective cohort study](#)

[Wan-Ju Liao](#)¹, [Hsi-Yu Lai](#)², [Liang-Yi Lin](#)², [Cheng-Hsueh Wu](#)³, [Fei-Yuan Hsiao](#)⁴, [Liang-Kung Chen](#)⁵

Affiliations Expand

- PMID: 40239852
- DOI: [10.1016/j.exger.2025.112754](#)

Free article

Abstract

Aims: Frailty, a common and clinically significant condition in older adults with heart failure (HF), is often overlooked in emergency department (ED) settings. This study aims to evaluate the impact of frailty on clinical outcomes in older adults directly discharged from the ED due to HF.

Methods and results: This retrospective cohort study used data from Taiwan's National Health Insurance (NHI) database, identifying older adults (≥ 65 years) discharged from the ED due to HF between 2017 and 2021. Frailty was assessed using a 38-item multimorbidity frailty index (mFI) derived from ICD-10-CM codes, stratifying patients into fit, mild-to-moderately frail, and severely frail. Outcomes included all-cause mortality, all-cause readmissions, and HF-related readmissions. Cox regression and Fine and Gray models estimated the impact of frailty on these outcomes. Among 42,989 older HF patients (mean age 80.7 ± 8.2 years, 55.5 % female), 57.8 % were frail (46.4 % mild-to-moderately frail and 11.4 % severely frail). Six-month mortality rates were 12.0 % in fit, 16.0 % in mild-to-moderately frail, and 19.4 % in severely frail patients. Readmission rates showed similar patterns. The severely frail group had higher risks of mortality (aHR 1.44, 95 % CI 1.33-1.55), all-cause readmissions (sHR 1.69, 95 % CI 1.62-1.76), and HF-related readmissions (sHR 1.59, 95 % CI 1.48-1.71).

Conclusion: Frailty is prevalent among older adults directly discharged from the ED due to HF and significantly elevates risks of mortality and readmissions. These findings highlight the need for frailty assessment in ED settings for older HF patients to optimize care planning, and improve outcomes.

Keywords: Acute heart failure; Direct discharge; Emergency department assessment; Frailty; Mortality; Readmission.

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Conflict of interest statement

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

Supplementary info

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. 2025 Jun 17:BJGPO.2024.0255.

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

[Declining number of home visits to older adults by GPs: 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 ageing population that has higher care demands, home visits by GPs have been declining.

Aim: To analyse the number of GP home visits from 2017-2023 in The Netherlands, and to investigate whether this trend differed according to age, sex, multimorbidity, and neighbourhood deprivation. In addition, to discover the most common reasons for home visits between 2017 and 2023.

Design & setting: An observational study that used data derived from Nivel Primary Care Database (Nivel-PCD), which contained routinely recorded data from approximately 500 Dutch GP practices.

Method: The number of home visits was calculated by age, sex, multimorbidity, and neighbourhood deprivation. Visual inspection was used to investigate the relation between the trend in number of home visits and age, sex, multimorbidity, and neighbourhood 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 with 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 owing to the increasing workload.

Keywords: electronic health records; general practitioners; home visits; house calls.

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Evid Based Nurs

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. 2025 Jun 19;28(3):119.

doi: 10.1136/ebnurs-2024-103952.

[Role of sociodemographic characteristics on the progression of multimorbidity over time: a longitudinal approach using the Clinical Practice Research Datalink of England](#)

[Martina Manna](#)¹, [Paolo Mazzola](#)^{2 3}

Affiliations Expand

- PMID: 38594077
- DOI: [10.1136/ebnurs-2024-103952](#)

No abstract available

Keywords: Mental Health; Primary Care Nursing; Public Health.

Conflict of interest statement

Competing interests: None declared.

Full text links

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

Arch Dis Child

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. 2025 Jun 20:archdischild-2024-328375.

doi: 10.1136/archdischild-2024-328375. Online ahead of print.

[Risk factors for recurrent attacks of wheeze in preschool children: a population-based cohort study in England](#)

[David Lo](#)^{1,2}, [Claire Lawson](#)³, [Jonathan Broomfield](#)⁴, [Clare Gillies](#)⁵, [Sharmin Shabnam](#)⁵, [Erol A Gaillard](#)^{4,2}, [Hilary Pinnock](#)⁶, [Jennifer Quint](#)⁷

Affiliations Expand

- PMID: 40541289
- DOI: [10.1136/archdischild-2024-328375](https://doi.org/10.1136/archdischild-2024-328375)

Abstract

Objective: To determine factors associated with recurrent attacks of acute wheeze in preschool children.

Design: Retrospective cohort study.

Setting: English primary electronic health data from the Clinical Practice Research Datalink linked with hospital data from Hospital Episode Statistics.

Participants: 42 820 children aged 5 years or under with at least one acute wheeze presentation between 1 January 2013 and 31 December 2014.

Exposures: Demographic and clinical variables including age, sex, ethnicity, deprivation quintile, clinical comorbidities and previous asthma medication prescriptions and acute attacks were included in multivariable analyses.

Main outcome measures: Further healthcare presentation with an acute wheeze/asthma attack within 12 months.

Results: Almost 40% (16 962/42 820) of children had a further attack within 12 months. The strongest predictors were hospitalisation with the index episode (RR 1.42; 95% CI 1.39 to 1.45) and an attack in the previous year (1.27; 1.22 to 1.32). Male sex (RR 1.06; 95% CI 1.03 to 1.08), South Asian ethnicity (1.08; 1.04 to 1.12), atopy (1.21; 1.18 to 1.24), prematurity (1.09; 1.04 to 1.14), increasing reliever prescriptions

(1.04; 1.03 to 1.04), number of previous attacks (1.03; 1.02 to 1.04) and previous hospitalisation with wheeze (1.09; 1.05 to 1.14) were also associated with further attacks. Older age at presentation (RR 0.92; 0.91 to 0.93) and number of prescriptions for inhaled corticosteroids (0.96; 0.95 to 0.97) in the previous year were associated with lower risk for further attacks.

Conclusions: Our findings can be used to aid clinical risk prediction for further attacks of wheeze in preschool children.

Keywords: Child Health; Epidemiology; Paediatrics; Respiratory Medicine.

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Conflict of interest statement

Competing interests: All authors have completed the ICMJE uniform disclosure form at www.icmje.org/disclosure-of-interest/ and declare the following: DL and CL receive support from National Institute for Health and Care Research (NIHR) advanced fellowships. DL has also received institutional research grants from the Midlands Asthma and Allergy Research Association (MAARA), NIHR and the Small Business Research Initiative (SBRI); and travel expense payments from the European Respiratory Society (ERS). CL has received honoraria from Boehringer Ingelheim (BI) and travel support from the British Association of Cardiac Nursing. HP holds institutional research grants from NIHR and the Medical Research Council (MRC) unrelated to this publication and has received personal fees from Teva Pharmaceuticals and Sandoz UK. JB receives support from NIHR. JQ has received institutional grants from the MRC, NIHR, Health Data Research, GlaxoSmithKline (GSK), BI, Astra Zeneca (AZ), Insmmed and Sanofi; and personal fees from GSK, Evidera, Chiesi, AZ and Insmmed; and consulting fees from GSK, BI, Sanofi, Chiesi and AZ. EAG has received institutional grants from Gilead, Chiesi, Propellar Health, Helicon Health, Adherium and AZ; travel expense payments from ERS; and personal fees from Circassia and Sanofi. SS and CG had no competing interests to declare.

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BMJ Open Respir Res

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. 2025 Jun 19;12(1):e003020.

doi: 10.1136/bmjresp-2024-003020.

[Asthma and extrapulmonary comorbidities in a middle-aged general population: results from the SCAPIS study](#)

[Juan Wang](#)^{1,2}, [Anders Blomberg](#)³, [Magnus Ekström](#)⁴, [Hans Lennart Persson](#)⁵, [Magnus Sköld](#)^{6,7}, [Kjell Torén](#)^{8,9}, [Xingwu Zhou](#)^{10,2}, [Andrei Malinowski](#)², [Christer Janson](#)¹⁰

Affiliations Expand

- PMID: 40541274
- PMCID: [PMC12182154](#)
- DOI: [10.1136/bmjresp-2024-003020](#)

Abstract

Introduction: Asthma may increase the risk of comorbidities and systemic inflammation, but population data are scarce. This study aimed to compare comorbidities and systemic inflammation between those with and without current asthma and to identify characteristics linked to comorbidities and biomarkers.

Methods: In a cross-sectional analysis of 28 828 people aged 50-64 in the Swedish CARDioPulmonary bioImage Study, assessments included postbronchodilator forced expiratory volume in 1 s (FEV₁), forced vital capacity (FVC), serum levels of C reactive protein (CRP) and haemoglobin A1c (HbA1c). Data on current physician-diagnosed asthma, respiratory symptoms and comorbidities were obtained via a questionnaire.

Results: The prevalence of current asthma was 6.3%. Current asthma was independently associated with a higher prevalence of hypertension (OR=1.30; 95% CI 1.16 to 1.46), hyperlipidaemia (OR=1.20; 95% CI 1.04 to 1.39), diabetes (OR=1.42; 95% CI 1.16 to 1.75), coeliac disease (OR=2.52; 95% CI 1.61 to 3.95) and rheumatic disease (OR=1.43; 95% CI 1.16 to 1.78). Asthma was also associated with higher levels of CRP (beta=0.25; 95% CI 0.06 to 0.44) and HbA1c (beta=0.47; 95% CI 0.18 to 0.77). In those with asthma, lower FVC % predicted was associated with a higher likelihood of hypertension (OR=1.10; 95% CI 1.01 to 1.19), diabetes (OR=1.47; 95% CI 1.26 to 1.71) and rheumatic disease (OR=1.22; 95% CI 1.05 to 1.42). Lower FEV₁ % predicted was associated with a higher likelihood of diabetes (OR=1.27; 95% CI 1.12 to 1.44). FVC % and FEV₁ % predicted were negatively associated with CRP and HbA1c.

Conclusions: Our findings suggest that in middle-aged people, asthma is independently associated with common comorbidities such as hypertension, diabetes and rheumatic disease, as well as elevated CRP and blood glucose. Our data suggest that some associations are connected with lung function impairment in those with asthma.

Keywords: Asthma; Asthma Epidemiology; Asthma Mechanisms; Clinical Epidemiology; Systemic disease and lungs.

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Conflict of interest statement

Competing interests: None declared.

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Am J Respir Crit Care Med

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. 2025 Jun 20.

doi: [10.1164/rccm.202412-2438OC](https://doi.org/10.1164/rccm.202412-2438OC). Online ahead of print.

[**Clinical Remission by a Comprehensive Severe Asthma Management Strategy Guided by Airway Inflammometry and Bioimaging**](#)

[Santi Nolasco](#)¹, [Melanie Kjarsgaard](#)², [Sylvia Lauks](#)³, [Owen Treleaven](#)³, [Terence Ho](#)⁴, [Chynna Huang](#)³, [Katherine Radford](#)⁵, [Taylor Swindall](#)³, [Carmen Venegas Garrido](#)⁶, [Anurag Bhalla](#)⁷, [Sarita Thawanaphong](#)⁸, [Yonni Friedlander](#)^{9,10}, [Lindsey Dymant](#)³, [Michael Surette](#)¹¹, [Michael Trus](#)⁶, [Roma Sehmi](#)⁴, [Ehsan Haider](#)^{10,12}, [Nader Khalidi](#)¹³, [Doron D Sommer](#)⁶, [Susan Wasserman](#)⁶, [Manali Mukherjee](#)⁴, [Sarah Svenningsen](#)⁸, [Gerard Cox](#)¹⁴, [Parameswaran Nair](#)¹⁵

Affiliations Expand

- PMID: [40540629](#)
- DOI: [10.1164/rccm.202412-2438OC](https://doi.org/10.1164/rccm.202412-2438OC)

Abstract

Rationale: Clinical remission is a multicomponent treatment goal in severe asthma. However, only about 30% of patients achieve clinical remission when treatment decisions are guided using blood eosinophil and FeNO levels. **Objectives:** To assess the effectiveness of a comprehensive, individualized treatment strategy in achieving clinical remission over 24 months in patients with severe asthma. **Methods:** Treatment strategies-including anti-inflammatory therapies, biologics, antibiotics, immunomodulators, and bronchial thermoplasty-were guided by clinical assessment, airway physiology, airway inflammometry, and bioimaging. Clinical remission was defined as no exacerbations for 24 months, no oral corticosteroid (OCS) use, and partly/well-controlled symptoms, with or without lung function criteria. **Measurements and Main Results:** One-hundred seventy-eight patients with severe asthma were evaluated. Of these, 88.2% were treated with biologics alone or in combination with other strategies; 20.2% were treated with antibiotics, hypertonic saline, and/or immunoglobulins; and 9% underwent bronchial thermoplasty after controlling the inflammatory component. After 24 months, 89.9% of patients were exacerbation-free, 83.1% were OCS-free, 78.1% had partly/well-controlled symptoms, and 84.8% had preserved lung function. Clinical remission was achieved in 66.3% of patients based on the three primary criteria and in 61.6% when including FEV₁% decline ≤5% from baseline. However, when the most stringent criteria were applied (ACQ-5 ≤0.75 and FEV₁ ≥80%), the clinical remission rate was 29.1%. Residual disease activity was driven primarily by airway infections and airway hyperresponsiveness rather than T2 inflammation. **Conclusions:** By using a comprehensive set of biomarkers and employing a management strategy tailored to individual pathobiology, a high proportion of patients with severe asthma can achieve clinical remission, depending on the definitions used. Nonetheless, recurrent airway infections, mucus, and airway hyperresponsiveness remain key unmet needs in severe asthma.

Keywords: imaging; inflammometry; remission; severe asthma; sputum.

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Am J Respir Crit Care Med

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. 2025 Jun 20.

doi: 10.1164/rccm.202504-0841VP. Online ahead of print.

[Is Your Placebo Really Needed?](#)

[Andrew Bush](#)¹, [Fernando Holguin](#)²

Affiliations Expand

- PMID: 40540617
- DOI: [10.1164/rccm.202504-0841VP](https://doi.org/10.1164/rccm.202504-0841VP)

No abstract available

Keywords: asthma; placebo; randomised controlled trial.

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J Sch Health

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. 2025 Jun 20.

doi: 10.1111/josh.70033. Online ahead of print.

[Screening Tools in School-Based Health Centers for Children With Asthma](#)

[Vanessa F Maier](#)^{1,2}, [Olivia Dhaliwal](#)^{3,4}, [Amanda Liu](#)^{4,5}, [Kim Foreman](#)⁶, [Matthew Linick](#)^{7,8}, [Katie Feldman](#)⁹

Affiliations Expand

- PMID: 40539258
- DOI: [10.1111/josh.70033](https://doi.org/10.1111/josh.70033)

Abstract

Background: There is a large body of research suggesting the role of school-based health centers (SBHCs) in improving outcomes for children with asthma, but there are no evidence-based guidelines for the care of children with asthma in SBHCs. We conducted a randomized trial to assess screening in children with asthma in an urban SBHC.

Methods: Participants were screened for asthma triggers. The intervention group received home assessments and medical legal partnership (MLP) referrals as indicated. The primary outcome of asthma severity was assessed using the asthma control test (ACT). All participants completed semi-structured interviews to evaluate their experience.

Results: All families randomized to intervention qualified for and completed home remediation. There were no statistically significant differences in asthma severity. There was 100% retention of participants, and all participants rated their experience as good or excellent.

Implications for school health policy, practice and equity: This study demonstrates a high prevalence of home-based asthma triggers for children with asthma who receive care in SBHCs. Although not large enough to demonstrate significance in primary outcomes, participants were successfully recruited from a diverse population and retained through completion of the study. Participants rated their experience as good or excellent, suggesting that the recruitment and retention of diverse participants for clinical trials in SBHCs can be successful.

Conclusions: Home-based asthma triggers for children with asthma who receive care in SBHCs are prevalent. Although complex collaborations are required, SBHCs are a viable site for clinical trials. More research is needed to understand the benefit of interventions in SBHCs to reduce asthma severity.

Keywords: asthma; health equity; implementation science; school-based health centers; translational research.

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. 2025 Jun 19.

doi: 10.1080/17476348.2025.2522757. Online ahead of print.

[The safety of asthma treatment and management strategies in pregnancy](#)

[Andrea E Davis](#)^{1,2}, [Michael E Wechsler](#)², [Jennifer A Namazy](#)³, [Michael Schatz](#)⁴

Affiliations Expand

- PMID: 40536883
- DOI: [10.1080/17476348.2025.2522757](https://doi.org/10.1080/17476348.2025.2522757)

Abstract

Introduction: Poor asthma control in pregnancy is associated with worse maternal and fetal outcomes. Despite this, many patients and providers opt not to continue treatment in pregnancy, largely due to fear of teratogenicity. The goal of this review is to inform providers about the safety of asthma medication in pregnancy as well as strategies for encouraging patients to adhere to these medications.

Areas covered: To prepare this narrative review article, we performed a database search using PubMed, Cochrane Library, Embase, Web of Science, and Google Scholar to obtain a broad range of clinical studies, systematic reviews, and meta-analyses related to asthma management during pregnancy. Search terms included asthma, pregnan*, treat*, therap*, manage*, and comorbid* with Boolean operators used to refine the search. Studies were limited to those published in the English language from 2000 to 2025.

Expert opinion: Most classes of medications used to treat asthma have reassuring safety data for use in pregnancy. Additional data are needed to assess the use of biologics in pregnancy, which have become a cornerstone of management for non-pregnant patients with severe asthma. Routine visits with providers and identifying treatable traits can also improve outcomes in these patients.

Keywords: Asthma; biologic; manage; maternal outcome; perinatal outcome; pregnancy; treat.

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Review

Expert Rev Respir Med

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. 2025 Jun 18.

doi: 10.1080/17476348.2025.2522743. Online ahead of print.

[Advances in exhaled breath condensate markers for severe asthma management: a systematic review](#)

[Claudia Gagliani¹](#), [Paul Brinkman²](#), [Marco Del Riccio³](#), [Alida Benfante¹](#), [Shahriyar Shahbazi Khamas²](#), [Anke-H Maitland-van der Zee²](#), [Stefania Principe²](#), [Nicola Scichilone¹](#)

Affiliations Expand

- PMID: 40533888
- DOI: [10.1080/17476348.2025.2522743](#)

Abstract

Background: Severe asthma is a chronic respiratory disease posing challenges for clinicians and patients, increasing health-care costs and patients' poor quality of life. Advances in precision medicine have introduced novel approaches to managing severe asthma, including breathomics, a promising field using exhaled breath analysis to identify disease biomarkers. Among these techniques, exhaled breath condensate (EBC) analysis has emerged as a potential noninvasive tool for monitoring airway inflammation and disease progression.

Methods: A systematic literature review was conducted to identify EBC biomarkers for monitoring severe asthma, searching across PubMed, Cochrane, Google Scholar, MEDLINE, ISRCTN, EMBASE and Web of Science.

Results: 23 studies were included in the review. Key markers identified were 8-isoprostane, hydrogen peroxide (H₂O₂), nitric oxide (NO), and eicosanoids. Among these, 8-isoprostane was the most widely studied biomarker in severe asthma, while H₂O₂ seems to be most closely linked to assessing asthma control.

Conclusions: To the best of our knowledge, this is the first systematic review focusing on EBC biomarkers in severe asthma. Breath analysis represents a promising noninvasive approach to evaluate airway inflammation, identify early signs of poorly controlled asthma and monitor treatment response. Further research is needed to validate these biomarkers for clinical application.

Protocol registration: uk/prospero with identifier CRD42023406669www.crd.york.ac.

Keywords: Asthma; Diagnosis; Exhaled breath; Monitoring; breath tests; severe asthma.

Supplementary info

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Review

Eur Respir Rev

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. 2025 Jun 18;34(176):240269.

doi: 10.1183/16000617.0269-2024. Print 2025 Apr.

[Safety of biologics for the treatment of asthma in children and adolescents: a systematic review](#)

[Elisa Wirthgen](#)^{1,2,3}, [Susann Quickert](#)^{1,3}, [Julia Weitzel](#)¹, [Birgit Salewski](#)¹, [Manfred Ballmann](#)⁴

Affiliations Expand

- PMID: 40533100
- PMCID: [PMC12175077](#)

- DOI: [10.1183/16000617.0269-2024](https://doi.org/10.1183/16000617.0269-2024)

Abstract

Context: Despite the clinical benefits, the administration of biologics in asthma is not without adverse effects. However, there is a lack of information on the safety profile, particularly in children.

Objective: To provide a systematic review of the range of reported adverse events (AEs) of biologic treatments approved for paediatric asthma (Xolair, Nucala, Dupixent, Fasenra and Tezspire).

Data sources: Databases (MEDLINE, CENTRAL, Scopus and Web of Science) and one registry (ClinicalTrials.gov).

Study selection: This review included randomised clinical trials, prospective clinical studies, real-world studies, exploratory studies, registry analyses, case series and case reports, which met predefined inclusion criteria.

Data extraction: Study characteristics and AEs were extracted into predefined forms and then summarised in terms of their frequency and study duration.

Results: Overall, 45 reports and 13 clinical trials met the inclusion criteria for data evaluation, of which eight studies were placebo-controlled. Overall, paediatric asthma patients' most frequently reported AEs were headache, injection site reactions, upper respiratory tract infections, pyrexia and urticaria. The systematic analysis revealed a similar safety profile of the biologics to that reported on the product labels.

Limitations: The small number of paediatric patients, missing placebo control groups, variant definitions of AEs and a lack of statistical evaluation limited the validation of specific AEs to individual biologics.

Conclusions: In this systematic review, no new safety concerns regarding the use of biologics in paediatric asthma were identified, even after an observation period of up to 7 years. In order to record rare side-effects and possible long-term consequences, further data from paediatric study cohorts are needed.

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Conflict of interest statement

Conflict of interest: All authors have nothing to disclose.

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

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ERJ Open Res

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. 2025 Jun 16;11(3):00783-2024.

doi: 10.1183/23120541.00783-2024. eCollection 2025 May.

[Biologics alter the relationship between exhaled nitric oxide fraction and sputum eosinophils in severe T2-high asthma patients](#)

[Mare Sabbe](#)¹, [Florence Schleich](#)¹, [Renaud Louis](#)¹

Affiliations Expand

- PMID: 40524926
- PMCID: [PMC12168171](#)
- DOI: [10.1183/23120541.00783-2024](#)

Abstract

Biologics alter the relationship between F_{ENO} and sputum eosinophils. Relying on F_{ENO} alone to judge the magnitude of airway eosinophilic inflammation may prove to be misleading in some patients receiving biologics. <https://bit.ly/49mPQC5>.

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Conflict of interest statement

Conflict of interest: M. Sabbe reports grants from Leon Fredericq and support for attending meetings from GSK. Conflict of interest: F. Schleich reports consulting fees from GSK, AstraZeneca, Chiesi and TEVA; payment or honoraria for lectures, presentations, manuscript writing or educational events from GSK, AstraZeneca and Chiesi; and support for attending meetings from AstraZeneca and Chiesi. Conflict of interest: R. Louis reports grants from GSK, AstraZeneca and Sanofi; and

support for attending meetings for lectures and advisory board fees from AstraZeneca, GSK, and Sanofi.

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

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Allergy

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. 2025 Jun 16.

doi: [10.1111/all.16616](https://doi.org/10.1111/all.16616). Online ahead of print.

[Role for Complement C5 in Eosinophilic Inflammation of Severe Asthma](#)

[Cong Dong](#)¹, [Shaohua Lu](#)², [Zhenan Deng](#)¹, [Xuliang Cai](#)¹, [Huahao Shen](#)³, [Guochao Shi](#)⁴, [Changxing Ou](#)¹, [Zuofu Peng](#)⁵, [Wei Jiang](#)⁶, [Xiuhua Fu](#)⁷, [Changzheng Wang](#)⁸, [Meiling Jin](#)⁹, [Zhongmin Qiu](#)¹⁰, [Xiaoyang Wei](#)¹¹, [Wei Gu](#)¹², [Kewu Huang](#)¹³, [Qiang Li](#)¹⁴, [Xiangyan Zhang](#)¹⁵, [Nanshan Zhong](#)¹, [Kian Fan Chung](#)¹⁶, [Qingling Zhang](#)¹; [C-BIOPRED Consortium](#)

Collaborators, Affiliations [Expand](#)

- PMID: [40524528](#)
- DOI: [10.1111/all.16616](https://doi.org/10.1111/all.16616)

Abstract

Background: We investigated the role of the complement system, particularly complement C5, in severe asthma defined from an analysis of sputum proteomics.

Although there has been evidence of complement activation in asthma, its role in severe asthma remains unclear.

Method: Sputum protein expression profiles were analyzed from healthy controls and severe asthma patients using data-dependent acquisition mass spectrometry. Weighted correlation network analysis (WGCNA) was used to define the unique modules that were highly correlated with clinical, physiologic, and inflammatory traits. Differential analysis was performed for the complement C5 pathway protein levels and eosinophilic protein expression as influenced by C5. Asthmatic mouse models were used to verify the effect of complement C5 administration and inhibition.

Results: The WGCNA "brown" module related to the complement system activation was positively correlated with eosinophilic inflammation. Specifically, C5 and downstream complement proteins were up-regulated in patients with high sputum eosinophil levels ($\geq 3\%$) compared to low sputum eosinophils ($< 3\%$). Patients with reduced C5 expression had less eosinophilic inflammation and better lung function. Using single-cell RNA sequencing and immunofluorescence staining led to identification of macrophages as the main source of C5. In vivo experiments confirmed that inhibiting C5 reduced inflammation in allergic mouse models, while direct stimulation with recombinant C5 in IL-5 transgenic mice increased eosinophilic inflammation.

Conclusion: We demonstrate a direct role for complement C5 in exacerbating eosinophilic inflammation in severe asthma.

Keywords: C5aR1; C5aR2; complement C5; complement C5 receptors; eosinophilic inflammation; severe asthma; weighted correlation network analysis.

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- [38 references](#)

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J Asthma

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. 2025 Jun 20:1-13.

doi: [10.1080/02770903.2025.2519103](https://doi.org/10.1080/02770903.2025.2519103). Online ahead of print.

[High- vs. low-intensity inspiratory muscle training in asthma: effects on respiratory muscles, exercise performance, dyspnea, and health-related quality of life](#)

[Cahidenur Kocak](#)¹, [Esra Pehlivan](#)¹, [Seyma Baslilar](#)²

Affiliations Expand

- PMID: 40524414
- DOI: [10.1080/02770903.2025.2519103](https://doi.org/10.1080/02770903.2025.2519103)

Abstract

Objective: To compare the effects of high- and low-intensity Inspiratory Muscle Training (IMT) combined with standard pulmonary rehabilitation on respiratory muscle function, exercise capacity, dyspnea, and quality of life in asthmatic patients.

Methods: Forty asthmatic patients were randomized into high-intensity IMT (H-IMT, $n = 20$) and low-intensity IMT (L-IMT, $n = 20$) groups. The H-IMT group trained at 80% of maximal inspiratory pressure and the L-IMT group at 30%, with 5% weekly load increases. Both groups followed an 8-week exercise program including breathing, strengthening, and walking exercises. Respiratory functions, pulmonary function test, respiratory muscle strength, maximum inspiratory and expiratory pressure measurement, peripheral muscle strength, 6-min walk test (6MWT), modified Medical Research Council (mMRC) dyspnea and Asthma Control Test (ACT), Asthma Quality of Life Questionnaire (AQLQ), Saint George Respiratory Quality of Life Questionnaire (SGRQ) and International Physical Activity Questionnaire (IPAQ) scores were assessed pre- and post-intervention.

Results: Baseline characteristics were similar. Both groups improved in most outcomes except spirometric values. The L-IMT group showed significant gains in IPAQ-SF walking ($p = .03$) and total scores ($p = .02$). 6MWT distance, mMRC, and ACT scores improved significantly more in the H-IMT group compared to the L-IMT group. There was no statistically significant difference between the groups ($p > 0.05$). Similarly, when the groups were compared, AQLQ-Environmental, AQLQ-Total, SGRQ-Impact, SGRQ-Total scores showed more improvement in the H-IMT group.

Conclusion: Both IMT intensities improved respiratory function, exercise capacity, and quality of life. High-intensity IMT was more effective for asthma control, while low-intensity IMT enhanced physical activity. Tailoring IMT intensity may optimize outcomes for asthmatic patients.

Registration number: [NCT06516848](#).

Keywords: Asthma; dyspnea; exercise capacity; health-related quality of life; inspiratory muscle training; pulmonary function; rehabilitation.

Full text links



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Review

J Asthma

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. 2025 Jun 19:1-16.

doi: 10.1080/02770903.2025.2519106. Online ahead of print.

[The risk factors for asthma in adolescents: a systematic review and meta-analysis](#)

[Hoileong Lee](#)¹, [Linyan Tang](#)², [Xin Wen](#)³

Affiliations Expand

- PMID: 40499043
- DOI: [10.1080/02770903.2025.2519106](https://doi.org/10.1080/02770903.2025.2519106)

Abstract

Objective: To identify risk factors for asthma in adolescents and provide a reference for disease management.

Methods: PubMed, Embase, Web of science and Cochrane library were searched from inception to November 1st, 2024. The quality was evaluated by using the Agency for Healthcare Research and Quality and the New Ottawa Scal. The range of scores for inclusion in the study was 7-9. Heterogeneous results were pooled using a random-effects model and reported as odds ratio (OR).

Results: Fifteen studies comprising 73,314 participants were included. The results of forest map showed that a total of 12 risk factors were associated with asthma in

adolescents. Previous hypersensitivity reaction (OR 2.87 [95% CI 2.50-3.31]; $p < 0.001$), history of family hypersensitivity reaction (OR 2.35 [95% CI 1.93-2.86]; $p < 0.001$), history of family asthma (OR 2.48 [95% CI 1.97-3.12]; $p < 0.001$), active smoking (OR 1.47 [95% CI 1.28, 1.69]; $p < 0.001$), exposure to secondhand smoke (OR 1.27 [95% CI 1.20-1.34]; $p < 0.001$), domestic animals (OR 1.21 [95% CI 1.13-1.29]; $p < 0.001$), outdoor pollution (OR 1.27 [95% CI 1.15, 1.41]; $p < 0.001$), and biofuel (OR 1.10 [95% CI 1.02-1.19]; $p < 0.001$), and obese/overweight (OR 1.26 [95% CI 1.13-1.40]; $p < 0.001$), private school (OR 1.82 [95% CI 1.52-2.18]; $p < 0.001$), and female (OR 1.21 [95% CI 1.11-1.32]; $p < 0.001$) were found to be correlated.

Conclusions: This study may provide a reference to inform the development of preventive strategies and management of adolescent asthma.

Keywords: Asthma; adolescents; management; risk.

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Review

Med J Aust

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. 2025 Jun 16;222(11):579-586.

doi: 10.5694/mja2.52671. Epub 2025 May 25.

[Respiratory syncytial virus preventives for children in Australia: current landscape and future directions](#)

[Sam T Barnett](#)¹, [Jane Tuckerman](#)^{2,3}, [Ian G Barr](#)^{4,5}, [Nigel W Crawford](#)^{2,3}, [Danielle F Wurzel](#)^{2,3}

Affiliations [Expand](#)

- PMID: 40413643
- PMCID: [PMC12167608](#)
- DOI: [10.5694/mja2.52671](#)

Abstract

Respiratory syncytial virus (RSV) is a major cause of acute lower respiratory tract infections, and a leading cause of hospitalisation in children under 6 months of age. Previously, palivizumab, a costly, short-acting monoclonal antibody, was the primary preventive option. The recent introductions of nirsevimab (Beyfortus), a long-acting monoclonal antibody, and Abrysvo, a maternal RSV vaccine, have brought about significant advances in RSV prevention for children. Western Australia, Queensland and New South Wales launched state-managed nirsevimab programs targeting infants and high risk groups for the 2024 RSV season. International data support nirsevimab's effectiveness in reducing RSV-related hospitalisations and severity of disease in real-world settings. In 2025, Australia's national RSV prevention program includes free maternal vaccination with Abrysvo and targeted infant protection with nirsevimab for high risk or newborns whose mothers did not receive Abrysvo at least 2 weeks before delivery, funded by individual jurisdictions. Real-world efficacy data derived from Australian states and territories and the national prevention program will be pivotal in evaluating and refining the integration of maternal immunisation with Abrysvo and infant passive immunisation with nirsevimab. Key logistical considerations include ensuring timely access and equitable distribution, particularly for First Nations populations who face increased risk from RSV infection. Coordinated efforts are essential to overcome health care disparities and deliver effective prevention strategies to these prioritised groups.

Keywords: Asthma; Childhood diseases; Fetomaternal medicine; Infancy; Neonatology; Pediatric emergency medicine; Respiratory tract infections; Vaccine preventable disease; Virus diseases.

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Conflict of interest statement

Jane Tuckerman and Danielle Wurzel are named on an investigator-led project grant sponsored by GlaxoSmithKline. Danielle Wurzel has received consultancy fees from Merck Sharp and Dohme and Praxhub, which have been directed to a research fund. Nigel Crawford is the Chair of the Australian Therapeutic Advisory Group on Immunisation (ATAGI), where he provides evidence-based health advice to government on vaccines and immunisation science, to guide public health policy, procedures and clinical use of the vaccines. All other authors have no conflicts of interest to declare.

- [60 references](#)

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Editorial

Thorax

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. 2025 Jun 16;80(7):410-411.

doi: [10.1136/thorax-2025-223228](https://doi.org/10.1136/thorax-2025-223228).

[Structure-function-treatment relationships of aerosol deposition in patients with severe asthma](#)

[Omar Usmani](#)¹, [Sylvia Verbanck](#)²

Affiliations Expand

- PMID: 40404287
- DOI: [10.1136/thorax-2025-223228](https://doi.org/10.1136/thorax-2025-223228)

No abstract available

Keywords: Asthma; Eosinophil Biology; Glucocorticoids; Imaging/CT MRI etc; Inhaler devices.

Conflict of interest statement

Competing interests: None declared.

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Publication typesExpand

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Eur Respir J

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. 2025 Jun 19;65(6):2500254.

doi: 10.1183/13993003.00254-2025. Print 2025 Jun.

[ChatGPT and other large language models for parents' questions about childhood asthma: a comparative study](#)

[Angéline Girault](#)¹, [Anaïs Le](#)^{1,2}, [Apolline Gonsard](#)^{1,2}, [Rola Abou Taam](#)¹, [Eytan Sarfati](#)¹, [Guillaume Lezmi](#)^{1,2,3}, [David Drummond](#)^{4,2,5,3}

Affiliations Expand

- PMID: 40374522
- DOI: [10.1183/13993003.00254-2025](#)

No abstract available

Conflict of interest statement

Conflicts of interest: D. Drummond is the secretary of the group 1.04 mHealth/eHealth at the European Respiratory Society and a core member of the ERS CRC CONNECT (Moving multiple digital innovations towards connected respiratory care). The other authors have no conflict of interest to disclose.

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Thorax

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. 2025 Jun 16;80(7):416-424.

doi: 10.1136/thorax-2024-222910.

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

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

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

No abstract available

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

Conflict of interest statement

Competing interests: None declared.

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Multicenter Study

Thorax

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. 2025 Jun 16;80(7):466-477.

doi: 10.1136/thorax-2024-222699.

[Incidence and prevalence of asthma, chronic obstructive pulmonary disease and interstitial lung disease between 2004 and 2023: harmonised analyses of longitudinal cohorts across England, Wales, South-East Scotland and Northern Ireland](#)

[Hannah Whittaker¹](#), [Adriana Kramer Fiala Machado^{#2}](#), [Sara Hatam^{#3}](#), [Sarah Cook^{#4}](#), [Sean Scully^{#5}](#), [Hywel Turner T Evans^{#6}](#), [Thomas Bolton^{7,8}](#), [Constantinos Kallis⁹](#), [John Busby¹⁰](#), [Liam G Heaney¹¹](#), [Aziz Sheikh¹²](#), [Jennifer K Quint¹³](#); [CVD-COVID-UK/COVID-IMPACT Consortium](#)

Collaborators, Affiliations Expand

- PMID: 40199588
- DOI: [10.1136/thorax-2024-222699](#)

Free article

Abstract

Background: We describe the epidemiology of asthma, chronic obstructive pulmonary disease (COPD) and interstitial lung disease (ILD) from 2004 to 2023 in England, Wales, Scotland and Northern Ireland (NI) using a harmonised approach.

Methods: Data from the National Health Service England (NHSE), Clinical Practice Research Datalink Aurum in England, Secure Anonymised Information Linkage Databank in Wales, DataLoch in South-East Scotland and the Honest Broker Service in NI were used. A harmonised approach to COPD, asthma and ILD case definitions, study designs and study populations across the four nations was performed. Age-sex-standardised incidence rates and point prevalence were calculated between 2004 and 2023 depending on data availability. Logistic and negative binomial regression compared incidence and prevalence rates between the start and end of each study period. Linear extrapolation projected incidence rates between 2020 and 2023 to illustrate how observed and projected rates differed.

Results: Incidence rates were lower in 2019 versus 2005 for asthma (England: incidence rate ratio 0.89, 95% CI 0.88 to 0.90; Wales: 0.66, 0.65 to 0.68; Scotland: 0.67, 0.64 to 0.71; NI: 0.84, 0.81 to 0.86), COPD (England: 0.83, 0.82 to 0.85; Wales: 0.67, 0.65 to 0.69) and higher for ILD (England: 3.27, 3.05 to 3.50; Wales: 1.39, 1.27 to 1.53; Scotland: 1.63, 1.36 to 1.95; NI: 3.03, 2.47 to 3.72). In NHSE, the incidence of

asthma was similar in June 2023 versus November 2019, but lower for COPD and higher for ILD. Prevalence of asthma in 2019 in England, Wales, Scotland and NI was 9.7%, 15.9%, 13.2% and 7.0%, respectively, for COPD 4.5%, 5.1%, 4.4% and 3.0%, and for ILD 0.4%, 0.5%, 0.6% and 0.3%. Projected incidence rates were 2.8, 3.4 and 1.8 times lower for asthma, COPD and ILD compared with observed rates at the height of the pandemic.

Interpretation: Asthma, COPD and ILD affect over 10 million people across the four nations, and a substantial number of diagnoses were missed during the pandemic.

Keywords: Asthma Epidemiology; COPD epidemiology; Interstitial Fibrosis.

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Conflict of interest statement

Competing interests: HW reports a grants from NIHR BRC for work conducted in the NHSE SDE. SH reports employment from DataLoch for the submitted work. SS reports grants from Industrial Strategy Challenge Fund, MRC and HDR UK for the submitted work. AS reported grants from HDR UK and ISCF for the submitted work and from asthma and lung UK outside the submitted work. JKQ reports grants from Industrial Strategy Challenge Fund, MRC and HDR UK for the submitted work and from GSK, Evidera, Chiesi and AZ outside the submitted work. SC, HTTE, TB, AKFM, LGH, JB and CK have no conflicts of interest.

Supplementary info

Publication types, MeSH termsExpand

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

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Review

Clin Rev Allergy Immunol

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. 2025 Jun 18;68(1):59.

doi: 10.1007/s12016-025-09073-y.

[Current Understanding of Epithelial-Derived Alarmins in Chronic Rhinosinusitis with Nasal Polyps](#)

[Fuying Cheng](#) ^{#123}, [Yizhang Wang](#) ^{#12}, [Yingqi Gao](#) ¹², [Chen Zhang](#) ¹², [Qianqian Zhang](#) ¹², [Jiani Chen](#) ¹², [Yumin Zhou](#) ¹², [Le Shi](#) ¹², [Li Hu](#) ¹², [Huan Wang](#) ⁴⁵, [Yaquang Zhang](#) ⁶⁷, [Xicai Sun](#) ⁸⁹

Affiliations Expand

- PMID: 40533675
- DOI: [10.1007/s12016-025-09073-y](https://doi.org/10.1007/s12016-025-09073-y)

Abstract

Chronic rhinosinusitis with nasal polyps (CRSwNP) is a multifactorial inflammatory condition characterized by persistent sinus inflammation and tissue remodeling. Epithelial-derived alarmins, including thymic stromal lymphopoietin (TSLP), interleukin-33 (IL-33), and interleukin-25 (IL-25), are critical mediators that initiate and amplify immune responses in CRSwNP. These alarmins are secreted by stressed or damaged nasal epithelial cells in response to environmental insults, such as allergens, microbial infections, pollutants, and proteases. Once released, they orchestrate immune cell activation and amplify inflammatory pathways. Targeting epithelial-derived alarmins has emerged as a promising therapeutic strategy for CRSwNP, with several biologics, including TSLP and IL-33 inhibitors, showing encouraging clinical outcomes. This review focuses on the role of epithelial-derived alarmins in CRSwNP, examining their expression patterns, regulatory mechanisms, and contributions to inflammation, evaluating the current progress in alarmin-targeted therapies, and exploring future research directions to optimize their clinical application.

Keywords: Chronic rhinosinusitis with nasal polyps; Epithelial alarmins; IL-25; IL-33; TSLP; Type 2 inflammation.

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Conflict of interest statement

Declarations. Ethical Approval: This article is a review of previously published studies. No new studies involving human participants or animals were conducted by the authors. **Competing Interests:** The authors declare no competing interests.

- [134 references](#)

Supplementary info

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Review

Eur Arch Otorhinolaryngol

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. 2025 Jun 18.

doi: 10.1007/s00405-025-09526-2. Online ahead of print.

[Digital health tools in the management of allergic rhinitis: a systematic review](#)

[Abdullah D Alotaibi](#)¹, [Abdulaziz S AlQahtani](#)¹, [Mohammed Alateeg](#)¹, [Mohd Saleem](#)², [Mohd Shahid Khan](#)³

Affiliations Expand

- PMID: 40533611
- DOI: [10.1007/s00405-025-09526-2](#)

Abstract

Background: Allergic rhinitis (AR) is an IgE-related condition that causes problems for patients and adds stress to healthcare systems everywhere. Though there are many effective drugs available, it is still difficult to keep track of symptoms, get people to stick with their medications and provide customized care.

Objective: We aim to assess whether digital health interventions-specifically those that make use of AI-improve outcomes for managing AR.

Methods: We searched for studies using PRISMA guidelines, looking in PubMed, MEDLINE, Web of Science and Scopus from January 2010 to January 2025. We included studies that measured digital approaches (mobile apps, telemedicine tools, wearable devices, electronic diaries and AI in medicine) and reported results for symptom control, following treatment plans, patient satisfaction or accuracy of tests.

Results: In all, 120 studies were included in the review, including 80 randomized controlled trials, 30 observational studies and 10 qualitative analyses. These systems showed significant improvement in managing symptoms (as much as 82%) and taking medicines as recommended (as many as 90%) when used by patients. The accuracy of diagnostic tests increased when additional devices such as FeNO

and nasal resistance were worn. Using telemedicine lowered the number of visits required and made patients happier. AIs helped provide real-time, custom suggestions, but today's systems mostly depend on what people say and their environment.

Conclusion: All in all, digital tools help manage AR in many reliable ways. They should be paired with molecular tools and made practical for doctors everywhere for easy acceptance. It is recommended that future studies work on confirming biomarkers, making them available and ensuring fair application.

Keywords: Allergic rhinitis; Artificial intelligence; Digital health; Mobile applications; Precision medicine; Wearable sensors.

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Conflict of interest statement

Declarations. Ethical approval: NA. **Competing interests:** The authors declare no competing interests.

- [31 references](#)

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J Craniofac Surg

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. 2025 Jun 17.

doi: 10.1097/SCS.0000000000011555. Online ahead of print.

[Multicenter Investigation of Current Allergic Rhinitis Coexistence in Asthma Patients](#)

[İmran Özdemir¹](#), [Nuray Bayar Muluk²](#), [Mustafa Yazir³](#), [Tarik Yağci⁴](#), [Duygu Zorlu⁵](#), [Burcu Turan⁶](#), [Cengiz Bal⁷](#), [Cemal Cingji^{8,9}](#), [Arzu Yorgancıoğlu¹⁰](#)

Affiliations Expand

- PMID: 40525962
- DOI: [10.1097/SCS.00000000000011555](https://doi.org/10.1097/SCS.00000000000011555)

Abstract

Objectives: The authors investigated whether any of the participants diagnosed with asthma also suffered from allergic rhinitis (AR); the authors also evaluated the coexistence rate.

Methods: The study enrolled 1140 asthma patients (760 males, 380 females) from centers in different regions of Turkey. All subjects showed asthma signs, including shortness of breath, wheezing, coughing, and chest tightness. Asthma severity was evaluated according to the GINA guidelines. The patients were also assessed for sinonasal symptoms and allergic rhinitis using the survey.

Results: AR positivity is detected in 846 patients (74.2%). In the age group of 20 to 29, 81.4% have AR, and in the age group of 30 to 39, 66.4% have RA. In asthma individuals, the AR positivity rate is higher in those with nasal discharge, sneezing, itching, and nasal obstruction. In asthma individuals, the total nasal symptom scores were higher in patients with a positive AR diagnosis (15.42 ± 3.03) compared with those with a negative diagnosis (14.83 ± 2.53). Postnasal drip, mucopurulent discharge, nasal polyps, and hyposmia were also positive in AR-positive patients. In AR-positive patients, mild and moderate shortness of breath, moderate and severe wheezing, moderate and severe cough, no chest thickness, and moderate chest tightness were detected.

Conclusions: AR positivity was detected in 846 patients with asthma (74.2%). Dysfunction of the upper and lower airways frequently coexists. Early identification and optimal management of AR can improve asthma symptoms. Patients with asthma should be evaluated for allergic rhinitis, and treatments should be planned for both diseases.

Keywords: Allergic rhinitis; GINA guidelines; asthma; coexistence; lower airways; upper airways.

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Conflict of interest statement

The authors report no conflicts of interest.

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. 2025 Jun 16:e23622.

doi: 10.1002/alr.23622. Online ahead of print.

[Do Skin Prick Tests Predict Nasal Provocation Test Outcomes in Allergic Rhinitis Patients?](#)

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Affiliations Expand

- PMID: 40518939
- DOI: [10.1002/alr.23622](#)

Abstract

Background: In diagnosing allergic rhinitis (AR), conventional skin prick tests (SPTs) often fail to reflect allergen-induced nasal symptoms. Conversely, nasal provocation tests (NPTs) provide more definitive assessments but are less accessible. Therefore, we aimed to evaluate the correlation between SPT and NPT outcomes to assess SPT's predictive reliability for NPT results.

Methods: A retrospective review was performed on 106 patients who underwent simultaneous SPT and NPT for suspected perennial AR. The SPT was assessed by measuring the mean wheal diameter of Dermatophagoides pteronyssinus (Dp). The NPT was performed by administering 100 µL of a 1000 AU/mL Dp solution into both nostrils, with responses assessed by changes in the five AR-related symptoms (total nasal symptom score, TNSS) at 15 min. Correlation and linear regression analyses were conducted to evaluate the relationship between SPT and NPT outcomes.

Results: TNSS changes at 15 min following intranasal Dp challenge showed a significant, moderately positive correlation with SPT Dp wheal diameter for all 106 subjects ($\rho = 0.640$, $p < 0.001$). In patients positive for both SPT and NPT ($n = 24$, $\rho = 0.510$, $p = 0.011$) and those with monosensitization ($n = 30$, $\rho = 0.644$, $p < 0.001$), a stronger and significant correlation was observed compared to the polysensitized

group (n = 35, $\rho = 0.372$, $p = 0.028$), while no significant correlation was noted in patients negative for either test. Linear regression confirmed a significant linear relationship ($R^2 = 0.423$, $Y = 2.65X - 0.59$, $p < 0.001$) between SPT wheal size and 15-min TNSS changes in NPT among all the subjects.

Conclusion: Significant correlations and linear associations between SPT and NPT outcomes support SPT's predictive capability for NPT responses.

Keywords: Dermatophagoides pteronyssinus; Dp; PAR; allergen; allergic rhinitis; house dust mite; nasal provocation test; perennial allergic rhinitis; skin prick test.

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. 2025 Jun 16;18(6):e263697.

doi: 10.1136/bcr-2024-263697.

Perplexing pneumonia: Pasteurella lung infection

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Affiliations Expand

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- DOI: [10.1136/bcr-2024-263697](https://doi.org/10.1136/bcr-2024-263697)

Abstract

Pasteurella multocida, commonly found in the oropharyngeal flora of cats and dogs, typically causes soft tissue infections following animal bites or scratches. Respiratory infections due to *Pasteurella* are rare and usually occur in individuals with predisposing factors, such as chronic lung disease or immunosuppression. We present an unusual case of an elderly male who developed a *Pasteurella* lung infection after his cat licked his dentures. The patient, with no significant history of lung disease or immunosuppression, presented with fever, cough and dyspnoea. The diagnosis was confirmed via bronchoalveolar lavage culture, which isolated *P. multocida*. The patient was successfully treated with intravenous ceftriaxone followed by oral amoxicillin-clavulanate. This case highlights the need to consider such pathogens even in the absence of animal bites or scratches and the importance of thorough history-taking to identify indirect sources of infection. Proper denture hygiene in pet owners may reduce the risk of similar infections.

Keywords: Bronchitis; Pneumonia (respiratory medicine).

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Conflict of interest statement

Competing interests: None declared.

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Collins C, Flanagan B, Henning JS. *Cutis*. 2012 Jun;89(6):269-72. PMID: 22838089

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BMJ Open Respir Res

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. 2025 Jun 20;12(1):e002373.

doi: 10.1136/bmjresp-2024-002373.

[Chronic obstructive pulmonary disease is a risk factor for non-tuberculous mycobacterial pulmonary disease: a population-based matched cohort study](#)

[Jong Geol Jang](#)¹, [Hyun Lee](#)², [Min Gu Kang](#)^{3,4}, [Youlim Kim](#)⁵, [Kwang Ha Yoo](#)⁵, [Kyung Hoon Min](#)⁶, [June Hong Ahn](#)¹, [Kyung Soo Hong](#)¹, [Jong Seung Kim](#)^{#3,7}, [Ji-Yong Moon](#)^{#8}

Affiliations Expand

- PMID: 40541276
- PMCID: [PMC12182194](#)
- DOI: [10.1136/bmjresp-2024-002373](#)

Abstract

Background: Longitudinal studies comprehensively evaluating the direction of the relationship between chronic obstructive pulmonary disease (COPD) and non-tuberculous mycobacterial pulmonary disease (NTM-PD) are scarce. Therefore, this study aimed to evaluate whether COPD influences the development of NTM-PD even after considering various confounders by using a nationwide longitudinal cohort study.

Methods: Data from the National Health Insurance Service National Sample Cohort between 2002 and 2019 were analysed. Participants ≥ 20 years of age with COPD and no previous NTM diagnosis were included in the study. The incidence of NTM-PD was compared between participants with COPD (n=8939) and 1:4 fully matched control participants (n=32 355). Participants were followed until the date of NTM-PD incidence, death, or December 2019.

Results: During a median follow-up of 9.0 years (IQR, 5.0-12.9 years), participants with COPD (55.5 per 100 000 person-years) had a higher incidence of NTM-PD than matched control cohorts (25.4 per 100 000 person-years), with a HR of 2.16 (95% CI, 1.45 to 3.23). Age, sex, smoking history, asthma, bronchiectasis and corticosteroid use did not affect the association between COPD and the risk of incident NTM-PD (*P* for interaction >0.05 for all). Among patients with COPD, being underweight and having bronchiectasis were significantly associated with NTM-PD development.

Conclusions: Individuals with COPD had approximately a twofold increased risk of developing NTM-PD compared with matched controls. Being underweight and having bronchiectasis were identified as risk factors for developing NTM-PD.

Keywords: Atypical Mycobacterial Infection; COPD epidemiology; Pulmonary Disease, Chronic Obstructive.

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Conflict of interest statement

Competing interests: None declared.

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. 2025 Jun 19.

doi: 10.1007/s00330-025-11752-5. Online ahead of print.

[Quantitative spectral computed tomography detects different patterns of airway wall thickening and contrast enhancement in infective lung disease: a feasibility study](#)

[Philip Konietzke](#)^{1 2 3}, [Johanna Thomä](#)^{4 5}, [Oliver Weinheimer](#)^{4 5 6}, [Thuy D Do](#)⁴, [Willi L Wagner](#)^{4 5 6}, [Arndt L Bodenberger](#)^{4 5}, [Wolfram Stiller](#)^{4 5}, [Tim F Weber](#)⁴, [Claus P Heußel](#)^{4 5 6}, [Hans-Ulrich Kauczor](#)^{4 5 6}, [Mark O Wielpütz](#)^{4 5 6}

Affiliations Expand

- PMID: 40536704
- DOI: [10.1007/s00330-025-11752-5](https://doi.org/10.1007/s00330-025-11752-5)

Abstract

Objectives: We aimed to show that spectral computed tomography (CT) can identify different patterns of airway wall thickening and contrast enhancement in lung-healthy controls, coronavirus disease 2019 (COVID-19), and non-COVID-19 pneumonia patients, reflecting airway inflammation in both pneumonia subtypes and airway neovascularization in COVID-19.

Materials and methods: 331 subjects (age 58.9 ± 17.2 years) with 218 arterial and 113 venous phase spectral CT acquisitions were retrospectively recruited: 119 lung-healthy controls, 45 with COVID-19 and 167 with non-COVID-19 pneumonia. Scientific software was used for segmenting the airway tree. Wall thickness (WT_{5-10}) and the difference in median maximum airway wall attenuation (slope of the spectral attenuation curve) between 40 keV and 100 keV display energy were calculated and aggregated for subsegmental airway generations 5-10 (λHU_{5-10}). Descriptive statistics, correlations, t-tests, and ANOVA analyses were performed.

Results: Arterial phase WT_{5-10} was similarly increased in COVID-19 (1.70 ± 0.44 mm) and non-COVID-19 (1.64 ± 0.53 mm) pneumonia compared to controls (1.18 ± 0.34 mm, $p < 0.001$). Arterial phase λHU_{5-10} was significantly higher in patients with COVID-19 pneumonia (3.09 ± 2.27 HU/keV) than in non-COVID-19 pneumonia (2.18 ± 1.54 HU/keV, $p < 0.01$) and lung-healthy controls (2.06 ± 1.11 HU/keV, $p < 0.01$).

Conclusion: Spectral CT shows significant differences in segmental wall thickness and airway contrast enhancement between COVID-19 and non-COVID-19 pneumonia and lung-healthy controls. Airway contrast enhancement may be a feasible measure to detect airway inflammation in pneumonia and neovascularization in COVID-19 pneumonia.

Key points: Question Is spectral CT airway contrast enhancement a feasible quantitative method to detect airway inflammation or neovascularisation? Findings Spectral CT shows significant differences in segmental wall thickness and airway contrast enhancement between COVID-19 and non-COVID-19 pneumonia, and lung-healthy controls. Clinical relevance Spectral CT can be used to assess inflammatory airway diseases such as cystic fibrosis, COPD, asthma and bronchiectasis.

Keywords: COVID-19; Computed tomography; Inflammation; Lung; Pneumonia.

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Conflict of interest statement

Compliance with ethical standards. Guarantor: The scientific guarantor of this publication is Philip Konietzke. **Conflict of interest:** The authors of this manuscript declare relationships with the following companies: Institutional funding and material support by Philips; Provision of IQon Spectral CT and Spectral CT 7500 (all authors) and research funding by Philips (T.F. Weber, T.D. Do, H.U. Kauczor, W. Stiller). Airway analysis technology is licensed to Imbio, L.L.C. The funders and industries had no role in study design, data collection and analysis, decision to publish or preparation of the manuscript. **Statistics and biometry:** No complex statistical methods were necessary for this paper. **Informed consent:** This retrospective single-center study was conducted in accordance with the Declaration of Helsinki. Ethical approval was granted by the local ethics committee of the Medical Faculty of Heidelberg University Hospital (S-924/2019) and need for written informed consent was waived. **Ethical approval:** Institutional Review Board approval was obtained. **Study subjects or cohorts overlap:** We confirm that our manuscript contains original data, while 119 lung-healthy controls were included from a previously published patient collective published in European Radiology (Bodenberger et al [10]). **Methodology:** Retrospective Observational Single-center study

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. 2025 Jun 18;34(176):250002.

doi: 10.1183/16000617.0002-2025. Print 2025 Apr.

[Multiple breath washout in primary ciliary dyskinesia: a systematic review of the literature](#)

[Andreas M Matthaïou¹](#), [Alexandra Demetropoulou¹](#), [Panayiotis Kouis¹](#), [Konstantinos Douros²](#), [Panayiotis Yiallourous¹](#), [Pinelopi Anagnostopoulou³](#)

Affiliations Expand

- PMID: 40533103
- PMCID: [PMC12175072](#)
- DOI: [10.1183/16000617.0002-2025](#)

Abstract

Primary ciliary dyskinesia (PCD) is a heterogeneous multiorgan genetic disease characterised by motile cilia impairment that primarily affects the respiratory system. Multiple breath washout (MBW) is an emerging pulmonary function test. Its main outcome, the lung clearance index (LCI), is a valuable sensitive measure in obstructive lung disease, especially in cystic fibrosis. The potential value of MBW as a monitoring tool for patients with PCD is not well known. This systematic review summarises all articles published by the end of 2022 reporting MBW data in patients with PCD and compares MBW parameters to spirometry and chest imaging findings. We searched PubMed, Embase and Scopus for original studies with MBW measurements in patients with PCD. 14 studies were included in the analysis with a total number of 398 patients. The mean/median LCI ranged from 7.98 to 11.8, whereas mean/median forced expiratory volume in 1 s (FEV₁) z-score ranged from -1.98 to -0.5. The LCI was abnormally increased in all studies, whereas only two studies had abnormally decreased FEV₁. The LCI also had a stronger correlation with chest computed tomography and magnetic resonance imaging results, compared to FEV₁. In conclusion, this review shows that the LCI is abnormally high in PCD from the preschool age up to adulthood. MBW appears to be more sensitive than spirometry in identifying pulmonary function impairment at the early stages of disease. These findings support the use of the LCI in daily clinical practice and provide evidence of using it as an outcome measure in upcoming clinical trials for patients with PCD.

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Conflict of interest statement

Conflict of interest: The authors report no conflict of interest.

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. 2025 Jun 18;34(176):240257.

doi: 10.1183/16000617.0257-2024. Print 2025 Apr.

[Dipeptidyl peptidase-1 inhibitors in bronchiectasis](#)

[Emma Johnson](#)¹, [Amy Gilmour](#)¹, [James D Chalmers](#)²

Affiliations Expand

- PMID: 40533102
- PMCID: [PMC12175074](#)
- DOI: [10.1183/16000617.0257-2024](#)

Abstract

Dipeptidyl peptidase (DPP)-1 (also known as cathepsin C) inhibitors are the first disease-specific therapy shown to be effective in bronchiectasis. The mechanism of action of DPP-1 inhibitors is suppression of activity of neutrophil serine proteases (NSPs) by preventing them from being activated during neutrophil maturation in the bone marrow. NSPs exert multiple directly damaging effects and contribute to ongoing dysregulated airway inflammation. High airway levels of NSPs are linked to bronchiectasis disease severity. Several phase 2 and one phase 3 trial have now confirmed that DPP-1 inhibitors reduce activity of the NSPs in the airways and have clinical benefits in bronchiectasis including reducing exacerbations and improving

other clinical end-points such as quality of life and slowing lung function decline. DPP-1 inhibition may also be a promising treatment avenue in other diseases where neutrophilic inflammation is implicated. Future directions include establishing direct and downstream effects of DPP-1 inhibitors in humans and seeking biomarkers to guide clinical application.

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Conflict of interest statement

Conflict of interest: E. Johnson and A. Gilmour have nothing to disclose. J.D. Chalmers reports grants from AstraZeneca, GlaxoSmithKline, Grifols, Gilead Sciences, Boehringer Ingelheim, Trudell, Insmmed and Genentech, and consultancy fees from AstraZeneca, GlaxoSmithKline, Grifols, Boehringer Ingelheim, Trudell, Insmmed, Genentech, Pfizer, Antabio and Zambon. J.D. Chalmers is an Associate Editor of this journal.

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. 2025 Jun 18;20(6):e0324254.

doi: 10.1371/journal.pone.0324254. eCollection 2025.

[Cost-effectiveness analysis of two inhaled antibiotics for stable Bronchiectasis with Pseudomonas aeruginosa infections in China](#)

[Wanxin Chen](#)¹, [Xuerong Chen](#)², [Liting Lai](#)¹, [Bin Hong](#)³, [Canghong Zhi](#)⁴, [Honglin Li](#)⁴, [Sha Li](#)¹, [Jie Jiang](#)¹

Affiliations Expand

- PMID: 40531911
- PMCID: [PMC12176172](#)
- DOI: [10.1371/journal.pone.0324254](#)

Abstract

Objective: To evaluate the cost-effectiveness of two available options for inhaled antibiotic treatment for patients with Bronchiectasis (BE) with *Pseudomonas aeruginosa* (PA) infections from the perspective of China's healthcare system.

Methods: A four-state Markov model was developed over a one-year horizon to simulate the cost-effectiveness of two inhaled antibiotic strategies: Tobramycin inhalation solution (TIS) versus nebulized colistimethate sodium (CMS). The inputs for the model were derived from phase III clinical trials and published literature, with cost data were sourced from public and real-world databases, etc. The incremental cost-effectiveness ratio (ICER) was assessed, setting the willingness-to-pay threshold at one times the per capita GDP of China. Scenario and sensitivity analyses were performed to explore the impact of uncertainties in input parameters.

Results: Over a one-year period, TIS was found to dominate CMS, resulting in a cost saving of CNY 41,109.53 (USD 5,689.27) and an increase of 0.0048 quality-adjusted life years (QALYs) per patient. Sensitivity analyses confirmed the robustness of these findings, which remained consistent under various scenarios.

Conclusions: TIS reduces healthcare costs and improves clinical outcomes compared to CMS in managing BE with PA infections in China. This study supports the inclusion of TIS in clinical guidelines for managing BE with PA infections, considering both economic benefits and health outcomes.

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Conflict of interest statement

The authors have declared that no competing interests exist.

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. 2025 Jun 16;80(7):406-407.

doi: [10.1136/thorax-2025-223225](https://doi.org/10.1136/thorax-2025-223225).

[Early life inflammation in CF: can it be reversed by CFTR modulators?](#)

[Jasleen Kaur Matta](#)¹, [Bradley S Quon](#)²

Affiliations Expand

- PMID: 40250987
- DOI: [10.1136/thorax-2025-223225](https://doi.org/10.1136/thorax-2025-223225)

No abstract available

Keywords: Bronchiectasis; Bronchoscopy; Child; Cystic Fibrosis; Cytokine Biology; Neutrophil Biology.

Conflict of interest statement

Competing interests: BSQ has received grant support from Cystic Fibrosis Canada and the Cystic Fibrosis Foundation unrelated to the work reported in this editorial. BSQ reports a relationship with Vertex Pharmaceuticals Incorporated that includes consulting or advisory and speaking and lecture fees. JKM reports no known competing financial interests or personal relationships that could have appeared to influence this editorial.

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