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

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Thorax

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. 2025 Jan 2:thorax-2024-221899.

doi: 10.1136/thorax-2024-221899. Online ahead of print.

[Clinical benefit of chronic non-invasive ventilation in severe stable COPD: a matter of persistent hypercapnia improvement](#)

[Tim Raveling<sup>1,2</sup>, Renzo Boersma<sup>3,2</sup>, Peter J Wijkstra<sup>3,2</sup>, Marieke L Duiverman<sup>3,2</sup>](#)

Affiliations Expand

- PMID: 39746814
- DOI: [10.1136/thorax-2024-221899](#)

Abstract

**Purpose:** In patients with chronic obstructive pulmonary disease (COPD) treated with chronic non-invasive ventilation (NIV), the relation between improvements in nocturnal transcutaneous partial pressure of CO<sub>2</sub> (PtcCO<sub>2</sub>) and daytime arterial partial pressure of CO<sub>2</sub> (PaCO<sub>2</sub>) remains uncertain. Also, to what extent improvements in nocturnal PtcCO<sub>2</sub> result in better health-related quality of life (HRQL), exercise capacity, lung function and survival has not been investigated.

**Patients and methods:** Patients with COPD who were initiated on chronic NIV were prospectively followed for 6 months. Daytime PaCO<sub>2</sub> and nocturnal PtcCO<sub>2</sub> were measured before NIV initiation. NIV targeted normocapnia (PaCO<sub>2</sub>/mean PtcCO<sub>2</sub><6.0 kPa) or to reduce baseline values >20%. HRQL was measured with the Severe Respiratory Insufficiency questionnaire (SRI) and exercise capacity with the 6-min walk test (6MWT). Patients were divided into three groups: group 1: neither PtcCO<sub>2</sub> nor PaCO<sub>2</sub> reductions reached the target; group 2: both PtcCO<sub>2</sub> and PaCO<sub>2</sub> targets were reached; group 3: only PtcCO<sub>2</sub> target was reached.

**Results:** 177 participants were included with both transcutaneous and daytime gas exchange data. In total, 66% reached nocturnal gas exchange targets. However, in only 17%, this also resulted in substantial daytime PaCO<sub>2</sub> reduction (group 2). Compared with group 1, these patients had higher baseline PtcCO<sub>2</sub> (7.4±0.7 vs 8.2±1.9 kPa, p=0.012) and better NIV usage (6.2±2.8 vs 8.3±2.4 hours, p=0.010). Despite comparable NIV settings, the forced expiratory volume in 1 s and 6MWT improved only in group 2, and only these participants reached a clinically relevant improvement on the SRI and experienced improved survival.

**Conclusion:** Patients with COPD who can maintain improved ventilation by nocturnal NIV during daytime spontaneous breathing are most likely to experience relevant benefits on HRQL, exercise capacity, lung function and survival.

**Keywords:** COPD epidemiology; Emphysema; Non invasive ventilation; Sleep.

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**Conflict of interest statement**

**Competing interests:** PJW reports grants from Resmed and Philips, consulting fees from Philips and is treasurer for the European Respiratory Society. MLD reports grants from Resmed, Philips, Lowenstein, Vivisol, Sencure and Fisher&Paykel, and payments from Chiesi and Breas Medical. The other authors have nothing to disclose.

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Am J Respir Crit Care Med

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. 2025 Jan 2.

doi: 10.1164/rccm.202411-2240ED. Online ahead of print.

## [Standard Risk Scores Inadequately Estimate Subclinical Coronary Artery Disease in COPD](#)

[Ashraf Fawzy](#)<sup>1</sup>, [Claus F Vogelmeier](#)<sup>2</sup>

Affiliations Expand

- PMID: 39746185
- DOI: [10.1164/rccm.202411-2240ED](#)

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. 2025 Jan 2.

doi: 10.1007/s41030-024-00282-y. Online ahead of print.

[Overlap Syndrome \(COPD and OSA\): A Treatable Trait for Triple Treatment?](#)

[Athanasios Voulgaris](#)<sup>1,2</sup>, [Alexandros Kalkanis](#)<sup>3</sup>, [Paschalis Steiropoulos](#)<sup>4,5</sup>

Affiliations Expand

- PMID: 39743657
- DOI: [10.1007/s41030-024-00282-y](#)

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Abstract

The coexistence of chronic obstructive pulmonary disease (COPD) and obstructive sleep apnea (OSA) in the same patient is referred to as overlap syndrome (OS). Patients with OS suffer more frequently from cardiovascular disease (CVD) and carry a higher risk of COPD-related exacerbations than patients with COPD alone, especially when OSA is left untreated. Based on recent evidence, triple therapy,

namely inhaled corticosteroid/long-acting muscarinic antagonist/long-acting beta-agonist (ICS-LABA-LAMA), is a treatment strategy in COPD patients with a history of exacerbations and/or CVD comorbidity. While several studies have previously focused on the role of triple therapy in patients with COPD, none of these has examined the potential benefits of this treatment in patients with COPD and concomitant OSA. Moreover, it is unknown whether patients with OS should be treated with triple therapy starting from their initial assessment, since they represent a population at risk for future exacerbations, in comparison to patients with COPD alone. In this commentary, we discuss these issues and highlight the need for further studies regarding the role of triple therapy in outcomes for patients with OS.

**Keywords:** Chronic obstructive pulmonary disease; Obstructive sleep apnea; Overlap syndrome; Triple therapy.

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#### Conflict of interest statement

**Declarations. Conflict of interest:** Paschalis Steiropoulos is an Editorial Board member of Pulmonary Therapy. Paschalis Steiropoulos was not involved in the selection of peer reviewers for the manuscript nor any of the subsequent editorial decisions. Athanasios Voulgaris and Alexandros Kalkanis declare that they have no competing interests. **Ethical Approval:** This article does not contain any studies with human participants or animals performed by any of the authors.

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#### Review

#### Eur Respir J

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. 2025 Jan 2;65(1):2401050.

doi: 10.1183/13993003.01050-2024. Print 2025 Jan.

## [Targeting neutrophil serine proteases in bronchiectasis](#)

[James D Chalmers](#)<sup>1,2</sup>, [Marcus A Mall](#)<sup>3,4,5,2</sup>, [Sanjay H Chotirmall](#)<sup>6,7</sup>, [Anne E O'Donnell](#)<sup>8</sup>, [Patrick A Flume](#)<sup>9</sup>, [Naoki Hasegawa](#)<sup>10</sup>, [Felix C Ringshausen](#)<sup>11,12,13</sup>, [Henrik Watz](#)<sup>14</sup>, [Jin-Fu Xu](#)<sup>15</sup>, [Michal Shteinberg](#)<sup>16,17,18</sup>, [Pamela J McShane](#)<sup>19,18</sup>

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- PMID: 39467608
- DOI: [10.1183/13993003.01050-2024](https://doi.org/10.1183/13993003.01050-2024)

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### Abstract

Persistent neutrophilic inflammation is a central feature in both the pathogenesis and progression of bronchiectasis. Neutrophils release neutrophil serine proteases (NSPs), such as neutrophil elastase (NE), cathepsin G and proteinase 3. When chronically high levels of free NSP activity exceed those of protective antiproteases, structural lung destruction, mucosal-related defects, further susceptibility to infection and worsening of clinical outcomes can occur. Despite the defined role of prolonged, high levels of NSPs in bronchiectasis, no drug that controls neutrophilic inflammation is licensed for the treatment of bronchiectasis. Previous methods of suppressing neutrophilic inflammation (such as direct inhibition of NE) have not been successful; however, an emerging therapy designed to address neutrophil-mediated pathology, inhibition of the cysteine protease cathepsin C (CatC, also known as dipeptidyl peptidase 1), is a promising approach to ameliorate neutrophilic inflammation, since this may reduce the activity of all NSPs implicated in bronchiectasis pathogenesis, and not just NE. Current data suggest that CatC inhibition may effectively restore the protease-antiprotease balance in bronchiectasis and improve disease outcomes as a result. Clinical trials for CatC inhibitors in bronchiectasis have reported positive phase III results. In this narrative review, we discuss the role of high NSP activity in bronchiectasis, and how this feature drives the associated morbidity and mortality seen in bronchiectasis. This review discusses therapeutic approaches aimed at treating neutrophilic inflammation in the bronchiectasis lung, summarising clinical trial outcomes and highlighting the need for more treatment strategies that effectively address chronic neutrophilic inflammation in bronchiectasis.

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### Conflict of interest statement

Conflict of interest: J.D. Chalmers reports support for the present manuscript from Boehringer Ingelheim, grants or contracts from AstraZeneca, Boehringer Ingelheim, Genentech, Gilead Sciences, GlaxoSmithKline, Grifols, Insmmed, Trudell and Novartis, consulting fees from Antabio, AstraZeneca, Boehringer Ingelheim, Chiesi Farmaceutici, GlaxoSmithKline, Grifols, Insmmed, Janssen, Novartis, Pfizer, Trudell and Zambon, and is the current Chief Editor of the European Respiratory Journal. M.A. Mall reports support for the present manuscript from Boehringer Ingelheim,

grants from Boehringer Ingelheim, the German Research Foundation (DFG), German Federal Ministry of Education and Research (BMBF), German Innovation Fund, and an independent medical grant from Vertex Pharmaceuticals with payments made to the institution, consultancy fees from AbbVie, Antabio, Arrowhead, Boehringer Ingelheim, Enterprise Therapeutics, Kither Biotech, Prieris, Recode, Santhera, Splisense and Vertex Pharmaceuticals, personal fees for advisory board participation or consulting from AbbVie, Antabio, Arrowhead Pharmaceuticals, Boehringer Ingelheim, Enterprise Therapeutics, Kither Biotech, Pari, Splisense and Vertex Pharmaceuticals, lecture honoraria from Vertex Pharmaceuticals, and travel support from Boehringer Ingelheim and Vertex Pharmaceuticals; M.A. Mall also reports that he is inventor on an issued patent filed by the University of North Carolina at Chapel Hill, describing the Scnn1b-transgenic mouse, and holds a leadership position as Fellow of the ERS (FERS). S.H. Chotirmall reports support for the present manuscript from Boehringer Ingelheim, grants from Singapore Ministry of Health's National Medical Research Council (Clinician Scientist Individual Research Grant (MOH-001356), Clinician Scientist Award (MOH-000710) and Open Fund Individual Research Grant (MOH-000955), and Singapore Ministry of Education under its AcRF Tier 1 Grant (RT1/22), serves on advisory boards for CSL Behring, Pneumagen Ltd and Boehringer Ingelheim, has received lecture fees from AstraZeneca and Chiesi Farmaceutici, and has served on data and safety monitoring boards for Inovio Pharmaceuticals Ltd and Imam Abdulrahman Bin Faisal University. A.E. O'Donnell reports support for the present study from Boehringer Ingelheim and Nucleus Global, grants from Boehringer Ingelheim, Insmmed, Zambon, Paratek, AN2, Armata, Renovian and Spero, payment or honoraria for lectures, presentations, manuscript writing or educational events from New York University School of Medicine, Academic CME, Vinidico and Peer View Institute, and a leadership role with the US Bronchiectasis Research Registry. P.A. Flume reports support for the present study from Boehringer Ingelheim, grants or contracts from Boehringer Ingelheim, Insmmed and Synchrony, consultancy fees from Insmmed, and serves on advisory boards and is a site principal investigator for Insmmed and Boehringer Ingelheim. N. Hasegawa reports support for the present manuscript from Boehringer Ingelheim, grants from Insmmed, consulting fees from Boehringer Ingelheim and Insmmed, royalties or licences from Boehringer Ingelheim, patents planned, issued or pending for Boehringer Ingelheim, and payment or honoraria for lectures from Insmmed. F.C. Ringshausen reports support for the present manuscript from Boehringer Ingelheim, grants from the German Center for Lung Research (DZL), German Center for Infection Research (DZIF), IMI (EU/EFPIA) and iABC Consortium (including Alaxia, Basilea, Novartis and Polyphor), Mukoviszidose Institute, Novartis and Insmmed Germany, with payments made to the institution, consulting fees from Parion Sciences, Grifols, Zambon, Insmmed, Helmholtz-Zentrum für Infektionsforschung and Boehringer Ingelheim, payment or honoraria for lectures, presentations, manuscript writing or educational events from IDE Werbeagentur GmbH, Interkongress GmbH, AstraZeneca, Insmmed, Grifols and Universitätsklinikum Frankfurt am Main, payment for expert testimony from the Social Court Cologne, with payments made to the institution, support for attending meetings from Mukoviszidose eV, participation on a data and safety monitoring board or advisory board with Insmmed, Grifols, Shionogi and Parion, leadership roles as PI of the German Center for Lung Research and Co-PI of the ECFS-CTN, and other financial interests from AstraZeneca, Boehringer Ingelheim, Celtaxsys, Corbus, Insmmed, Novartis, Parion, University of Dundee, Vertex and Zambon, for clinical trial participation with fees paid to the institution. H. Watz reports support

for the present manuscript from Boehringer Ingelheim, consulting fees from AstraZeneca, Boehringer Ingelheim, Chiesi, GlaxoSmithKline and Sanofi, payment or honoraria for lectures, presentations or educational events from AstraZeneca, Boehringer Ingelheim, Chiesi, GlaxoSmithKline and Sanofi, support for attending meetings from AstraZeneca, Boehringer Ingelheim, Chiesi, GlaxoSmithKline and Sanofi, and leadership roles as Chair, COPD guideline of the German Respiratory Society and Chair, disease area COPD of the German Center for Lung Research (DZL). J-F. Xu reports support for the present manuscript from Boehringer Ingelheim. M. Shteinberg reports support for the present manuscript from Boehringer Ingelheim, grants/research support from GlaxoSmithKline, Insmmed, Novartis, Trudell Pharma and Tel Aviv League for Lung Diseases, consultation fees from AstraZeneca, Boehringer Ingelheim, Dexcel, GlaxoSmithKline, Kamada, Synchrony Medical, Trumed, Vertex and Zambon, payment or honoraria for lectures, presentations, speaker bureaus, manuscript writing or educational events from AstraZeneca, Boehringer Ingelheim, GlaxoSmithKline, Insmmed, Kamada, Novartis, PhysioAssist, Sanofi and Teva, participation on a data and safety monitoring board for AstraZeneca, Boehringer Ingelheim and Bonus Biotherapeutics, support for attending meetings from AstraZeneca Israel, Novartis, Actelion, Kamada, Boehringer Ingelheim, GlaxoSmithKline and Rafa, leadership roles with AJRCCM, EMBARC, the Israel Pulmonology Society and the Israel Society for TB and Mycobacterial Diseases, is an editorial board member of ERJ and Chest, and taskforce member for ERS bronchiectasis guidelines, and receipt of equipment from Trudell Medical. P.J. McShane reports support for the present manuscript from Boehringer Ingelheim, consultancy fees from Boehringer Ingelheim, payment or honoraria for lectures, presentations, speaker bureaus, manuscript writing or educational events from from Insmmed, participation on a data safety monitoring board or advisory board with Boehringer Ingelheim (AIRLEAF trial), Spero and Insmmed (Aspen trial), and the following financial or non-financial interests: principal investigator for Insmmed (Aspen trial), Boehringer Ingelheim (AIRLEAF), Paratek (oral omadacycline), AN2 Therapeutics (Epetraborole), Renovian (ARINA-1), Spero, Armata, Electromed and MannKind.

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. 2025 Jan 1;42(1):40-46.

doi: 10.4103/lungindia.lungindia\_366\_24. Epub 2024 Dec 24.

### [COPD in females- Seeing through the smoke](#)

[S R Sreedevi<sup>1</sup>](#), [Ramesh Holla<sup>1</sup>](#), [A K Vishak<sup>2</sup>](#), [Bhaskaran Unnikrishnan<sup>1</sup>](#), [T Rekha<sup>1</sup>](#), [P Prasanna Mithra<sup>1</sup>](#), [Nithin Kumar<sup>1</sup>](#), [Mithun Rao<sup>1</sup>](#)

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- PMID: 39718914
- DOI: [10.4103/lungindia.lungindia\\_366\\_24](#)

Free article

Abstract

Chronic obstructive pulmonary disease (COPD) is a type of lung disease marked by permanent damage to tissues in the lungs. Over time, chronic obstructive pulmonary disease (COPD) can make breathing difficult due to permanent lung damage. COPD encompasses two main conditions chronic bronchitis, where inflammation and scarring narrow the large airways, and emphysema, where the tiny air sacs in the lungs are damaged. The widespread lung condition, chronic obstructive pulmonary disease (COPD), is largely preventable and treatable, affecting people of all genders globally. There are many studies estimating the burden of COPD in men and women, however, only a few studies have estimated the prevalence of COPD in women aged more than 40 years. Women are equally susceptible to COPD, as they are exposed more to domestic smoke, but they are often neglected and the disease goes unnoticed, which makes them more vulnerable to respiratory failure following a respiratory infection. To gain a comprehensive understanding, this review explores the existing research through a narrative analysis of primary research articles retrieved from PubMed. In total 15 relevant papers were extracted and reviewed. The review finds significant differences exist in the prevalence of COPD among women 40 years of age and older, with greater rates found in rural areas. Women have more severe symptoms and higher fatality rates; contributing factors to this increase are exposure to biomass fuels and growing smoking rates.

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. 2025 Jan 1;55(1):32-39.

doi: 10.1097/NSG.000000000000112. Epub 2024 Dec 20.

[The health effects of poor air quality](#)

[Karilee W Bingham<sup>1</sup>](#)

Affiliations Expand

- PMID: 39702915
- DOI: [10.1097/NSG.000000000000112](https://doi.org/10.1097/NSG.000000000000112)

Abstract

Smoke, particularly from wildfires and other combustion sources, is a significant contributor to air pollution, comprising a complex mixture of particulate matter and gaseous pollutants. Prolonged exposure to smoke can exacerbate respiratory diseases, such as asthma and chronic obstructive pulmonary disease, leading to increased ED visits and hospitalizations. This article examines the significant health risks associated with air pollution, particularly chronic diseases and acute respiratory conditions, and discusses the emergency treatment of acute respiratory distress from exposure.

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Thromb Res

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. 2025 Jan:245:109213.

doi: 10.1016/j.thromres.2024.109213. Epub 2024 Nov 19.

[Risks of major arterial and venous thrombotic diseases after hospitalisation for influenza, pneumonia, and COVID-19: A population-wide cohort in 2.6 million people in Wales](#)

[Spencer Keene<sup>1</sup>, Hoda Abbasizanjani<sup>2</sup>, Fatemeh Torabi<sup>2</sup>, Rochelle Knight<sup>3</sup>, Venexia Walker<sup>4</sup>, Elena Raffetti<sup>5</sup>, Genevieve Cezard<sup>6</sup>, Samantha Ip<sup>7</sup>, Alexia Sampri<sup>6</sup>, Thomas Bolton<sup>8</sup>, Rachel Denholm<sup>9</sup>, Kamlesh Khunti<sup>10</sup>, Ashley Akbari<sup>2</sup>, Jennifer Quint<sup>11</sup>, Spiros Denaxas<sup>12</sup>, Cathie Sudlow<sup>8</sup>, Emanuele Di Angelantonio<sup>13</sup>, Jonathan A C Sterne<sup>9</sup>, Angela Wood<sup>14</sup>, William N Whiteley<sup>15</sup>; CVD-COVID-UK/COVID-IMPACT Consortium and the Longitudinal Health and Wellbeing COVID-19 National Core Study](#)

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- PMID: 39608301
- DOI: [10.1016/j.thromres.2024.109213](https://doi.org/10.1016/j.thromres.2024.109213)

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Abstract

**Objective:** Pneumonia, influenza, COVID-19, and other common infections might increase the risk of thrombotic events acutely through an interaction between inflammation and the thrombotic system. The long-term risks of arterial and venous thrombotic events following hospitalisation for COVID-19 and hospitalisation for pneumonia or influenza are unclear.

**Materials and methods:** In a population-wide cohort of linked Welsh health data of adults, we calculated the incidence of arterial and venous thrombosis after hospitalisation for COVID-19 (2020-2021). We then compared this post-hospitalisation incidence with the incidence prior to COVID-19 hospitalisation in the same individuals, and with the incidence in individuals who were never hospitalised for COVID-19. We then repeated this analysis for hospitalisation for pneumonia or influenza in a separate cohort (2016-2019). We estimated adjusted hazard ratios (aHRs) in separate time periods starting from the date of the first infection that

resulted in hospitalisation (day 0, 1 to 7 days, 2 to 4 weeks, 5 to 16 weeks, and 17 to 75 weeks) using time-varying Cox regression. Confounders included age, sex, smoking status, obesity, deprivation (fifths of Welsh Index of Multiple Deprivation), rural or urban setting, care home attendance, Elixhauser comorbidity index, surgery in the last year, medications (e.g. lipid-lowering and antiplatelet/anticoagulant use), hypertension and/or hypertensive medication use, and past medical history of chronic kidney disease, diabetes, chronic obstructive pulmonary disease, dementia, cancer, or any CVD.

**Results:** For the first arterial thrombosis, the aHRs were 3.80 (95 % CI: 2.50-5.77) between days 1-7, 5.24 (4.21-6.51) between weeks 2-4, 2.12 (1.72-2.60) between weeks 5-16, and 1.60 (1.38-1.86) between weeks 17-75 after hospitalisation for COVID-19. The corresponding aHRs after hospitalisation for pneumonia/influenza were: 5.42 (4.35-6.75), 3.87 (3.32-4.49), 1.96 (1.74-2.21), and 1.41 (1.30-1.53). For first venous thrombosis, aHRs were 7.47 (3.56-15.7) between days 1-7, 22.6 (17.5-29.1) between weeks 2-4, 6.58 (4.98-8.68) between weeks 5-16, and 2.25 (1.67-3.02) between weeks 17-75 after hospitalisation for COVID-19. The corresponding aHRs after hospitalisation for pneumonia/influenza were: 15.1 (10.3-22.0), 11.8 (9.23-15.1), 5.80 (4.75-7.08), and 1.89 (1.57-2.29). Excess risk was highest in individuals aged  $\geq 60$  years, in whom we estimated 2,700 and 2,320 additional arterial and 1,270 and 840 additional venous events after 100,000 hospitalisations for COVID-19 and pneumonia/influenza, respectively.

**Conclusions:** Both hospitalisation for COVID-19 and pneumonia/influenza increase the risk of arterial and venous thrombosis. Preventative healthcare policies are needed for cardiovascular risk factor management, vaccination, and anticoagulation in high-risk patients with hospitalised or severe infections.

**Keywords:** COVID-19\* / epidemiology; Cohort studies; Hospitals; Influenza, human\* / epidemiology; Influenza, human\* / prevention & control; SARS-CoV-2.

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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. **Disclosures** Dr. Whiteley has given expert testimony to UK courts and served on an advisory board for Bayer. Kamlesh Kunti is chair of the ethnicity subgroup of the UK Scientific Advisory Group for Emergencies (SAGE) and is a member of SAGE. The other authors report no conflicts.

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Am J Physiol Lung Cell Mol Physiol

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. 2025 Jan 1;328(1):L120-L133.

doi: 10.1152/ajplung.00118.2024. Epub 2024 Nov 19.

[Impaired antiviral immunity in frequent exacerbators of chronic obstructive pulmonary disease](#)

[Lydia J Finney<sup>1</sup>](#), [Peter Fenwick<sup>1</sup>](#), [Samuel V Kemp<sup>2</sup>](#), [Aran Singanayagam<sup>1</sup>](#), [Michael R Edwards<sup>1</sup>](#), [Kylie B R Belchamber<sup>1</sup>](#), [Tatiana Keadze<sup>1</sup>](#), [Eteri Regis<sup>1</sup>](#), [Gavin D Donaldson<sup>1</sup>](#), [Patrick Mallia<sup>1</sup>](#), [Louise E Donnelly<sup>1</sup>](#), [Sebastian L Johnston<sup>1</sup>](#), [Jadwiga A Wedzicha<sup>1</sup>](#)

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- PMID: 39560620
- DOI: [10.1152/ajplung.00118.2024](#)

Abstract

Respiratory viruses cause chronic obstructive pulmonary disease (COPD) exacerbations. Rhinoviruses (RVs) are the most frequently detected. Some patients with COPD experience frequent exacerbations ( $\geq 2$  exacerbations/yr). The relationship between exacerbation frequency and antiviral immunity remains poorly understood. The objective of this study was to investigate the relationship between exacerbation frequency and antiviral immunity in COPD. Alveolar macrophages and bronchial epithelial cells (BECs) were obtained from patients with COPD and healthy participants. Alveolar macrophages were infected with RV-A16 multiplicity of infection (MOI) 5 and BECs infected with RV-A16 MOI 1 for 24. Interferons (IFNs) and proinflammatory cytokines IL-1 $\beta$ , IL-6, C-X-C motif chemokine ligand (CXCL)-8, and TNF were measured in cell supernatants using a mesoscale discovery platform. Viral load and interferon-stimulated genes were measured in cell lysates using quantitative PCR. Spontaneous and RV-induced IFN- $\beta$ , IFN- $\gamma$ , and CXCL-11 release were significantly reduced in alveolar macrophages from patients with COPD compared with healthy subjects. IFN- $\beta$  was further impaired in uninfected alveolar macrophages from patients with COPD with frequent exacerbations 82.0 pg/mL versus infrequent exacerbators 234.7 pg/mL,  $P = 0.008$  and RV-infected alveolar macrophages from frequent exacerbators 158.1 pg/mL versus infrequent exacerbators 279.5 pg/mL,  $P = 0.022$ . Release of proinflammatory cytokines CXCL-8, IL-6, TNF, and IL-1 $\beta$  was higher in uninfected BECs from patients with COPD

compared with healthy subjects but there was no difference in proinflammatory response to RV between groups. IFN responses to RV were impaired in alveolar macrophages from patients with COPD and further reduced in patients with frequent exacerbations. NEW & NOTEWORTHY COPD exacerbations are commonly triggered by viral infections. Some patients with COPD have frequent exacerbations leading to rapid lung function decline and increased mortality. In this study, antiviral responses (interferons) from bronchial epithelial cells and alveolar macrophages were reduced in patients with COPD compared with healthy participants and further reduced in patients with COPD with frequent exacerbations. Impaired antiviral immunity may lead to frequent COPD exacerbations. Targeted vaccinations and antiviral therapy may reduce exacerbations in COPD.

**Keywords:** chronic obstructive pulmonary disease; exacerbation; interferon; macrophage; virus.

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**Exp Ther Med**

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. 2024 Oct 24;29(1):3.

doi: 10.3892/etm.2024.12753. eCollection 2025 Jan.

[Development and validation of a nomogram for predicting bacterial infections in patients with acute exacerbation of chronic obstructive pulmonary disease](#)

[Xiaoming Wang](#)<sup>1</sup>, [Wanqiu Yuan](#)<sup>2</sup>, [Dian Zhong](#)<sup>3</sup>, [Xiaolin Chen](#)<sup>1</sup>

**Affiliations Expand**

- PMID: 39534283
- PMCID: [PMC11552094](#)

- DOI: [10.3892/etm.2024.12753](https://doi.org/10.3892/etm.2024.12753)

## Abstract

Bacterial infection is a significant contributory factor in the pathogenesis of acute exacerbations of chronic obstructive pulmonary disease (AECOPD) and it has a pivotal role in exacerbating symptoms and precipitating mortality among patients with chronic obstructive pulmonary disease (COPD). The early identification of bacterial infection in individuals with COPD remains a challenge. Therefore, the present study aimed to create and validate a risk assessment tool using easily accessible serum biomarkers to predict bacterial infection in individuals with AECOPD. A retrospective cohort study was carried out at Pingxiang People's Hospital (Pingxiang, China) from January 2023 to December 2023, involving individuals diagnosed with AECOPD. A total of 544 patients with AECOPD were randomly allocated to the two following groups: The training set, which included 70% (n=384) of the patients, and the validation set, which included 30% (n=160) of the patients. Subsequently, a nomogram model was constructed using multivariate logistic regression analysis in the training set. Its discriminatory ability and calibration were internally validated, while decision curve analyses were employed to assess the clinical utility of the nomogram. The incidence of bacterial infection in hospitalized patients with AECOPD was 50% in the training set and 48.1% in the validation set. The nomogram model incorporated independent factors associated with bacterial infection, including C-reactive protein, neutrophil elastase, procalcitonin and eosinophils, identified by univariate and multivariate logistic regression analyses. The area under the curve of the nomogram model was 0.835 [95% confidence interval (CI): 0.795-0.875] in the training set and 0.785 (95% CI: 0.715-0.856) in the validation set. The model demonstrated excellent discrimination and calibration in the validation set [c-statistic: 0.79 (95% CI: 0.68-0.90)]. Furthermore, the discrimination and overfitting bias of the model were assessed through internal validation, revealing a C-index of 0.836 for the initial group and 0.788 for the subsequent validation set. The straightforward risk prediction model for early identification of bacterial infections is valuable for hospitalized patients with AECOPD.

**Keywords:** AECOPD; bacterial infection; nomogram; prediction model; risk factors.

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**Conflict of interest statement**

The authors declare that they have no competing interests.

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Randomized Controlled Trial

Am J Emerg Med

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. 2025 Jan;87:38-43.

doi: 10.1016/j.ajem.2024.10.043. Epub 2024 Oct 28.

[A high-flow nasal cannula versus noninvasive ventilation in acute exacerbations of chronic obstructive pulmonary disease](#)

[Oguzhan Haciosman<sup>1</sup>](#), [Huseyin Ergenc<sup>1</sup>](#), [Adem Az<sup>2</sup>](#), [Yunus Dogan<sup>1</sup>](#), [Ozgur Sogut<sup>3</sup>](#)

Affiliations Expand

- PMID: 39481328
- DOI: [10.1016/j.ajem.2024.10.043](#)

Abstract

**Purpose:** We investigated the efficacy and safety of a high-flow nasal cannula (HFNC) at different flow rates compared to noninvasive ventilation (NIV) in patients with acute chronic obstructive pulmonary disease (COPD) exacerbations.

**Methods:** This prospective, randomized, single-blind study assigned patients to one of three study groups. The NIV group (n = 47) received bilevel positive airway pressure. The HFNC-30 (n = 44) and HFNC-50 (n = 46) groups received HFNC therapy at flow rates of 30 and 50 L/min, respectively. Demographic and clinical characteristics and arterial blood gas parameters before and 30, 60, and 120 min after treatment were compared among the treatment groups.

**Results:** This study included 137 consecutive patients with acute exacerbations of COPD, comprising 90 males and 47 females, with a mean age of  $68.1 \pm 10.5$  years. A total of 21 patients (15.33 %) were intubated, and the overall mortality rate was 10.2 %. The mean PaCO<sub>2</sub> levels on admission were  $64.69 \pm 10.81$ ,  $61.51 \pm 9.03$ , and  $62.29 \pm 9.87$  in the NIV, HFNC-30, and HFNC-50 groups, respectively, with no significant differences observed (p = 0.372). A significant reduction in mean PaCO<sub>2</sub> was observed in all treatment groups at 30, 60, and 120 min (p < 0.05 for all). However,

the  $\Delta\text{PaCO}_2$  at 60 min was significantly higher in the HFNC-30 group compared to the NIV group ( $p = 0.042$ ). Additionally, neither intubation rates nor 28-day mortality differed among the treatment groups ( $p = 0.368$  and  $p = 0.775$ , respectively).

**Conclusion:** HFNC was not inferior to NIV in improving arterial blood gas parameters, particularly  $\text{PaCO}_2$  in patients with COPD exacerbations, especially those with hypercarbia. Moreover, HFNC at a flow rate of 30 L/min was superior to NIV for reducing  $\text{PaCO}_2$  levels at 60 min.

**Trial registry:** National Library of Medicine Clinical Trial Registry;  
No.: [NCT06495086](https://clinicaltrials.gov/study/NCT06495086); URL: <https://clinicaltrials.gov/study/NCT06495086>.

**Keywords:** COPD exacerbations; Efficacy; High-flow nasal cannula; Noninvasive ventilation; Safety.

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Conflict of interest statement

Declaration of competing interest All authors declare no competing interests.

Supplementary info

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Br J Radiol

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. 2025 Jan 1;98(1165):150-159.

doi: 10.1093/bjr/tqae211.

[Automated CT-based decoupling of the effects of airway narrowing and wall thinning on airway counts in chronic obstructive pulmonary disease](#)

[Syed Ahmed Nadeem](#)<sup>1</sup>, [Xinyu Zhang](#)<sup>2</sup>, [Prashant Nagpal](#)<sup>3</sup>, [Eric A Hoffman](#)<sup>1 4 5</sup>, [Kung-Sik Chan](#)<sup>2</sup>, [Alejandro P Comellas](#)<sup>5</sup>, [Punam K Saha](#)<sup>1 6</sup>

Affiliations Expand

- PMID: 39447037
- PMCID: [PMC11652725](#)
- DOI: [10.1093/bjr/tqae211](#)

## Abstract

**Objective:** We examine pathways of airway alteration due to wall thinning, narrowing, and obliteration in chronic obstructive pulmonary disease (COPD) using CT-derived airway metrics.

**Methods:** Ex-smokers (N = 649; age mean  $\pm$  std: 69  $\pm$  6 years; 52% male) from the COPD Gene Iowa cohort (September 2013-July 2017) were studied. Total airway count (TAC), peripheral TAC beyond 7th generation (TACp), and airway wall thickness (WT) were computed from chest CT scans using previously validated automated methods. Causal relationships among demographic, smoking, spirometry, COPD severity, airway counts, WT, and scanner variables were analysed using causal inference techniques including direct acyclic graphs to assess multi-pathway alterations of airways in COPD.

**Results:** TAC, TACp, and WT were significantly lower ( $P < .0001$ ) in mild, moderate, and severe COPD compared to the preserved lung function group. TAC (TACp) losses attributed to narrowing and obliteration of small airways were 4.59%, 13.29%, and 32.58% (4.64%, 17.82%, and 45.51%) in mild, moderate, and severe COPD, while the losses attributed to wall thinning were 8.24%, 17.01%, and 22.95% (12.79%, 25.66%, and 33.95%) in respective groups.

**Conclusions:** Different pathways of airway alteration in COPD are observed using CT-derived automated airway metrics. Wall thinning is a dominant contributor to both TAC and TACp loss in mild and moderate COPD while narrowing and obliteration of small airways is dominant in severe COPD.

**Advances in knowledge:** This automated CT-based study shows that wall thinning dominates airway alteration in mild and moderate COPD while narrowing and obliteration of small airways leads the alteration process in severe COPD.

**Keywords:** COPD; airway counting; airway morphology; artificial intelligence; causal graph analysis; quantitative CT.

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## Conflict of interest statement

P.K.S. has received grants from NIH. A.P.C. has received grants from NIH and is a paid consultant for GlaxoSmithKline, Eli Lilly, and AstraZeneca. E.A.H. has received grants from the NIH and American Lung Association; is a participant (unpaid) on Siemens photon counting CT advisory board; and is founder and shareholder of VIDA Diagnostics, a company commercializing lung image analysis software developed, in part at the University of Iowa. P.N. has received honorarium for

educational workshops for Society of Cardiovascular CT and American Society of Nuclear Cardiology. All other authors declare no competing interests.

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

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Am J Med

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. 2025 Jan;138(1):42-50.e5.

doi: 10.1016/j.amjmed.2024.09.001. Epub 2024 Oct 5.

[Increased Risk of Chronic Respiratory Disease among Individuals with Inflammatory Bowel Disease in a Prospective Cohort Study](#)

[Lintao Dan](#)<sup>1</sup>, [Ying Xie](#)<sup>2</sup>, [Tian Fu](#)<sup>3</sup>, [Yuhao Sun](#)<sup>4</sup>, [Xuejie Chen](#)<sup>3</sup>, [Xiaoyan Wang](#)<sup>3</sup>, [Chenkai Wu](#)<sup>5</sup>, [Jie Chen](#)<sup>6</sup>, [Xue Li](#)<sup>7</sup>

Affiliations Expand

- PMID: 39370033
- DOI: [10.1016/j.amjmed.2024.09.001](#)

Abstract

**Background:** Cross-sectional evidence suggests a higher burden of chronic respiratory diseases in people with inflammatory bowel disease, but there is a lack of prospective evidence to clarify the direction of their associations. We aimed to investigate the association of inflammatory bowel disease with the risk of 2 major chronic respiratory diseases, chronic obstructive pulmonary disease, and asthma.

**Methods:** We included 430,414 participants from UK Biobank and followed them from recruitment (2006-2010) to 2021. Chronic obstructive pulmonary disease and asthma cases were obtained from inpatient data and death register. Using Cox proportional hazards models, we estimated the multivariable-adjusted hazard ratios (HR) of developing chronic obstructive pulmonary disease and asthma in participants with inflammatory bowel disease compared with inflammatory bowel disease-free groups. We also investigated the association among Crohn's disease and ulcerative colitis with the risk of chronic obstructive pulmonary disease and asthma.

**Results:** Over a median follow-up of 11.9 years, there were 11,196 incidents of chronic obstructive pulmonary disease and 9831 asthma cases. The adjusted HRs of developing chronic obstructive pulmonary disease (HR 1.54; 95% confidence interval [CI], 1.33-1.79) and asthma (HR 1.52; 95% CI, 1.29-1.79) were higher for those with inflammatory bowel disease when compared with inflammatory bowel disease-free participants. Participants with Crohn's disease and ulcerative colitis were also found to have a higher risk of chronic obstructive pulmonary disease (Crohn's disease: HR 1.71; 95% CI, 1.36-2.15; ulcerative colitis: HR 1.45; 95% CI, 1.20-1.75) and asthma (Crohn's disease: HR 1.73; 95% CI, 1.33-2.25; ulcerative colitis: HR 1.41; 95% CI, 1.15-1.73) when compared with those free of inflammatory bowel disease.

**Conclusions:** This study suggested that individuals with inflammatory bowel disease have a higher risk of developing chronic obstructive pulmonary disease and asthma, highlighting the importance of preventing chronic respiratory diseases among inflammatory bowel disease patients.

**Keywords:** Asthma; Chronic obstructive pulmonary diseases; Cohort study; Inflammatory bowel disease.

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Meta-Analysis

J Cardiopulm Rehabil Prev

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. 2025 Jan 1;45(1):20-28.

doi: 10.1097/HCR.0000000000000900. Epub 2024 Sep 24.

[Exploring the Promising Impact of Pulmonary Rehabilitation on Gait and Balance in Patients With COPD: A Systematic Review and Meta-Analysis](#)

[Mobina Khosravi<sup>1</sup>, Sedigheh Sadat Naimi, Seyed Mohammadreza Shokouhyan, Aysan Nemati, Mohsen Abedi](#)

Affiliations Expand

- PMID: 39311644
- DOI: [10.1097/HCR.0000000000000900](#)

Abstract

**Purpose:** Chronic obstructive pulmonary disease (COPD) is commonly associated with respiratory difficulties, but it also presents with musculoskeletal problems. The objective of this systematic review and meta-analysis was to evaluate the effects of pulmonary rehabilitation (PR) on balance and gait in patients with COPD.

**Review methods:** We conducted a comprehensive search of 4 databases, including PubMed, Google Scholar, Science Direct, and Web of Science, from inception to November 2023. The review included studies reporting the association between COPD status and balance and gait using PR. Two independent reviewers examined the titles and abstracts, extracted the data using a standardized form, and assessed the risk of bias of the included articles.

**Summary:** A total of 14 studies with 320 patients in the study groups and 188 controls were included in the analysis. The risk of bias in the included studies was medium to high. The results showed that PR non-statistically significantly improved balance, as demonstrated by moderate effect sizes in the Timed Up and Go (standardized mean difference [SMD] = 0.1: 95% CI, -1.41 to 1.69) and Berg Balance Scale (SMD = -0.39: 95% CI, -1.30 to 0.53). However, the impact of PR on gait function was less clear, with mixed results. The study findings highlight the positive but non-significant effects of PR on balance in individuals with COPD. The results suggest that PR programs could include exercises that target balance improvement to enhance the overall quality of patients. However, further research is needed to determine the optimal duration and intensity of these exercises to achieve maximum benefits for patients with COPD.

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Conflict of interest statement

The authors declare no conflicts of interest.

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Review

Lancet Infect Dis

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. 2025 Jan;25(1):94-113.

doi: 10.1016/S1473-3099(24)00456-0. Epub 2024 Sep 5.

[The evidence base for the optimal antibiotic treatment duration of upper and lower respiratory tract infections: an umbrella review](#)

[Suzanne M E Kuijpers<sup>1</sup>](#), [David T P Buis<sup>1</sup>](#), [Kirsten A Ziesemer<sup>2</sup>](#), [Reinier M van Hest<sup>3</sup>](#), [Rogier P Schade<sup>4</sup>](#), [Kim C E Sigaloff<sup>1</sup>](#), [Jan M Prins<sup>5</sup>](#)

Affiliations Expand

- PMID: 39243792
- DOI: [10.1016/S1473-3099\(24\)00456-0](#)

Abstract

**Background:** Many trials, reviews, and meta-analyses have been performed on the comparison of short versus long antibiotic treatment in respiratory tract infections, generally supporting shorter treatment. The aim of this umbrella review is to assess the soundness of the current evidence base for optimal antibiotic treatment duration.

**Methods:** A search in Ovid MEDLINE, Embase, and Clarivate Analytics Web of Science Core Collection was performed on May 1, 2024, without date and language restrictions. Systematic reviews addressing treatment durations in community-acquired pneumonia (CAP), acute exacerbation of chronic obstructive pulmonary disease (AECOPD), hospital-acquired pneumonia (HAP), acute sinusitis, and streptococcal pharyngitis, tonsillitis, or pharyngotonsillitis were included. Studies from inpatient and outpatient settings were included; reviews in paediatric populations were excluded. Outcomes of interest were clinical and bacteriological cure, microbiological eradication, mortality, relapse rate, and adverse events. The quality of the reviews was assessed using the AMSTAR 2 tool, risk of bias of all included randomised controlled trials (RCTs) using the Cochrane risk-of-bias tool (version 1), and overall quality of evidence according to GRADE.

**Findings:** We identified 30 systematic reviews meeting the criteria; they were generally of a low to critically low quality. 21 reviews conducted a meta-analysis. For CAP outside the intensive care unit (ICU; 14 reviews, of which eight did a meta-analysis) and AECOPD (eight reviews, of which five did a meta-analysis), there was sufficient evidence supporting a treatment duration of 5 days; evidence for shorter durations is scarce. Evidence on non-ventilator-associated HAP is absent, despite identifying three reviews (of which one did a meta-analysis), since no trials were conducted exclusively in this population. For sinusitis the evidence appears to support a shorter regimen, but more evidence is needed in the population who actually require antibiotic treatment. For pharyngotonsillitis (eight reviews, of which six did a meta-analysis), sufficient evidence exists to support short-course cephalosporin but not short-course penicillin when dosed three times a day.

**Interpretation:** The available evidence for non-ICU CAP and AECOPD supports a short-course treatment duration of 5 days in patients who have clinically improved. Efforts of the scientific community should be directed at implementing this evidence in daily practice. High-quality RCTs are needed to underpin even shorter treatment durations for CAP and AECOPD, to establish the optimal treatment duration of HAP and acute sinusitis, and to evaluate shorter duration using an optimal penicillin dosing schedule in patients with pharyngotonsillitis.

**Funding:** None.

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**Conflict of interest statement**

**Declaration of interests** We declare no competing interests.

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Curr Probl Cardiol

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. 2025 Jan;50(1):102838.

doi: 10.1016/j.cpcardiol.2024.102838. Epub 2024 Sep 4.

[Sleep apnea is a common and dangerous cardiovascular risk factor](#)

[Robert J Henning<sup>1</sup>, W McDowell Anderson<sup>2</sup>](#)

Affiliations Expand

- PMID: 39242062
- DOI: [10.1016/j.cpcardiol.2024.102838](#)

Abstract

Sleep apnea involves almost one billion individuals throughout the world, including 40 million Americans. Of major medical concern is the fact that the prevalence of sleep apnea is significantly increasing due to the epidemic of obesity, physical inactivity, and diabetes mellitus which are important risk factors for the development and persistence of sleep apnea in individuals. Sleep apnea is characterized by multiple episodes of apnea or hypopnea during sleep, which cause nocturnal arousals, gasping for breath during the night, daytime sleepiness, irritability, forgetfulness, fatigue and recurrent headaches. Obstructive sleep apnea occurs when upper airway obstruction occurs in an individual during sleep with absent or markedly reduced airflow in the presence of continued activity of inspiratory thoracic and diaphragmatic muscles. Central sleep apnea is defined as the absence or the significant reduction of naso-oral airflow due to the withdrawal during sleep of ponto-medullary respiratory center stimulation of the nerves of the inspiratory thoracic and diaphragmatic muscles and absence of contraction of these muscles during apnea. Complex sleep apnea occurs when an individual exhibits characteristics of both obstructive and central sleep apnea. The severity of sleep apnea is measured by polysomnography and the apnea hypopnea index (AHI), which is the average number of apneas and hypopneas per hour of sleep measured by polysomnography. Sleep apnea is mild if the AHI is 5-14/h with no or mild symptoms, moderate if the AHI is 15 to 30/h with occasional daytime sleepiness,

and severe if the AHI is  $>30/h$  with frequent daytime sleepiness that interferes with the normal activities of daily life. Chronic sleep apneas and hypopneas followed by compensatory hyperpneas are associated with significant adverse cardiovascular consequences including: 1) recurrent hypoxemia and hypercarbia; 2) Increased sympathetic nerve activity and decreased parasympathetic nerve activity; 3) oxidative stress and vascular endothelial dysfunction; and 4) cardiac remodeling and cardiovascular disease. Moderate or severe sleep apnea significantly increases the risk of coronary artery disease, congestive heart failure, cerebral vascular events (strokes), and cardiac dysrhythmias, and also increase the morbidity and mortality of these diseases. Nevertheless, sleep apnea is currently underdiagnosed and untreated in many individuals due to the challenges in the prediction and detection of sleep apnea and a lack of well-defined optimal treatment guidelines. Chronic continuous positive airway pressure for  $\geq 4$  h/night for  $>70\%$  of nights is beneficial in the treatment of patients with sleep apnea. CPAP Improves sleep quality, reduces the AHI, augments cardiac output and increases oxygen delivery to brain and heart, reduces resistant hypertension, decreases cardiac dysrhythmias, and reduces daytime sleepiness. The present article discusses the diagnosis of obstructive sleep apnea, central sleep apnea, and complex apnea. Thereafter the important pathophysiologic mechanisms in sleep apnea and the relationship of these pathophysiologic mechanics to atherosclerotic vascular disease are reviewed. Guidelines are then provided for the treatment of mild, moderate and severe sleep apnea. In order to reduce the cardiovascular morbidity and mortality caused by sleep apnea and facilitate the diagnosis and the long-term, effective treatment of sleep apnea in patients, the close cooperation is necessary of cardiovascular specialists, pulmonary specialists, and respiratory therapy/rehabilitation specialists.

**Keywords:** Central sleep apnea; Heart failure; Hypertension; Hypoxemia; Myocardial infarction; Obstructive sleep apnea.

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Conflict of interest statement

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

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## Randomized Controlled Trial

## Respirology

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. 2025 Jan;30(1):41-50.

doi: 10.1111/resp.14820. Epub 2024 Sep 3.

[Effect of pulmonary rehabilitation duration on exercise capacity and health-related quality of life in people with chronic obstructive pulmonary disease \(PuRe Duration Trial\): A randomized controlled equivalence trial](#)

[Joshua A Bishop](#)<sup>1,2</sup>, [Lissa M Spencer](#)<sup>1,3</sup>, [Tiffany J Dwyer](#)<sup>1</sup>, [Zoe J McKeough](#)<sup>1</sup>, [Amanda McAnulty](#)<sup>3</sup>, [Regina Leung](#)<sup>4</sup>, [Jennifer A Alison](#)<sup>1,5</sup>

## Affiliations Expand

- PMID: 39228164
- PMCID: [PMC11688624](#)
- DOI: [10.1111/resp.14820](#)

## Abstract

**Background and objective:** There is no strong evidence on the optimal duration of pulmonary rehabilitation (PR) programmes. The aim of the study was to determine whether an 8-week PR programme was equivalent to a 12-week PR programme in improving endurance exercise capacity in people with chronic obstructive pulmonary disease (COPD).

**Methods:** Participants with COPD were randomized to either an 8-week (8-wk Group) or 12-week (12-wk Group), twice weekly, supervised PR programme consisting of endurance and strength training and individualized self-management education. Between group comparisons were made at completion of each programme (i.e., week 8 or week 12), for both programmes at week 12, and at 6-12-month follow-up. The primary outcome was endurance exercise capacity measured by the endurance shuttle walk test (ESWT) with the minimally important difference of 186 s set as the equivalence limit.

**Results:** Sixty-six participants [mean (SD); age 69 (7) years, FEV<sub>1</sub> 48 (17) %predicted] were randomized (33 per group). Between-group comparisons demonstrated that the ESWT time was equivalent for the 12-wk Group compared to

the 8-wk Group at programme completion [mean (95% CI)] [71 s (-61 to 203)], week 12 [70 s (-68 to 208)], and 6-12-month follow-up [93 s (-52 to 239)], though superiority of the 12-wk Group could not be ruled out at each time point.

**Conclusion:** Equivalence was shown between 8-and 12-week PR programmes for endurance exercise capacity, but superiority could not be ruled out for the 12-wk Group. Decisions about programme duration may depend on local waitlist times, healthcare budgets and patient preference.

**Keywords:** COPD; chronic obstructive pulmonary disease; duration; equivalence; pulmonary rehabilitation.

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#### Conflict of interest statement

The authors declare no conflicts of interest.

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#### Editorial

#### Thorax

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. 2024 Dec 31:thorax-2024-222606.

doi: 10.1136/thorax-2024-222606. Online ahead of print.

[Do inhaled corticosteroids decrease the risk of cardiovascular outcomes in patients with chronic obstructive pulmonary disease?](#)

[David M Mannino](#)<sup>1 2</sup>

Affiliations Expand

- PMID: 39740990
- DOI: [10.1136/thorax-2024-222606](#)

*No abstract available*

Keywords: COPD Exacerbations; COPD Pharmacology; COPD epidemiology.

Conflict of interest statement

Competing interests: DM is a consultant to Astra-Zeneca, GlaxoSmithKline, Regeneron, Genentech, Up to Date, and the COPD Foundation, and a Medical Expert for the Schlesinger Law Firm.

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Review

Pediatr Pulmonol

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. 2024 Dec 31.

doi: 10.1002/ppul.27251. Online ahead of print.

[Immunomodulatory therapy by macrolides: More than killing bugs](#)

[Bruce K Rubin<sup>1</sup>](#)

Affiliations Expand

- PMID: 39739449
- DOI: [10.1002/ppul.27251](https://doi.org/10.1002/ppul.27251)

*No abstract available*

Keywords: COPD; barrolide; bronchiectasis; cystic fibrosis; immunomodulation; macrolide.

- [4 references](#)

Supplementary info

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Clinical Trial

Hum Vaccin Immunother

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. 2024 Dec 31;20(1):2343544.

doi: 10.1080/21645515.2024.2343544. Epub 2024 Apr 24.

[Lung mucosal immunity to NTHi vaccine antigens: Antibodies in sputum of chronic obstructive pulmonary disease patients](#)

[Federica Baffetta<sup>1</sup>](#), [Cecilia Buonsanti<sup>1</sup>](#), [Luca Moraschini<sup>1</sup>](#), [Susanna Aprea<sup>1</sup>](#), [Martina Canè<sup>2</sup>](#), [Stefano Lombardi<sup>1</sup>](#), [Mario Contorni<sup>1</sup>](#), [Simona Rondini<sup>3</sup>](#), [Ashwani Kumar Arora<sup>3</sup>](#), [Monia Bardelli<sup>1</sup>](#), [Oretta Finco<sup>1</sup>](#), [Davide Serruto<sup>1</sup>](#), [Silvia Rossi Paccani<sup>1</sup>](#)

## Affiliations Expand

- PMID: 38655676
- PMCID: [PMC11057560](#)
- DOI: [10.1080/21645515.2024.2343544](#)

## Abstract

Chronic obstructive pulmonary disease (COPD) is a common chronic respiratory illness in older adults. A major cause of COPD-related morbidity and mortality is acute exacerbation of COPD (AECOPD). Bacteria in the lungs play a role in exacerbation development, and the most common pathogen is non-typeable *Haemophilus influenzae* (NTHi). A vaccine to prevent AECOPD containing NTHi surface antigens was tested in a clinical trial. This study measured IgG and IgA against NTHi vaccine antigens in sputum. Sputum samples from 40 COPD patients vaccinated with the NTHi vaccine were collected at baseline and 30 days after the second dose. IgG and IgA antibodies against the target antigens and albumin were analyzed in the sputum. We compared antibody signals before and after vaccination, analyzed correlation with disease severity and between sputum and serum samples, and assessed transudation. Antigen-specific IgG were absent before vaccination and present with high titers after vaccination. Antigen-specific IgA before and after vaccination were low but significantly different for two antigens. IgG correlated between sputum and serum, and between sputum and disease severity. Sputum albumin was higher in patients with severe COPD than in those with moderate COPD, suggesting changes in transudation played a role. We demonstrated that immunization with the NTHi vaccine induces antigen-specific antibodies in sputum. The correlation between IgG from sputum and serum and the presence of albumin in the sputum of severe COPD patients suggested transudation of antibodies from the serum to the lungs, although local IgG production could not be excluded. Clinical Trial Registration: [NCT02075541](#).

**Keywords:** COPD exacerbations; COPD pathology; bacterial infection; infection control; respiratory infection.

## Plain language summary

**What is the context?** Chronic obstructive pulmonary disease (COPD) is the most common chronic respiratory illness in older adults and the third leading cause of death worldwide. One bacterium in the lungs, non-typeable *Haemophilus influenzae* (NTHi), is responsible for acute exacerbation of the disease, characterized by an increase in airway wall inflammation and symptoms, leading to high morbidity and mortality. A vaccine targeting NTHi was previously developed but did not show efficacy in reducing exacerbations in COPD patients, probably because the vaccine did not elicit an immune response in the lung mucosae, where the bacteria are located. **What is the impact?** Parenteral immunization with new vaccines targeting NTHi is able to elicit immune defense at the level of lung mucosae. Now that antibodies can be measured in sputum, new vaccines against COPD exacerbations or other lung infections can be tested for efficacy in the actual

target tissue. Also, lung immunity against specific pathogens can now be tested. What is new? We determined that antigen-specific antibodies were present in the lungs after vaccination; these were assessed in sputum after vaccination with NTHi surface antigens. NTHi-specific IgG were present in the lungs and appeared to have arrived there primarily by transudation, a type of leakage from the serum to the lung mucosae. Transudation appeared to be stronger in severe than in moderate COPD patients.

#### Conflict of interest statement

AKA, CB, DS, FB, LM, MB, MCo, OF, SA, SL, SR, and SRP are employed by GSK. AKA, LM, MB, MCo, SR, and SRP hold shares in GSK. The authors declare no other financial and non-financial relationships and activities. MCo declare no financial and non-financial relationships and activities and no conflicts of interest.

- [30 references](#)
- [5 figures](#)

#### Supplementary info

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#### Chest

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. 2024 Dec 30:S0012-3692(24)05734-9.

doi: 10.1016/j.chest.2024.12.025. Online ahead of print.

#### [Preserved Ratio Impaired Spirometry \(PRISm\) Prevalence, Risk Factors, and Outcomes: A Systematic Review and Meta-Analysis](#)

[Nicole M Robertson](#)<sup>1</sup>, [Connor S Centner](#)<sup>2</sup>, [Vickram Tejwani](#)<sup>3</sup>, [Shakir Hossen](#)<sup>1</sup>, [Dipan Karmali](#)<sup>4</sup>, [Sibei Lu](#)<sup>4</sup>, [Trishul Siddharthan](#)<sup>5</sup>

#### Affiliations [Expand](#)

- PMID: 39742912
- DOI: [10.1016/j.chest.2024.12.025](https://doi.org/10.1016/j.chest.2024.12.025)

## Abstract

**Background:** The prevalence of chronic respiratory diseases is increasing globally. There is evidence that those with spirometric impairment, and no evidence of obstruction, termed preserved ratio impaired spirometry (PRISm), have increased risk of morbidity and mortality, compared to those with normal lung function. There remain several gaps in characterizing PRISm.

**Research questions:** What is the prevalence, risk factors and clinical outcomes associated with PRISm globally?

**Study design and methods:** In this systematic review a comprehensive search using MEDLINE, Web of Science, CINAHL, and CENTRAL databases was conducted to include epidemiological studies with no language or data restrictions. Two reviewers independently screened citations and shortlisted full-text articles according to the Preferred Reporting Items for Systematic Reviews and Meta-Analyses guidelines and data was extracted. Quality was assessed with the Effective Public Health Practice Project tool.

**Results:** 52 studies met the inclusion criteria with 33 studies included in the meta-analysis. Pooled PRISm prevalence was 12% (95% CI: 0.10, 0.15) with greater prevalence in low-and middle-income countries (LMICs) compared to high-income countries (19% vs. 11%). Comorbid diabetes was a significant risk factor associated with PRISm but data for female sex and smoking were mixed. PRISm was associated with increased all-cause (OR 1.41, 95% CI:1.08, 1.83, p=0.02), cardiovascular (OR 1.84, 95% CI:1.31, 2.58, p<0.01), and respiratory mortality (OR 1.82, 95% CI:1.08, 3.05, p=0.03). PRISm was not associated with a reduced lung cancer diagnosis (p=0.46). Quality assessment analysis revealed 34.6% (n=18) studies were rated "strong," 42.3% (n=22) "moderate," and 23.1% (n=12) "weak." Studies conducted LMICs had lower quality ratings.

**Interpretation:** Individuals with PRISm have increased risk of all-cause, cardiovascular, and respiratory mortality. Recognizing and targeting modifiable PRISm risk factors may reduce the growing burden of PRISm and transition to obstructive lung disease globally. Additional studies are needed in LMICs that have unique risk factors a disease trajectory.

**Keywords:** mortality; pre-COPD; preserved ratio impaired spirometry; prevalence; risk factors.

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. 2024 Dec 30;25(1):447.

doi: 10.1186/s12931-024-03073-w.

[Trends in initial pharmacological COPD treatment in primary care \(2010-2021\): a population-based study using the PHARMO Data Network](#)

[Guilherme Rodrigues](#)<sup>1 2 3 4</sup>, [Joana Antão](#)<sup>5 6 7 8</sup>, [Qichen Deng](#)<sup>8 9 10</sup>, [Brenda N Baak](#)<sup>11</sup>, [Alda Marques](#)<sup>5 6</sup>, [Frits M E Franssen](#)<sup>8 9 10</sup>, [Martijn A Spruit](#)<sup>8 9 10</sup>

Affiliations Expand

- PMID: 39736696
- PMCID: [PMC11687194](#)
- DOI: [10.1186/s12931-024-03073-w](#)

Abstract

**Background:** Pharmacological treatment is a cornerstone of chronic obstructive pulmonary disease (COPD) management, with general practitioners providing the most care. However, the lack of data on prescribing trends in initial pharmacotherapy in primary care hinders the understanding of how scientific and technical developments impact patient care and may also perpetuate suboptimal practices. Hence, this study aims to analyze trends in the initial pharmacological treatment of newly diagnosed COPD patients in Dutch primary care from 2010 to 2021.

**Methods:** A repeated cross-sectional study was conducted via the PHARMO GP Database. Data were extracted from the electronic health records of individuals managed by general practitioners in the Netherlands within the PHARMO Data Network. Individuals aged  $\geq 40$  years at diagnosis with an International Classification of Primary Care code for COPD (R95) were included. Initial pharmacological treatment was identified based on the first prescription issued within 90 days postdiagnosis. The annual proportions of individuals receiving a specific treatment among those diagnosed were calculated and directly

standardized by age and sex according to the 2021 Dutch population structure. Trend analysis was performed via joinpoint regression.

**Results:** A total of 54,628 COPD patients were included (median [IQR] age: 65 [57-73]; 53.7% male), with 36.4% not receiving respiratory medication within 90 days of diagnosis, and 4.2% on other treatments. Trend analysis revealed that LAMA monotherapy increased from 13.4% in 2010 to 15.1% in 2015 and then declined to 11.0% by 2021. Moreover, LABA-ICS decreased from 17.6% to 8.5% between 2010 and 2018, after which it plateaued. In contrast, LABA-LAMA sharply increased, from 0.6% in 2010 to 9.6% in 2021. LABA monotherapy increased from 2.6% in 2010 to 5.7% in 2021. Triple therapy has remained constant. For reliever-only therapies, SABA increased from 8.5% in 2010 to 14.3% in 2018 and then stabilized, whereas SAMA and SABA-SAMA remained low throughout.

**Conclusions:** Shifts in initial pharmacological COPD treatment from 2010 to 2021 likely reflect the introduction of new inhalers and updated management strategies. However, a significant proportion of patients remain without GP prescriptions, which warrants further investigation.

**Keywords:** Chronic obstructive pulmonary disease; Drug therapy; Primary health care.

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#### Conflict of interest statement

**Declarations.** Ethics approval and consent to participate: This study is exempt from requiring informed consent under the European Union General Data Protection Regulation (EU-GDPR), which permits the use of secondary data for scientific research when appropriate safeguards are in place. Stichting Informatievoorziening voor Zorg en Onderzoek (STIZON) is responsible for the collection, processing, and deidentification of data in accordance with the Personal Data Protection Act under Dutch legislation, allowing its anonymous use by PHARMO and/or affiliated universities or projects for research purposes. Consent for publication: Not applicable. Competing interests: G.R., J.A., Q.D., and A.M. declare that they have no competing interests. B.N.B. is an employee of the PHARMO Institute for Drug Outcomes Research, an independent institute conducting financially supported studies for the government, healthcare authorities, and pharmaceutical companies. F.M.E.F. has received research grants from AstraZeneca; consultancy fees from Merck Sharp & Dohme; and speaker fees from AstraZeneca, Boehringer Ingelheim, GlaxoSmithKline, Chiesi, and Novartis. All these are outside the scope of the current study. M.A.S. has received research grants from the Netherlands Lung Foundation and Stichting Astma Bestrijding, as well as consultancy fees from AstraZeneca and Boehringer Ingelheim outside the scope of the current study. All research grants and consultancy fees were paid to Ciro.

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

Supplementary info

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. 2024 Dec 30.

doi: 10.4046/trd.2024.0089. Online ahead of print.

## [Clinical significance of various pathogens identified in patients with acute exacerbations of COPD: a multi-center study in South Korea](#)

[Hyun Woo Ji](#)<sup>1</sup>, [Soojoung Yu](#)<sup>2</sup>, [Yun Su Sim](#)<sup>3</sup>, [Hyewon Seo](#)<sup>4</sup>, [Jeong-Woong Park](#)<sup>5</sup>, [Kyung Hoon Min](#)<sup>6</sup>, [Deog Kyeom Kim](#)<sup>7</sup>, [Hyun Woo Lee](#)<sup>7</sup>, [Chin Kook Rhee](#)<sup>8</sup>, [Yong Bum Park](#)<sup>9</sup>, [Kyeong-Cheol Shin](#)<sup>10</sup>, [Kwang Ha Yoo](#)<sup>11</sup>, [Ji Ye Jung](#)<sup>1</sup>

## Affiliations Expand

- PMID: 39736471
- DOI: [10.4046/trd.2024.0089](#)

## Free article

## Abstract

**Background:** Respiratory infection is a major cause of acute exacerbation of chronic obstructive pulmonary disease (AECOPD). We investigated the presence of bacterial and viral pathogens and clinical features in patients with AECOPD.

**Methods:** This retrospective study included 1,186 patients diagnosed with AECOPD from 28 hospitals in South Korea between 2015-2018. Pathogen identification rates, basic characteristics and clinical features, and associated factors for infection with potentially drug-resistant (PDR) pathogens were evaluated using microbiological tests.

**Results:** Bacteria, viruses, and both were found in 262 (22.1%), 265 (22.5%), and 129 (10.9%) patients, respectively. The most common pathogens were Pseudomonas

aeruginosa (17.8%), *Mycoplasma pneumoniae* (11.2%), *Streptococcus pneumoniae* (9.0%), influenza A virus (19.0%), rhinovirus (15.8%), and respiratory syncytial virus (6.4%). A history of pulmonary tuberculosis (OR 1.66; P=0.046), bronchiectasis (OR 1.99; P=0.032), and triple inhaler use within six months (OR 2.04; P=0.005) were significant associated factors for PDR pathogen infection. Hospital stay length (15.9 days vs. 12.4 days; P=0.018) and ICU admission rates (15.9% vs. 9.5%; P=0.030) were increased in patients infected with PDR pathogens.

**Conclusions:** This study indicates that various types of pathogens are implicated during AECOPD. However, further research is needed to confirm whether these pathogens influence AECOPD development and progression.

**Keywords:** acute exacerbation; chronic obstructive pulmonary disease; drug resistance; pathogen.

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. 2024 Dec 28.

doi: 10.1007/s12325-024-03088-1. Online ahead of print.

[Comparative Effectiveness of Fluticasone Furoate/Umeclidinium/Vilanterol and Budesonide/Glycopyrrolate/Formoterol Fumarate among US Patients with Chronic Obstructive Pulmonary Disease](#)

[David Mannino](#)<sup>1,2</sup>, [Stephen Weng](#)<sup>3</sup>, [Guillaume Germain](#)<sup>4</sup>, [Julien Boudreau](#)<sup>4</sup>, [Anabelle Tardif-Samson](#)<sup>4</sup>, [Sergio Forero-Schwanhaeuser](#)<sup>5</sup>, [François Laliberté](#)<sup>4</sup>, [Patrick Gravelle](#)<sup>4</sup>, [Chris H Compton](#)<sup>5</sup>, [Stephen G Noorduy](#)<sup>6,7</sup>, [Rosirene Paczkowski](#)<sup>8</sup>

Affiliations Expand

- PMID: 39731707

- DOI: [10.1007/s12325-024-03088-1](https://doi.org/10.1007/s12325-024-03088-1)

## Abstract

**Introduction:** Chronic obstructive pulmonary disease (COPD) is associated with exacerbations which can reduce quality of life and increase mortality. Single-inhaler triple therapy (SITT) is recommended for maintenance treatment of COPD among patients experiencing exacerbations despite dual-therapy use. This real-world comparative effectiveness study compared the impact of SITTs, fluticasone furoate/umeclidinium/vilanterol (FF/UMEC/VI), and budesonide/glycopyrrolate/formoterol fumarate (BUD/GLY/FORM), on COPD exacerbations and mortality.

**Methods:** Medicare Fee-for-Service (FFS) patients with COPD initiated on FF/UMEC/VI or BUD/GLY/FORM were identified from the Komodo Research healthcare claims dataset (01/01/2016-12/31/2023). Overlap weighting based on high-dimensional propensity scores evaluated from patient characteristics was used to adjust for baseline confounding. Primary outcome was annualized rate of moderate-severe COPD exacerbations (per patient-year; PPY) compared using rate ratios (RRs) with 95% confidence intervals (CIs) from weighted Poisson regression models. Secondary and exploratory outcomes were risk of moderate-severe COPD exacerbations and all-cause mortality, respectively, evaluated using Kaplan-Meier analysis and hazard ratios (HR) with 95% CIs from Cox proportional hazard models. A secondary analysis was conducted among a mutually exclusive population with Medicare Advantage, Medicaid, or commercial insurance.

**Results:** Overall, 32,312 FF/UMEC/VI and 12,230 BUD/GLY/FORM Medicare FFS patients were included. After weighting, median follow-up was 9 months. Compared with BUD/GLY/FORM, FF/UMEC/VI users had a 12% lower rate of annualized moderate-severe COPD exacerbations [0.80 and 0.91 PPY; RR (95% CI): 0.88 (0.85-0.92);  $P < 0.001$ ] and a 10% lower risk of moderate-severe exacerbations at 12 months post-initiation [HR (95% CI): 0.90 (0.87-0.93);  $P < 0.001$ ], driven by moderate exacerbations. FF/UMEC/VI compared with BUD/GLY/FORM users had 11% lower risk of all-cause mortality at 12 months post-initiation [5.6% vs. 6.4%; HR (95% CI): 0.89 (0.80-0.98);  $P = 0.020$ ]. Results were consistent among patients with Medicare Advantage, Medicaid, or commercial insurance.

**Conclusions:** In this real-world comparative effectiveness study, FF/UMEC/VI was associated with significantly lower rate and risk of COPD exacerbations than BUD/GLY/FORM.

**Keywords:** Budesonide/glycopyrrolate/formoterol fumarate; Chronic obstructive pulmonary disease; Exacerbations; Fluticasone furoate/umeclidinium/vilanterol; Real-world comparative effectiveness study.

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## Conflict of interest statement

**Declarations. Conflict of Interest:** David Mannino is a consultant for AstraZeneca, the COPD Foundation, Genentech, GSK, Regeneron, and Up-to-Date. David Mannino is also an expert witness on behalf of people suing the tobacco and vaping industries. Stephen Weng, Sergio Forero-Schwanhaeuser, Chris H Compton, Stephen G Noorduyn, and Rosirene Paczkowski are employees of GSK and/or hold

financial equities in GSK. Stephen G Noorduyn is also a PhD candidate at McMaster University. Guillaume Germain, Julien Boudreau, Anabelle Tardif-Samson, François Laliberté, and Patrick Gravelle are employees of Groupe d'analyse, which received funding from GSK to conduct this study. Ethical Approval: This study complied with all applicable laws regarding patient privacy, as described in the Declaration of Helsinki. No direct patient contact or primary collection of individual human patient data has occurred in this study. This study used existing, fully de-identified data that complied with the requirements of the Health Insurance Portability and Accountability Act and the patient(s) cannot be identified, directly or through identifiers. Study results were in tabular form and aggregate analyses that omit patient identification; therefore, informed consent, ethics committee or Institutional Review Board approval were not required.

- [34 references](#)

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. 2024 Dec 28;14(1):31043.

doi: 10.1038/s41598-024-82275-0.

[Clinical features and prognostic risk factors of different sex with acute exacerbations of chronic obstructive pulmonary disease](#)

[Yun-Xia Yu](#)<sup>1,2</sup>, [Jing-Jing Feng](#)<sup>1,2</sup>, [Meng Zhang](#)<sup>1,2</sup>, [Tian-Yun Shi](#)<sup>1,2</sup>, [Jin-Dong Shi](#)<sup>1,2</sup>, [Yong Du](#)<sup>1,2</sup>, [Jun-Qing Li](#)<sup>1,2</sup>, [Zhi-Jun Jie](#)<sup>3,4</sup>

Affiliations Expand

- PMID: 39730732
- PMCID: [PMC11681165](#)

- DOI: [10.1038/s41598-024-82275-0](https://doi.org/10.1038/s41598-024-82275-0)

## Abstract

The aim of this retrospective cohort study was to investigate the clinical characteristics and the outcomes of acute exacerbations of chronic obstructive pulmonary disease (AECOPD) patients between different sex. We aimed to collect the first hospitalization patients who were diagnosed as AECOPD between 1 January 2019 to 31 December 2021 from the general ward and intensive care unit in the hospital, Shanghai the Fifth People's Hospital, Fudan University. Demographic data, initial clinical symptoms, on-admission vital signs, comorbidities, laboratory tests and imaging examination, treatment, and follow-up were compared between the two groups. The patients were followed up for 30 days, 90 days, 180 days after the discharge from the hospital, all these differences were not statistically significant in hospital readmissions and mortality ( $P > 0.05$ ). The multivariate analysis incorporated seven factors according to the results of the univariate regression analysis. The results showed that readmission was independently associated with increased course of disease ( $P = 0.032$ ), combined with chronic pulmonary heart disease ( $P = 0.011$ ), and combined with peptic ulcer ( $P = 0.044$ ). Conversely, there was no correlation between sex and readmission ( $P = 0.304$ ). The short-term readmission was independently associated with increased course of disease, combined with chronic pulmonary heart disease, and combined with peptic ulcer, but not with sex.

**Keywords:** Acute exacerbation; Chronic obstructive pulmonary disease; Clinical features; Prognosis; Sex.

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## Conflict of interest statement

**Declarations. Competing interests:** The authors declare no competing interests.  
**Ethics declarations:** Due to the retrospective nature of the study, the Ethics Committee of Shanghai the Fifth Peoples Hospital waived the need of obtaining informed consent.

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

## Supplementary info

MeSH terms, Grants and fundingExpand

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nature portfolio

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

BMC Health Serv Res

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. 2025 Jan 2;25(1):6.

doi: 10.1186/s12913-024-12185-4.

[Assessment of older persons with multimorbidity in Norwegian primary care: a qualitative study of healthcare professionals' experiences and preferences in fostering continuity of care](#)

[Turid Rimereit Aarønes](#)<sup>1,2</sup>, [Kristin Taraldsen](#)<sup>3</sup>, [Linda Aimée Hartford Kvæøl](#)<sup>3,4</sup>

Affiliations Expand

- PMID: 39748433
- DOI: [10.1186/s12913-024-12185-4](#)

Abstract

**Background:** As the population ages, more people live longer with multimorbidity. Older people with multimorbidity face diverse needs and medical conditions, increasing the risk of adverse health outcomes, and often experience fragmented healthcare. Research has called for better ways to reach, understand and care for this group to enhance care continuity. This study aimed to examine healthcare professionals' experiences and preferences as they relate to assessments' role in promoting care continuity for home-dwelling older patients with multimorbidity in community-based healthcare.

**Methods:** This qualitative study acquired qualitative data from 17 healthcare professionals from reablement teams, interdisciplinary teams, rehabilitation teams and home nursing in three Norwegian municipalities. Representing nursing, physiotherapy, occupational therapy and social work, all participants were experienced in assessing older home-dwelling patients with multimorbidity. Semi-structured focus group and individual interviews were conducted, then the interviews were transcribed and analysed using reflexive thematic analysis.

**Results:** The analysis elicited three themes: gaining insight beyond diagnoses to promote relational continuity, facilitating interaction to ensure informational continuity, and linking patient journeys to facilitate managerial continuity. The themes underscore the significance of evaluating patients beyond their medical conditions, emphasising assessment's collaborative nature across disciplines. Healthcare professionals use diverse assessment methods and facilitate interaction to understand patients' needs. Working together across different healthcare professions is key for care that includes the whole patient, but challenges such as underutilisation of assessments and poor documentation still exist. Furthermore, linking patient journeys remains difficult due to fragmented services and limited

resources. Despite these challenges, assessments were viewed as crucial to care continuity.

**Conclusions:** In this qualitative study, healthcare professionals emphasised that assessment is a complex, continuous process due to the fluctuating health of individuals with multimorbidity. Effective instruments and diverse assessment methods are essential to understanding all aspects of patients' health and well-being to ensure care continuity across individual, service, and system levels. Our findings highlight the need for systematic and structured use of assessments to improve interdisciplinary collaboration and personalised care for older individuals with multimorbidity. Understanding the patient journey is crucial for achieving these goals, potentially benefiting healthcare professionals, policymakers, and primary care providers.

**Keywords:** Assessment; Care continuity; Holistic understanding; Interdisciplinary collaboration; Multimorbidity; Person-centred care; Primary care; Professional communication.

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#### Conflict of interest statement

**Declarations.** Ethics approval and consent to participate: This project was presented to REK (Regional Committees for Medical and Healthcare Research Ethics; No. 533642) and underwent processing by Sikt (Norwegian Agency for Shared Services in Education and Research), thereby ensuring compliance with privacy regulations for handling personal data (No. 544851). Data were stored securely on the Services for Sensitive Data (SSD) platform, adhering to Norwegian privacy regulations. To maintain informant confidentiality, selected municipalities' names were anonymised. All participants received written and oral information about the study and the handling of personal data, then provided written informed consent before participation. The participants were informed that their involvement was voluntary and that they could withdraw at any time without consequences. During the interviews, the participants were briefed on the interview's purpose, logistics, audio recording use, de-identification procedures and the option of taking a break if needed. Consent for publication: Not applicable. Competing interests: The authors declare no competing interests.

- [70 references](#)

Supplementary info

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. 2025 Jan 2;14(1):3.

doi: 10.1186/s13643-024-02730-x.

[Interprofessional collaborative practice in health and social care for people living with multimorbidity: a scoping review protocol](#)

[Josephine-L K Murray](#)<sup>1</sup>, [Virginia Hernandez-Santiago](#)<sup>2</sup>, [Frank Sullivan](#)<sup>2</sup>, [Joanna Hernal](#)<sup>2</sup>, [Farhana Badshah](#)<sup>2</sup>, [Ben Keatley](#)<sup>2</sup>, [Jillian Galbraith](#)<sup>2</sup>, [Pam Channer](#)<sup>2</sup>, [Anne Fearfull](#)<sup>2</sup>, [Anne Haddow](#)<sup>2</sup>, [Eleanor Johnston](#)<sup>2</sup>, [Maureen Ward](#)<sup>2</sup>, [Veronica O'Carroll](#)<sup>2</sup>

Affiliations Expand

- PMID: 39748417
- DOI: [10.1186/s13643-024-02730-x](#)

Abstract

**Background:** Multimorbidity, the co-existence of two or more conditions within an individual at any one time, is globally increasing and forecasted to rise. This poses a significant challenge for current models of healthcare delivery, which are now ill-equipped to meet the future population health needs. Interprofessional collaborative practice is a specific way professionals work closely together and with patients and their families to improve patient outcomes. Evidence suggests it can improve outcomes for people living with a single condition. What remains unknown is if interprofessional collaborative practice has been used to improve the outcomes of people living with multimorbidity, and if so, to what extent?

**Methods:** A scoping review is proposed to identify prior peer-reviewed research and grey literature related to interprofessional collaborative practice for multimorbidity in health and social care settings. A search strategy will identify primary, peer-reviewed research and grey literature. An initial limited search will be conducted to identify relevant existing systematic reviews. Their methods will be examined and their search terms scrutinised. A second comprehensive search will be used to interrogate four databases, looking back 10 years, seeking articles published in English, French, Spanish or Portuguese. Hand searching will be performed on all included full-text articles for any articles missing from the two steps above. Critical data will be extracted by adapting existing data abstraction forms based on the needs of the research objectives. These forms will be piloted before use. The results will be analysed descriptively. If appropriate, qualitative content analysis may be undertaken. Where sufficient numbers of homogeneous interventions exist, meta-analysis techniques will be applied. Results will be presented in tabular, graphic, and diagrammatic information displays.

**Discussion:** This scoping review will provide an overview of the current evidence base of interprofessional collaborative practice used internationally for people

living with multimorbidity in health and social care settings. These findings will provide valuable information to improve health and social care practice as well as change systems and policy to meet the population need of multimorbidity.

**Systematic review registration:** The protocol was submitted to Open Science Framework on 19 December 2023 and registered on OSF Registries. Registration DOI: <https://doi.org/10.17605/OSF.IO/UXHG3> .

**Keywords:** Health and social care workforce; Healthcare public health; Healthcare research; Interprofessional collaborative practice; Multimorbidity; Scoping review; Social care research.

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#### Conflict of interest statement

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

- [42 references](#)

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Randomized Controlled Trial

BMC Public Health

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. 2025 Jan 2;25(1):3.

doi: 10.1186/s12889-024-20922-x.

[Developing and assessing the "MultiLife" intervention: a mobile health-based lifestyle toolkit for cardiometabolic multimorbidity in diabetes and hypertension management - a type 1 hybrid effectiveness-implementation trial protocol](#)

[Sanghamitra Pati](#)<sup>1</sup>, [Jaideep Menon](#)<sup>2</sup>, [Tanveer Rehman](#)<sup>3,4</sup>, [Ritik Agrawal](#)<sup>5,6</sup>, [Jayasingh Kshatri](#)<sup>5,7</sup>, [Subrata Kumar Palo](#)<sup>5,8</sup>, [Chandrashekar Janakiram](#)<sup>2</sup>, [Srijeeta Mitra](#)<sup>5,6</sup>, [Aswathy Sreedevi](#)<sup>2</sup>, [Tanu Anand](#)<sup>9</sup>

## Affiliations Expand

- PMID: 39748357
- DOI: [10.1186/s12889-024-20922-x](https://doi.org/10.1186/s12889-024-20922-x)

## Abstract

**Background:** Cardiometabolic multimorbidity (CMM), characterized by the coexistence of diabetes, hypertension, and cardiovascular disease, poses a major health challenge in India, particularly in rural areas with limited healthcare resources. Lifestyle interventions can manage cardiometabolic risk factors, yet adherence remains suboptimal. Mobile health (mHealth) interventions offer a scalable approach for managing CMM by promoting behaviour change and medication adherence. We will develop and evaluate the MultiLife intervention, a mHealth-based lifestyle toolkit aimed at improving CMM management among individuals receiving primary care in Eastern India in the year 2025.

**Methods:** This study is a two-arm, cluster-randomized controlled trial with a hybrid Type 1 design involving 840 participants across 18 primary health centres in Odisha and Jharkhand. Using the Health Belief Model as a conceptual framework, the MultiLife intervention will deliver daily digital reminders, weekly health education broadcasts, and ongoing primary care support in the intervention arm, while the control group will receive the standard ongoing primary care support care. The trained healthcare workers will recruit 50 CMM patients, with a 6-month intervention period, during routine visits in each cluster. Primary outcomes include changes in HbA1c from baseline (T0) to end-line (T6). Secondary outcomes include blood pressure, body mass index, physical activity, and dietary habits. Qualitative assessments will explore intervention barriers and facilitators. Implementation outcomes, assessed through the RE-AIM QuEST framework, will evaluate MultiFrame's acceptability, adoption, fidelity, and maintenance. A random-effects regression model will be used for difference-in-difference analysis, adjusting for covariates and within-cluster correlations.

**Discussion:** The MultiLife trial may provide valuable insights into how mHealth-enabled primary care can enhance patient engagement, adherence, and cardiovascular risk reduction in resource-constrained settings. By integrating patient perspectives, this study could inform scalable digital health strategies for comprehensive CMM management, providing a model for future interventions in similar contexts.

**Trial registration:** CTRI.nic.in, CTRI/2024/10/074559, Registered on 1 October 2024.

**Keywords:** Healthy lifestyle; India; Multimorbidity; Primary health care; Randomized controlled trial; Rural health; Technology transfer; Telemedicine.

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**Conflict of interest statement**

**Declarations.** Ethics approval and consent to participate: Ethical clearance has been granted by Institutional ethics committees, ICMR Regional Medical Research Centre for (ICMR-RMRC/IHEC-2024/026), Institutional Ethics Committee, RIMS, Ranchi ((ECR/769/INST/JH/2015/RR-21/Letter no: 259) and State ethics committee, Odisha (22629/MS-2-IV-01/2024). Before engaging in any phase of this research, all study participants will be required to provide informed consent. The research will be conducted in compliance with the applicable guidelines and regulations outlined in the Declaration of Helsinki. **Competing interests:** The authors declare no competing interests.

- [90 references](#)

Supplementary info

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J Aging Health

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. 2025 Jan;37(1-2):40-53.

doi: 10.1177/08982643231215476. Epub 2023 Nov 28.

[An Exploration of Methods to Resolve Inconsistent Self-Reporting of Chronic Conditions and Impact on Multimorbidity in the Canadian Longitudinal Study on Aging](#)

[Alessandra T Andreacchi](#)<sup>1</sup>, [Alberto Brini](#)<sup>2</sup>, [Edwin Van den Heuvel](#)<sup>2</sup>, [Graciela Muniz-Terrera](#)<sup>3</sup>, [Alexandra Mayhew](#)<sup>1,4,5</sup>, [Philip St John](#)<sup>6</sup>, [Lucy E Stirland](#)<sup>7,8</sup>, [Lauren E Griffith](#)<sup>1,4,5</sup>

Affiliations Expand

- PMID: 38016065
- PMCID: [PMC11566091](#)
- DOI: [10.1177/08982643231215476](#)

## Abstract

**Objectives:** To quantify inconsistent self-reporting of chronic conditions between the baseline (2011-2015) and first follow-up surveys (2015-2018) in the Canadian Longitudinal Study on Aging (CLSA), and to explore methods to resolve inconsistent responses and impact on multimorbidity.

**Methods:** Community-dwelling adults aged 45-85 years in the baseline and first follow-up surveys were included ( $n = 45,184$ ). At each survey, participants self-reported whether they ever had a physician diagnosis of 35 chronic conditions. Identifiable inconsistent responses were enumerated.

**Results:** 32-40% of participants had at least one inconsistent response across all conditions. Illness-related information (e.g., taking medication) resolved most inconsistent responses (>93%) while computer-assisted software asking participants to confirm their inconsistent disease status resolved  $\leq 53\%$ . Using these adjudication methods, multimorbidity prevalence at follow-up increased by  $\leq 1.6\%$  compared to the prevalence without resolving inconsistent responses.

**Discussion:** Inconsistent self-reporting of chronic conditions is common but may not substantially affect multimorbidity prevalence. Future research should validate methods to resolve inconsistencies.

**Keywords:** CLSA; Canadian longitudinal study on aging; chronic disease; morbidity.

## Conflict of interest statement

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

- [33 references](#)

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. 2024 Dec 29:156126.

doi: 10.1016/j.metabol.2024.156126. Online ahead of print.

## [Identifying proteins and pathways associated with multimorbidity in 53,026 adults](#)

[Yi-Lin Chen](#)<sup>1</sup>, [Jia You](#)<sup>2</sup>, [Yu Guo](#)<sup>1</sup>, [Yi Zhang](#)<sup>1</sup>, [Bing-Ran Yao](#)<sup>1</sup>, [Ji-Jing Wang](#)<sup>2</sup>, [Shi-Dong Chen](#)<sup>1</sup>, [Yi-Jun Ge](#)<sup>1</sup>, [Liu Yang](#)<sup>1</sup>, [Xin-Rui Wu](#)<sup>1</sup>, [Bang-Sheng Wu](#)<sup>1</sup>, [Ya-Ru Zhang](#)<sup>1</sup>, [Qiang Dong](#)<sup>1</sup>, [Jian-Feng Feng](#)<sup>3</sup>, [Mei Tian](#)<sup>4</sup>, [Wei Cheng](#)<sup>5</sup>, [Jin-Tai Yu](#)<sup>6</sup>

### Affiliations Expand

- PMID: 39740741
- DOI: [10.1016/j.metabol.2024.156126](https://doi.org/10.1016/j.metabol.2024.156126)

### Abstract

**Background and aims:** Multimorbidity, the coexistence of multiple chronic diseases, is a rapidly expanding global health challenge, carrying profound implications for patients, caregivers, healthcare systems, and society. Investigating the determinants and drivers underlying multiple chronic diseases is a priority for disease management and prevention.

**Method:** This prospective cohort study analyzed data from the 53,026 participants in the UK Biobank from baseline (2006 to 2010) across 13.3 years of follow-up. Using Cox proportional hazards regression model, we characterized shared and unique associations across 38 incident outcomes (31 chronic diseases, 6 system mortality and all-cause mortality). Furthermore, ordinal regression models were used to assess the association between protein levels and multimorbidity (0-1, 2, 3-4, or  $\geq 5$  chronic diseases). Functional and tissue enrichment analysis were employed for multimorbidity-associated proteins. The upstream regulators of above proteins were identified.

**Results:** We demonstrated 972 (33.3 %) proteins were shared across at least two incident chronic diseases after Bonferroni correction ( $P < 3.42 \times 10^{-7}$ , 93.3 % of those had consistent effects directions), while 345 (11.8 %) proteins were uniquely linked to a single chronic disease. Remarkably, GDF15, PLAUR, WFDC2 and AREG were positively associated with 20-24 incident chronic diseases (hazards ratios: 1.21-3.77) and showed strong associations with multimorbidity (odds ratios: 1.33-1.89). We further identified that protein levels are explained by common risk factors, especially renal function, liver function, inflammation, and obesity, providing potential intervention targets. Pathway analysis has underscored the pivotal role of the immune response, with the top three transcription factors associated with proteomics being NFKB1, JUN and RELA.

**Conclusions:** Our results enhance the understanding of the biological basis underlying multimorbidity, offering biomarkers for disease identification and novel targets for therapeutic intervention.

**Keywords:** Chronic diseases; Multimorbidity; Plasma proteins.

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Conflict of interest statement

Declaration of competing interest The authors declared no potential conflicts of interest concerning the research, authorship, and/or publication of this article.

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. 2024 Dec 28;14(1):31166.

doi: 10.1038/s41598-024-82335-5.

[Propensity score matching analysis of the association between physical activity and multimorbidity in middle-aged and elderly Chinese](#)

[Bingbing Fan](#)<sup>1</sup>, [Kexin Ren](#)<sup>2</sup>, [Lang Li](#)<sup>1</sup>

Affiliations Expand

- PMID: 39732820
- PMCID: [PMC11682053](#)
- DOI: [10.1038/s41598-024-82335-5](#)

Abstract

In the context of an aging population, older adults increasingly face the challenge of managing multiple chronic conditions simultaneously. This study utilized analytical methods such as propensity score matching (PSM) and multivariate logistic regression, to explore the relationship between physical activity and the number of chronic diseases as well as the risk of developing co-morbidities among middle-aged and elderly Chinese individuals using data from the 2020 China Health and

Retirement Longitudinal Survey. The PSM results showed that physical activity decreased the number of chronic diseases in middle-aged and elderly people by 0.050 ( $p < 0.05$ ). The multivariate logistic regression results the odds ratio (OR) for the risk of multimorbidity in the moderate and high intensity physical activity groups compared to the group with inadequate physical activity were 0.845 (95% CI 0.729-0.980) and 0.847 (95% CI 0.727-0.988), which means that moderate-intensity physical activity is strongly associated with a reduced risk of multimorbidity. Regular physical activity among middle-aged and older adults is associated with a reduction in the number of chronic diseases they suffer from.

**Keywords:** CHARLS; Chronic disease; Co-morbidity; Multimorbidity; PSM; Physical activity.

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**Conflict of interest statement**

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

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

1

Allergy

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. 2025 Jan 3.

doi: 10.1111/all.16445. Online ahead of print.

[The Role of WNT5a and TGF- \$\beta\$ 1 in Airway Remodelling and Severe Asthma](#)

[Tariq Daud](#)<sup>1</sup>, [Sheree Roberts](#)<sup>1</sup>, [Nazanin Zounemat Kermani](#)<sup>2,3</sup>, [Matthew Richardson](#)<sup>1</sup>, [Liam G Heaney](#)<sup>4</sup>, [Ian M Adcock](#)<sup>3</sup>, [Yassine Amrani](#)<sup>1</sup>, [Peter Bradding](#)<sup>1</sup>, [Salman Siddiqui](#)<sup>1,3</sup>

Affiliations Expand

- PMID: 39749571

- DOI: [10.1111/all.16445](https://doi.org/10.1111/all.16445)

## Abstract

**Background:** Airway remodelling is a feature of severe asthma with airway epithelial damage observed frequently. We evaluated the role of WNT5a and TGF- $\beta_1$  in asthmatic airway biopsies and in sputum and bronchial brushings assessed their role in remodelling.

**Methods:** WNT5a and TGF- $\beta_1$  protein expression were assessed in the lamina propria epithelium of people with asthma (GINA 1-3, n=8 and GINA 4-5, n=14) and healthy subjects (n=9), alongside relevant remodelling markers. The effects of WNT5a and TGF- $\beta_1$  on BEAS-2B epithelial cell wound healing and differentiation were assessed in vitro. Replication was performed in the Unbiased Biomarkers for the Prediction of Respiratory Disease Outcomes (U-BIOPRED) study in sputum (n = 120) and bronchial brushes (n = 147).

**Results:** WNT5a and TGF- $\beta_1$  protein expression were significantly increased in the airway epithelium and lamina propria in asthma patients with concurrent airflow limitation or severe disease. Furthermore, WNT5a protein expression in the lamina propria correlated with tissue eosinophils and vascular remodelling. Airway epithelial WNT5a was co-localised predominantly to airway basal cells and correlated with Th17 gene expression ( $r = 0.40$ ,  $p = 0.025$ ) and both the % intact ( $r_s = 0.54$ ,  $p = 0.001$ ) and % denuded epithelium ( $r_s = -0.39$ ,  $p = 0.003$ ). Experiments in BEAS-2B cells confirmed that WNT5a at maximal physiological concentrations (1  $\mu\text{g/mL}$ ), promoted epithelial wound healing, independently of TGF- $\beta_1$ , as well as induction of EMT-like morphology. WNT5a mRNA was associated with severe asthma, airflow limitation, sputum eosinophilia and Th2, and Th17 and neutrophil activation transcriptomes in sputum in U-BIOPRED.

**Conclusion:** WNT5a is associated with both airway remodelling and severe asthma.

**Trial registration:** ClinicalTrials.gov identifier: [NCT01982162](https://clinicaltrials.gov/ct2/show/study/NCT01982162).

**Keywords:** TGF- $\beta_1$ ; WNT5a; airway remodelling; asthma.

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Editorial

Expert Rev Respir Med

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. 2025 Jan 3.

doi: 10.1080/17476348.2024.2449080. Online ahead of print.

[Achieving sustained remission in severe asthma: goals, challenges, issues and opportunities](#)

[Alessandro Vatrella<sup>1</sup>](#), [Angelantonio Maglio<sup>1</sup>](#)

Affiliations Expand

- PMID: 39749409
- DOI: [10.1080/17476348.2024.2449080](https://doi.org/10.1080/17476348.2024.2449080)

*No abstract available*

**Keywords:** asthma; asthma remission; asthma therapy; asthma treatment; biologics; remission; severe asthma; sustained remission.

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Expert Rev Clin Immunol

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. 2025 Jan 2.

doi: 10.1080/1744666X.2024.2448990. Online ahead of print.

## Type 2 inflammation: a Portuguese consensus using Web-Delphi and decision conferencing (INFLAT2-PT)

Suzete Costa<sup>1,2</sup>, João Pedro Aguiar<sup>1,2</sup>, Mónica D Oliveira<sup>3,4</sup>, João Gonçalves<sup>5,6</sup>, João Carlos Ribeiro<sup>7,8</sup>, Luís Taborda-Barata<sup>9,10</sup>, Helena Farinha<sup>5,11</sup>, Pedro Escada<sup>12,13</sup>, Samuel Fernandes<sup>14,15</sup>, Luís Soares-de-Almeida<sup>16,17</sup>, Maria João Paiva-Lopes<sup>13,18</sup>, Cláudia Chaves Loureiro<sup>19,20</sup>, Isabel Lourinho<sup>21,22</sup>, João A Fonseca<sup>23,24</sup>, Marta Drummond<sup>25,26</sup>, Rui Tato Marinho<sup>14,15</sup>, João Bana E Costa<sup>27</sup>, António Vaz Carneiro<sup>1,2</sup>, Carlos A Bana E Costa<sup>3,28</sup>

### Affiliations Expand

- PMID: 39748205
- DOI: [10.1080/1744666X.2024.2448990](https://doi.org/10.1080/1744666X.2024.2448990)

### Abstract

**Objectives:** Atopic/allergic diseases impose a growing burden on public health, affecting millions of patients worldwide. The main objective of this study was to develop a national expert consensus on relevant clinical questions related to type 2 inflammation.

**Methods:** We conducted: a comprehensive literature review with a qualitative analysis to identify the most repeated themes on the overlap of conditions; a modified 3-round Web-Delphi (or e-Delphi); and a final online decision conference.

**Results:** We included 51 studies. Following three Web-Delphi rounds, we ended up with 30 statements with a 76% overall full agreement rate, 16% agreement, 2% disagreement, and 0% full disagreement. The decision conference enabled adjustments, and the expert panel agreed unanimously on the final set of statements. The consensus used evidence synthesis, Web-Delphi, and decision conference to produce 30 statements on type 2 inflammation as a driver for multimorbidity in asthma, certain rhinitis phenotypes, atopic dermatitis, chronic rhinosinusitis with nasal polyps, and eosinophilic esophagitis grouped under five domains in underlying pathophysiology, multimorbidity, diagnosis and management, multidisciplinary management, and impact on mental health.

**Conclusion:** We expect the first Portuguese expert consensus INFLAT2-PT to promote understanding of type 2 inflammation diseases, multidisciplinary care, integrated care pathways, future research, and inform health authorities.

**Keywords:** Allergy; asthma; atopic dermatitis; chronic rhinosinusitis; consensus; eosinophilic esophagitis; type-2 inflammation.

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Acta Paediatr

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. 2025 Jan 2.

doi: 10.1111/apa.17565. Online ahead of print.

[The severity of the first occurrence of bronchiolitis increased the risk of developing asthma symptoms](#)

[Cedric Agossah<sup>1,2</sup>, Julien Marie<sup>1</sup>, Yasmine Bendoukha<sup>3,4</sup>, Cecile Vallet<sup>1</sup>, Jacques Brouard<sup>1,2</sup>, David Brossier<sup>2,5</sup>](#)

Affiliations Expand

- PMID: 39748149
- DOI: [10.1111/apa.17565](https://doi.org/10.1111/apa.17565)

Abstract

**Aim:** The relationship between bronchiolitis and asthma is complex. We assessed whether patients admitted to a paediatric intensive care unit (PICU) with bronchiolitis had a greater risk of developing asthma than patients admitted to a paediatric ward.

**Methods:** We retrospectively included children under 1 year of age, who were hospitalised for bronchiolitis for the first time at the University Hospital of Caen, France, between 2010 and 2014. The children were divided into two groups: 89 were admitted to the paediatric ward and 89 were admitted to the PICU. We wanted to assess which group developed more asthma before 6 years of age. The Global Initiative for Asthma definition was used.

**Results:** The median age of the 178 children (55% boys) was 32 (interquartile range 19-56) days. We found that 35% of the PICU group and 19% of the ward group had asthma at 6 years of age. The mean onset of symptoms was 3 years earlier in the PICU group than the ward group ( $p < 0.01$ ). Both these findings were significant.

**Conclusion:** The severity of the first episode of bronchiolitis increased the risk of developing asthma symptoms. Regular follow-ups are suggested for infants admitted to PICUs for bronchiolitis.

**Keywords:** asthma; bronchiolitis; intensive care; preschool wheezing; risk factors.

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Review

Sr Care Pharm

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. 2025 Jan 1;40(1):3-9.

doi: 10.4140/TCP.n.2025.3.

[Combination Inhaled Corticosteroid and Short-acting Beta2 Agonist \(ICS-SABA\) Use for Older Adults With Asthma](#)

[Jaycie Truong<sup>1</sup>](#), [Kimberly A B Cauthon<sup>2</sup>](#)

Affiliations Expand

- PMID: 39747808
- DOI: [10.4140/TCP.n.2025.3](#)

Abstract

The first combination inhaled corticosteroid and short-acting beta<sub>2</sub> agonist (ICS-SABA) was approved by the Food and Drug Administration (FDA) in 2023 for as-needed treatment or prevention of bronchoconstriction and to reduce the risk of asthma exacerbations in patients 18 years of age and older. The recently approved product contains an ICS-albuterol combination. The 2024 Global Initiative for Asthma (GINA) guidelines recommend as-needed ICS-formoterol as the preferred asthma reliever therapy; however, a GINA alternative recommendation is the use of ICS whenever an as-needed (SABA) is used. There is no difference in as-needed asthma treatment recommended by the GINA guidelines in older adults, and there has been minimal study in older adults. Because of limited guidance on the use of the ICS-SABA reliever inhaler in older adults, the purpose of this review is to evaluate the DENALI and MANDALA studies and the potential role of ICS-SABA in older adults. The mean ages in both studies were 50 years. The MANDALA primary outcome result was a statistically significant lower risk of severe exacerbations in

the ICS-SABA reliever group compared with the as-needed albuterol (ALB) group at 24 weeks. In the MANDALA older adults subgroup analysis, there was not a statistically significant difference in the ICS-SABA reliever group compared with the as-needed ALB-alone group but the results favored ICS-SABA. The DENALI primary outcome results were a greater change from baseline in forced expiratory volume in the first second (FEV1) area under the curve averaged over 12 weeks with albuterol/budesonide (ALB-BUD) 180/160 ug compared with budesonide alone and placebo and a greater change from baseline in trough FEV1 with ALB-BUD 180/160 ug and 180/80 ug than ALB-alone and placebo. Because of minimal adverse effects in both trials and the benefits in preventing asthma exacerbations reported in the MANDALA trial, it is important to assess and recommend that older adults with asthma receive inhaled corticosteroid with their reliever asthma inhaler.

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Multicenter Study

Allergy Asthma Proc

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. 2025 Jan 1;46(1):45-51.

doi: 10.2500/aap.2025.46.240084.

[Clinical remission in patients with severe eosinophilic asthma treated with mepolizumab: A post-hoc analysis of RELight study](#)

[Andriana I Papaioannou<sup>1</sup>](#), [Maria Kallieri<sup>2</sup>](#), [Eleftherios Zervas<sup>3</sup>](#), [Evangelia Fouka<sup>4</sup>](#), [Konstantinos Porpodis<sup>4</sup>](#), [Marija Hadji Mitrova<sup>4</sup>](#), [Eleni Tzortzaki<sup>5</sup>](#), [Michael Makris<sup>6</sup>](#), [Maria Ntakoula<sup>6</sup>](#), [Panagiotis Lyberopoulos<sup>2</sup>](#), [Katerina Dimakou<sup>7</sup>](#), [Sofia Koukidou<sup>7</sup>](#), [Sevasti Ampelioti<sup>7</sup>](#), [Anastasia Papaporfyriou<sup>8</sup>](#), [Konstantinos Katsoulis<sup>9</sup>](#), [Maria Kipourou<sup>9</sup>](#), [Nikoletta Rovina<sup>1</sup>](#), [Katerina Antoniou<sup>10</sup>](#), [Stylios Vittorakis<sup>11</sup>](#), [Petros Bakakos<sup>1</sup>](#), [Paschalis Steiropoulos<sup>12</sup>](#), [Katerina Markopoulou<sup>13</sup>](#), [Panteleimon Avarlis<sup>14</sup>](#), [Ilias C Papanikolaou<sup>15</sup>](#), [Miltiadis Markatos<sup>11</sup>](#), [Eleni Gaki<sup>16</sup>](#), [Konstantinos Samitas<sup>3</sup>](#), [Konstantinos Glynos<sup>17</sup>](#), [Spyros A Papis<sup>2</sup>](#), [Despoina Papakosta<sup>4</sup>](#), [Nikolaos Tzanakis<sup>10</sup>](#), [Mina Gaga<sup>3</sup>](#), [Konstantinos Kostikas<sup>18</sup>](#), [Stelios Loukides<sup>2</sup>](#)

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- PMID: 39741370
- DOI: [10.2500/aap.2025.46.240084](https://doi.org/10.2500/aap.2025.46.240084)

## Abstract

**Background:** Remission of asthma can occur as part of the natural history of the disease; however, the use of biologics can result in disease remission in some patients. **Objective:** In this post hoc analysis of the RELight study, we aimed to evaluate clinical remission in real life among patients treated with mepolizumab, to detect possible differences between "remitters" and "nonremitters," and to evaluate possible predictors of remission. **Methods:** Clinical remission was defined as the absence of asthma exacerbations, discontinuation of oral corticosteroids (OCS), achievement of asthma control (Asthma Control Test [ACT]  $\geq 20$ ), and stable or improved lung function. **Results:** A total of 146 patients were evaluated; remission was achieved in 40 (27.4%) and 29 (22%) after 12 and 24 months, respectively. At 12 months, the patients in remission had a better baseline ACT score (17.0 [14.0-19.0] versus 15.0 [12.0-17.0];  $p = 0.027$ ), were more rarely using OCS (35% versus 62.2%;  $p = 0.004$ ), and required a lower baseline dose of OCS (5.0 mg/day [5.0-10.0 mg/day] versus 10.0 mg/day [5.0-15.0 mg/day];  $p = 0.042$ ) at baseline, whereas, at 24 months, they less frequently carried a baseline diagnosis of gastroesophageal reflux disease (GERD) (10.3% versus 32%;  $p = 0.031$ ) and used lower doses of OCS at baseline (5.0 [1.0-5.0] versus 10.0 [5.0-15.0];  $p = \leq 0.001$ ) versus nonremitters; 52.5% of patients had sustained remission, whereas 42.5% experienced relapse. These patients more frequently had GERD versus patients with sustained remission (52.9% versus 4.8%;  $p = 0.002$ ). Finally, regression analysis has shown that GERD was the only predictor of relapse. **Conclusion:** Remitters had better asthma control and needed lower doses or no maintenance OCS at baseline, whereas GERD seems to be an important factor that affects remission and relapse. Clinical trial [NCT04084613](https://www.clinicaltrials.gov/ct2/show/study/NCT04084613), <ext-link xmlns:xlink="http://www.w3.org/1999/xlink" ext-link-type="uri" xlink:href="http://www.clinicaltrials.gov">www.clinicaltrials.gov</ext-link>.

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. 2024 Nov 14;7(1):100376.

doi: 10.1016/j.opresp.2024.100376. eCollection 2025 Jan-Mar.

[\[Proposal for a future consensus on the referral of patients with severe asthma in the specialized care setting. Coordination between hospitals with and without accredited asthma units\]](#)

[Article in Spanish]

[José Ángel Carretero Gracia](#)<sup>1</sup>, [Pilar Cebollero Rivas](#)<sup>2</sup>

Affiliations Expand

- PMID: 39717140
- PMCID: [PMC11664392](#)
- DOI: [10.1016/j.opresp.2024.100376](#)

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. 2024 Nov 14;7(1):100378.

doi: 10.1016/j.opresp.2024.100378. eCollection 2025 Jan-Mar.

[Enhancing the Management of Severe Asthma in Spain: The CARABELA Initiative Disclosed](#)

[Astrid Crespo-Lessmann](#)<sup>1</sup>; [Carabela-SA Scientific Committee](#)

Affiliations Expand

- PMID: 39717138
- PMCID: [PMC11663956](#)
- DOI: [10.1016/j.opresp.2024.100378](#)

Abstract

in [English, Spanish](#)

**Introduction:** Severe asthma management is associated with increased healthcare resource use. The CARABELA initiative employs lean methodology to optimize severe asthma management in Spain.

**Material and methods:** Scientific Societies, clinicians, healthcare management and industry stakeholders implemented lean methodology to reorganize and optimize processes and design a practical, individualized approach to improve quality of care for the management of severe asthma patients. This initiative involved four phases: Phase 1 characterized severe asthma management models in six pilot hospitals, identifying improvement areas; Phase 2 validated and prioritized these areas and healthcare quality indicators in a National Workshop; Phase 3 focused on regional meetings to co-create and refine solutions; and Phase 4 is disseminating and implementing results locally by applying a digital tool and organizing tailored workshops.

**Results:** This CARABELA initiative identified 87 improvement areas, mainly in diagnosis and care coordination, and developed solutions emphasizing awareness, nursing roles, patient education, and communication. National and regional meetings produced 112 cocreated solutions and established healthcare quality indicators. Thirty-six hospitals are now implementing tailored improvement plans.

**Conclusions:** The CARABELA-SA initiative revealed variability in severe asthma management across Spain, underscoring the need for standardized healthcare quality indicators. By engaging nearly 200 professionals, the initiative fostered collaboration and innovation and established a framework for ongoing improvement

in managing severe asthma and other chronic diseases. The CARABELA initiative promotes patient-centered care and interdisciplinary collaboration with the objective of enhancing patient outcomes and healthcare efficiency.

**Keywords:** Healthcare models; Indicators; Lean methodology; Management; Quality of care; Severe asthma.

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Nursing

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. 2025 Jan 1;55(1):32-39.

doi: 10.1097/NSG.000000000000112. Epub 2024 Dec 20.

[The health effects of poor air quality](#)

[Karilee W Bingham<sup>1</sup>](#)

Affiliations Expand

- PMID: 39702915
- DOI: [10.1097/NSG.000000000000112](#)

Abstract

Smoke, particularly from wildfires and other combustion sources, is a significant contributor to air pollution, comprising a complex mixture of particulate matter and gaseous pollutants. Prolonged exposure to smoke can exacerbate respiratory diseases, such as asthma and chronic obstructive pulmonary disease, leading to

increased ED visits and hospitalizations. This article examines the significant health risks associated with air pollution, particularly chronic diseases and acute respiratory conditions, and discusses the emergency treatment of acute respiratory distress from exposure.

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Review

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. 2025 Jan 1;38(1):e13-e15.

doi: 10.1097/01.JAA.000000000000153. Epub 2024 Dec 19.

[Triple inhaler therapy in adolescents and adults with moderate or severe persistent asthma](#)

[Mark L'Eplattenier<sup>1</sup>](#), [Gina Pontrelli](#), [Carina Loscalzo](#)

Affiliations Expand

- PMID: 39699325
- DOI: [10.1097/01.JAA.000000000000153](#)

Abstract

Expert guidelines, meta-analyses, and multiple randomized controlled trials have demonstrated the effectiveness of long-acting inhaled antimuscarinic agents (LAMAs) as an additive medication for patients with poorly controlled moderate or severe persistent asthma. LAMAs play an essential role in blocking acetylcholine binding to muscarinic receptors and reducing bronchoconstriction and mucus production. By adding this medication to other combination inhalers, patients can use a triple inhaler to improve FEV1 values and reduce exacerbations.

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. 2025 Jan 1;43(Pt 2):126523.

doi: 10.1016/j.vaccine.2024.126523. Epub 2024 Nov 18.

[Trends and characteristics of herpes zoster vaccination among older adults with asthma in the United States, 2008-2023: Findings from self-reported national surveys](#)

[Chun-Tse Hung](#)<sup>1</sup>, [Li-Min Wang](#)<sup>2</sup>, [Yu-Chien Hung](#)<sup>3</sup>

Affiliations Expand

- PMID: 39561629
- DOI: [10.1016/j.vaccine.2024.126523](#)

Abstract

**Background:** Asthma is a risk factor for herpes zoster. However, evidence regarding herpes zoster vaccination among patients with asthma is limited. Since the recommendations and availability of herpes zoster vaccines in the U.S. have changed over time, a comprehensive investigation into herpes zoster vaccination is crucial.

**Objectives:** This study aimed to assess the trends and determinants of herpes zoster vaccination among U.S. adults with asthma aged 50 and over.

**Methods:** Data from the 2008-2023 National Health Interview Survey were used. Data were analyzed in October 2024. Joinpoint regression analysis was performed to analyze trends in herpes zoster vaccination. A multivariable logistic regression model was used to identify factors associated with herpes zoster vaccination.

**Results:** This study included 20,664 respondents, representing approximately 8.6 million U.S. adults with asthma aged 50 and over. From 2008 to 2023, a significantly increasing trend in herpes zoster vaccination was observed (average annual percent change = 13.48; 95 % CI, 9.35, 17.77;  $P < 0.01$ ). This increasing trend was also observed when stratified by age groups. Several factors, including age, sex, race/ethnicity, region, educational level, income, asthma control, and flu vaccination, were associated with herpes zoster vaccination.

**Conclusions:** Over the past 16 years, herpes zoster vaccine coverage sharply increased among U.S. adults with asthma aged 50 and over. Disparities in several characteristics exist, underscoring the necessity for targeted policies and interventions to promote equity in herpes zoster vaccination rates.

**Keywords:** Asthma; Herpes zoster; Immunization; National Health Interview Survey; Shingles; Trend; Vaccination; Vaccine.

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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. **Financial disclosure** No financial disclosures were reported by the authors of this paper.

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. 2025 Jan:115:110271.

doi: 10.1016/j.mri.2024.110271. Epub 2024 Nov 2.

[Cystic Fibrosis or asthma? Discerning dyspnea with hyperpolarized xenon gas magnetic resonance imaging](#)

[David Wang](#)<sup>1</sup>, [Cody Thornburgh](#)<sup>2</sup>, [Harjeet Singh](#)<sup>1</sup>, [Zach Holliday](#)<sup>3</sup>

### Affiliations Expand

- PMID: 39491568
- DOI: [10.1016/j.mri.2024.110271](https://doi.org/10.1016/j.mri.2024.110271)

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### Abstract

Hyperpolarized Xenon MRI (HPG MRI) has been studied for its potential use in assessing lung function in patients with cystic fibrosis (CF) and in patients with asthma. We present a case of a man with overlapping cystic fibrosis and allergic asthma with severe obstructive lung disease in which spirometry and computed topography (CT) imaging was unable to determine the primary cause for his uncontrolled symptoms. HPG MRI was used to guide a tissue biopsy and determine the primary driver to be allergic asthma. After starting targeted therapy for severe asthma, his symptoms have greatly improved.

**Keywords:** Asthma; Bronchoscopy; Cystic fibrosis; Hyperpolarized xenon gas MRI.

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### Conflict of interest statement

**Declaration of competing interest** The authors have no conflicts of interest.

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Editorial

Ann Allergy Asthma Immunol

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. 2025 Jan;134(1):3-4.

doi: 10.1016/j.anai.2024.10.013. Epub 2024 Oct 15.

[The next frontier: Defining and optimizing treatments for patients with type 2 low asthma](#)

[Elena Zidan](#)<sup>1</sup>, [Gabriella Wilson](#)<sup>2</sup>, [Junghee Jenny Shin](#)<sup>3</sup>, [Geoffrey Chupp](#)<sup>4</sup>

Affiliations Expand

- PMID: 39414022
- DOI: [10.1016/j.anai.2024.10.013](#)

*No abstract available*

Conflict of interest statement

Disclosures Dr Chupp reports consulting income from GlaxoSmithKline, AZ, Sanofi-Genzyme, Regeneron, Amgen, RAPT therapeutics, and Genentech. The remaining authors have no conflicts of interest to report.

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Ann Allergy Asthma Immunol

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. 2025 Jan;134(1):9-18.

doi: 10.1016/j.anai.2024.09.016. Epub 2024 Oct 10.

[Novel asthma treatments: Advancing beyond approved novel step-up therapies for asthma](#)

[Lior Seluk](#)<sup>1</sup>, [Andrea E Davis](#)<sup>2</sup>, [Sarah Rhoads](#)<sup>2</sup>, [Michael E Wechsler](#)<sup>3</sup>

Affiliations Expand

- PMID: 39393433
- DOI: [10.1016/j.anai.2024.09.016](#)

Abstract

Over the past 2 decades, the management of severe asthma has shifted from relying on inhaled corticosteroids and bronchodilators to more precise, targeted approaches. Monoclonal antibodies designed to address specific molecular pathways in asthma have transformed care for patients with severe asthma. Because therapy targeting IgE became the first biologic developed for allergic asthma in 2003, monoclonal antibodies targeting interleukin (IL)-5, IL-5 receptor, IL-4/13 receptor, and thymic stromal lymphopoietin have been approved for treating difficult-to-treat asthma, improving symptoms, reducing exacerbations, and reducing oral corticosteroid dosing. Despite these advances, many patients continue to experience asthma exacerbations and symptoms and fail to achieve remission. To address this, pharmaceutical companies and researchers are exploring novel therapies targeting different aspects of asthma pathophysiology, including cytokines, enzymes, and cellular pathways. Innovative treatments such as inhaled biologics, ultra-long-acting biologics, and combination biologics are in development. New molecular targets, such as Bruton tyrosine kinase, OX-40 ligand, and Janus kinase, offer promise for addressing unmet needs in asthma care. Although many therapies have failed to get approval for use because of a lack of efficacy, trial design, or toxicity, these experiments still provide insights into asthma's underlying mechanisms. The future of asthma management looks

promising, with emerging therapies aiming to improve patient outcomes. The challenge will lie in identifying the right therapy for each patient and developing personalized treatment strategies.

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#### Conflict of interest statement

Disclosures Dr Wechsler has received consulting, advisory, or speaking honoraria from the following: Allakos, Amgen, Areteia Therapeutics, Arrowhead Pharmaceutical, AstraZeneca, Avalo Therapeutics, Belenos Bio, Celldex, Connect Biopharma, Eli Lilly, Equillium, GlaxoSmithKline, Incyte, Jasper Therapeutics, Kinaset, Kymera, Merck, MyBiometry, Pharming, Phylaxis, Pulmatrix, RAPT Therapeutics, Recludix Pharma, Regeneron, Roche/Genentech, Sanofi/Genzyme, Sentien, Sound Biologics, Tetherex Pharmaceuticals, Uniquity Bio, Upstream Bio, Verona Pharma, and Zurabio. The other authors have no conflicts of interest to report.

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#### Review

Ann Allergy Asthma Immunol

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. 2025 Jan;134(1):31-45.

doi: 10.1016/j.anai.2024.09.023. Epub 2024 Oct 9.

[Identifying super-responders: A review of the road to asthma remission](#)

[Samuel Mailhot-Larouche](#)<sup>1</sup>, [Carlos Celis-Preciado](#)<sup>1</sup>, [Liam G Heaney](#)<sup>2</sup>, [Simon Couillard](#)<sup>3</sup>

## Affiliations Expand

- PMID: 39383944
- DOI: [10.1016/j.anai.2024.09.023](https://doi.org/10.1016/j.anai.2024.09.023)

## Free article

## Abstract

**Asthma is a chronic respiratory disease marked by heterogeneity and variable clinical outcomes. Recent therapeutic advances have highlighted patients achieving optimal outcomes, termed "remission" or "super-response." This review evaluates the various definitions of these terms and explores how disease burden impedes the attainment of remission. We assessed multiple studies, including a recent systematic review and meta-analysis, on biologic treatments for asthma remission. Our review highlights that type 2 inflammation may be the strongest predictor of biologic response. Key comorbidities (eg, obesity and mood disorders) and behavioral factors (eg, poor adherence, improper inhalation technique, and smoking) were identified as dominant traits limiting remission. In addition, asthma burden and longer disease duration significantly restrict the potential for remission in patients with severe asthma under the current treatment paradigm. We review the potential for a "predict-and-prevent" approach, which focuses on early identification of high-risk patients with type 2 inflammation and aggressive treatment to improve long-term asthma outcomes. In conclusion, this scoping review highlights the following unmet needs in asthma remission: (1) a harmonized global definition, with better defined lung function parameters; (2) integration of nonbiologic therapies into remission strategies; and (3) a clinical trial of early biologic intervention in patients with remission-prone, very type 2-high, moderately severe asthma with clinical remission as a predefined primary end point.**

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## Review

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. 2025 Jan;134(1):19-30.

doi: 10.1016/j.anai.2024.09.021. Epub 2024 Oct 9.

[The role of biologics in inducing remission in asthma](#)

[William W Busse<sup>1</sup>](#)

Affiliations Expand

- PMID: 39383940
- DOI: [10.1016/j.anai.2024.09.021](#)

Abstract

Asthma remissions have been identified as a new treatment outcome and as based on experience with biologics. Remissions are defined as no symptoms, no exacerbations, no use of systemic corticosteroids, and stabilization (optimization) of lung functions; all these criteria need to be sustained for at least 1 year. This study discussed the evolution of remissions, the evolving criteria, and experiences in achieving remission after treatment with biologics. In severe, uncontrolled asthma, treatment with biologics has led to remissions in 20% to 35% of the subjects treated. It is proposed that remissions will become a new and important treatment outcome for asthma.

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Conflict of interest statement

Disclosures Dr Busse is a consultant to Sanofi, Regeneron, and GlaxoSmithKline; received speaker honoraria from Sanofi, Regeneron, and GlaxoSmithKline; and receives royalties from Elsevier.

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. 2025 Jan;138(1):42-50.e5.

doi: 10.1016/j.amjmed.2024.09.001. Epub 2024 Oct 5.

[Increased Risk of Chronic Respiratory Disease among Individuals with Inflammatory Bowel Disease in a Prospective Cohort Study](#)

[Lintao Dan](#)<sup>1</sup>, [Ying Xie](#)<sup>2</sup>, [Tian Fu](#)<sup>3</sup>, [Yuhao Sun](#)<sup>4</sup>, [Xuejie Chen](#)<sup>3</sup>, [Xiaoyan Wang](#)<sup>3</sup>, [Chenkai Wu](#)<sup>5</sup>, [Jie Chen](#)<sup>6</sup>, [Xue Li](#)<sup>7</sup>

Affiliations Expand

- PMID: 39370033
- DOI: [10.1016/j.amjmed.2024.09.001](#)

Abstract

**Background:** Cross-sectional evidence suggests a higher burden of chronic respiratory diseases in people with inflammatory bowel disease, but there is a lack of prospective evidence to clarify the direction of their associations. We aimed to investigate the association of inflammatory bowel disease with the risk of 2 major chronic respiratory diseases, chronic obstructive pulmonary disease, and asthma.

**Methods:** We included 430,414 participants from UK Biobank and followed them from recruitment (2006-2010) to 2021. Chronic obstructive pulmonary disease and asthma cases were obtained from inpatient data and death register. Using Cox proportional hazards models, we estimated the multivariable-adjusted hazard ratios (HR) of developing chronic obstructive pulmonary disease and asthma in participants with inflammatory bowel disease compared with inflammatory bowel disease-free groups. We also investigated the association among Crohn's disease and ulcerative colitis with the risk of chronic obstructive pulmonary disease and asthma.

**Results:** Over a median follow-up of 11.9 years, there were 11,196 incidents of chronic obstructive pulmonary disease and 9831 asthma cases. The adjusted HRs of developing chronic obstructive pulmonary disease (HR 1.54; 95% confidence interval [CI], 1.33-1.79) and asthma (HR 1.52; 95% CI, 1.29-1.79) were higher for those with inflammatory bowel disease when compared with inflammatory bowel disease-free participants. Participants with Crohn's disease and ulcerative colitis were also found to have a higher risk of chronic obstructive pulmonary disease (Crohn's disease: HR 1.71; 95% CI, 1.36-2.15; ulcerative colitis: HR 1.45; 95% CI,

1.20-1.75) and asthma (Crohn's disease: HR 1.73; 95% CI, 1.33-2.25; ulcerative colitis: HR 1.41; 95% CI, 1.15-1.73) when compared with those free of inflammatory bowel disease.

**Conclusions:** This study suggested that individuals with inflammatory bowel disease have a higher risk of developing chronic obstructive pulmonary disease and asthma, highlighting the importance of preventing chronic respiratory diseases among inflammatory bowel disease patients.

**Keywords:** Asthma; Chronic obstructive pulmonary diseases; Cohort study; Inflammatory bowel disease.

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. 2025 Jan;134(1):91-93.

doi: 10.1016/j.anai.2024.09.012. Epub 2024 Oct 1.

[Effect of electronic medication monitoring on asthma outcomes in a multidisciplinary pediatric severe asthma clinic](#)

[Matthew R McCulloch](#)<sup>1</sup>, [Samantha Bothwell](#)<sup>2</sup>, [John T Brinton](#)<sup>2</sup>, [William C Anderson](#)<sup>3rd</sup><sup>3</sup>

Affiliations Expand

- PMID: 39362361
- DOI: [10.1016/j.anai.2024.09.012](https://doi.org/10.1016/j.anai.2024.09.012)

**No abstract available**

**Conflict of interest statement**

Disclosures Dr Anderson has served on advisory boards for Regeneron, Sanofi, and Genentech. He has received program development funding from the COPIC Medical Foundation and the Colorado Medicaid Supplemental Funding Program. The remaining authors have no conflicts of interest to report.

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. 2025 Jan;31(1):43-48.

doi: 10.1016/j.cmi.2024.09.014. Epub 2024 Sep 25.

[Effects of long-term corticosteroid use on susceptibility to respiratory viruses: a narrative review](#)

[Paraskevi C Fragkou](#)<sup>1</sup>, [Dimitra Dimopoulou](#)<sup>2</sup>, [Charalampos D Moschopoulos](#)<sup>3</sup>, [Chrysanthi Skevaki](#)<sup>4</sup>; [ESCMID Study Group for Respiratory Viruses \(ESGREV\)](#)

**Affiliations Expand**

- PMID: 39332599
- DOI: [10.1016/j.cmi.2024.09.014](https://doi.org/10.1016/j.cmi.2024.09.014)

**Abstract**

**Background:** Synthetic glucocorticoids are among the most commonly administered drugs due to their potent immunomodulatory properties. However,

they may put patients at risk for infections. Their effect on the incidence of respiratory viral infections (RVIs) remains unclear.

**Objectives:** The aim of this review is to provide an insightful overview of the most up-to-date evidence regarding the extent to which the use of corticosteroids (CSs) influences the risk of RVIs.

**Sources:** The PubMed database was searched for studies on the association between CSs and RVIs from inception until 15 December 2023.

**Content:** CSs have differing impacts on the risk of RVIs in asthma and chronic obstructive pulmonary disease, influenced by both the specific virus and the type and dose of CSs. Furthermore, current data demonstrate that CSs may increase the risk of RVIs in patients with systemic lupus erythematosus, rheumatoid arthritis, vasculitis, solid tumours, haematological malignancies, and among transplant recipients.

**Implications:** Large-scale studies are imperative to inform a more accurate and personalized risk stratification for RVIs. This, in turn, will point towards new strategies for RVI prevention and associated morbidity and mortality in high-risk populations.

**Keywords:** Asthma; Autoimmunity; Chronic disease; Chronic obstructive pulmonary disease; Corticosteroids; Immunosuppression; Infection risk; Malignancy; Safety; Transplantation.

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Int J Hyg Environ Health

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. 2025 Jan:263:114463.

doi: 10.1016/j.ijheh.2024.114463. Epub 2024 Sep 26.

[Systematic review of impacts of occupational exposure to wildfire smoke on respiratory function, symptoms, measures and diseases](#)

[Win Wah](#)<sup>1</sup>, [Asmare Gelaw](#)<sup>2</sup>, [Deborah C Glass](#)<sup>3</sup>, [Malcolm R Sim](#)<sup>3</sup>, [Ryan F Hoy](#)<sup>4</sup>, [Janneke Berecki-Gisolf](#)<sup>5</sup>, [Karen Walker-Bone](#)<sup>3</sup>

Affiliations Expand

- PMID: 39332351
- DOI: [10.1016/j.ijheh.2024.114463](#)

Free article

Abstract

**Background:** Wildfire smoke contains numerous hazardous air pollutants which pose serious health risks to humans. Despite this, there has been a limited focus on the assessment of the acute physiological and longer-term respiratory effects of wildfire exposure on firefighters and other emergency workers. Therefore, we undertook a systematic review of the evidence about the respiratory impacts of occupational wildfire smoke exposure among wildfire fighters (WFF).

**Methods:** Eligible studies from Medline, Embase and Scopus databases were included if they described the relationship between wildfire exposure and respiratory function, symptoms, measures and diseases amongst emergency personnel or firefighters who had responded to wildfires.

**Results:** Twenty-six articles met the inclusion criteria. 24 out of 26 (22 out of 23 moderate/high quality) studies provided evidence of adverse respiratory effects, including reduced lung function, increased airway dysfunction and airway inflammation, upper and lower respiratory tract symptoms and increased asthma incidence related to wildfires or prescribed burns exposure among WFF and police responders. Fourteen out of 19 studies showed statistically significant declines in spirometry measures of lung function (mostly short-term studies). Two studies using complex lung function tests showed a significant effect on peripheral airway function.

**Discussion:** This review found a convincing body of evidence that occupational exposure to wildfires or prescribed burns has both acute and possibly longer-term respiratory effects among WFFs and some other emergency personnel. Given that these events are increasing, more needs to be done to identify those most at risk and mitigate these risks.

**Keywords:** Bushfire; Firefighters; Occupational exposure; Respiratory; Systematic review; Wildfire.

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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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**Randomized Controlled Trial**

**Am J Rhinol Allergy**

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. 2025 Jan;39(1):6-12.

doi: 10.1177/19458924241274501. Epub 2024 Sep 19.

[Association Between Smell Loss, Disease Burden, and Dupilumab Efficacy in Chronic Rhinosinusitis with Nasal Polyps](#)

[Zachary M Soler](#)<sup>1</sup>, [Zara M Patel](#)<sup>2</sup>, [Joaquim Mullo](#)<sup>3</sup>, [Jose Mattos](#)<sup>4</sup>, [Scott Nash](#)<sup>5</sup>, [Changming Xia](#)<sup>5</sup>, [Zhixiao Wang](#)<sup>5</sup>, [Kinga Borsos](#)<sup>6</sup>, [Mark Corbett](#)<sup>7</sup>, [Juby A Jacob-Nara](#)<sup>7</sup>, [Harry Sacks](#)<sup>5</sup>, [Paul Rowe](#)<sup>7</sup>, [Yamo Deniz](#)<sup>5</sup>, [Andrew P Lane](#)<sup>8</sup>

**Affiliations** Expand

- PMID: 39300794
- PMCID: [PMC11626849](#)
- DOI: [10.1177/19458924241274501](#)

**Abstract**

**Objective:** To evaluate the association between smell loss and other aspects of disease, and evaluate dupilumab efficacy in patients with severe chronic rhinosinusitis with nasal polyps (CRSwNP) and moderate or severe smell loss.

**Methods:** This post-hoc analysis of the SINUS-24/52 studies ([NCT02912468](#)/NCT02898454) analyzed nasal polyp score (NPS, 0-8), nasal congestion/obstruction (NC, 0-3), Lund-Mackay CT-scan score (LMK-CT, 0-24), rhinosinusitis severity visual analog scale (RS-VAS, 0-10), and 22-item Sinonasal Outcome Test (SNOT-22, 0-110) according to baseline monthly average patient-reported loss of smell scores (LoS, 0-3) of >1 to 2 (moderate) or >2 to 3 (severe) in patients randomized to dupilumab 300 mg or placebo every 2 weeks.

**Results:** Of 724 patients randomized, baseline LoS was severe in 601 (83%) and moderate in 106 (15%). At baseline, severe versus moderate LoS was associated with 1-point greater severity of NC (odds ratio [OR] 6.01 [95% confidence interval, (CI) 3.95, 9.15]), 5-point greater severity of LMK-CT (OR 2.19 [1.69, 2.85]), and 8.9-point greater severity of SNOT-22 (OR 1.35 [1.20, 1.49]). At Week 24, least squares mean differences (95% CI) dupilumab versus placebo in change from baseline were: NPS -1.90 (-2.56, -1.25) and -1.95 (-2.20, -1.70) in the moderate and severe baseline LoS subgroups, respectively; NC -.35 (-.64, -.06) and -1.00 (-1.13, -.87); LMK-CT -6.30 (-7.88, -4.72) and -6.22 (-6.82, -5.63); RS-VAS -1.18 (-2.20, -.16) and -3.47 (-3.90, -3.03); and SNOT-22 -7.52 (-14.55, -.48) and -21.72 (-24.63, -18.82); all nominal  $P < .05$  versus placebo. Improvements with dupilumab in NC, RS-VAS, and SNOT-22 were statistically greater in patients with severe versus moderate baseline LoS.

**Conclusion:** Significant smell impairment in severe CRSwNP is associated with significant disease (NC, RS-VAS, LMK), health-related quality of life impairment (SNOT-22), asthma, and non-steroidal anti-inflammatory drug-exacerbated respiratory disease. Dupilumab significantly improved NPS, NC, LMK-CT, RS-VAS, and SNOT-22 in subjects with moderate and severe baseline smell loss.

**Keywords:** CRSwNP; HRQoL; anosmia; biologic; dupilumab; interleukin-13; interleukin-4; interleukin-4 receptor alpha; olfaction; smell loss.

#### **Conflict of interest statement**

**Declaration of Conflicting Interests**The authors declare the following potential conflicts of interest with respect to the research, authorship, and/or publication of this article: Zachary M. Soler has been a consultant or advisory board member for Lyra, Novartis, Olympus, and Optinose; he has received speaker's fees from GlaxoSmithKline and Regeneron Pharmaceuticals Inc.; and held the post of medical director at Healthy Humming. Zara M. Patel has been a consultant or advisory board member for Dianotic, InfiniteMD, Mediflix, Medtronic, and Optinose and the Chief Medical Officer of Olfera Therapeutics. Joaquim Mullol has participated in a speakers' bureau or advisory board or received a research grant from AstraZeneca, Genentech, Inc., GlaxoSmithKline, Glenmark, Menarini, Mitsubishi-Tanabe, Merck Sharp & Dohme, Viartis (Mylan-MEDA), Novartis, Procter & Gamble, Regeneron Pharmaceuticals Inc., Sanofi, and the NOUCOR/Uriach Group. Jose Mattos has no financial disclosures or conflicts of interest. Scott Nash, Changming Xia, Zhixiao Wang, Harry Sacks, and Yamo Deniz are employees of Regeneron Pharmaceuticals and may hold stock and/or stock options in the company. Kinga Borsos is a former employee of Sanofi and may hold stock and/or stock options in the company. Mark Corbett, Juby A. Jacob-Nara, and Paul Rowe are employees of Sanofi and may hold

stock and/or stock options in the company. Andrew P. Lane is a member of the advisory boards of Sanofi and Regeneron Pharmaceuticals Inc.

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J Asthma

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. 2025 Jan;62(1):155-166.

doi: 10.1080/02770903.2024.2393677. Epub 2024 Aug 27.

[Physical comorbidity is associated with overnight hospitalization in U.S. adults with asthma: an assessment of the 2005-2018 National Health and Nutrition Examination Surveys](#)

[Hanna A Frank<sup>1</sup>, Mohammad Ehsanul Karim<sup>1,2</sup>](#)

Affiliations Expand

- PMID: 39155766
- DOI: [10.1080/02770903.2024.2393677](#)

Abstract

**Objective:** Identifying the effects of comorbidity on healthcare utilization is critical for understanding the benefits of improved comorbidity management. Asthma is a common respiratory condition, associated with gastrointestinal, metabolic, psychiatric, and other respiratory conditions. Adults with asthma represent a key population in understanding comorbidity and its consequences. The objective was

to explore the relationship between comorbidity and overnight hospitalizations in U.S. adults with asthma.

**Study design and methods:** A cross-sectional sample of 3,887 subjects aged 20-79 was aggregated from seven cycles (2005-2018) of the National Health and Nutrition Examination Survey (NHANES). The survey design was created using the full seven cycles, then a subpopulation was used for the analysis. Design-based modified Poisson regression with robust standard errors compared the prevalence of overnight hospitalizations in subjects with and without comorbidities. Comorbidity was defined as the presence of one or more additional chronic conditions.

**Results:** Over half (61.6%) of patients with asthma reported having comorbidities. The overnight hospitalization prevalence was higher in those with comorbidities (21.6%) than those without (7.4%). The adjusted prevalence ratio of overnight hospitalizations in those with comorbidities vs. those without was 2.02 (95% CI: 1.54-2.66). Conclusions from sensitivity analyses remained the same.

**Conclusions:** Comorbidity in U.S. adult asthma patients is associated with increased overnight hospitalizations. Study results concur with examinations of other healthcare utilization outcomes, revealing how comorbidity influences healthcare utilization patterns in patients with asthma. The reduction of overnight hospitalizations should be a targeted goal when developing and evaluating interventions to manage comorbidities in patients with asthma.

**Keywords:** Coexisting disease; NHANES; asthma; comorbidity; healthcare utilization; multimorbidity; overnight hospitalization; survey data.

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Meta-Analysis

J Asthma

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. 2025 Jan;62(1):124-133.

doi: 10.1080/02770903.2024.2391441. Epub 2024 Aug 28.

[Efficacy and safety of subcutaneous and sublingual allergen immunotherapy in the treatment of asthma in children: a systematic review and meta-analysis](#)

[Wenwen Yang<sup>1</sup>](#), [Weijie Wang<sup>1</sup>](#), [Yishu Ji<sup>1</sup>](#), [Huisong Pan<sup>1</sup>](#)

Affiliations Expand

- PMID: 39132908
- DOI: [10.1080/02770903.2024.2391441](https://doi.org/10.1080/02770903.2024.2391441)

Abstract

**Objective:** Asthma is a common chronic condition in children globally. Allergen-specific immunotherapy, such as subcutaneous (SCIT) and sublingual (SLIT) therapies, are promising by increasing allergen tolerance. This meta-analysis compares the efficacy and safety of SLIT and SCIT in pediatric asthma.

**Methods:** We searched PubMed, Cochrane Library, and Embase for randomized controlled trials and case-control studies comparing SLIT and SCIT in asthmatic children. Meta-analysis was conducted using random-effects models with calculations *via* R software version 4.3.2 and RevMan version 5.4. Study quality and bias risk were assessed using the Newcastle-Ottawa Scale and Cochrane Risk of Bias Tool.

**Results:** The literature search yielded a total of 1787 records, with 7 studies meeting the inclusion criteria after screening and assessments. There was no significant difference in the Total Asthma Symptoms Score between SLIT and SCIT (mean difference -0.05 [95% CI: -0.21; 0.10]). However, asthma improvement rates were higher in the SLIT group (risk ratio 0.77 [95% CI: 0.64; 0.93]). FEV1 improvement showed no significant difference (mean difference -1.60 [95% CI: -6.27; 3.08]). Adverse events were similar between the treatments (risk ratio 0.56 [95% CI: 0.11; 2.82]).

**Conclusions:** SLIT and SCIT were generally similarly effective and safe for treating pediatric asthma. SLIT may be preferred due to its noninvasive administration. More research is needed on long-term effects and tailored treatment approaches.

**Keywords:** Childhood asthma; allergen-specific immunotherapy; meta-analysis; subcutaneous immunotherapy; sublingual immunotherapy.

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J Asthma

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. 2025 Jan;62(1):110-123.

doi: 10.1080/02770903.2024.2388781. Epub 2024 Aug 12.

[A novel approach to investigate severe asthma and COPD: the 3d ex vivo respiratory mucosa model](#)

[Alberto Fucarino<sup>1</sup>](#), [Alessandro Pitruzzella<sup>2</sup>](#), [Stefano Burgio<sup>3,4</sup>](#), [Giorgia Intili<sup>2</sup>](#), [Olga Maria Manna<sup>2</sup>](#), [Michele Domenico Modica<sup>2,5</sup>](#), [Salvatore Poma<sup>5</sup>](#), [Alida Benfante<sup>6</sup>](#), [Alessandra Tomasello<sup>6</sup>](#), [Nicola Scichilone<sup>6</sup>](#), [Fabio Bucchieri<sup>2</sup>](#)

Affiliations Expand

- PMID: 39096201
- DOI: [10.1080/02770903.2024.2388781](#)

Abstract

**Purpose:** This article illustrates the replication of asthma and COPD conditions in a laboratory setting and the potential applications of this methodology.

**Introduction:** Biologic drugs have been shown to enhance the treatment of severe asthma and COPD. Monoclonal antibodies against specific targets have dramatically changed the management of these conditions. Although the inflammatory pathways of asthma and COPD have already been clearly outlined, alternative mechanisms of action remain mostly unexplored. They could provide additional insights into these diseases and their clinical management.

**Aims:** *In vivo* or *in vitro* models have thus been developed to test alternative hypotheses. This study describes sophisticated *ex vivo* models that mimic the response of human respiratory mucosa to disease triggers, aiming to narrow the gap between laboratory studies and clinical practice.

**Results:** These models successfully replicate crucial aspects of these diseases, such as inflammatory cell presence, cytokine production, and changes in tissue structure, offering a dynamic platform for investigating disease processes and evaluating potential treatments, such as monoclonal antibodies. The proposed models have the potential to enhance personalized medicine approaches and

patient-specific treatments, helping to advance the understanding and management of respiratory diseases.

**Keywords:** Chronic obstructive pulmonary disease (COPD); air-liquid interface (ALI) cultures; asthma; drug efficacy evaluation; ex vivo respiratory mucosa model; inflammatory lung diseases; tissue remodeling.

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Meta-Analysis

J Asthma

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. 2025 Jan;62(1):4-13.

doi: 10.1080/02770903.2024.2385973. Epub 2024 Aug 2.

[Long-term safety of tezepelumab in patients with asthma: a systematic review and meta-analysis of randomized controlled trials](#)

[Jinlv Qin](#)<sup>1</sup>, [Guizuo Wang](#)<sup>2</sup>, [Dong Han](#)<sup>2</sup>

Affiliations Expand

- PMID: 39067012
- DOI: [10.1080/02770903.2024.2385973](https://doi.org/10.1080/02770903.2024.2385973)

Abstract

**Objective:** Tezepelumab has demonstrated its effectiveness in patients with asthma, but its safety, especially for long-term use, needs to be further explored. This

systematic review and meta-analysis aimed to determine the safety of long-term use of tezepelumab in patients with asthma.

**Data sources:** A systematic search was made of PubMed, Embase, Cochrane Library, and clinicaltrials.gov, without language restrictions.

**Study selections:** Randomized controlled trials (RCTs) on treatment of asthma with tezepelumab, compared with placebo, were reviewed. Studies were pooled to weighted mean differences (WMDs) and risk ratios (RRs), with 95% confidence intervals (CIs).

**Results:** Seven RCTs (enrolling 2050 participants) met the inclusion criteria. Serious adverse event (RR 0.74, 95% CI 0.57 to 0.95), upper respiratory tract infection (RR 0.73, 95% CI 0.55 to 0.96), and asthma (RR 0.61, 95% CI 0.48 to 0.76) were more frequent in the placebo groups. There was no statistically significant difference in the proportion of patients with at least one adverse event (AE), AEs leading to discontinuation of study treatment, all-cause death, influenza, bronchitis, nasopharyngitis, headache, and hypertension between the two groups.

**Conclusion:** Long-term (12-52 wk) use of tezepelumab in patients with asthma does not increase the incidence of adverse events.

**Keywords:** Tezepelumab; asthma; meta-analysis; safety.

Supplementary info

Publication types, MeSH terms, SubstancesExpand

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Pediatr Pulmonol

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. 2024 Dec 31:e27466.

doi: 10.1002/ppul.27466. Online ahead of print.

[As-Needed Inhaled Corticosteroid-Formoterol in a Single Inhaler Compared to Inhaled Corticosteroid-Albuterol in Separate Inhalers as Reliever Therapy in Mild Pediatric Asthma: A Cost-Utility Analysis](#)

[Carlos E Rodríguez-Martínez<sup>1,2</sup>, Monica P Sossa-Briceño<sup>3</sup>, Jefferson Antonio Buendía<sup>4</sup>](#)

Affiliations Expand

- PMID: 39739342
- DOI: [10.1002/ppul.27466](#)

Abstract

**Objectives:** Since 2019 as-needed low-dose ICS-formoterol in a single inhaler has been recommended for treatment of mild asthma in children aged more than 12 years. Alternatively, the use of ICS-albuterol has been proposed in countries where ICS-formoterol is not available or affordable. The aim of the present study was to evaluate the cost-utility of as-needed ICS-albuterol in separate inhalers compared to ICS-formoterol in a single inhaler as reliever therapy in pediatric patients with mild asthma living in Colombia.

**Methods:** A Markov-type model was developed to estimate the costs and health outcomes of a simulated cohort of pediatric patients with mild asthma treated for 12 months. The effectiveness data and transition probabilities were obtained from relevant randomized clinical trials (RCTs). Cost data were obtained from official databases provided by the Colombian Ministry of Health. The main outcome was the variable "quality-adjusted life-years" (QALYs).

**Results:** The base-case analysis showed that compared with the use of as-needed ICS-albuterol in separate inhalers, the use of ICS-formoterol in a single in pediatric patients with mild asthma was associated with lower costs (US\$475.51 vs. 735.33 average cost per patient) and the greatest gain in QALYs (0.9367 vs. 0.9352 QALYs on average per patient), thus leading to dominance.

**Conclusions:** Compared with the use of as-needed ICS-albuterol in separate inhalers, the use of ICS-formoterol in a single inhaler as reliever therapy is cost-effective in patients aged 12 years or more with mild asthma, because it showed a greater gain in QALYs at lower total treatment costs.

**Keywords:** cost-effectiveness; inhaled corticosteroids; mild asthma; quality-adjusted life-years; separate inhalers; single inhaler.

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- [26 references](#)

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Chest

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. 2024 Dec 30:S0012-3692(24)05733-7.

doi: 10.1016/j.chest.2024.11.045. Online ahead of print.

[The role of bronchial biopsy in the prediction of response to biological therapy in severe uncontrolled asthma: a prospective study](#)

[Borja G Cosío](#)<sup>1</sup>, [Amanda Iglesias](#)<sup>2</sup>, [Hanaa Shafiek](#)<sup>3</sup>, [Mar Mosteiro](#)<sup>4</sup>, [Inés Escribano](#)<sup>5</sup>, [Nuria Toledo-Pons](#)<sup>6</sup>, [Jose Luis Valera](#)<sup>6</sup>, [Cristina Gómez Bellvert](#)<sup>7</sup>, [Luis Pérez de Llano](#)<sup>8</sup>

Affiliations Expand

- PMID: 39742914
- DOI: [10.1016/j.chest.2024.11.045](https://doi.org/10.1016/j.chest.2024.11.045)

Abstract

**Background:** Up to two thirds of patients with severe uncontrolled asthma (SUA) who received biological therapy do not have a complete response.

**Research question:** Can bronchial biopsy (BB) play a role in the identification of patients with SUA who has a better response to biological therapy?

**Study design: AND METHODS:** Prospective multicentre study. Consecutive SUA patients candidate to biological therapy underwent bronchoscopy and BB prior to biological therapy and clinical response was evaluated 6 months later. BB was evaluated according to a previously validated pathological score (PS) and was compared with a score of T2 inflammation (T2 score) that includes blood eosinophil count (BEC) and FeNO in predicting response to biological therapy. Response was graded as super-response, good response and partial/no response according to a composite score that includes exacerbations, oral corticosteroid (OCS) use, asthma control test (ACT) and improvement in FEV1.

**Results:** 92 patients were recruited and 78 completed the study, 63 of them received anti-IL5/5R (Mepolizumab, Reslizumab and Benralizumab) and 15 Dupilumab, being super-responders 36.5% and 26.6% respectively (p=0.126). The PS, but not the T2 score, was the only variable independently associated to response. Super-responders showed statistically significant higher PS. Response was better predicted by the PS compared to T2 score, in those receiving OCS and especially in those on anti-IL5/5R . Low tissue eosinophilia (<10 eosinophils/field) was associated to poor response to biological therapy.

**Interpretation:** BB is more precise in the prediction of response to biological therapy than the T2 score, especially in those requiring OCS or receiving anti-IL5/5R . Tissue eosinophilia is the main driver of this predictive capacity, but there are other items in the PS related to bronchial remodeling that might be contributing to the identification of response to biological therapy.

**Keywords:** T2 score; bronchoscopy; pathological score; submucosal eosinophilia; super-response to biological therapy.

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NPJ Prim Care Respir Med

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. 2024 Dec 28;34(1):46.

doi: 10.1038/s41533-024-00404-8.

[Clinically-enhanced digital health program for respiratory care associated with better medication use and retention](#)

[Leanne Kaye](#)<sup>1</sup>, [Vy Vuong](#)<sup>2</sup>, [Urvashi Patel](#)<sup>3</sup>, [Douglas Mager](#)<sup>3</sup>, [Meredith A Barrett](#)<sup>2</sup>

Affiliations Expand

- PMID: 39732726

- PMID: [PMC11682130](#)
- DOI: [10.1038/s41533-024-00404-8](#)

## Abstract

Digital health platforms for asthma self-management have demonstrated promise in improving clinical and quality of life outcomes. However, few studies have examined such an approach in a real-world, fully remote setting. As such, we evaluated the benefit of an evidence-based digital self-management platform for asthma—both on its own and when integrated into an established virtual clinical service. We compared six-month outcomes of a digital self-management program plus virtual clinical oversight, called a therapeutic resource center, (DP + TRC) with a digital self-management-only (DP) program in patients with uncontrolled asthma. The DP included electronic medication sensors that captured the date and time of both short-acting beta agonist (SABA) and controller medication usage. The TRC included remote care oversight to promote inhaler adherence and address symptom worsening. SABA usage, controller adherence and program retention were assessed retrospectively using regression models controlling for age, enrollment year, controller/SABA use, and baseline asthma control status. 18,584 DP patients (mean age (SD): 33 (14.6) yrs; 89.9% uncontrolled asthma) and 3440 DP + TRC patients (mean age (SD): 43.7 (15.6) yrs; 48.6% uncontrolled) were assessed. We observed significantly better six-month program retention (55% vs. 41%,  $p < 0.001$ ) and controller adherence (54% vs. 45%,  $p < 0.001$ ), but no statistically significant differences in mean SABA use (0.76 vs. 0.87 mean puffs/day;  $p = 0.158$ ) for the DP + TRC vs. DP groups, respectively. From baseline to six months, both groups had similar reductions in mean daily SABA use (both  $p < 0.001$ ) and improvements in the percent of SABA-free days (both  $p < 0.001$ ). The proportion of patients with  $\geq 80\%$  controller adherence declined in both groups, but a larger relative decline was noted in the DP vs. DP + TRC group. A digital self-management platform for asthma management combined with virtual clinical oversight may offer a scalable solution that not only achieves reduced SABA use, but also promotes medication adherence and increases program retention.

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## Conflict of interest statement

Competing interests: L.K., V.V., and M.A.B. were employed at ResMed at the time of manuscript development. L.K. and M.A.B. are former employees of Propeller Health. U.P. and D.M. are employees of Evernorth Health Services, the parent company of Express Scripts.

- [18 references](#)

Supplementary info

MeSH terms, SubstancesExpand

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nature portfolio

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

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Expert Rev Clin Immunol

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. 2025 Jan 2.

doi: 10.1080/1744666X.2024.2448990. Online ahead of print.

## Type 2 inflammation: a Portuguese consensus using Web-Delphi and decision conferencing (INFLAT2-PT)

Suzete Costa<sup>1,2</sup>, João Pedro Aquiar<sup>1,2</sup>, Mónica D Oliveira<sup>3,4</sup>, João Gonçalves<sup>5,6</sup>, João Carlos Ribeiro<sup>7,8</sup>, Luís Taborda-Barata<sup>9,10</sup>, Helena Farinha<sup>5,11</sup>, Pedro Escada<sup>12,13</sup>, Samuel Fernandes<sup>14,15</sup>, Luís Soares-de-Almeida<sup>16,17</sup>, Maria João Paiva-Lopes<sup>13,18</sup>, Cláudia Chaves Loureiro<sup>19,20</sup>, Isabel Lourinho<sup>21,22</sup>, João A Fonseca<sup>23,24</sup>, Marta Drummond<sup>25,26</sup>, Rui Tato Marinho<sup>14,15</sup>, João Bana E Costa<sup>27</sup>, António Vaz Carneiro<sup>1,2</sup>, Carlos A Bana E Costa<sup>3,28</sup>

### Affiliations Expand

- PMID: 39748205
- DOI: [10.1080/1744666X.2024.2448990](https://doi.org/10.1080/1744666X.2024.2448990)

### Abstract

**Objectives:** Atopic/allergic diseases impose a growing burden on public health, affecting millions of patients worldwide. The main objective of this study was to develop a national expert consensus on relevant clinical questions related to type 2 inflammation.

**Methods:** We conducted: a comprehensive literature review with a qualitative analysis to identify the most repeated themes on the overlap of conditions; a modified 3-round Web-Delphi (or e-Delphi); and a final online decision conference.

**Results:** We included 51 studies. Following three Web-Delphi rounds, we ended up with 30 statements with a 76% overall full agreement rate, 16% agreement, 2% disagreement, and 0% full disagreement. The decision conference enabled adjustments, and the expert panel agreed unanimously on the final set of statements. The consensus used evidence synthesis, Web-Delphi, and decision conference to produce 30 statements on type 2 inflammation as a driver for multimorbidity in asthma, certain rhinitis phenotypes, atopic dermatitis, chronic rhinosinusitis with nasal polyps, and eosinophilic esophagitis grouped under five

domains in underlying pathophysiology, multimorbidity, diagnosis and management, multidisciplinary management, and impact on mental health.

**Conclusion:** We expect the first Portuguese expert consensus INFLAT2-PT to promote understanding of type 2 inflammation diseases, multidisciplinary care, integrated care pathways, future research, and inform health authorities.

**Keywords:** Allergy; asthma; atopic dermatitis; chronic rhinosinusitis; consensus; eosinophilic esophagitis; type-2 inflammation.

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Eur Ann Allergy Clin Immunol

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. 2025 Jan 2.

doi: 10.23822/EurAnnACI.1764-1489.382. Online ahead of print.

[Rhinitis or asthma among adults as associated factors with symptoms of depression](#)

[T I Bedolla-Pulido<sup>1</sup>](#), [J Morales-Romero<sup>2</sup>](#), [N A Pulido-Guillén<sup>3</sup>](#), [M E De Alba-Márquez<sup>4</sup>](#), [M Robles-Figueroa<sup>5</sup>](#), [M Bedolla-Barajas<sup>6</sup>](#)

Affiliations Expand

- PMID: 39745419
- DOI: [10.23822/EurAnnACI.1764-1489.382](#)

Abstract

**Background.** It has been observed that diseases such as rhinitis and asthma not only affect the physical health of individuals but can also significantly impact their psychological well-being. The aim of this study is to analyze the relationship between allergic rhinitis (AR), non-allergic rhinitis (NAR), and asthma with symptoms of depression in adults. **Methods.** Comparative cross-sectional study. Adult subjects diagnosed with AR, NAR or asthma were selected and a fourth group of apparently healthy individuals (control group) was recruited. Study subjects were included consecutively. Multivariate binary logistic regression models were used to investigate the association of the diseases in this study (AR, NAR or asthma) with

the 21 symptoms of depression from the Beck Depression Inventory-II. The adjusted odds ratio (aOR) was used as the test statistic. Results. A total of 257 participants (60% women; mean age 33.2 years) were included and compared cross-sectionally in four groups: AR (n=59), NAR (n=42), asthma (n=80), and a control group (n=76). In women, asthma and allergic rhinitis were associated with loss of energy and tiredness or fatigue. On the contrary, among men, neither asthma nor allergic rhinitis showed an association with the variables analyzed. However, anxiety showed an association as a risk factor for symptoms of depression in both sexes. Conclusions. Our study reveals for the first time that although the spectrum of symptoms of depression is broad, rhinitis and asthma are only related to some of them.

**Keywords:** Asthma; adult; allergic rhinitis; depression; energy loss; fatigue; pessimism; sleep; sleep habits.

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Review

J Asthma

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. 2025 Jan 2:1-10.

doi: 10.1080/02770903.2024.2415544. Online ahead of print.

[Efficacy and safety of montelukast-levocetirizine combination therapy in combined allergic rhinitis and asthma syndrome: a systematic review and meta-analysis](#)

[Min Shao<sup>1</sup>](#), [Jianing Sun<sup>1</sup>](#), [Qiling Zheng<sup>1</sup>](#)

Affiliations Expand

- PMID: 39394937
- DOI: [10.1080/02770903.2024.2415544](https://doi.org/10.1080/02770903.2024.2415544)

Abstract

**Objective:** This meta-analysis aims to evaluate the efficacy and safety of montelukast combined with levocetirizine in the treatment of allergic rhinitis with asthma, and to provide objective and effective evidence-based medical evidence for clinical use.

**Data sources:** PubMed, Web of Science, Cochrane Library, WANFANG DATA, CNKI, and Chinese BioMedical Literature Database were retrieved to identify records related to montelukast combined with levocetirizine in the treatment of allergic rhinitis with asthma.

**Study selections:** First, the eligibility criteria were employed to screen search results. Then, two investigators independently assessed titles, abstracts, and the full text of all retrieved references to identify potentially eligible studies.

**Results:** As of 2024-02-03, a total of six articles were included in this meta-analysis, covering 2,950 patients with allergic rhinitis with asthma. The meta-analysis results exhibited a pooled NSS of -1.28 (95%CI: -1.64 to -0.92), suggesting that the combination of montelukast and levocetirizine was effective in the treatment of nasal symptoms of allergic rhinitis complicated with asthma. The meta-analysis of controlled trials showed that the SMD of NSS in the group of montelukast combined with levocetirizine was -2.56 (95%CI: -2.77 to -2.35). The result indicated that compared with the control group, the combination of montelukast with levocetirizine significantly improved the symptoms of allergic rhinitis.

**Conclusion:** In summary, this meta-analysis demonstrated the efficacy of montelukast combined with levocetirizine in the treatment of nasal symptoms in AR with asthma, indicating that the combination of montelukast with levocetirizine is more effective in improving symptoms of allergic rhinitis than monotherapy and has good safety.

**Keywords:** Montelukast; allergic rhinitis; asthma syndrome; levocetirizine; meta-analysis.

Supplementary info

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Lancet Reg Health Eur

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. 2024 Nov 26:48:101136.

doi: 10.1016/j.lanepe.2024.101136. eCollection 2025 Jan.

**Efficacy and safety of SQ house dust mite sublingual immunotherapy-tablet (12 SQ-HDM) in children with allergic rhinitis/rhinoconjunctivitis with or without asthma (MT-12): a randomised, double-blind, placebo-controlled, phase III trial**

**Antje Schuster<sup>1</sup>, Davide Caimmi<sup>2,3</sup>, Hendrik Nolte<sup>4</sup>, Silviya Novakova<sup>5</sup>, Jan Mikler<sup>6</sup>, Majken Hougaard Foss-Skiftesvik<sup>4</sup>, Anne Sofie Østerdal<sup>4</sup>, Andrzej Emeryk<sup>7</sup>, Remi Gagnon<sup>8</sup>, Oliver Pfaar<sup>9</sup>**

**Affiliations Expand**

- PMID: 39678704
- PMCID: [PMC11638617](#)
- DOI: [10.1016/j.lanepe.2024.101136](#)

**Abstract**

**Background:** Allergic rhinitis/rhinoconjunctivitis (AR/C) induced by house dust mites (HDM) often begins in childhood and negatively impacts a child's quality of life. The daily burden can be further compounded by comorbid asthma. Allergen immunotherapy is the only available treatment targeting the underlying cause of allergic disease. Efficacy and safety of the SQ HDM sublingual immunotherapy (SLIT)-tablet has been demonstrated in adults and adolescents with HDM AR/C with or without asthma, but data are lacking for younger children.

**Methods:** Phase III, randomised, double-blind, placebo-controlled trial in younger children (5-11 years) with HDM AR/C with or without asthma. Eligible subjects were randomised 1:1 to SQ HDM SLIT-tablet or placebo for ~1 year and had free access to AR/C symptom-relieving medications. The primary outcome was the total combined rhinitis score (TCRS) during the final 8 weeks of the treatment period (~1 year). Secondary outcomes included the rhinitis daily symptom score (DSS) and medication score (DMS), the rhinoconjunctivitis total combined score (TCS), and the Paediatric Rhinoconjunctivitis Quality of Life Questionnaire (PRQLQ) score. Efficacy analyses were conducted on the full analysis set (observed cases). Asthma-related outcomes were also explored. The trial was registered on ClinicalTrials.gov: [NCT04145219](#) and EudraCT: 2019-000560-22.

**Findings:** A total of 1460 subjects were randomised to SQ HDM SLIT-tablet (n = 729) or placebo (n = 731). The primary outcome, TCRS, was statistically significantly different for SQ HDM SLIT-tablet (n = 693) versus placebo (n = 706), with an absolute difference of 1.0 (95% CI: 0.5, 1.4; p < 0.0001) corresponding to a relative reduction of 22.0% (95% CI: 12.0, 31.1). Key secondary outcomes (DSS, DMS, TCS, PRQLQ)

showed statistically significant reductions in symptoms and medication use, and improved disease-related quality of life for SQ HDM SLIT-tablet versus placebo. Improvements in asthma symptoms and reduced asthma medication use indicated an additional effect of SQ HDM-SLIT tablet versus placebo. The SQ HDM SLIT-tablet showed a higher event rate for treatment-related adverse events (AEs) than placebo. Most events were of mild or moderate severity and few subjects discontinued due to AEs (2.5%).

**Interpretation:** The trial confirmed the efficacy and safety of the SQ HDM SLIT-tablet for treating HDM AR/C in younger children (5-11 years) with or without asthma. The safety profile supports daily self-administration of the SQ HDM SLIT-tablet in children.

**Funding:** ALK-Abelló, Hørsholm, Denmark.

**Keywords:** Allergen immunotherapy; Allergic rhinitis; House dust mite; Paediatric; SLIT-tablet.

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#### **Conflict of interest statement**

AS has received personal fees/clinical study fees from ALK-Abelló. Unpaid board member for German paediatric scientific societies (Gesellschaft für Pädiatrische Pneumologie [GPP] and Westdt. AG für pädiatrische Pneumologie und Allergologie [WAPPA]; unpaid co-author on scientific guidelines. DC has received fees for oral presentations from ALK-Abelló, Stallergenes Greer, AstraZeneca, GlaxoSmithKline, and Sanofi-Genzyme. Scientific board member for ALK-Abelló, Stallergenes Greer, AstraZeneca, and Sanofi-Genzyme. HN is an employee of ALK-Abelló. SN has received fees for oral presentations from Stallergenes Greer, TEVA. Chie, Berlin-Chemie, and Chiesi. JM was a clinical investigator in clinical studies MT-12, MT-18, and TT-06 sponsored by ALK-Abelló, and YOBI-SL79.22 sponsored by Stallergenes. MHF-S is an employee of ALK-Abelló. ASØ was an employee of ALK-Abelló when the work was conducted, but has since moved to Novo Nordisk. AE has received lecture fees from ALK-Abelló. RG has conducted research for ALK-Abelló, AstraZeneca, GSK, DBV, Regeneron, Moderna, Novartis, and Sanofi, and has received consultancy fees from ALK-Abelló, Regeneron, Bausch Lomb, and Sanofi-Genzyme; received lecture fees from Bausch Lomb, and Novartis. OP reports grants from ALK-Abelló, Denmark, during the conduct of the study; furthermore, he reports grants and/or personal fees and/or travel support from ALK-Abelló, Allergopharma, Stallergenes Greer, HAL Allergy Holding B.V./HAL Allergie GmbH, Bencard Allergie GmbH/Allergy Therapeutics, Laboratorios LETI/LETI Pharma, GSK, ROXALL Medizin, Novartis, Sanofi-Aventis and Sanofi-Genzyme, Med Update Europe GmbH, streamedup! GmbH, Pohl-Boskamp, Immunotek S.L., John Wiley and Sons/AS, Paul-Martini-Stiftung (PMS), Regeneron Pharmaceuticals Inc., RG Aertzefortbildung, Institut für Disease Management, Springer GmbH, AstraZeneca, IQVIA Commercial, Ingress Health, Wort&Bild Verlag, Verlag ME, Procter&Gamble, ALTAMIRA, Meinhardt Congress GmbH, Deutsche Forschungsgemeinschaft, Thieme, Deutsche AllergieLiga e.V., AeDA, Alfried-Krupp Krankenhaus, Red Maple Trials Inc., Königlich Dänisches Generalkonsulat, Medizinische Hochschule Hannover, ECM Expo & Conference Management GmbH, Technical University Dresden, Lilly, Japanese Society of Allergy, Forum für Medizinische Fortbildung, Dustri-Verlag, Pneumolive, ASIT Biotech, LOFARMA, Almirall, Paul-Ehrlich-Institut, all outside the

submitted work; and he is member of EAACI Excom, member of ext. board of directors DGAKI; coordinator, main- or co-author of different position papers and guidelines in rhinology, allergology and allergen-immunotherapy; he is associate editor (AE) of Allergy and Clinical Translational Allergy.

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Clinical Trial

Ann Allergy Asthma Immunol

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. 2025 Jan;134(1):61-69.e12.

doi: 10.1016/j.anai.2024.09.015. Epub 2024 Sep 28.

[Mild and symptom-free months in patients with chronic rhinosinusitis with nasal polyps treated with dupilumab](#)

[Claus Bachert](#)<sup>1</sup>, [Asif H Khan](#)<sup>2</sup>, [Claire Hopkins](#)<sup>3</sup>, [Joseph K Han](#)<sup>4</sup>, [Wytske J Fokkens](#)<sup>5</sup>, [Leda P Mannent](#)<sup>6</sup>, [Jérôme Msihid](#)<sup>6</sup>, [Kinga Borsos](#)<sup>7</sup>, [Siddhesh Kamat](#)<sup>8</sup>, [Scott Nash](#)<sup>8</sup>, [Harry Sacks](#)<sup>8</sup>, [Paul J Rowe](#)<sup>2</sup>, [Yamo Deniz](#)<sup>8</sup>, [Juby A Jacob-Nara](#)<sup>9</sup>

Affiliations Expand

- PMID: 39343385
- DOI: [10.1016/j.anai.2024.09.015](#)

## Free article

### Abstract

**Background:** Frequently reported outcomes of clinical trials in chronic rhinosinusitis with nasal polyps (CRSwNP) may have limited reliability for patients.

**Objective:** To enhance the patient reliability of outcomes in dupilumab clinical trials for CRSwNP, daily symptom scores were used to determine new patient-centered end points: mild-to-no-symptom months (MSM) and symptom-free months (SFM).

**Methods:** This work is a post hoc analysis of patients receiving dupilumab 300 mg or placebo every 2 weeks for 24 weeks (SINUS-24 study; [NCT02912468](#)) or 52 weeks (SINUS-52; [NCT02898454](#)). Patients recorded symptom severity scores daily for each of nasal congestion, loss of smell, and anterior and posterior rhinorrhea on a scale of 0 to 3 (0 = no symptoms; 1 = mild; 2 = moderate; 3 = severe). We assessed the proportions of patients reporting only MSM or SFM throughout the 28-day period before randomization, week 24 (pooled studies), and week 52 (SINUS-52).

**Results:** Significantly more dupilumab-treated than placebo-treated patients achieved MSM for all 4 symptoms (week 24: 31.0% vs 4.4%; odds ratio [OR] 12.9 [95% CI 6.4-25.8]; week 52: 38.3% vs 2.6%; OR 15.6 [5.9-41.0]; both  $P < .0001$ ). In addition, significantly more dupilumab-treated than placebo-treated patients achieved SFM for at least 1 of the 4 symptoms (week 24: 35.4% vs 10.8%; OR 4.9 [95% CI 3.1-7.8]; week 52: 50.0% vs 9.2%; OR 9.1 [95% CI 4.6-17.9]; both  $P < .0001$ ).

**Conclusion:** One-third of patients with severe CRSwNP treated with dupilumab achieved MSM for all 4 cardinal symptoms (nasal congestion, loss of smell, and anterior and posterior rhinorrhea). Moreover, half of the patients achieved SFM for at least 1 of the 4 symptoms. These results support the benefit of dupilumab in improving patient-centered outcomes.

**Trial registration:** ClinicalTrials.gov Identifiers: [NCT02912468](#) (SINUS-24) and [NCT02898454](#) (SINUS-52).

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### Conflict of interest statement

**Disclosures** Professor Bachert is an advisory board member for AstraZeneca, Novartis, and Sanofi. Professor Hopkins is an advisory board member for AstraZeneca, BiInspire Technologies, GlaxoSmithKline, and Sanofi. Professor Han is an advisory board member for AstraZeneca, Genentech, GlaxoSmithKline, Novartis, Regeneron Pharmaceuticals Inc, and Sanofi. Professor Fokkens has received research grants from BiInspire Technologies, GlaxoSmithKline, Mylan, Novartis, and Sanofi. Dr Khan, Dr Mannent, Mr Msihid, and Dr Rowe are employees of Sanofi and may hold stock and/or stock options in the company. Dr Borsos and Dr Jacob-Nara are former employees of Sanofi and may hold stock and/or stock options in the company. Mr Kamat, Dr Nash, and Dr Deniz are employees and shareholders of Regeneron Pharmaceuticals Inc. Dr Sacks is an employee of Regeneron Pharmaceuticals Inc and a shareholder in OptiNose.

### Supplementary info

Publication types, MeSH terms, Substances, Associated dataExpand

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Randomized Controlled Trial

Am J Rhinol Allergy

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. 2025 Jan;39(1):6-12.

doi: 10.1177/19458924241274501. Epub 2024 Sep 19.

[Association Between Smell Loss, Disease Burden, and Dupilumab Efficacy in Chronic Rhinosinusitis with Nasal Polyps](#)

[Zachary M Soler](#)<sup>1</sup>, [Zara M Patel](#)<sup>2</sup>, [Joaquim Mullol](#)<sup>3</sup>, [Jose Mattos](#)<sup>4</sup>, [Scott Nash](#)<sup>5</sup>, [Changming Xia](#)<sup>5</sup>, [Zhixiao Wang](#)<sup>5</sup>, [Kinga Borsos](#)<sup>6</sup>, [Mark Corbett](#)<sup>7</sup>, [Juby A Jacob-Nara](#)<sup>7</sup>, [Harry Sacks](#)<sup>5</sup>, [Paul Rowe](#)<sup>7</sup>, [Yamo Deniz](#)<sup>5</sup>, [Andrew P Lane](#)<sup>8</sup>

Affiliations Expand

- PMID: 39300794
- PMCID: [PMC11626849](#)
- DOI: [10.1177/19458924241274501](#)

Abstract

**Objective:** To evaluate the association between smell loss and other aspects of disease, and evaluate dupilumab efficacy in patients with severe chronic rhinosinusitis with nasal polyps (CRSwNP) and moderate or severe smell loss.

**Methods:** This post-hoc analysis of the SINUS-24/52 studies ([NCT02912468](#)/NCT02898454) analyzed nasal polyp score (NPS, 0-8), nasal congestion/obstruction (NC, 0-3), Lund-Mackay CT-scan score (LMK-CT, 0-24), rhinosinusitis severity visual analog scale (RS-VAS, 0-10), and 22-item Sinonasal Outcome Test (SNOT-22, 0-110) according to baseline monthly average patient-reported loss of smell scores (LoS, 0-3) of >1 to 2 (moderate) or >2 to 3 (severe) in patients randomized to dupilumab 300 mg or placebo every 2 weeks.

**Results:** Of 724 patients randomized, baseline LoS was severe in 601 (83%) and moderate in 106 (15%). At baseline, severe versus moderate LoS was associated with 1-point greater severity of NC (odds ratio [OR] 6.01 [95% confidence interval, (CI) 3.95, 9.15]), 5-point greater severity of LMK-CT (OR 2.19 [1.69, 2.85]), and 8.9-point greater severity of SNOT-22 (OR 1.35 [1.20, 1.49]). At Week 24, least squares mean differences (95% CI) dupilumab versus placebo in change from baseline were: NPS -1.90 (-2.56, -1.25) and -1.95 (-2.20, -1.70) in the moderate and severe baseline LoS subgroups, respectively; NC -.35 (-.64, -.06) and -1.00 (-1.13, -.87); LMK-CT -6.30 (-7.88, -4.72) and -6.22 (-6.82, -5.63); RS-VAS -1.18 (-2.20, -.16) and -3.47 (-3.90, -3.03); and SNOT-22 -7.52 (-14.55, -.48) and -21.72 (-24.63, -18.82); all nominal  $P < .05$  versus placebo. Improvements with dupilumab in NC, RS-VAS, and SNOT-22 were statistically greater in patients with severe versus moderate baseline LoS.

**Conclusion:** Significant smell impairment in severe CRSwNP is associated with significant disease (NC, RS-VAS, LMK), health-related quality of life impairment (SNOT-22), asthma, and non-steroidal anti-inflammatory drug-exacerbated respiratory disease. Dupilumab significantly improved NPS, NC, LMK-CT, RS-VAS, and SNOT-22 in subjects with moderate and severe baseline smell loss.

**Keywords:** CRSwNP; HRQoL; anosmia; biologic; dupilumab; interleukin-13; interleukin-4; interleukin-4 receptor alpha; olfaction; smell loss.

#### **Conflict of interest statement**

**Declaration of Conflicting Interests**The authors declare the following potential conflicts of interest with respect to the research, authorship, and/or publication of this article: Zachary M. Soler has been a consultant or advisory board member for Lyra, Novartis, Olympus, and Optinose; he has received speaker's fees from GlaxoSmithKline and Regeneron Pharmaceuticals Inc.; and held the post of medical director at Healthy Humming. Zara M. Patel has been a consultant or advisory board member for Dianotic, InfiniteMD, Mediflix, Medtronic, and Optinose and the Chief Medical Officer of Olfera Therapeutics. Joaquim Mullol has participated in a speakers' bureau or advisory board or received a research grant from AstraZeneca, Genentech, Inc., GlaxoSmithKline, Glenmark, Menarini, Mitsubishi-Tanabe, Merck Sharp & Dohme, Viatrix (Mylan-MEDA), Novartis, Procter & Gamble, Regeneron Pharmaceuticals Inc., Sanofi, and the NOUCOR/Uriach Group. Jose Mattos has no financial disclosures or conflicts of interest. Scott Nash, Changming Xia, Zhixiao Wang, Harry Sacks, and Yamo Deniz are employees of Regeneron Pharmaceuticals and may hold stock and/or stock options in the company. Kinga Borsos is a former employee of Sanofi and may hold stock and/or stock options in the company. Mark Corbett, Jubby A. Jacob-Nara, and Paul Rowe are employees of Sanofi and may hold stock and/or stock options in the company. Andrew P. Lane is a member of the advisory boards of Sanofi and Regeneron Pharmaceuticals Inc.

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J Allergy Clin Immunol Pract

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. 2024 Dec 31:S2213-2198(24)01284-4.

doi: 10.1016/j.jaip.2024.12.035. Online ahead of print.

[A randomized comparison of bencycloquidium bromide, mometasone furoate and a combination for persistent allergic rhinitis](#)

[Xian Li](#)<sup>1</sup>, [Xueyan Wang](#)<sup>2</sup>, [Qintai Yang](#)<sup>3</sup>, [Jianjun Chen](#)<sup>4</sup>, [Hao Tian](#)<sup>5</sup>, [Meiping Lu](#)<sup>6</sup>, [Tingting Ma](#)<sup>2</sup>, [Yana Zhang](#)<sup>3</sup>, [Yue Zhou](#)<sup>4</sup>, [Jiao Xia](#)<sup>5</sup>, [Lei Cheng](#)<sup>6</sup>, [Yuan Zhang](#)<sup>7</sup>, [Luo Zhang](#)<sup>8</sup>

Affiliations Expand

- PMID: 39746515
- DOI: [10.1016/j.jaip.2024.12.035](#)

Abstract

**Background:** Moderate to severe persistent allergic rhinitis (AR) poses a substantial socioeconomic burden.

**Objectives:** We aimed to establish the superiority of bencycloquidium bromide (BCQB) nasal spray and BCQB combined with mometasone furoate nasal spray (MFNS) over MFNS alone in adults with moderate-to-severe persistent AR.

**Methods:** In this multicentre, randomised controlled clinical trial ([NCT05038202](#)), adults with moderate-to-severe persistent AR were randomly assigned to receive

the BCQB, MFNS, or a combination treatment, for 4-week periods. The mean changes from baseline in the daily reflective runny nose, nasal congestion, sneezing, nasal itching scores, total nasal symptom score (TNSS) and Rhinoconjunctivitis Quality of Life Questionnaire (RQLQ) scores were recorded. The exploratory endpoints and adverse events were also assessed.

**Results:** BCQB led to a significant improvement in the mean change from baseline in daily reflective runny nose during the 4-week treatment, in comparison to MFNS (least-squares [LS] mean difference, -0.27; 95% confidence interval [CI], -0.44 to -0.09; P=.004). BCQB combined with MFNS significantly improved runny nose, nasal congestion, sneezing, TNSS, and RQLQ scores compared to MFNS alone, except for nasal itching. BCQB significantly decreased the percentage change in eosinophilic cationic protein, eotaxin, vasoactive intestinal peptide, and interleukin-6 levels. Treatment-emergent adverse events were similar among the three groups.

**Conclusion:** BCQB was superior to the MFNS in reducing daily runny nose symptoms. The combination of BCQB and MFNS was superior to MFNS alone in alleviating TNSS in patients with moderate-to-severe persistent AR with a predominant symptom of runny nose.

**Keywords:** allergic rhinitis; cholinergic antagonists; clinical trial; moderate-to-severe.

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. 2024 Dec 31;10(1):2419779.

doi: 10.1080/20565623.2024.2419779. Epub 2024 Nov 14.

[Effect of house dust mite sublingual immunotherapy in patients with adult atopic dermatitis with rhinitis](#)

[Mayuko Mizuno](#)<sup>1</sup>, [Shinya Imamura](#)<sup>1,2</sup>, [Ai Yoshioka](#)<sup>1</sup>, [Ken Washio](#)<sup>1,3</sup>, [Yoshiko Oda](#)<sup>1</sup>, [Hiroki Matsuhara](#)<sup>4</sup>, [Katsuyo Ohashi-Doi](#)<sup>4</sup>, [Atsushi Fukunaga](#)<sup>1,5</sup>

Affiliations Expand

- PMID: 39539183

- PMID: [PMC11572311](#)
- DOI: [10.1080/20565623.2024.2419779](#)

## Abstract

**Aim:** Whether house dust mite (HDM) sublingual immunotherapy (SLIT) is effective for the skin symptoms of adult atopic dermatitis (AD) is unclear. **Methods:** HDM SLIT was added to conventional AD treatment for 10 HDM-sensitized AD patients with rhinitis for 2 years. **Results:** Seven out of ten enrolled patients completed the study. Eczema Area and Severity Index score was significantly reduced when comparing before treatment and at 24 months follow-up. CD203c ratio in the basophil activation test using HDM extract, skin prick test with HDM extract and *Dermatophagoides pteronyssinus*/*Dermatophagoides farinae* specific-IgG4 tended to improve when comparing before treatment and after treatment. **Conclusion:** HDM SLIT might be a therapeutic option for AD patients with rhinitis who are sensitized to HDM.

**Keywords:** allergy immunotherapy; atopic dermatitis; dermatophagoides farinae; dermatophagoides pteronyssinus; sublingual immunotherapy.

## Plain language summary

**What is this article about?** This study examined the effect of house dust mite (HDM) sublingual immunotherapy (SLIT), which is treatment to make the immune system work better to use medicine that is put under the tongue, as an add-on to conventional atopic dermatitis (AD) treatment on the improvement of skin symptoms and immunological response to HDM SLIT in patients with adult AD complicated with rhinitis. **What were the results?** Eczema Area and Severity Index score which is one of the AD assessment indices and represents AD severity, was significantly reduced when comparing before treatment and at 24 months follow-up. The immune response to HDM tended to improve when comparing before treatment and after treatment. **What do the results of the study mean?** HDM SLIT might be a therapeutic option for AD patients with rhinitis who are sensitized to HDM.

## Conflict of interest statement

A Fukunaga has received fees for speaking from Novartis, Sanofi, Takeda, Tanabe-Mitsubishi, Kyowa-Kirin, Kyorin, Kaken and Taiho. A Fukunaga has also received funds for sponsored/joint research from Taiho. H Matsuhara and K Ohashi-Doi are employees of Torii Pharmaceutical Co., Ltd. KW has received fees for speaking from Sanofi.

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. 2024 Dec 30;14(1):31940.

doi: [10.1038/s41598-024-83471-8](https://doi.org/10.1038/s41598-024-83471-8).

[Association between allergen-specific immunoglobulin E sensitization, allergic rhinitis symptoms, and quality of life in school-aged children](#)

[Daisuke Watanabe](#)<sup>1</sup>, [Sanae Otawa](#)<sup>2</sup>, [Megumi Kushima](#)<sup>2</sup>, [Hideki Yui](#)<sup>2</sup>, [Ryoji Shinohara](#)<sup>2</sup>, [Zentaro Yamagata](#)<sup>2</sup>, [Daiju Sakurai](#)<sup>1</sup>, [Kunio Miyake](#)<sup>3</sup>; [Yamanashi Adjunct Study of the Japan Environment and Children's Study Group](#)

Collaborators, Affiliations Expand

- PMID: 39738358
- PMCID: [PMC11686096](#)
- DOI: [10.1038/s41598-024-83471-8](https://doi.org/10.1038/s41598-024-83471-8)

Abstract

This study aimed to investigate the relationship between allergen-specific immunoglobulin E (IgE) sensitization and allergic rhinitis (AR) symptoms in school-aged children in Japan and to understand the current severity of AR symptoms and the quality of life (QOL) among children with AR. We analyzed data from 8-year-old children who participated in the Yamanashi Adjunct Study of the Japan Environment and Children's Study, focusing on those with complete information on specific IgE levels and AR (1229 for perennial AR [PAR] and 1196 for seasonal AR [SAR]). Sensitization was determined when allergen-specific IgE levels were class 2 (0.70 U/mL) or higher. A total of 656 children (53.4%) were identified as sensitized to house dust mite-specific IgE, comprising 362 (60.6%) boys and 294 (46.5%) girls. For Japanese cedar pollen (JCP)-specific IgE, 820 (68.6%) children were sensitized,

with 430 (73.1%) boys and 390 (64.1%) girls. Among children with AR, 40.2% of those with PAR and 78.4% of those with SAR experienced moderate to severe nasal symptoms. This study highlighted the high prevalence of JCP-specific IgE sensitization among school-aged children in Japan and provided insights into the severity of AR symptoms and the impact on QOL in these children.

**Keywords:** Allergic rhinitis; Quality of life; School-aged children; Seasonal allergic rhinitis (SAR); Severity; Specific IgE antibodies.

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**Conflict of interest statement**

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

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- [5 figures](#)

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## "cough"[MeSH Terms] OR cough[Text Word]

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Am J Nurs

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. 2025 Jan 1;125(1):14.

doi: 10.1097/01.NAJ.0001094868.00110.95. Epub 2024 Dec 26.

[Whooping Cough Cases Are on the Rise in the United States](#)

[Karen Roush](#)

- PMID: 39723775
- DOI: [10.1097/01.NAJ.0001094868.00110.95](https://doi.org/10.1097/01.NAJ.0001094868.00110.95)

**Abstract**

Decreased vaccine coverage and waning immunity are cited as factors.

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Randomized Controlled Trial

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. 2025 Jan 1;21(1):38-47.

doi: 10.1097/PTS.0000000000001288.

[Older Adult Misuse of Over-the-Counter Medications: Effectiveness of a Novel Pharmacy-Based Intervention to Improve Patient Safety](#)

[Aaron M Gilson](#), [Jason S Chladek](#)<sup>1</sup>, [Jamie A Stone](#), [Taylor L Watterson](#)<sup>2</sup>, [Elin C Lehnbom](#), [Emily L Hoffins](#)<sup>1</sup>, [Maria E Berbakov](#), [Jukrin Moon](#), [Nora A Jacobson](#)<sup>3</sup>, [Richard J Holden](#)<sup>4</sup>, [Ronald E Gangnon](#), [Denise L Walbrandt Pigarelli](#), [Lauren L Welch](#), [Edward C Portillo](#), [Olayinka O Shiyabola](#)<sup>1</sup>, [Joel Gollhardt](#)<sup>5</sup>, [Kenneth Walker](#)<sup>6</sup>, [Michelle A Chui](#)

Affiliations Expand

- PMID: 39705382
- DOI: [10.1097/PTS.0000000000001288](https://doi.org/10.1097/PTS.0000000000001288)

Abstract

**Objectives:** Older adults' (ages ≥65) inappropriate over-the-counter medications (OTC) use is prevalent, comprising Drug-Age, Drug-Drug, Drug-Disease, and Drug-Label types. Given that pharmacies sell many OTCs, structurally redesigning

pharmacy aisles for improving patient safety (Senior Safe) was conceived to mitigate older adult OTC misuse, using Stop Signs and Behind-the-Counter Signs for high-risk OTCs. This study determined whether Senior Safe reduced high-risk OTCs misuse, while secondarily evaluating misuse changes for all OTCs.

**Methods:** A randomized controlled trial design matched and randomly allocated 20 health system community pharmacies to control or intervention groups. All 288 study participants completed an OTC choice task in which they chose a hypothetical symptom scenario (pain, sleep, cough/cold/allergy), selected an OTC, and described how they would use it at symptom onset and if symptoms persisted or worsened. Reported OTC use was evaluated for each misuse type. Intervention and control sites were compared for each misuse type using multivariate modeling.

**Results:** For high-risk OTCs, Drug-Age and Drug-Drug misuse were more likely in control sites (OR = 2.752, P = 0.004; OR = 6.199, P = 0.003, respectively), whereas Drug-Disease and Drug-Label misuse had too few occurrences in intervention sites for statistical comparisons. For all OTCs, only Drug-Age misuse was more likely for control sites (OR = 5.120, P = 0.001). Adults aged 85+ years had the greatest likelihood of all misuse types.

**Conclusions:** Results demonstrated that older adults frequently reported multiple misuse types, highlighting safety concerns. Senior Safe reduced high-risk OTC misuse, especially for older adults younger than 85 years. Cumulatively, these findings provide insights into practice recommendations supported through regulatory guidance.

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Conflict of interest statement

The authors disclose no conflict of interest.

- [35 references](#)

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Review

Am J Gastroenterol

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. 2025 Jan 1;120(1):60-64.

doi: 10.14309/ajg.0000000000003205. Epub 2024 Nov 14.

## [The Role of Gastroesophageal Reflux in Airway Inflammation](#)

[Walter W Chan](#)<sup>1</sup>, [Nirmal Sharma](#)<sup>2</sup>, [C Prakash Gyawali](#)<sup>3</sup>

Affiliations Expand

- PMID: 39670525
- PMID: PMC11695137 (available on 2026-01-01)
- DOI: [10.14309/ajg.0000000000003205](https://doi.org/10.14309/ajg.0000000000003205)

Abstract

Gastroesophageal reflux disease occurs when the barrier at the esophagogastric junction is weakened, allowing for transient relaxations of the lower esophageal sphincter or disruption of the esophagogastric junction. This leads to the refluxate traveling up the esophagus, and potentially into the pharynx, where it can be aspirated into the airway. The refluxate can cause a range of symptoms, including sore throat, coughing, wheezing, and shortness of breath, which may occur with or without visible airway inflammation. Both experimental and clinical studies have shown that aspirated refluxate can directly damage the airway lining and trigger immune responses that contribute to airway injury and inflammation. While traditional diagnostic tests for gastroesophageal reflux disease can identify abnormal reflux patterns, there is a need for more specific methods to predict airway inflammation or therapeutic outcomes related to reflux aspiration.

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Conflict of interest statement

No conflicts of interest exist. Guarantor of the article: C. Prakash Gyawali

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Clin Nurs Res

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. 2025 Jan;34(1):47-57.

doi: 10.1177/10547738241298030. Epub 2024 Nov 20.

[Effect of Self-Prone on Respiratory Functions, Pneumonia Severity, and Mortality Risk Among Patients Diagnosed With Community-Acquired Pneumonia: A Nursing-Based Quasi-Experimental Study](#)

[Hoda Abdou Abd El-Monem El-Deeb](#)<sup>1</sup>, [Naglaa Abd Allah Abd El Hafeez](#)<sup>1</sup>, [Manar Ali Rashwan](#)<sup>2</sup>, [Mona Metwally El-Sayed](#)<sup>3</sup>, [Mahmoud Abdelwahab Khedr](#)<sup>4</sup>, [Rasha Fathy Ahmed Dawood](#)<sup>1</sup>

Affiliations Expand

- PMID: 39564942
- DOI: [10.1177/10547738241298030](https://doi.org/10.1177/10547738241298030)

Abstract

Assessing and monitoring respiratory parameters, such as respiratory rate, oxygen saturation, and lung sounds, is crucial for the management and prognosis of pneumonia patients. Prone positioning has been shown to improve oxygenation in patients with respiratory disorders, including pneumonia, by reducing ventilation/perfusion mismatch. However, there is a lack of evidence supporting the benefits of self-prone in spontaneously breathing pneumonia patients. This study aims to evaluate the effect of self-prone on respiratory functions, pneumonia, and mortality risk among patients diagnosed with community-acquired pneumonia. The study used a pre- and post-test quasi-experimental design with a control group, adhering to the Transparent Reporting of Evaluations with Nonrandomized Designs guidelines. It was conducted in the Medical Respiratory Department inpatient wards at the Respiratory Diseases Hospital in Alexandria, Egypt. The study recruited 128 patients with community-acquired pneumonia, conveniently assigned to an intervention group ( $n = 64$ ) and a control group ( $n = 64$ ). Data were collected using

socio-demographic and historical data sheets, respiratory parameters assessment sheets, the confusion uremia respiratory rate and blood pressure (CURB-65) severity of pneumonia score, and the Pneumonia Severity Index. Prone positioning significantly positively impacted respiratory parameters in the intervention group compared to the control group. Specifically, the intervention group exhibited improvements in respiratory rate, oxygen saturation, reduced need for supplemental oxygen, and cough ( $p < .05$ ). Furthermore, the intervention group exhibited fewer changes in findings from chest inspection, palpation, and auscultation. In addition, the severity of pneumonia was reduced in the intervention group compared to the control group, as indicated by lower CURB-65 ( $p = .014$ ) and pneumonia severity index scores ( $p = .005$ ). The study demonstrated that self-proning interventions significantly improved respiratory functions and reduced the risk of death among participants with community-acquired pneumonia. These findings suggest that self-proning is a beneficial technique for managing respiratory distress, particularly in non-intubated patients, and can be an effective strategy to improve patient outcomes in clinical settings.

**Keywords:** community-acquired pneumonia; mortality risk; nursing; quasi-experimental study; respiratory functions; self-proning.

**Conflict of interest statement**

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

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**J Pain Symptom Manage**

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. 2024 Dec 31:S0885-3924(24)01233-8.

doi: 10.1016/j.jpainsymman.2024.12.021. Online ahead of print.

## Cigarette smoking and symptom burden: baseline results from 9 ECOG-ACRIN cancer clinical trials

[Sarah N Price](#)<sup>1</sup>, [Ju-Whei Lee](#)<sup>2</sup>, [Ilana F Gareen](#)<sup>3</sup>, [Sheetal M Kircher](#)<sup>4</sup>, [Shaji K Kumar](#)<sup>5</sup>, [Ingrid A Mayer](#)<sup>6</sup>, [Nabil F Saba](#)<sup>7</sup>, [Timothy S Fenske](#)<sup>8</sup>, [Michael B Atkins](#)<sup>9</sup>, [F Stephen Hodi](#)<sup>10</sup>, [Christos E Kyriakopoulos](#)<sup>11</sup>, [Clare M Tempany-Afdhal](#)<sup>12</sup>, [Tait D Shanafelt](#)<sup>13</sup>, [Elyse R Park](#)<sup>14</sup>, [Lynne I Wagner](#)<sup>15</sup>

### Affiliations Expand

- PMID: 39746495
- DOI: [10.1016/j.jpainsymman.2024.12.021](https://doi.org/10.1016/j.jpainsymman.2024.12.021)

### Abstract

**Context:** Approximately 11% of cancer survivors smoke post-diagnosis.

**Objective:** Understanding the relationship between smoking and perceived cancer-related symptoms may inform tobacco treatment interventions for this population.

**Methods:** From 2017-2021, 740 adults in 9 ECOG-ACRIN trials provided baseline data. The effects of smoking status on symptoms were evaluated using logistic regression, adjusting for age, gender, race, performance status, treatment setting, and anxiety. Fisher's exact test was used to compare the prevalence of patients reporting that smoking helps/worsens each symptom by smoking status (current vs. former).

**Results:** Among participants (mean age= 58.8, 93.9% white, 30.3% female, most common cancer types: leukemia [35.5%], lymphoma [19.1%], and prostate [17.7%]), smoking statuses were: 81 current (10.9%), 257 former (34.7%), and 402 (54.3%) never. Patients currently smoking were more likely to experience cough compared to those who formerly (OR=3.25, p<.0001) or never (OR=3.70, p<.0001) smoked. Current smoking was associated with greater severity of cough and pain and greater pain interference compared to former and never smoking (OR's>2.26, p's <.005). Patients currently smoking were more likely to report that smoking helps with nausea (29.4 vs 1.3%, p<.0001), insomnia (16.4 vs 0.6%, p<.0001), and pain (16.1 vs. 2.8%, p=.002) compared to those who formerly smoked.

**Conclusion:** Patients currently smoking report greater severity of cancer-related symptoms (i.e., cough, pain) yet were also more likely to believe that smoking helps with nausea, insomnia, and pain. Symptom management should include tobacco cessation, education on smoking and its relationship to symptoms, and strategies to reduce reliance on smoking for symptom relief.

**Keywords:** cough; nausea; neoplasms; pain; smoking; symptom management.

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### Conflict of interest statement

Conflict of Interest Disclosures SKK reports research funding for clinical trials to the institution from: AbbVie, Amgen, Allogene, AstraZeneca, BMS, Carsgen, GSK,

Janssen, Novartis, Roche-Genentech, Takeda, Regeneron; consulting/advisory board participation: (with no personal payments) with AbbVie, Amgen, BMS, Janssen, Roche-Genentech, Takeda, AstraZeneca, Bluebird Bio, Secura Biotherapeutics, Trillium, Loxo Oncology, K36, Sanofi, ArcellIX, and (with personal payment) Oncopeptides, Beigene, Antengene; IAM is an employee of AstraZeneca; NFS reports consulting and/or compensation for Advisory Role from AstraZeneca, Eisai Medical, Exelixis, Merck, Merck EMD Serono, BionTech, GSK, Seagen, Flamingo, Novartis, Inovio, Aveo, Surface Oncology, Imugene, Faron Pharmaceutical, Coherus, Fulgent, Pfizer, Kura, Vaxxinex, CUE, Tosk, BMS, Celldex, Astex, Nanobiotix; TSF reports having received honoraria for serving as a speaker and/or consultant for Adaptive Biotechnologies, ADC Therapeutics, Astrazeneca, Beigene, Kite (Gilead), Lilly/LOXO, Ono Pharmaceuticals, and Seagen; MBA reports Advisor Board and/or Consulting with Abbvie, Agenus, Asher Bio, AstraZeneca, Atreca, Aveo, BMS, Eisai, Exelixis, Fathom, GSK, Merck, Novartis, OncoRena, Pfizer, Pliant Therapeutics, Pyxis Oncology, Roche, SAB Bio, Sanofi, ScholarRock, SeaGen, Simcha, Surface, Takeda, and Werewolf and Stock/Stock Options with Werewolf Pharmaceutical and Pyxis Oncology; FSH reports grants and personal fees from Bristol-Myers Squibb and Novartis, and personal fees from Merck, Surface, Compass Therapeutics, Apricity, 7 Hills Pharma, Bicara, Checkpoint Therapeutics, Genentech/Roche, Bioentre, Gossamer, Iovance, Catalym, Immunocore, Kairos, Rheos, Bayer, Zumutor, Corner Therapeutics, Puretech, Curis, Astra Zeneca, Solu Therapeutics, all outside the submitted work. In addition, FSH has a patent “Methods for Treating MICA-Related Disorders” (#20100111973) with royalties paid, a patent Tumor antigens and uses thereof (#7250291) issued, a patent Angiopoietin-2 Biomarkers Predictive of Anti-immune checkpoint response (#20170248603) pending, a patent Compositions and Methods for Identification, Assessment, Prevention, and Treatment of Melanoma using PD-L1 Isoforms (#20160340407) pending, a patent Therapeutic Peptides (#20160046716, #20140004112, #20170022275, #20170008962) pending, a patent Therapeutic Peptides (# 9402905) issued, a patent Methods of Using Pembrolizumab and Trebananib pending, a patent Vaccine Compositions and Methods for Restoring NKG2D Pathway Function against Cancers (#10279021) issued, a patent Antibodies that bind to MHC class I polypeptide-related sequence (#10106611) issued, a patent Anti-Galectin Antibody Biomarkers Predictive of Anti-Immune Checkpoint and Anti-Angiogenesis Responses (# 20170343552) pending, and a patent Antibodies against EDIL3 and methods of use thereof pending; CEK reports research funding from Sanofi-Aventis, Gilead Sciences, Incyte Corporation, Pionyr Immunopharma, AstraZeneca, Merck, BMS. CEK has served on advisory board for Sanofi-Aventis, Exelixis, AVEO pharmaceuticals, Janssen, and Pfizer; TDS reports research support from Pharmacyclics, AbbVie, and Genentec. Mayo Clinic also pays TDS a portion of royalties related to the Well-being Index instruments and the Mayo Leadership Index; ERP reports receiving royalties from UpToDate, “Behavioral Approaches to Smoking Cessation.”; LIW reports consulting on patient-reported outcomes design, analysis, and interpretation at Celgene/Bristol-Myers Squibb and Athenex. The other authors declare no conflicts of interest.

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. 2024 Dec 31;20(1):2392334.

doi: 10.1080/21645515.2024.2392334. Epub 2024 Sep 5.

[Global tendency and frontiers of research on pertussis from 2000 to 2023: A bibliometric and visual analysis](#)

[Hao Wang](#)<sup>1,2</sup>, [Xiaoying Liu](#)<sup>3</sup>, [Xin Cao](#)<sup>2</sup>, [Jie Liu](#)<sup>2</sup>, [Wei Li](#)<sup>2</sup>

Affiliations Expand

- PMID: 39238254
- PMCID: [PMC11382716](#)
- DOI: [10.1080/21645515.2024.2392334](#)

Abstract

Pertussis has reemerged globally, with rising incidence in China. Controlling this disease remains a significant public health challenge worldwide. This study applies bibliometric methods to analyze global and Chinese research on pertussis, assessing current trends, identifying hot topics, predicting future research directions, and providing guidance for scientific research and clinical practice. Pertussis-related articles from 2000 to 2023 were retrieved from four major Chinese databases and three English databases. COOC and CiteSpace software were used to analyze publication trends, geographic distribution, institutions, disciplines, and keywords, to visualize through network maps. The study analyzed 2,580 Chinese and 5,311 foreign articles and reviews. Pertussis research publications have increased globally, with foreign research peaking earlier than in China. The United States leads in publication volume, while China showed the highest burst of activity from 2019 to 2023. Research mainly focuses on animal experiments, vaccine development and safety, clinical characteristics and treatment, and pertussis toxin. Pertussis research is thriving globally and in China. Future research should emphasize interdisciplinary collaboration across molecular biology, immunology, and epidemiology to innovate vaccines and control strategies. Additionally, continued development of treatment drugs remains crucial as current vaccines do not fully control pertussis.

**Keywords:** CiteSpace; Pertussis; bibliometrics; hotspots; research trends; visual analysis.

**Conflict of interest statement**

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

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. 2024 Dec 31;20(1):2389577.

doi: 10.1080/21645515.2024.2389577. Epub 2024 Aug 20.

[Pertussis vaccine effectiveness following country-wide implementation of a hexavalent acellular pertussis immunization schedule in infants and children in Panama](#)

[Arlene E Calvo](#)<sup>1,2</sup>, [Andrea G Tristán Urrutia](#)<sup>3</sup>, [Juan C Vargas-Zambrano](#)<sup>4</sup>, [Humberto López Castillo](#)<sup>5,6</sup>

**Affiliations** Expand

- PMID: 39164002

- PMID: [PMC11340738](#)
- DOI: [10.1080/21645515.2024.2389577](#)

## Abstract

Despite high pediatric vaccination coverage rates (VCRs), pertussis incidence has increased worldwide, including in several countries in Latin America in the last two decades. Given the few vaccine effectiveness (VE) studies in Latin American countries, this retrospective, observational, cohort study estimated the effectiveness of hexavalent acellular (aP) primary and booster vaccination (wP) against pertussis in infants (6.5-18.5 months) and children (18.5-48.5 and 48.5-72.5 months) in Panama. Age-specific incidence rates (IRs) were calculated for the vaccine's pre-initiation (2001-2013), initiation (2014), and post-initiation (2015-2019) periods. VCRs and trends were determined, and VE was analyzed using a case coverage or screening method to compare proportions of vaccinated cases and vaccinated individuals in the population. Between 2001-2019, 868 confirmed pertussis cases were reported in Panama; 712 (82.0%; 54.8 cases/year) during the pre-initiation period, 19 (2.2%; 19 cases/year) during the initiation period, and 137 (15.8%; 27.4 cases/year) during the post-initiation period. Panama underwent cyclical increases in IRs, which varied between age groups. VCRs increased for primary and booster doses. Between 2015 and 2019, third-dose yearly vaccine coverage increased, on average, 3.3%. Specifically, during the post-initiation period, 109/137 (79.6%) of cases were unvaccinated. Relative VE was estimated at 96.2% [95% CI: 86.5%, 98.9%] with three doses; 100% with 4 and 5 booster doses. Absolute VE was estimated at 99.3% with three doses only. These results show that vaccination played an important role in maintaining a low number of pertussis cases in Panama, affirming the need for sustained investment and commitment to vaccination programs.

**Keywords:** Panama; Pertussis; hexavalent vaccine; universal vaccine coverage; vaccine efficacy.

## Conflict of interest statement

JCVZ is a Sanofi employee and may hold shares and/or stock options in the company.

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. 2024 Dec 31;20(1):2377904.

doi: 10.1080/21645515.2024.2377904. Epub 2024 Jul 17.

[Public health management of pertussis in adults: Practical challenges and future strategies](#)

[C Raina MacIntyre<sup>1</sup>, Jaime Correia de Sousa<sup>2</sup>, Ulrich Heininger<sup>3</sup>, Peter Kardos<sup>4</sup>, Andreas Konstantopoulos<sup>5</sup>, Donald Middleton<sup>6</sup>, Terry Nolan<sup>7</sup>, Alberto Papi<sup>8</sup>, Adrian Rendon<sup>9</sup>, Albert Rizzo<sup>10</sup>, Kim Sampson<sup>11</sup>, Alessandro Sette<sup>12</sup>, Elizabeth Sobczyk<sup>13</sup>, Tina Tan<sup>14</sup>, Catherine Weil-Olivier<sup>15</sup>, Birgit Weinberger<sup>16</sup>, Tom Wilkinson<sup>17</sup>, Carl Heinz Wirsing von König<sup>18</sup>](#)

Affiliations Expand

- PMID: 39016172
- PMCID: [PMC11259069](#)
- DOI: [10.1080/21645515.2024.2377904](#)

Abstract

A panel of 24 international experts met in July 2022 to discuss challenges associated with pertussis detection, monitoring, and vaccination in adults; conclusions from this meeting are presented. There has been a shift in the epidemiology of pertussis toward older children and adults. This shift has been attributed to the waning of infection- or vaccine-induced immunity, newer detection techniques causing detection bias, and possibly the replacement of whole-cell pertussis with acellular vaccines in high-income countries, which may lead to immunity waning more quickly. The burden of adult pertussis is still likely under-ascertained due to widespread under-recognition by healthcare professionals (HCPs), under-diagnosis, and under-reporting in this age group. Non-standardized

testing guidance and varied case definitions have contributed to under-reporting. Key barriers to HCP engagement with the tetanus, diphtheria, and pertussis (Tdap) vaccine include low awareness, lack of time/funding, and lack of motivation due to low prioritization of Tdap.

**Keywords:** *Bordetella pertussis*; Tdap vaccination; adults; comorbidities; disease burden; under-reporting.

#### **Conflict of interest statement**

CRM is supported by an NHMRC Investigator Grant, grant no. [2016907]. She is on the WHO COVID-19 Vaccine Composition Technical Advisory Group and the WHO SAGE Working Group on Smallpox and Monkeypox. She currently receives funding from Sanofi for influenza and pertussis research. JCS received research support from AstraZeneca and GSK; and honoraria from AstraZeneca, GSK, Bial, Sanofi, and Medinfar. He also participated in a company-sponsored speaker's bureau for AstraZeneca and Sanofi. UH received consulting fees from Sanofi-Pasteur, Sanofi Aventis France, and GSK, and lecture fees from GSK, Infectopharm, Merck, Moderna, Pfizer, Roche, Sanofi Genzyme, and Sanofi-Pasteur. He participated on the Data Monitoring Committees of a poliomyelitis vaccine (Takeda), a phase II study of an adjuvanted pandemic influenza vaccine (GSK/Watermark), the Norovirus Bivalent VLP Vaccine Program (Takeda/HilleVax), and the Cell culture influenza vaccine (Seqirus/IQVIA). He is a member of the Meta Data Safety Monitoring Board for CEPI (Coalition for Epidemic Preparedness Innovations) and of the Varicella Advisory Board, Switzerland (Merck). PK received honoraria for participating in the 2022 Zoom meetings by Sanofi; he also received honoraria for participation in advisory boards and lectures, and travel costs from the following companies: AstraZeneca, Bionorica, Chiesi, Engelhard, GSK, Jansen, Klosterfrau, Novartis, MSD, and Schwabe. His institution received honoraria for clinical trial participation from Bellus, the ERS NEuroCOUGH Initiative, and MSD. DM received personal fees from Dynavax, Seqirus, Sanofi, and GSK; and grants and personal fees from Pfizer. TN received research contracts to conduct clinical trials, with funding to the institution from Moderna, Sanofi, GSK, Iliad Biotechnologies, Dynavax, Seqirus, Janssen, and MSD; consulting fees from GSK, Seqirus, MSD, Sanofi, AstraZeneca, Moderna, BioNet, and Pfizer; and has served on data safety and monitoring boards for Seqirus, Clover, Moderna, Emergent, Serum Institute of India, SK Bioscience Korea, Emergent Biosolutions, and Novavax. AP received grants or contracts from Chiesi, AstraZeneca, GSK, Sanofi, and Agenzia Italiana del Farmaco (AIFA); consultancy fees from Chiesi, AstraZeneca, GSK, Novartis, Sanofi, Avillion, and Elpen Pharmaceuticals; payment or honoraria for lectures, presentations, manuscript writing or educational events from Chiesi, AstraZeneca, GSK, Menarini, Novartis, Zambon, Mundipharma, Sanofi, Edmond Pharma, Iqvia, Avillion, and Elpen Pharmaceuticals; and participated on a data safety monitoring board or advisory board for Chiesi, AstraZeneca, GSK, MSD, Novartis, Sanofi, Iqvia, Avillion, and Elpen Pharmaceuticals. AR received consulting fees, honoraria for lectures, presentations, speakers' bureaus or educational events, and participated in advisory boards from AstraZeneca, Boehringer Ingelheim, Chiesi, GSK, and Sanofi; and received support for travel/attending meetings from Chiesi. KS received a salary from the Australian Immunisation Coalition which has received funding towards some of its activities from industry sources, including GSK, Sanofi, Roche, and Seqirus. He also received a consultancy fee from APACI, which derives its income from similar sources. AS is a consultant for AstraZeneca Pharmaceuticals,

Calyptus Pharmaceuticals, Inc, Darwin Health, EmerVax, EUROIMMUN, F. Hoffman-La Roche Ltd, Fortress Biotech, Gilead Sciences, Granite bio., Gritstone Oncology, Guggenheim Securities, Moderna, Pfizer, RiverVest Venture Partners, and Turnstone Biologics. La Jolla Institute has filed for patent protection for various aspects of T cell epitope and vaccine design work. TT received grants from Merck and Sanofi; personal fees from GSK Biologicals and Sanofi; and honoraria from Sanofi. CWO received grants/contracts and payment/honoraria for lectures, presentations, speakers bureaus, manuscript writing, or educational events from AstraZeneca, GSK, Janssen, MedImmune, Pfizer, Sanofi, and Sanofi-Aventis; consulting fees, acting as a punctual consultant or directly as an independent expert, from AstraZeneca, GSK, Janssen, MedImmune, MSD, Pfizer, Sanofi, and Sanofi-Aventis; and acted in a leadership or fiduciary role for Coalition for Life Course Immunisation and InVovac-France. BW received honoraria for participation in advisory boards and lectures, and travel costs from the following companies: GSK, MSD, Sanofi, Moderna. TW received research funding and consultancy fees from Synairgen Research Ltd. CHWVK received honoraria for attending meetings sponsored by Sanofi, GSK Biologicals, and MSD. AK, AAR, and ES have no competing interests to declare. Sanofi funded the expert meeting from which this publication resulted. Following the meeting, the authors independently initiated the publication and requested Sanofi's support for medical writing via an external third party. The opinions and views expressed in this manuscript are solely those of the authors and do not reflect the position of Sanofi. Sanofi had the opportunity to review the manuscript, but the authors had the final decision to submit.

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. 2024 Dec 31;20(1):2361499.

doi: 10.1080/21645515.2024.2361499. Epub 2024 Jun 7.

## [Predictors of maternal pertussis vaccination acceptance among pregnant women in Norway](#)

[Bo T Hansen](#)<sup>1</sup>, [Brita A Winje](#)<sup>2</sup>, [Jeanette Stålcrantz](#)<sup>1</sup>, [Margrethe Greve-Isdahl](#)<sup>1</sup>

### Affiliations Expand

- PMID: 38847213
- PMCID: [PMC11164220](#)
- DOI: [10.1080/21645515.2024.2361499](#)

### Abstract

Maternal vaccination against pertussis is safe and provides effective protection against pertussis for the newborn, but the vaccine coverage rate remains generally low. Norway is currently planning for introduction of routine maternal pertussis vaccination. To assess maternal pertussis vaccination acceptance among pregnant Norwegian women, we surveyed women at 20-40 weeks gestation in 2019. Among the 1,148 pregnant women participating in this cross-sectional study, 73.8% reported they would accept pertussis vaccination during pregnancy if it was recommended, 6.9% would not accept and 19.2% were undecided. Predictors for low likelihood of accepting pertussis vaccination during pregnancy included low confidence in health authorities and in maternal pertussis vaccination safety and effectiveness, low awareness and adherence to influenza vaccination during pregnancy, and low awareness of pertussis vaccination. The major reasons reported for not accepting or being undecided about maternal pertussis vaccination were lack of information on vaccine safety for both mother and child. Most women reported that they would consult their general practitioner or a midwife for information if they were offered maternal pertussis vaccination. General practitioners and midwives were also regarded as the most trustworthy sources of information if the women were in doubt about accepting vaccination. We conclude that information addressing safety concerns and raising awareness about maternal pertussis vaccination could increase acceptance of maternal pertussis vaccination. Our findings highlight the pivotal role of the antenatal and primary health care services in providing such information to pregnant women.

**Keywords:** Maternal immunization; Tdap; antenatal vaccination; attitudes; maternal care providers; maternal vaccination; obstetrical care; pertussis; pertussis vaccine; vaccine acceptance; vaccine hesitancy.

### Conflict of interest statement

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

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. 2024 Dec 31;20(1):2324547.

doi: 10.1080/21645515.2024.2324547. Epub 2024 Apr 2.

[Understanding the impact of adult pertussis and current approaches to vaccination: A narrative review and expert panel recommendations](#)

[Peter Kardos](#)<sup>1</sup>, [Jaime Correia de Sousa](#)<sup>2</sup>, [Ulrich Heininger](#)<sup>3</sup>, [Andreas Konstantopoulos](#)<sup>4</sup>, [C Raina MacIntyre](#)<sup>5</sup>, [Donald Middleton](#)<sup>6</sup>, [Terry Nolan](#)<sup>7</sup>, [Alberto Papi](#)<sup>8</sup>, [Adrian Rendon](#)<sup>9</sup>, [Albert Rizzo](#)<sup>10</sup>, [Kim Sampson](#)<sup>11</sup>, [Alessandro Sette](#)<sup>12</sup>, [Elizabeth Sobczyk](#)<sup>13</sup>, [Tina Tan](#)<sup>14</sup>, [Catherine Weil-Olivier](#)<sup>15</sup>, [Birgit Weinberger](#)<sup>16</sup>, [Tom Wilkinson](#)<sup>17</sup>, [Carl Heinz Wirsing von König](#)<sup>18</sup>

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- PMID: 38564339
- PMCID: [PMC10989709](#)
- DOI: [10.1080/21645515.2024.2324547](#)

Abstract

**Pertussis has several notable consequences, causing economic burden, increased strain on healthcare facilities, and reductions in quality of life. Recent years have seen a trend toward an increase in pertussis cases affecting older children and adults. To boost immunity, and protect vulnerable populations, an enduring approach to vaccination has been proposed, but gaps remain in the evidence surrounding adult vaccination that are needed to inform such a policy. Gaps include: the true incidence of pertussis and its complications in adults; regional variations in disease recognition and reporting; and incidence of severe disease, hospitalizations, and deaths in older adults. Better data on the efficacy/effectiveness of pertussis vaccination in adults, duration of protection, and factors leading to poor vaccine uptake are needed. Addressing the critical evidence gaps will help highlight important areas of unmet need and justify the importance of adult pertussis vaccination to healthcare professionals, policymakers, and payers.**

**Keywords: Bordetella pertussis; Tdap vaccination; adults; disease burden; underreporting.**

#### **Conflict of interest statement**

**PK received honoraria for participating in the 2022 Zoom meetings by Sanofi; he also received honoraria for participation in advisory boards and lectures, and travel costs from the following companies: AstraZeneca, Bionorica, Chiesi, Engelhard, GSK, Janssen, Klosterfrau, Novartis, MSD, and Schwabe. His institution received honoraria for clinical trial participation from Bellus, the ERS NEuroCOUGH Initiative, and MSD. JCS received research support from AstraZeneca and GSK; and honoraria from AstraZeneca, GSK, Bial, Sanofi, and Medinfar, He also participated in a company-sponsored speaker's bureau for AstraZeneca and Sanofi. UH received consulting fees from Sanofi and GSK, and lecture fees from GSK, Infectopharm, Merck, Moderna, Pfizer, Roche, Sanofi Genzyme and Sanofi-Pasteur. He participated on the Data Monitoring Committees of a poliomyelitis vaccine (Takeda), a phase II study of an adjuvanted pandemic influenza vaccine (GSK/Watermark), the Norovirus Bivalent VLP Vaccine Program (Takeda/HilleVax), and the Cell culture influenza vaccine (Seqirus/IQVIA). He is a member of the Meta Data Safety Monitoring Board for CEPI (Coalition for Epidemic Preparedness Innovations) and of the Varicella Advisory Board, Switzerland (Merck). CRM is supported by an NHMRC Investigator Grant, grant no. [2016907]. She is on the WHO COVID-19 Vaccine Composition Technical Advisory Group and the WHO SAGE Working Group on Smallpox and Monkeypox. She currently receives funding from Sanofi for influenza and pertussis research. DM received personal fees from Dynavax, Seqirus, Sanofi, and GSK; and grants and personal fees from Pfizer. TN received research contracts to conduct clinical trials, with funding to the institution from Moderna, Sanofi, GSK, Iliad Biotechnologies, Dynavax, Seqirus, Janssen, and MSD; consulting fees from GSK, Seqirus, MSD, Sanofi, AstraZeneca, Moderna, BioNet, and Pfizer; and has served on data safety and monitoring boards for Seqirus, Clover, Moderna, Emergent, Serum Institute of India, SK Bioscience Korea, Emergent Biosolutions, and Novavax. AP received grants or contracts from Chiesi, AstraZeneca, GSK, Sanofi, and Agenzia Italiana del Farmaco (AIFA); consultancy fees from Chiesi, AstraZeneca, GSK, Novartis, Sanofi, Avillion, and Elpen Pharmaceuticals; payment or honoraria for lectures, presentations, manuscript writing or educational events from Chiesi, AstraZeneca, GSK, Menarini, Novartis, Zambon, Mundipharma, Sanofi, Edmond Pharma, Iqvia, Avillion, and Elpen Pharmaceuticals; and participated on a data safety monitoring board or advisory board for Chiesi, AstraZeneca, GSK, MSD,**

Novartis, Sanofi, Iqvia, Avillion, and Elpen Pharmaceuticals. AR received consulting fees, honoraria for lectures, presentations, speakers' bureaus or educational events, and participated in advisory boards from AstraZeneca, Boehringer Ingelheim, Chiesi, GSK and Sanofi; and received support for travel/attending meetings from Chiesi. KS received a salary from the Australian Immunisation Coalition which has received funding towards some of its activities from industry sources, including GSK, Sanofi, Roche and Seqirus. He also received a consultancy fee from APACI, which derives its income from similar sources. AS is a consultant for AstraZeneca Pharmaceuticals, Calyptus Pharmaceuticals, Inc, Darwin Health, EmerVax, EUROIMMUN, F. Hoffman-La Roche Ltd, Fortress Biotech, Gilead Sciences, Granite bio., Gritstone Oncology, Guggenheim Securities, Moderna, Pfizer, RiverVest Venture Partners, and Turnstone Biologics. La Jolla Institute for Immunology has filed for patent protection for various aspects of T cell epitope and vaccine design work. TT received grants from Merck and Sanofi; personal fees from GSK Biologicals and Sanofi; and honoraria from Sanofi. CWO received grants/contracts and payment/honoraria for lectures, presentations, speakers bureaus, manuscript writing, or educational events from AstraZeneca, GSK, Janssen, MedImmune, Pfizer, Sanofi, and Sanofi-Aventis; consulting fees, acting as a punctual consultant or directly as an independent expert, from AstraZeneca, GSK, Janssen, MedImmune, MSD, Pfizer, Sanofi, and Sanofi-Aventis; and acted in a leadership or fiduciary role for Coalition for Life Course Immunisation and Infovac-France. BW received honoraria for participation in advisory boards and lectures, and travel costs from the following companies: GSK, MSD, Sanofi, Moderna. TW received research funding and consultancy fees from Synairgen Research Ltd. CHWVK received honoraria for attending meetings sponsored by Sanofi, GSK Biologicals and MSD. AK, AAR, and ES have no competing interests to declare.

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. 2025 Jan 1;43(Pt 1):126502.

doi: 10.1016/j.vaccine.2024.126502. Epub 2024 Nov 8.

## Pertussis vaccination coverage in women at two months postpartum and associated factors in France, National Perinatal Survey 2021

[Lisa Dilange](#)<sup>1</sup>, [Fatima Ait El Belghiti](#)<sup>1</sup>, [Virginie Demiquel](#)<sup>1</sup>, [Olivia Anselem](#)<sup>2</sup>, [Nolwenn Regnault](#)<sup>1</sup>, [Camille Le Ray](#)<sup>3</sup>, [Isabelle Parent Du-Châtelet](#)<sup>1</sup>, [Sophie Vaux](#)<sup>4</sup>; [ENP-2021 Study Group and ENP-DROM 2021 Study Group](#)

### Affiliations Expand

- PMID: 39520895
- DOI: [10.1016/j.vaccine.2024.126502](https://doi.org/10.1016/j.vaccine.2024.126502)

### Free article

### Abstract

**Background:** Pertussis vaccination in young mothers aims to protect neonates through cocooning. We estimated pertussis vaccination coverage (VC) in women at two months postpartum in France in 2021, and the proportion of women who got vaccinated in the first two months postpartum; associated determinants were studied.

**Methods:** We used data from the 2021 National Perinatal Surveys conducted in metropolitan France (ENP 2021) and French overseas territories (ENP-DROM 2021). Multivariate poisson regressions were employed to study the following determinants: age, educational level, monthly household income, socio-professional situation, birth country, parity, health professional who monitored pregnancy, influenza vaccination during pregnancy, region of residence, prenatal care consultations, having health insurance, having a partner, and having a chronic pathology. Results were weighted.

**Results:** The study sample comprised 7999 women. Estimated pertussis VC at two months postpartum was 66.8 % (95 %CI [65.5-68.0]). VC was significantly lower in i) unemployed women (vs. executives/managers, intermediate and higher intellectual professionals), ii) those on low income (vs. high), and iii) those with two or more children (vs. primiparous). It was significantly higher in i) women born in France, ii) those vaccinated against influenza during pregnancy, iii) those who received prenatal care from a private midwife, and iv) those with more prenatal consultations. The proportion of women vaccinated against pertussis in the two-month postpartum period (33.4 % [31.7-35.9]) was significantly lower in i) women on low incomes, ii) unemployed women, iii) women with health insurance, and iv) multiparous women. It was significantly higher in those vaccinated against influenza during pregnancy.

**Discussion - conclusion:** Pertussis VC in women at two months postpartum in 2021 was insufficient and was marked by social and territorial inequalities in health. Vaccination for pregnant women has been recommended in France since 2022. A study monitoring the impact of this new recommendation is essential.

**Keywords:** Health inequities; Pertussis vaccine; Pregnancy; Vaccination; Vaccine coverage; Whooping cough.

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

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Editorial

Eur Respir J

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. 2025 Jan 2;65(1):2401804.

doi: 10.1183/13993003.01804-2024. Print 2025 Jan.

[Disarming the cavalry: targeting neutrophils to limit collateral damage in non-CF bronchiectasis](#)

[Omri A Arbiv](#) <sup>1,2,3</sup>, [Bradley S Quon](#) <sup>4,5</sup>

Affiliations Expand

- PMID: 39746771
- DOI: [10.1183/13993003.01804-2024](https://doi.org/10.1183/13993003.01804-2024)

*No abstract available*

Conflict of interest statement

Conflict of interest: The authors do not have any personal or financial relationships related to the content of this editorial.

Comment on

- [Cathepsin C \(dipeptidyl peptidase 1\) inhibition in adults with bronchiectasis: AIRLEAF, a phase II randomised, double-blind, placebo-controlled, dose-finding study.](#)

Chalmers JD, Shteinberg M, Mall MA, O'Donnell AE, Watz H, Gupta A, Frahm E, Eleftheraki A, Rauch J, Chotirmall SH, Armstrong AW, Eickholz P, Hasegawa N, Sauter W, McShane PJ. Eur Respir J. 2025 Jan 2;65(1):2401551. doi: 10.1183/13993003.01551-2024. Print 2025 Jan. PMID: 39255990 Free PMC article. Clinical Trial.

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. 2025 Jan 2;65(1):2401050.

doi: 10.1183/13993003.01050-2024. Print 2025 Jan.

[Targeting neutrophil serine proteases in bronchiectasis](#)

[James D Chalmers](#)<sup>1,2</sup>, [Marcus A Mall](#)<sup>3,4,5,2</sup>, [Sanjay H Chotirmall](#)<sup>6,7</sup>, [Anne E O'Donnell](#)<sup>8</sup>, [Patrick A Flume](#)<sup>9</sup>, [Naoki Hasegawa](#)<sup>10</sup>, [Felix C Ringshausen](#)<sup>11,12,13</sup>, [Henrik Watz](#)<sup>14</sup>, [Jin-Fu Xu](#)<sup>15</sup>, [Michal Shteinberg](#)<sup>16,17,18</sup>, [Pamela J McShane](#)<sup>19,18</sup>

Affiliations Expand

- PMID: 39467608
- PMCID: [PMC11694565](#)
- DOI: [10.1183/13993003.01050-2024](#)

Abstract

Persistent neutrophilic inflammation is a central feature in both the pathogenesis and progression of bronchiectasis. Neutrophils release neutrophil serine proteases (NSPs), such as neutrophil elastase (NE), cathepsin G and proteinase 3. When chronically high levels of free NSP activity exceed those of protective antiproteases, structural lung destruction, mucosal-related defects, further susceptibility to infection and worsening of clinical outcomes can occur. Despite the defined role of prolonged, high levels of NSPs in bronchiectasis, no drug that controls neutrophilic inflammation is licensed for the treatment of bronchiectasis. Previous methods of

suppressing neutrophilic inflammation (such as direct inhibition of NE) have not been successful; however, an emerging therapy designed to address neutrophil-mediated pathology, inhibition of the cysteine protease cathepsin C (CatC, also known as dipeptidyl peptidase 1), is a promising approach to ameliorate neutrophilic inflammation, since this may reduce the activity of all NSPs implicated in bronchiectasis pathogenesis, and not just NE. Current data suggest that CatC inhibition may effectively restore the protease-antiprotease balance in bronchiectasis and improve disease outcomes as a result. Clinical trials for CatC inhibitors in bronchiectasis have reported positive phase III results. In this narrative review, we discuss the role of high NSP activity in bronchiectasis, and how this feature drives the associated morbidity and mortality seen in bronchiectasis. This review discusses therapeutic approaches aimed at treating neutrophilic inflammation in the bronchiectasis lung, summarising clinical trial outcomes and highlighting the need for more treatment strategies that effectively address chronic neutrophilic inflammation in bronchiectasis.

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#### Conflict of interest statement

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University School of Medicine, Academic CME, Vinidico and Peer View Institute, and a leadership role with the US Bronchiectasis Research Registry. P.A. Flume reports support for the present study from Boehringer Ingelheim, grants or contracts from Boehringer Ingelheim, Insmmed and Synchrony, consultancy fees from Insmmed, and serves on advisory boards and is a site principal investigator for Insmmed and Boehringer Ingelheim. N. Hasegawa reports support for the present manuscript from Boehringer Ingelheim, grants from Insmmed, consulting fees from Boehringer Ingelheim and Insmmed, royalties or licences from Boehringer Ingelheim, patents planned, issued or pending for Boehringer Ingelheim, and payment or honoraria for lectures from Insmmed. F.C. Ringshausen reports support for the present manuscript from Boehringer Ingelheim, grants from the German Center for Lung Research (DZL), German Center for Infection Research (DZIF), IMI (EU/EFPIA) and iABC Consortium (including Alaxia, Basilea, Novartis and Polyphor), Mukoviszidose Institute, Novartis and Insmmed Germany, with payments made to the institution, consulting fees from Parion Sciences, Grifols, Zambon, Insmmed, Helmholtz-Zentrum für Infektionsforschung and Boehringer Ingelheim, payment or honoraria for lectures, presentations, manuscript writing or educational events from I!DE Werbeagentur GmbH, Interkongress GmbH, AstraZeneca, Insmmed, Grifols and Universitätsklinikum Frankfurt am Main, payment for expert testimony from the Social Court Cologne, with payments made to the institution, support for attending meetings from Mukoviszidose eV, participation on a data and safety monitoring board or advisory board with Insmmed, Grifols, Shionogi and Parion, leadership roles as PI of the German Center for Lung Research and Co-PI of the ECFS-CTN, and other financial interests from AstraZeneca, Boehringer Ingelheim, Celtaxsys, Corbus, Insmmed, Novartis, Parion, University of Dundee, Vertex and Zambon, for clinical trial participation with fees paid to the institution. H. Watz reports support for the present manuscript from Boehringer Ingelheim, consulting fees from AstraZeneca, Boehringer Ingelheim, Chiesi, GlaxoSmithKline and Sanofi, payment or honoraria for lectures, presentations or educational events from AstraZeneca, Boehringer Ingelheim, Chiesi, GlaxoSmithKline and Sanofi, support for attending meetings from AstraZeneca, Boehringer Ingelheim, Chiesi, GlaxoSmithKline and Sanofi, and leadership roles as Chair, COPD guideline of the German Respiratory Society and Chair, disease area COPD of the German Center for Lung Research (DZL). J-F. Xu reports support for the present manuscript from Boehringer Ingelheim. M. Shteinberg reports support for the present manuscript from Boehringer Ingelheim, grants/research support from GlaxoSmithKline, Insmmed, Novartis, Trudell Pharma and Tel Aviv League for Lung Diseases, consultation fees from AstraZeneca, Boehringer Ingelheim, Dexcel, GlaxoSmithKline, Kamada, Synchrony Medical, Trumed, Vertex and Zambon, payment or honoraria for lectures, presentations, speaker bureaus, manuscript writing or educational events from AstraZeneca, Boehringer Ingelheim, GlaxoSmithKline, Insmmed, Kamada, Novartis, PhysioAssist, Sanofi and Teva, participation on a data and safety monitoring board for AstraZeneca, Boehringer Ingelheim and Bonus Biotherapeutics, support for attending meetings from AstraZeneca Israel, Novartis, Actelion, Kamada, Boehringer Ingelheim, GlaxoSmithKline and Rafa, leadership roles with AJRCCM, EMBARC, the Israel Pulmonology Society and the Israel Society for TB and Mycobacterial Diseases, is an editorial board member of ERJ and Chest, and taskforce member for ERS bronchiectasis guidelines, and receipt of equipment from Trudell Medical. P.J. McShane reports support for the present manuscript from Boehringer Ingelheim, consultancy fees from Boehringer Ingelheim, payment or honoraria for lectures, presentations, speaker bureaus, manuscript writing or

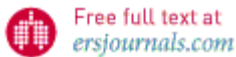
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Clinical Trial

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. 2025 Jan 2;65(1):2401551.

doi: 10.1183/13993003.01551-2024. Print 2025 Jan.

[Cathepsin C \(dipeptidyl peptidase 1\) inhibition in adults with bronchiectasis: AIRLEAF, a phase II randomised, double-blind, placebo-controlled, dose-finding study](#)

[James D Chalmers](#)<sup>1</sup>, [Michal Shteinberg](#)<sup>2,3</sup>, [Marcus A Mall](#)<sup>4,5,6</sup>, [Anne E O'Donnell](#)<sup>7</sup>, [Henrik Watz](#)<sup>8</sup>, [Abhya Gupta](#)<sup>9</sup>, [Edith Frahm](#)<sup>10</sup>, [Anastasia Eleftheraki](#)<sup>10</sup>, [Johanna Rauch](#)<sup>11</sup>, [Sanjay H Chotirmall](#)<sup>12,13</sup>, [April W Armstrong](#)<sup>14</sup>, [Peter Eickholz](#)<sup>15</sup>, [Naoki Hasegawa](#)<sup>16</sup>, [Wiebke Sauter](#)<sup>9</sup>, [Pamela J McShane](#)<sup>17</sup>

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- PMID: 39255990
- PMCID: [PMC11694546](#)
- DOI: [10.1183/13993003.01551-2024](#)

## Abstract

**Background:** Bronchiectasis is characterised by uncontrolled neutrophil serine protease (NSP) activity. Cathepsin C (CatC; dipeptidyl peptidase 1) activates NSPs during neutrophil maturation. CatC inhibitors can potentially reduce neutrophil-mediated lung damage. This phase II, randomised, double-blind, placebo-controlled trial (AIRLEAF®; clinicaltrials.gov identifier [NCT05238675](#)) evaluated efficacy, safety and optimal dosing of BI 1291583, a novel, reversible CatC inhibitor, in adults with bronchiectasis.

**Methods:** In total, 322 participants were randomised (2:1:1:2) to receive one of three oral doses of BI 1291583 (1 mg/2.5 mg/5 mg) or placebo for 24-48 weeks. A multiple comparison procedure and modelling approach was used to demonstrate a nonflat dose-response curve based on the time to first pulmonary exacerbation up to week 48. In addition, efficacy of individual BI 1291583 doses was evaluated based on the frequency of exacerbations, severe exacerbations (fatal or leading to hospitalisation and/or intravenous antibiotic administration), lung function and quality of life.

**Results:** A significant dose-dependent benefit of BI 1291583 over placebo was established based on time to first exacerbation (shape: maximum effect curve 1; adjusted  $p=0.0448$ ). Treatment with BI 1291583 5 mg and 2.5 mg numerically reduced the risk of an exacerbation compared with placebo (hazard ratio (95% CI) 0.71 (0.48 to 1.05) and 0.66 (0.40 to 1.08), respectively; both  $p>0.05$ ). BI 1291583 2.5 mg showed numerically better efficacy compared with 5 mg across several end-points; 1 mg was similar to placebo. The safety profile of BI 1291583 was similar to placebo.

**Conclusion:** Treatment with BI 1291583 resulted in a reduction in the risk of experiencing an exacerbation in adults with bronchiectasis.

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Arbiv OA, Quon BS. Eur Respir J. 2025 Jan 2;65(1):2401804. doi: 10.1183/13993003.01804-2024. Print 2025 Jan. PMID: 39746771 No abstract available.

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. 2025 Jan;297(1):93-100.

doi: 10.1111/joim.20034. Epub 2024 Nov 23.

[An electronic medical record retrieval system can be used to identify missed diagnosis in patients with primary ciliary dyskinesia](#)

[Wangji Zhou<sup>1</sup>, Qiaoling Chen<sup>1</sup>, Yaqi Wang<sup>1</sup>, Anhui Guo<sup>2</sup>, Aohua Wu<sup>1</sup>, Xueqi Liu<sup>1</sup>, Jinrong Dai<sup>1</sup>, Shuzhen Meng<sup>1</sup>, Christopher Situ<sup>3</sup>, Yaping Liu<sup>4</sup>, Kai-Feng Xu<sup>1</sup>, Weiguo Zhu<sup>2</sup>, Xinlun Tian<sup>1</sup>](#)

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- PMID: 39578984
- PMCID: [PMC11636425](#)
- DOI: [10.1111/joim.20034](#)

Abstract

**Background:** Primary ciliary dyskinesia (PCD) is a rare, genetically heterogeneous disease. Due to difficulty accessing diagnostic services and a lack of awareness of the syndrome, clinicians often fail to recognize the classic phenotype, leading to missed diagnoses.

**Methods:** Relevant medical records were accessed through The BIG DATA QUERY AND ANALYSIS SYSTEM of Peking Union Medical College Hospital from September 1, 2012 to March 31, 2024. The search strategy included the following key terms: (bronchiectasis OR atelectasis OR recurrent cough OR recurrent expectoration OR hemoptysis) AND (sinusitis OR nasal polyps OR otitis media OR neonatal pneumonia OR neonatal respiratory distress OR ectopic pregnancy OR infertility OR artificial insemination OR assisted reproduction OR hydrocephalus OR congenital heart disease OR organ laterality defect OR right-sided heart OR semen OR consanguineous marriage). Patients were filtered according to inclusion and exclusion criteria, and those with clinical suspicion of PCD were invited for screening, which included nasal nitric oxide and whole exome sequencing.

**Results:** A total of 874 medical records were retrieved. After filtering based on inclusion and exclusion criteria, 65 patients with clinical suspicion of PCD were identified, 21 of whom accepted our invitation to complete PCD-related screening. Among them, four were diagnosed with PCD, one was diagnosed with cystic fibrosis, and one was diagnosed with immunodeficiency-21.

**Conclusions:** This is the first study to use an electronic medical record retrieval system to identify missed diagnoses PCD. We believe that the methods used in this study can be extended to other rare diseases in the future.

**Keywords:** electronic medical records; missed diagnosis; primary ciliary dyskinesia; rare disease.

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#### Conflict of interest statement

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. 2024 Dec 31.

doi: 10.1002/ppul.27251. Online ahead of print.

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[Bruce K Rubin](#)<sup>1</sup>

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- PMID: 39739449
- DOI: [10.1002/ppul.27251](https://doi.org/10.1002/ppul.27251)

*No abstract available*

Keywords: COPD; barrolide; bronchiectasis; cystic fibrosis; immunomodulation; macrolide.

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. 2024 Dec 31.

doi: 10.1002/ppul.27255. Online ahead of print.

[Bronchiectasis and neutrophil dominant inflammation](#)

[Bruce K Rubin](#)<sup>1</sup>

Affiliations Expand

- PMID: 39739446

- DOI: [10.1002/ppul.27255](https://doi.org/10.1002/ppul.27255)

*No abstract available*

Keywords: CatC/DPP1; bronchiectasis; cystic fibrosis; macroide antibiotics; neutrophil elastase.

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. 2024 Dec 30.

doi: 10.4046/trd.2024.0089. Online ahead of print.

[Clinical significance of various pathogens identified in patients with acute exacerbations of COPD: a multi-center study in South Korea](#)

[Hyun Woo Ji](#)<sup>1</sup>, [Soojoung Yu](#)<sup>2</sup>, [Yun Su Sim](#)<sup>3</sup>, [Hyewon Seo](#)<sup>4</sup>, [Jeong-Woong Park](#)<sup>5</sup>, [Kyung Hoon Min](#)<sup>6</sup>, [Deog Kyeom Kim](#)<sup>7</sup>, [Hyun Woo Lee](#)<sup>7</sup>, [Chin Kook Rhee](#)<sup>8</sup>, [Yong Bum Park](#)<sup>9</sup>, [Kyeong-Cheol Shin](#)<sup>10</sup>, [Kwang Ha Yoo](#)<sup>11</sup>, [Ji Ye Jung](#)<sup>1</sup>

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- PMID: 39736471

- DOI: [10.4046/trd.2024.0089](https://doi.org/10.4046/trd.2024.0089)

## Free article

### Abstract

**Background:** Respiratory infection is a major cause of acute exacerbation of chronic obstructive pulmonary disease (AECOPD). We investigated the presence of bacterial and viral pathogens and clinical features in patients with AECOPD.

**Methods:** This retrospective study included 1,186 patients diagnosed with AECOPD from 28 hospitals in South Korea between 2015-2018. Pathogen identification rates, basic characteristics and clinical features, and associated factors for infection with potentially drug-resistant (PDR) pathogens were evaluated using microbiological tests.

**Results:** Bacteria, viruses, and both were found in 262 (22.1%), 265 (22.5%), and 129 (10.9%) patients, respectively. The most common pathogens were *Pseudomonas aeruginosa* (17.8%), *Mycoplasma pneumoniae* (11.2%), *Streptococcus pneumoniae* (9.0%), influenza A virus (19.0%), rhinovirus (15.8%), and respiratory syncytial virus (6.4%). A history of pulmonary tuberculosis (OR 1.66; P=0.046), bronchiectasis (OR 1.99; P=0.032), and triple inhaler use within six months (OR 2.04; P=0.005) were significant associated factors for PDR pathogen infection. Hospital stay length (15.9 days vs. 12.4 days; P=0.018) and ICU admission rates (15.9% vs. 9.5%; P=0.030) were increased in patients infected with PDR pathogens.

**Conclusions:** This study indicates that various types of pathogens are implicated during AECOPD. However, further research is needed to confirm whether these pathogens influence AECOPD development and progression.

**Keywords:** acute exacerbation; chronic obstructive pulmonary disease; drug resistance; pathogen.

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