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

1

Respir Res

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. 2025 Feb 7;26(1):49.

doi: 10.1186/s12931-024-03087-4.

[Association of e-cigarette and cigarette use with self-reported chronic obstructive pulmonary disease \(COPD\): a multivariable analysis of a large United States data set](#)

[Alicia J Burns](#)¹, [Alexander W Steinberg](#)², [James D Sargent](#)³, [Jenny E Ozga](#)⁴, [Zhigun Tang](#)⁴, [Cassandra A Stanton](#)⁴, [Laura M Paulin](#)⁵

Affiliations Expand

- PMID: 39920672
- DOI: [10.1186/s12931-024-03087-4](https://doi.org/10.1186/s12931-024-03087-4)

Abstract

Background: Prior research has linked e-cigarette use with chronic obstructive pulmonary disease (COPD). We examined the relationship between e-cigarette use and COPD prevalence in older adults with varying cigarette use status.

Methods: Data from the 2020 National Health Interview Survey were used to estimate the association between each of 9 exposure categories based on cigarette use (never, former, current) and e-cigarette use (never, former, current), with respondent-reported physician-diagnosed COPD prevalence in individuals 40 years and older (N = 22,997). Weighted multivariable analysis accounted for cigarette pack years, age of cigarette smoking onset, race, income-to-poverty ratio, rurality, gender, age, and medical comorbidities. Sensitivity of results was tested in 3 separate models with addition of years since quit cigarettes, smoking intensity and duration.

Results: 39.7% of individuals reported ever smoking cigarettes and 10.2% reported ever using e-cigarettes. Among individuals with ever e-cigarette use, 88.5% also reported current or former cigarette smoking. The weighted prevalence of COPD was 7.2%; Among those who reported former cigarette smoking, the highest risk of COPD prevalence compared to never cigarette/never e-cigarette use was in those currently using e-cigarettes (adjusted risk ratio (ARR) 2.82, 95% confidence interval (CI) [1.5, 5.3]). The ARR for former cigarette/current e-cigarette use was significantly larger than the ARR for former cigarette/never e-cigarette use ($p < 0.002$) in 3 out of 4 models; however, one model had the ARR attenuated to 1.35 (0.67, 2.76) when years since quitting smoking was added to the model. Other cigarette/e-cigarette combinations were also sensitive to how cigarette smoking history was modeled. For example, ARR for former cigarette/former e-cigarette (1.68 [1.00, 2.80] and current cigarette/former e-cigarette (2.50 [1.56,4.02]) were reduced to 1.05 (0.62, 1.77) and 1.04 (0.62, 1.75) respectively, when cigarette smoking duration was substituted for pack-years.

Conclusions: Current e-cigarette use among former cigarette smokers was associated with significantly higher COPD prevalence compared to never e-cigarette use. However, COPD risk for most cigarette/e-cigarette combinations could be greatly attenuated by how cigarette smoking history was modeled, raising questions about the robustness of these associations in prior research and the possibility of reverse causality in prior cross-sectional research.

Keywords: Chronic obstructive pulmonary disease (COPD); E-cigarette; Electronic nicotine delivery systems (ENDS); Smoking cessation.

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Conflict of interest statement

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

- [43 references](#)

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Am J Respir Crit Care Med

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. 2025 Feb 7.

doi: 10.1164/rccm.202408-1625RL. Online ahead of print.

[Continuous Monitoring for Atrial Fibrillation in Individuals at Increased Risk of Acute Exacerbations of COPD](#)

[David M MacDonald](#)¹, [Trent Fischer](#)², [Selcuk Adabag](#)³, [Shakeel Amanullah](#)⁴, [Jose Diaz](#)⁵, [Philip Diaz](#)⁶, [Ken M Kunisaki](#)^{7,8}, [Pamela L Lutsey](#)⁹, [Christine H Wendt](#)¹⁰

Affiliations Expand

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- DOI: [10.1164/rccm.202408-1625RL](https://doi.org/10.1164/rccm.202408-1625RL)

No abstract available

Keywords: Atrial fibrillation; Monitoring, ambulatory; Pulmonary disease, chronic obstructive.

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3

Editorial

Eur Respir J

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. 2025 Feb 6;65(2):2402103.

doi: 10.1183/13993003.02103-2024. Print 2025 Feb.

[Cardiovascular risk assessment in patients with COPD: reduce, reuse and recycle](#)

[Miguel Divo](#)^{1,2}, [Ciro Casanova](#)³, [Victor Pinto-Plata](#)^{2,4}

Affiliations Expand

- PMID: 39915048
- DOI: [10.1183/13993003.02103-2024](https://doi.org/10.1183/13993003.02103-2024)

No abstract available

Conflict of interest statement

Conflict of interest: The authors declare that they have no conflicts of interest related to the content of this manuscript. All authors have contributed significantly to the research and preparation of this manuscript, and they have no financial or personal relationships that could inappropriately influence or bias the work presented.

Comment on

- [ECG-based risk factors for adverse cardiopulmonary events and treatment outcomes in COPD.](#)

Wade RC, Martinez FJ, Criner GJ, Tombs L, Lipson DA, Halpin DMG, Han MK, Singh D, Wise RA, Kalhan R, Dransfield MT. Eur Respir J. 2025 Feb 6;65(2):2400171. doi: 10.1183/13993003.00171-2024. Print 2025 Feb. PMID: 39467609 Free PMC article. Clinical Trial.

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4

Chronic Obstr Pulm Dis

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. 2025 Feb 5.

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

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

[Wang Chun Kwok¹](#), [Terence Chi Chun Tam¹](#), [Chi Hung Chau²](#), [Fai Man Lam²](#), [James Chung Man Ho¹](#)

Affiliations Expand

- PMID: 39912873
- DOI: [10.15326/jcopdf.2024.0582](https://doi.org/10.15326/jcopdf.2024.0582)

Free article

Abstract

Background: *Pseudomonas aeruginosa* is an important pathogen in patients with chronic respiratory diseases. It can colonize the airway and could have prognostic value in bronchiectasis and cystic fibrosis. Its role in chronic obstructive pulmonary disease (COPD) is less well defined.

Methods: A prospective study was conducted in Hong Kong to investigate the possible association between *Pseudomonas aeruginosa* colonization and acute exacerbation of COPD (AECOPD) risks.

Results: Among 327 Chinese patients with COPD included, 33 (10.1%) of the patients had *Pseudomonas aeruginosa* colonization. Patients with or without *Pseudomonas aeruginosa* colonization had similar background characteristics. Patients with *Pseudomonas aeruginosa* colonization had increased risks of moderate to severe AECOPD, severe AECOPD and pneumonia with adjusted odds ratio (aOR) of 3.15 (95% CI 1.05 - 9.48, p = 0.042), 2.59 (95% CI 1.01 - 6.64, p = 0.048) and 4.19 (95% CI 1.40 - 12.54, p = 0.011) respectively. Patients with *Pseudomonas aeruginosa* colonization also had increased annual frequency of moderate to severe AECOPD, median 0 [0 - 0.93] in the non-*Pseudomonas aeruginosa* colonization group and 1.35 [0 - 3.39] in the *Pseudomonas aeruginosa* colonization group, with a p-value of 0.005 in multi-variate linear regression.

Conclusion: *Pseudomonas aeruginosa* colonization is a potential independent risk factor for moderate to severe AECOPD and pneumonia among patients with COPD without co-existing bronchiectasis.

Keywords: COPD; COPD exacerbation; *Pseudomonas aeruginosa*; pneumonia.

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5

Chronic Obstr Pulm Dis

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. 2025 Feb 5.

doi: 10.15326/jcopdf.2024.0577. Online ahead of print.

[Validation of Acute Exacerbation of Chronic Obstructive Pulmonary Disease Recording in Electronic Health Records: A Systematic Review](#)

[Elizabeth Moore¹, Philip Stone², Ayda Alizadeh¹, Jaspreet Sangha¹, Saranya Das¹, Shraddha Arshanapalli¹, Jennifer K Quint¹](#)

Affiliations Expand

- PMID: 39912869
- DOI: [10.15326/jcopdf.2024.0577](https://doi.org/10.15326/jcopdf.2024.0577)

Free article

Abstract

Objective: Acute exacerbations of COPD (AECOPD) can have severe impacts on patients with the disease and a heavy burden on healthcare resources. Electronic health records (EHRs) are a valuable resource for identifying cases of AECOPD and research. Studies have attempted to validate case definitions of AECOPD and this review aimed to summarise validated AECOPD definitions in EHRs, and to provide

guidance on the best algorithms to use to ensure accurate cohorts of AECOPD cases are available for researchers using EHRs.

Methods: MEDLINE and Embase were searched and studies that met the inclusion criteria were reviewed by ≥ 2 reviewers. Data extracted included the algorithms used to identify AECOPD, the reference standards used to compare against the algorithm, and measures of validity. The risk of bias was assessed using QUADAS-2 adapted for this review.

Results: Out of 2,784 studies found by the search strategy, 12 met the inclusion criteria. The clinical terminology used to build algorithms to detect AECOPD included codes from the International Statistical Classification of Diseases and Related Health Problems (ICD) 9th and 10th editions (ICD-9 and ICD-10), along with Read codes from UK general practices. AECOPD can be identified within EHRs using validated definitions, however the validity of AECOPD definitions vary considerably depending on the algorithm used and the settings they are applied in.

Conclusion: Although there are validated definitions that can be used to identify AECOPD, there is no clear consensus on which provides the highest validity or the most sensitive and specific definition to use.

Keywords: AECOPD; COPD; acute exacerbation of COPD; electronic health records.

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6

Observational Study

Sci Rep

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. 2025 Feb 5;15(1):4427.

doi: 10.1038/s41598-025-89013-0.

[A normal electrocardiogram indicates a better prognosis in patients with moderate to very severe chronic obstructive pulmonary disease](#)

[Martina Kulirova](#)^{1,2}, [Miroslav Solar](#)^{2,3}, [Michal Kopecky](#)^{1,2}, [Barbora Novotna](#)⁴, [Marek Plutinsky](#)⁵, [Kristian Brat](#)⁵, [Libor Fila](#)⁶, [Petr Vanik](#)⁷, [Pavlina Musilova](#)⁸, [Tomas Dvorak](#)⁹, [Petr Safranek](#)¹⁰, [Michal Svoboda](#)¹¹, [Vladimir Koblizek](#)^{12,13}

Affiliations Expand

- PMID: 39910197
- PMCID: [PMC11799201](#)
- DOI: [10.1038/s41598-025-89013-0](#)

Abstract

The role of electrocardiography (ECG) in predicting mortality in patients with chronic obstructive pulmonary disease (COPD) has not been sufficiently established. Research question: Is a normal ECG associated with a better prognosis than an abnormal ECG in patients with COPD? ECG parameters were assessed in patients enrolled in the Czech Multicenter Research Database of COPD. We assessed ECGs from baseline (August 2013) until December 31, 2019, or until death. The primary endpoint was 5-year overall survival depending on the ECG findings. A total of 300 subjects were enrolled in the study and 143 died during follow-up. This multicenter noninterventive observational prospective study revealed a significant difference in 5-year overall survival between COPD patients with normal ECGs and those with prognostically significant or other ECG abnormalities (76.8%, 38.2%, and 63.4%, respectively; $P < 0.001$). Patients with prognostically significant ECG abnormalities had a 2.537-fold greater mortality risk at 5 years than those with normal ECGs. In the COPD setting, patients with normal ECGs had a better prognosis than those with prognostically significant abnormalities suggesting that ECG may be a valuable tool for predicting mortality risk in these patients.

Keywords: Chronic obstructive pulmonary disease; Electrocardiography; Mortality; Prognosis.

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Conflict of interest statement

Declarations. Competing interests: The authors declare no competing interests
Ethics approval and consent to participate: The study was conducted in accordance with the laws of the Czech Republic and the ethical principles of the Declaration of Helsinki. Institutional Multicenter Ethic Committee of University Hospital Hradec Kralove (Charles University, Czechia, EU) approved study protocol with informed consent on 12 February 2013; approval number 201303 501P.

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

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7

Review

Clin Investig Arterioscler

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. 2025 Feb 4:500757.

doi: 10.1016/j.arteri.2024.500757. Online ahead of print.

[COPD and cardiovascular risk](#)

[Article in English, Spanish]

[Carlos Santiago Díaz¹](#), [Francisco J Medrano²](#), [N Muñoz-Rivas³](#), [Luis Castilla Guerra⁴](#), [M Belén Alonso Ortiz⁵](#); [en representación de los grupos de trabajo de EPOC y de Riesgo Vascular de la Sociedad Española de Medicina Interna](#)

Affiliations Expand

- PMID: 39909770
- DOI: [10.1016/j.arteri.2024.500757](https://doi.org/10.1016/j.arteri.2024.500757)

Abstract

Chronic Obstructive Pulmonary Disease (COPD) usually presents joined to other pathologies we call comorbidities. The more frequent of them are those related to cardiovascular risk, either its risk factors or its clinical manifestations. Cardiovascular risk of these patients grows up with the severity of the airflow obstruction, specially during and after an exacerbation of COPD. Patients with COPD have between 2 and 5 times more risk of ischaemic heart disease than people

without COPD, even after adjusting for confounding factors. Cardiovascular diseases are up to the second cause of mortality in these patients, close to those due to the lung disease. Although COPD is associated to several cardiovascular risk factors such as tobacco, arterial hypertension or Diabetes Mellitus, they don't explain all the excess in cardiovascular risk these patients have. Despite that excess of cardiovascular risk in COPD patients, most widely used cardiovascular risk scores don't include COPD as a risk factor itself, so global risk is underestimated in these patients. In this review, we make a bibliography revision of the available evidence about COPD and cardiovascular risk factors as well as the excess of cardiovascular risk COPD itself involves.

Keywords: Arterial hypertension; COPD; Cardiopatía isquémica; Cardiovascular risk factors; Diabetes mellitus; EPOC; Factores de riesgo cardiovascular; Hipertensión arterial; Ischemic cardiac disease; Riesgo cardiovascular.

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8

J Med Internet Res

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. 2025 Feb 5:27:e63660.

doi: 10.2196/63660.

[Long-Term Monitoring of Individuals With Chronic Obstructive Pulmonary Disease Using Digital Health Technology: Qualitative Study](#)

[Shih-Ying Chien](#)^{1,2,3}, [Han-Chung Hu](#)^{4,5}, [Hsiu-Ying Cho](#)⁵

Affiliations Expand

- PMID: 39908545

- DOI: [10.2196/63660](https://doi.org/10.2196/63660)

Free article

Abstract

Background: Digital health adoption in clinical practice has been widespread, yet there remains further potential for optimizing care specifically for chronic obstructive pulmonary disease (COPD). This study therefore conducted qualitative research involving 35 health care professionals from a range of hospitals in Taiwan.

Objective: This study aims to investigate barriers and facilitators related to the implementation of digital health technology (DHT) in the long-term monitoring of individuals with COPD based on clinical experiences in Taiwan. The perspectives of Taiwanese health care professionals provided valuable insights into the challenges and opportunities associated with using DHT for the management and enhancement of respiratory rehabilitation and long-term monitoring of patients with COPD.

Methods: Several key themes related to the development of DHT were identified. Barriers encompassed concerns pertaining to digital safety, insurance coverage, constraints related to medical resources, and the presence of a digital divide. Facilitators included the potential for cost reduction, personalized prescriptions, and instilling motivation in users.

Results: To enhance the acceptance and use of DHT, embracing a user-centered approach that prioritizes the distinct needs of all parties involved is recommended. Moreover, optimizing and leveraging the effective use of DHT in managing the health of individuals with COPD promises to deliver care characterized by greater precision and efficiency.

Conclusions: Overall, the benefits of using DHT for the long-term care of patients with COPD outweigh the disadvantages. After the COVID-19 pandemic, there has been an increased emphasis in Taiwan on the effectiveness of DHT in managing chronic diseases. Relevant studies including this paper have suggested that web-based exercise management systems could benefit patients with COPD in rehabilitation and tracking. Our findings provide meaningful directions for future research endeavors and practical implementation. By addressing identified barriers and capitalizing on facilitators, advancements can be made in the development and use of DHT, especially in overcoming challenges such as information security and operational methods. The implementation of the recommended strategies will likely lead to improved COPD care outcomes.

Keywords: Taiwan; barriers and facilitators; chronic obstructive pulmonary disease; digital health; digital health technology.

©Shih-Ying Chien, Han-Chung Hu, Hsiu-Ying Cho. Originally published in the Journal of Medical Internet Research (<https://www.jmir.org>), 05.02.2025.

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9

Monaldi Arch Chest Dis

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. 2025 Feb 4.

doi: 10.4081/monaldi.2025.3157. Online ahead of print.

[Chronic obstructive pulmonary disease and heart failure in real life: the tip of the iceberg in the sea of comorbidities. A prospective observational study](#)

[Ombretta Para](#)¹, [Marco Vanetti](#)², [Chiara Dibonaventura](#)³, [Davide Salerno](#)³, [Lorenzo Caruso](#)³, [Christian Carleo](#)³, [Asim Raza](#)³, [Carlo Nozzoli](#)³, [Antonio Spanevello](#)²

Affiliations Expand

- PMID: 39907680
- DOI: [10.4081/monaldi.2025.3157](#)

Free article

Abstract

Chronic obstructive pulmonary disease (COPD) and heart failure (HF) are two of the most common conditions treated in internal medicine. Although it is known that these diseases often coexist, the specific characteristics of the affected patients and the prognostic implications are not yet well understood. Managing patients with both COPD and HF requires an integrated treatment approach. The aim of the study was to examine the association between COPD and HF. We conducted a prospective observational cohort study. All consenting patients admitted to the Internal Medicine Department from the Emergency Department with known or strongly suspected COPD were enrolled. A total of 144 patients were included, with 47.2% of them also having HF, distributed among the various HF subcategories as follows: 10.4% with HF with reduced ejection fraction (HFrEF), 3.5% with HF with mild-reduced ejection fraction, and 33.3% with HF with preserved ejection fraction (HFpEF). This result is consistent with the literature, which suggests a higher prevalence of COPD in patients with HFpEF compared to HFrEF. A Doppler

echocardiography was performed during hospitalization. Some variables showed a statistically significant difference when comparing patients with COPD and HF to those with COPD without HF. Interestingly, the follow-up at 3 and 6 months post-discharge revealed higher mortality in patients with HF, with an odds ratio (95% confidence interval) of 10.0 (1.2-82.2). This study could contribute to a better understanding of the prognostic implications arising from the coexistence of COPD and HF, emphasizing the importance of a patient-centered approach in managing multiple comorbidities.

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BMC Public Health

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. 2025 Feb 4;25(1):456.

doi: 10.1186/s12889-025-21680-0.

[The global burden of chronic respiratory diseases attributable to tobacco from 1990 to 2021: a global burden of disease study 2021](#)

[Haoshen Feng](#) ^{#1}, [Zhe Li](#) ^{#2}, [Rui Zheng](#) ³

Affiliations Expand

- PMID: 39905394
- PMCID: [PMC11796058](#)
- DOI: [10.1186/s12889-025-21680-0](#)

Abstract

Background: Tobacco is a major risk factor for chronic respiratory diseases (CRDs), yet the global distribution and trends of tobacco-related CRD burdens remain inadequately explored.

Methods: This study extracted data on mortality, disability-adjusted life years (DALYs), age-standardized mortality rate (ASMR), and age-standardized DALY rate (ASDR) related to tobacco-attributable CRDs from the 2021 Global Burden of Disease (GBD) study. Joinpoint regression was used to identify temporal trends in age-standardized rates (ASR), while autoregressive integrated moving average (ARIMA) forecasting was applied to project future trends in ASMR and ASDR for tobacco-related CRDs.

Results: In 2021, global tobacco-related CRD deaths and DALYs reached 1,545,686 (95% UI: 1,144,476-1,942,541) and 33,014,429 (95% UI: 24,275,462 - 40,930,821), representing increases of 25.43% and 15.64%, respectively, since 1990. Elderly individuals and males showed a higher disease burden. Between 1990 and 2021, ASMR [average annual percentage change (AAPC) = -2.009 (95% CI: -1.8915 to -2.1263)] and ASDR [AAPC = -2.1057 (95% CI: -2.0123 to -2.199)] for tobacco-related CRDs showed a declining trend globally, with autoregressive integrated moving average forecasting suggesting continued declines in ASMR and ASDR in the future. Regionally, South Asia, East Asia, and Oceania had the highest CRD burdens, while country-specific data indicated that Nepal, Myanmar, Papua New Guinea, Kiribati, and the Democratic People's Republic of Korea bore significant burdens. The ASMR and ASDR of tobacco-related CRDs were highest in regions and countries with Socio-Demographic Index values between 0.4 and 0.5.

Conclusion: Although global tobacco-related CRD deaths and DALYs have continued to increase, ASMR and ASDR are on the decline, with variations across geographic regions. Prevention and control strategies tailored to country-specific disease prevalence are essential to mitigate these burdens.

Keywords: Asthma; Chronic obstructive pulmonary disease; Chronic respiratory diseases; Global burden of disease study; Tobacco.

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Conflict of interest statement

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

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

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PLoS One

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. 2025 Feb 4;20(2):e0317592.

doi: 10.1371/journal.pone.0317592. eCollection 2025.

[Mortality trends and disparities for coexisting chronic obstructive pulmonary disease and cardiovascular disease: A retrospective analysis of deaths in the United States from 1999-2020](#)

[Aman Goyal¹, Humza Saeed², Wania Sultan³, Ajeet Singh³, Abdullah², Muhammad Khubaib Arshad², Zubair Amin², Mah I Kan Changez⁴, Gauranga Mahalwar⁵, Rozi Khan⁶, Wael AlJaroudi⁷](#)

Affiliations Expand

- PMID: 39903793
- PMCID: [PMC11793733](#)
- DOI: [10.1371/journal.pone.0317592](#)

Abstract

Background: Chronic obstructive pulmonary disease (COPD) and cardiovascular disease (CVD) greatly influence morbidity and mortality, with COPD patients frequently suffering from cardiovascular comorbidities like coronary heart disease and stroke. This study analyzes mortality trends and disparities among individuals in the United States (US) affected by both CVD and COPD.

Methods: This study analyzed death certificates from the CDC WONDER database for individuals aged 25 and older who died between 1999 and 2020 with both CVD (ICD I00-I99) and COPD (ICD J41-J44). Age-adjusted mortality rates (AAMRs) and annual percent change (APC) were calculated by year, sex, age group, race/ethnicity, geographic region, and urbanization status.

Results: Between 1999 and 2020, there were 3,590,124 reported deaths due to coexisting CVD and COPD, with overall AAMR slightly changing from 82.2 to 81.2 per 100,000 population, and a notable rise from 2018 to 2020 (APC: 5.28; 95% CI: 1.83 to 7.22) coinciding with the onset of COVID-19 pandemic. A similar surge in mortality was observed across multiple demographic subgroups, particularly among older adults. Disparities across age groups, sex, race, and geographic

location were also observed in the mortality rates due to CVD and COPD. When analyzed by age group, older adults exhibited the highest AAMR at 824.1. Men had higher AAMRs than women (96.5 vs. 60.7). Ethnoracial analysis showed that non-Hispanic (NH) White individuals had the highest AAMRs (82.0), followed by NH American Indian or Alaska Native (74.5), NH Black (63.6), Hispanic (38.1), and NH Asian or Pacific Islander (25.1) individuals. Additionally, non-metropolitan areas had higher AAMRs compared to metropolitan areas (96.2 vs. 70.9).

Conclusions: The findings suggest that mortality rates for CVD and COPD have increased in recent years, coinciding with the onset of the COVID-19 pandemic, which may have exacerbated outcomes in vulnerable populations. The study highlights the need for targeted interventions to address the overlapping impacts of CVD and COPD, especially in high-risk groups.

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Conflict of interest statement

The authors have declared that no competing interests exist.

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

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12

BMC Pulm Med

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. 2025 Feb 3;25(1):57.

doi: 10.1186/s12890-025-03515-1.

[Screening of COPD patients using the COPD diagnostic questionnaire and a portable spirometer in primary healthcare institutions: a cross-sectional, diagnostic study](#)

[Feng Chen](#)¹, [Qingrong Nie](#)², [Xuefeng Han](#)², [Chunjuan Li](#)², [Qimeng Liu](#)², [Feifei Xu](#)², [Li Zhang](#)³, [Le Qiao](#)⁴, [Maoxin Li](#)⁵, [Ying Zhang](#)⁶, [Haiyan Wang](#)⁷

Affiliations Expand

- PMID: 39901092
- PMCID: [PMC11789370](#)
- DOI: [10.1186/s12890-025-03515-1](#)

Abstract

Background: Portable spirometers and chronic obstructive pulmonary disease (COPD) diagnostic questionnaires are commonly used for screening patients with COPD in primary healthcare institutions, but their accuracy is often inadequate. This study aimed to explore the accuracy of combining these two tools in screening for COPD.

Methods: Participants aged ≥ 40 years were recruited from primary healthcare institutions between July 2022 and July 2023. All participants completed COPD diagnostic questionnaires (CDQs) and pulmonary function tests including pre and post bronchodilator maneuvers using a portable spirometer at primary healthcare institutions and a conventional spirometer at a tertiary hospital. COPD was diagnosed based on the forced expiratory volume/forced vital capacity (FEV₁/FVC) ratio measured by the conventional spirometer after administration of 400 μ g of salbutamol sulfate. An FEV₁/FVC ratio of $< 70\%$ indicated COPD, while an FEV₁/FVC ratio of $\geq 70\%$ was classified as non-COPD. The sensitivity and specificity of combining the portable spirometer and CDQ for COPD screening were statistically analyzed. Receiver operating characteristic (ROC) curves were employed to compare the efficacy of the portable spirometer, CDQ, and their combination in diagnosing COPD.

Results: Of the 2,120 participants, 264 were newly diagnosed with COPD. Among the non-COPD population, 264 participants were matched by age, sex, and BMI to form the non-COPD group. The sensitivity and specificity of the combination of the portable spirometer and CDQ in diagnosing COPD were 96.6% (95% confidence interval [CI]: 0.934-0.983) and 79.9% (95% CI: 0.745-0.845), respectively, significantly higher than those with the use of either method alone ($p < 0.05$). The area under the ROC curve for the combined diagnosis of COPD was 0.994 (95% CI: 0.983-0.999), with a Jordan index of 0.765.

Conclusions: Our findings suggest that combining the portable spirometer with the CDQ enhances COPD detection and is a valuable approach for implementation in primary healthcare institutions.

Trial registration: This study has been registered in national medical research registration and filing information system of China, www.medicalresearch.org.cn , Trail registration number: MR-11-23-020214.

Keywords: Chronic obstructive pulmonary disease; Diagnostic questionnaire; Portable spirometer; Primary healthcare institutions.

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Conflict of interest statement

Declarations. Ethics approval and consent to participate: The study adhered to the Declaration of Helsinki, and was approved by the Ethics Commission of Liangxiang Teaching Hospital, Affiliated with Capital Medical University, Beijing, No. 2016164. Participants were fully informed about the purpose of study, and all provided written informed consent before the examination. All methods were conducted in accordance with relevant guidelines and regulations. **Consent for publication:** Not applicable. **Competing interests:** The authors declare no competing interests.

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

Supplementary info

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13

Editorial

Thorax

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. 2025 Feb 3:thorax-2024-222680.

doi: 10.1136/thorax-2024-222680. Online ahead of print.

[Pulmonary rehabilitation: one size does not fit all](#)

[Narelle S Cox](#)^{1,2}, [Anne E Holland](#)^{3,2,4}

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- PMID: 39900490
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Keywords: Exercise; Pulmonary Disease, Chronic Obstructive; Pulmonary Rehabilitation.

Conflict of interest statement

Competing interests: None declared.

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Multidiscip Respir Med

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. 2025 Feb 3:20.

doi: 10.5826/mrm.2025.1010.

[What is worth measuring in patients with COPD?](#)

[Claudio Tantucci](#)¹

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- PMID: 39899024

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Abstract

A personalized approach to management of a COPD patient is currently required due to heterogeneity of this disorder. A functional evaluation of each COPD patient is a fundamental part of the process to achieve this objective and should require a rational step-by-step procedure starting from the etiology of COPD, determination of the predominant underlying disease, assessment of risk severity, therapeutic role of ICS and finally monitoring of disease activity and its impact on the patient's life under the chosen treatment. Aim of this review is to indicate a series of easy sequential measurements that are worth to have for obtaining all this information crucial to taking care of a patient with a new diagnosis of COPD.

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Review

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. 2025 Feb 6;65(2):2401603.

doi: 10.1183/13993003.01603-2024. Print 2025 Feb.

[GOLD Science Committee recommendations for the use of pre- and post-bronchodilator spirometry for the diagnosis of COPD](#)

[Dave Singh](#)¹, [Robert Stockley](#)², [Antonio Anzueto](#)³, [Alvar Agustí](#)⁴, [Jean Bourbeau](#)⁵, [Bartolome R Celli](#)⁶, [Gerard J Criner](#)⁷, [MeiLan K Han](#)⁸, [Fernando J Martinez](#)⁹, [María Montes de Oca](#)¹⁰, [Obianuju B Ozoh](#)¹¹, [Alberto Papi](#)¹², [Ian Pavord](#)¹³, [Nicolas Roche](#)¹⁴, [Sandeep Salvi](#)¹⁵, [Don D Sin](#)¹⁶, [Thierry Troosters](#)¹⁷, [Jadwiga Wedzicha](#)¹⁸, [Jinping Zheng](#)¹⁹, [Claus Vogelmeier](#)²⁰, [David Halpin](#)²¹

Affiliations Expand

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- DOI: [10.1183/13993003.01603-2024](#)

Abstract

The Global Initiative for Chronic Obstructive Lung Disease (GOLD) report states that the diagnosis of COPD should be considered in individuals with chronic respiratory symptoms and/or exposure to risk factors. Forced spirometry demonstrating airflow obstruction after bronchodilation is required to confirm the diagnosis using a threshold of forced expiratory volume in 1 s (FEV₁)/forced vital capacity (FVC) ratio <0.7. This GOLD Science Committee review weighs the evidence for using pre- or post-bronchodilator (BD) spirometry to diagnose COPD. Cohort studies have shown that pre- and post-BD spirometry give concordant diagnostic results in most cases, although the prevalence of COPD is up to 36% lower with post-BD values. Discordant results may occur in "volume" or "flow" responders. Volume responders have reduced FVC due to gas trapping causing FEV₁/FVC ≥0.7 pre-BD, but a volume response occurs post-BD with a greater improvement in FVC relative to FEV₁ decreasing the ratio to <0.7. Flow responders show a greater FEV₁ improvement relative to FVC which may increase FEV₁/FVC from <0.7 pre-BD to ≥0.7 post-BD; these individuals have an increased likelihood of developing post-BD obstruction during follow-up and require monitoring longitudinally. GOLD 2025 recommends using pre-BD spirometry to rule out COPD and post-BD measurements to confirm the diagnosis. This will reduce clinical workload. Post-BD results close to the threshold should be repeated to ensure a correct diagnosis is made. Post-BD measurements ensure that volume responders are not overlooked and limit COPD overdiagnosis.

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Conflict of interest statement

Conflict of interest: D. Singh reports consulting fees from Adovate, Aerogen, Almirall, Apogee, Arrowhead, AstraZeneca, Bial, Boehringer Ingelheim, Chiesi, Cipla, CONNECT Biopharm, Covis, CSL Behring, DevPro Biopharma LCC, Elpen, Empirico, EpiEndo, Genentech, Generate Biomedicines, GlaxoSmithKline, Glenmark, Kamada, Kinaset Therapeutics, Kymera, Menarini, MicroA, OM Pharma, Orion, Pieris Pharmaceuticals, Pulmatrix, Revolo, Roivant Sciences, Sanofi, Synairgen, Tetherex, Teva, Theravance Biopharma, Upstream and Verona Pharma. R. Stockley reports consultancy fees from Mereo BioPharma, CSL Behring, Vertex and Grifols, payment or honoraria for lectures, presentations, manuscript writing or educational events from GlaxoSmithKline, and participation on a data safety monitoring board or advisory board with Kamada and Arimata. A. Anzueto reports consulting fees from GlaxoSmithKline, AstraZeneca, Sanofi/Regeneron and Pfizer, and payment or honoraria for lectures, presentations or educational events from GlaxoSmithKline, AstraZeneca and Viatrix Pharma. A. Agusti reports grants from

GlaxoSmithKline, AstraZeneca and Menarini, payment or honoraria for lectures, presentations or educational events from GlaxoSmithKline, AstraZeneca, Chiesi, Menarini, Zambon, MSD and Sanofi, and a leadership role with GOLD as Chairman of the Board of Directors (unpaid). J. Bourbeau reports grants from the Canadian Institute of Health Research (CIHR), Réseau en Santé Respiratoire du FRQS, McGill University, McGill University Health Centre Foundation, AstraZeneca Canada Ltd, Boehringer Ingelheim Canada Ltd, GlaxoSmithKline Canada Ltd, Grifols, Novartis, Sanofi and Trudell Canada Ltd (all paid to their institution), and payment or honoraria for lectures, presentations or educational events from AstraZeneca Canada Ltd, Boehringer Ingelheim Canada Ltd, GlaxoSmithKline Canada Ltd, Trudell Canada Ltd, Pfizer Canada Ltd and Covis Pharma Canada Ltd. B.R. Celli reports support for the present manuscript from Chiesi Farmaceutici, grants from GlaxoSmithKline, AstraZeneca, Menarini, Sanofi Aventis and Axios, consulting fees from GlaxoSmithKline, AstraZeneca and Sanofi Aventis, payment or honoraria for lectures, presentations or educational events from GlaxoSmithKline, AstraZeneca, Menarini, Chiesi and Regeneron, support for attending meetings from GlaxoSmithKline and Sanofi Aventis, and participation on a data safety monitoring board or advisory board with AstraZeneca Therapeutics, Sanofi Aventis and Vertex. G.J. Criner reports grants from ALung Technologies Inc., American College of Radiology, American Lung Associations, AstraZeneca, BioScale Inc., Boehringer Ingelheim, BREATH Therapeutics Inc., COPD Foundation, Coridea/ZIDAN, Corvus, Dr Karen Burns of St Michael's Hospital, Fisher & Paykel Healthcare Ltd, Galapagos NV, GlaxoSmithKline, Kinevent, Lungpacer Medical Inc., NHLBI, Nurvaira Inc., Patient-Centered Outcomes Research Institute, Pulmonary Fibrosis Foundation, PulmonX, Respiroics Inc., Respivant Sciences, Spiration Inc., Steward St Elizabeth's Medical Center of Boston Inc. and Veracyte Inc., participation on a data safety monitoring board or advisory board for Chiesi, Pliant and Sanofi, and personal fees from Amgen, AstraZeneca, Boehringer Ingelheim, Broncus Medical, CSA Medical, EOLO Medical, Gala Therapeutics, GlaxoSmithKline, Helios Medical, Ion, Merck, Medtronic, Mereo BioPharma, NGM Biopharmaceuticals, Novartis, Olympus, PulmonX, Respiroics Inc., Respivant Sciences, The Implementation Group and Verona Pharma. M.K. Han reports grants from NIH, Sanofi, Novartis, Nuvaira, Sunovion, Gala Therapeutics, COPD Foundation, AstraZeneca, American Lung Association, Boehringer Ingelheim and Biodesix, royalties or licences from UpToDate, Norton Publishing and Penguin Random House, consulting fees from AstraZeneca, Boehringer Ingelheim, GlaxoSmithKline, Novartis, Pulmonx, Teva, Verona, Merck, Mylan, Sanofi, DevPro, Aerogen, Polarian, Regeneron, Altesa BioPharma, Amgen, Roche, RS Biotherapeutics, Apreo Health and Genentech, payment or honoraria for lectures, presentations, manuscript writing or educational events from Cipla, Chiesi, AstraZeneca, Boehringer Ingelheim, GlaxoSmithKline, Medscape, Integrity, NACE and Medwiz, participation on a data safety monitoring board or advisory board with Novartis and Medtronic (funds paid to institution), leadership or fiduciary roles with the COPD Foundation Board, COPD Foundation Scientific Advisory Committee, ALA advisory committee, American Thoracic Society (journal editor), ALA (volunteer spokesperson), GOLD scientific committee and Emerson School Board, Ann Arbor, MI, stock or stock options with Meissa Vaccines and Altesa BioPharma, and receipt of medical writing support from GlaxoSmithKline, Boehringer Ingelheim, AstraZeneca and Novartis. F.J. Martinez reports grants from AstraZeneca, Chiesi, GlaxoSmithKline, Sanofi/Regeneron and NHLBI, with payments made to the COPD Foundation for partnership in SPIROMICS and/or CAPTURE, consulting fees from AstraZeneca, Boehringer Ingelheim, Chiesi,

CSL Behring, GlaxoSmithKline, Novartis, Polarean, Pulmonx, Roche, Sanofi/Regeneron, Sunovion, Teva and Theravance/Viatris, payment or honoraria for lectures, presentations, manuscript writing or educational events from AstraZeneca, GlaxoSmithKline and Roche, participation on a data safety monitoring board or advisory board with MedTronic and GlaxoSmithKline, and payment from UpToDate for COPD CME. M. Montes de Oca reports payment or honoraria for lectures, presentations, manuscript writing or educational events from GlaxoSmithKline and Boehringer Ingelheim. O.B. Ozoh reports payment or honoraria for lectures, presentations, manuscript writing or educational events from AstraZeneca and Gertz Pharma. A. Papi reports grants from Chiesi, AstraZeneca, GlaxoSmithKline and Sanofi, consultancy fees from Chiesi, AstraZeneca, GlaxoSmithKline, Sanofi, Avillion, Moderna and Roche, payment or honoraria for lectures, presentations, manuscript writing or educational events from Chiesi, AstraZeneca, GlaxoSmithKline, Menarini, Zambon, Mundipharma, Sanofi, Iqvia, Avillion, Regeneron and Zambon, and participation on a data safety monitoring board or advisory board with Chiesi, AstraZeneca, GlaxoSmithKline, Sanofi, Iqvia, Avillion and Moderna. I. Pavord reports consulting fees, payment or honoraria for lectures, presentations or educational events and support for attending meetings from GlaxoSmithKline, Sanofi/Regeneron and AstraZeneca. N. Roche reports grants from Boehringer Ingelheim, Novartis, GlaxoSmithKline and Pfizer, consultancy fees from Boehringer Ingelheim, GlaxoSmithKline, AstraZeneca, Sanofi, Chiesi, Pfizer, Novartis, Teva, Bayer, Austral and Biosency, payment or honoraria for lectures, presentations, manuscript writing or educational events from Boehringer Ingelheim, GlaxoSmithKline, AstraZeneca, Sanofi, Chiesi, Pfizer, Novartis, Teva, Zambon, MSD and Menarini, support for attending meetings from Chiesi, AstraZeneca and GlaxoSmithKline, and is European Respiratory Society Science Council Chair. S. Salvi reports leadership roles with Global Initiative for Chronic Obstructive Lung Disease (unpaid member) and Indian Chest Society (president, unpaid). D.D. Sin reports support for the present manuscript from Chiesi Farmaceutici SpA, grants from Nextone, payment or honoraria for lectures, presentations, manuscript writing or educational events from AstraZeneca, GlaxoSmithKline and Boehringer Ingelheim, participation on a data safety monitoring board for NHLBI, and a leadership role with the European Respiratory Society as Deputy Chief Editor of the European Respiratory Journal. T. Troosters has no potential conflicts of interest to disclose. J. Wedzicha reports grants from AstraZeneca, Boehringer, Chiesi, GlaxoSmithKline, Novartis, Genentech and 37Clinical, consulting fees from AstraZeneca, Epiendo, GlaxoSmithKline, Gilead, Novartis, Pieris, Pulmatrix and Empirico, payment or honoraria for lectures, presentations or educational events from AstraZeneca, GlaxoSmithKline, Boehringer, Recipharm and Novartis, participation as data safety monitoring board chair for Virtus, and a leadership role as Editor in Chief of the American Journal of Respiratory and Critical Care Medicine until March 2022. J. Zheng reports payment or honoraria for lectures, presentations, speakers bureaus or manuscript writing and support for attending meetings from GlaxoSmithKline, AstraZeneca, Chiesi and Sanofi. C. Vogelmeier reports grants from the German Ministry of Education and Science (BMBF), AstraZeneca, Boehringer Ingelheim, Chiesi, CSL Behring, GlaxoSmithKline, Grifols and Novartis, consulting fees from Aerogen, AstraZeneca, Boehringer Ingelheim, CSL Behring, Chiesi, GlaxoSmithKline, Insmmed, Menarini, Novartis, Nuaira, Roche and Sanofi, and payment or honoraria for lectures, presentations, manuscript writing or educational events from Aerogen, AstraZeneca, Boehringer Ingelheim, CSL Behring, Chiesi, GlaxoSmithKline, Insmmed, Menarini, Novartis, Roche and Sanofi. D. Halpin

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Randomized Controlled Trial

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. 2025 Feb 6;65(2):2400171.

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[ECG-based risk factors for adverse cardiopulmonary events and treatment outcomes in COPD](#)

[R Chad Wade](#)¹, [Fernando J Martinez](#)², [Gerard J Criner](#)³, [Lee Tombs](#)⁴, [David A Lipson](#)^{5,6}, [David M G Halpin](#)⁷, [MeiLan K Han](#)⁸, [Dave Singh](#)⁹, [Robert A Wise](#)¹⁰, [Ravi Kalhan](#)¹¹, [Mark T Dransfield](#)¹²

Affiliations Expand

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Abstract

Background: COPD has high mortality, compounded by comorbid cardiovascular disease. We investigated two ECG markers, Cardiac Infarction Injury Score (CIIS) and P pulmonale, as prognostic tools for adverse cardiopulmonary events in COPD.

Methods: This was a *p ost hoc* analysis of the IMPACT trial. Outcomes included odds (odds ratio, 95% confidence intervals) of adverse cardiopulmonary events stratified by CIIS threshold (<20 *versus* ≥20) and P pulmonale (baseline). Events included all-cause death, hospitalisation or death, cardiovascular adverse event of special interest, severe COPD exacerbations, and moderate/severe COPD exacerbations. We also assessed the effects of fluticasone furoate/umeclidinium/vilanterol *versus* fluticasone furoate/vilanterol or umeclidinium/vilanterol based on CIIS and P pulmonale.

Results: We included 9448 patients. Patients with CIIS ≥20 (*versus* CIIS <20) had greater odds of all-cause death (OR 1.73, 95% CI 1.27-2.37, *p*<0.001), hospitalisation or death (OR 1.33, 95% CI 1.17-1.50, *p*<0.001), cardiovascular adverse event of special interest (OR 1.27, 95% CI 1.08-1.48, *p*<0.005), severe COPD exacerbations (OR 1.41, 95% CI 1.21-1.64, *p*<0.001) and moderate/severe COPD exacerbations (OR 1.25, 95% CI 1.13-1.40, *p*<0.001). Patients with P pulmonale (*versus* without) had greater odds of all-cause death (OR 2.25, 95% CI 1.54-3.29, *p*<0.001), hospitalisation or death (OR 1.51, 95% CI 1.28-1.79, *p*<0.001), severe COPD exacerbations (OR 2.00, 95% CI 1.65-2.41, *p*<0.001) and moderate/severe COPD exacerbations (OR 1.25, 95% CI 1.08-1.46, *p*<0.001). A combined model demonstrated that patients with CIIS ≥20 and P pulmonale had increased risk of all-cause death (OR 3.38, 95% CI 1.23-9.30, *p*=0.019), hospitalisation or death (OR 1.61, 95% CI 1.14-2.22, *p*=0.004) and rate of severe COPD exacerbations (OR 1.89, 95% CI 1.22-2.91, *p*=0.004) and moderate/severe COPD exacerbations (OR 1.25, 95% CI 1.00-1.56, *p*=0.046). The risk of all-cause death and cardiovascular adverse events of special interest was reduced with fluticasone furoate/umeclidinium/vilanterol *versus* umeclidinium/vilanterol in patients with CIIS ≥20, but not CIIS <20.

Conclusions: These findings suggest the potential clinical relevance of CIIS and P pulmonale as risk indicators for adverse cardiopulmonary events in COPD.

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Conflict of interest statement

Conflict of interest: R.C. Wade declares no conflicts of interest. F.J. Martinez is editor-in-chief for the American Journal of Respiratory and Critical Care Medicine and reports consulting fees from AstraZeneca, Boehringer Ingelheim, Chiesi, CSL Behring, Gala, GSK, Novartis, Polarean, Pulmonx, Sanofi/Regeneron, Sunovion, Teva, Theravance/Viatris and Verona; grant support from AstraZeneca, Chiesi, GSK and Sanofi/Regeneron; and payment or honoraria from UpToDate for participation in COPD CME activities; and participated in an event adjudication committee for MedTronic. F.J. Martinez states that AstraZeneca, Boehringer Ingelheim and GSK are partners of the SPIROMICS programme and partners in the NHLBI CAPTURE

validation study; Novartis, Sanofi/Regeneron, Sunovion and Teva are partners of the SPIROMICS programme; and Theravance/Viatris are partners in the NHLBI CAPTURE validation study. G.J. Criner has received personal fees from Almirall, AstraZeneca, Boehringer Ingelheim, Chiesi, CSA Medical, Eolo, GSK, HGE Technologies, Novartis, Nuvaira, Olympus, Pulmonx and Verona. L. Tombs is a consultant for Veramed and a director for Precise Approach Ltd, London; he was consulted by GSK to conduct the statistical analysis for this study but received no payment for manuscript development. D.A. Lipson is an employee of GSK and holds GSK stocks/shares. D.M.G. Halpin received personal fees from AstraZeneca, Boehringer Ingelheim, Chiesi, GSK, Novartis and Pfizer; and non-financial support from Boehringer Ingelheim and Novartis. M.K. Han has received either in kind research support or funds paid to the institution from National Institutes of Health, Sanofi, Novartis, Nuvaira, Sunovion, Gala Therapeutics, COPD Foundation, AstraZeneca, American Lung Association, Boehringer Ingelheim and Biodesix; consulting fees from AstraZeneca, Boehringer Ingelheim, GSK, Novartis, Pulmonx, Teva, Verona, Merck, Mylan, Sanofi, DevPro, Aerogen, Polarian, Regeneron, Altesa BioSciences, Amgen, Roche, United Therapeutics, RS Biotherapeutics and Apreo Health; royalties from UpToDate, Norton Publishing and Penguin Random House; payment or honoraria for consultancy from Cipla, Chiesi, AstraZeneca, Boehringer Ingelheim, GSK, Medscape, Integrity, NACE and Medwiz; has served roles on boards or scientific committees for COPD Foundation Board, COPD Foundation Scientific Advisory Committee, American Lung Association advisory committee, American Thoracic Society (journal editor), American Lung Association (volunteer spokesperson), GOLD scientific committee and Emerson School Board (Ann Arbor, MI, USA); participated in data safety monitoring boards for Novartis and Medtronic with funds paid to the institution; holds stock options from Meissa Vaccines and Altesa BioSciences; and reports receipt of equipment, materials, drugs, medical writing, gifts or other services from GSK, Boehringer Ingelheim, AstraZeneca and Novartis. D. Singh declares consulting fees from Aerogen, AstraZeneca, Boehringer Ingelheim, Chiesi, Cipla, CSL Behring, Epiendo, Genentech, Glenmark, GSK, Gossamerbio, Kinaset, Menarini, Novartis, Pulmatrix, Sanofi, Synairgen, Teva, Theravance and Verona. R.A. Wise served as a paid member of the IMPACT study data monitoring committee and is a member of the scientific advisory board; and has received personal fees from AstraZeneca, Boehringer Ingelheim, Beyond Air, Contrafact, Roche-Genentech, Bristol Myers Squibb, Merck, Verona, Theravance, AbbVie, GSK, Chemerx, Kiniksa, Savara, Galderma, Kamada, Pulmonx, Kinevant, Vaxart, Polarean, Chiesi, 4D Pharma and Puretech; grant support from AstraZeneca, Sanofi, Verona, Genentech, Boehringer Ingelheim and 4DX imaging; payment for expert testimony from the US Government and Genentech; and support for attending meetings and/or travel from AstraZeneca; additionally, he has received editorial support from GSK, AstraZeneca, Boehringer Ingelheim and Merck Foundation and has served on the Board of Directors/Medical and Scientific Advisory Committee for the COPD Foundation, and on a Scientific Advisory Board for the American Lung Association. R. Kalhan reports grants from NHLBI, Boehringer Ingelheim and Spiration; grants and personal fees from AstraZeneca; and personal fees from CVS Caremark and GSK. M.T. Dransfield received consulting fees from GSK, Genentech, Novartis, Pulmonx, AstraZeneca, Teva and Apreo; royalties or licences from UpToDate; support for attending meetings from GSK; and grant support from the American Lung Association, Department of Defense and NIH; he also serves on the Board of Directors for the COPD Foundation.

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Divo M, Casanova C, Pinto-Plata V. Eur Respir J. 2025 Feb 6;65(2):2402103. doi: 10.1183/13993003.02103-2024. Print 2025 Feb. PMID: 39915048 No abstract available.

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. 2025 Feb 5;35(2):90-99.

doi: 10.2188/jea.JE20240085. Epub 2024 Jul 20.

[Much Lower Prevalence and Mortality of Chronic Obstructive Pulmonary Disease in Japan Than in the United States Despite Higher Smoking Rates: A Meta-Analysis/Systematic Review](#)

[Akira Sekikawa](#)¹, [Mengyi Li](#)¹, [Niva Joshi](#)¹, [Brandon Herbert](#)¹, [Curtis Tilves](#)¹, [Chendi Cui](#)¹, [Shiyao Gao](#)¹, [Yuefang Chang](#)², [Yasutaka Nakano](#)³, [Frank C Sciruba](#)²

Affiliations Expand

- PMID: 39034109
- PMCID: [PMC11706673](#)

- DOI: [10.2188/jea.JE20240085](https://doi.org/10.2188/jea.JE20240085)

Abstract

Background: A recent systematic review showed Japan's mortality from chronic obstructive pulmonary disease (COPD) is the lowest among 204 countries, despite notably higher smoking rates in men in Japan than in the United States. This study aims to compare (1) trends in smoking rates, (2) trends in COPD mortality, and (3) the spirometry-based COPD prevalence in the general adult population between Japan and the United States.

Methods: Age- and sex-specific smoking rates from the 1980s through 2010s and COPD mortality from 1999 through 2019 were obtained from national surveys and official statistics (International Classification of Diseases-10th codes J40-44), respectively. A systematic review and meta-analysis was performed to estimate COPD prevalence in Japan, while the National Health and Nutrition Examination Survey 2007-2012 was used for the United States. A fixed ratio of 0.7 of forced expiratory volume in the first second of forced vital capacity was used to define COPD.

Results: Over the past 4 decades, men in Japan consistently had 20-30% higher smoking rates than their United States counterparts. From 1999-2019, age-adjusted COPD mortality in men in Japan was only a third of the United States, whereas that in women was less than a tenth in 2019. Synthesizing data from 11 studies, involving 89,955 participants, Japan's COPD prevalence was more than 10% lower than in the United States in almost all age groups for both sexes.

Conclusion: This study showed markedly lower rates of COPD in Japan than in the United States. Investigating factors contributing to the paradoxical observations could lead to advancing COPD risk reduction strategies.

Keywords: COPD; Japan, and the US; epidemiology; mortality; prevalence; smoking.

Conflict of interest statement

Conflicts of interest: None declared.

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

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. 2025 Feb 6:113:105584.

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[A systematic analysis of the contribution of genetics to multimorbidity and comparisons with primary care data](#)

[Olivia Murrin](#)¹, [Ninon Mounier](#)¹, [Bethany Voller](#)¹, [Linus Tata](#)², [Carlos Gallego-Moll](#)³, [Albert Roso-Llorach](#)³, [Lucía A Carrasco-Ribelles](#)⁴, [Chris Fox](#)⁵, [Louise M Allan](#)⁵, [Ruby M Woodward](#)⁶, [Xiaoran Liang](#)¹, [Jose M Valderas](#)⁷, [Sara M Khalid](#)⁸, [Frank Dudbridge](#)⁶, [Sally E Lamb](#)⁵, [Mary Mancini](#)⁹, [Leon Farmer](#)⁹, [Kate Boddy](#)⁵, [Jack Bowden](#)¹, [David Melzer](#)¹, [Timothy M Frayling](#)¹⁰, [Jane A H Masoli](#)¹¹, [Luke C Pilling](#)¹, [Concepción Violán](#)¹², [João Delgado](#)¹³

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Abstract

Background: Multimorbidity, the presence of two or more conditions in one person, is common but studies are often limited to observational data and single datasets. We address this gap by integrating large-scale primary-care and genetic data from multiple studies to interrogate multimorbidity patterns and producing digital resources to support future research.

Methods: We defined chronic, common, and heritable conditions in individuals aged ≥ 65 years, using two large primary-care databases [CPRD (UK) N = 2,425,014 and SIDIAP (Spain) N = 1,053,640], and estimated heritability using the same definitions in UK Biobank (N = 451,197). We used logistic regression to estimate the co-occurrence of pairs of conditions in the primary care data. Linkage disequilibrium score regression was used to estimate genetic similarity between pairs of conditions. Meta-analyses were conducted across databases, and up to three sources of genetic data, for each pair of conditions. We classified pairs of conditions as across or within-domain based on the international classification of disease.

Findings: We identified 72 chronic conditions, with 43.6% of 2546 pairs showing higher co-occurrence than chance in primary care and evidence of shared genetics. Many across-domain pairs exhibited substantial shared genetics (e.g., iron deficiency anaemia and peripheral arterial disease: genetic correlation $R_g = 0.45$ [95% Confidence Intervals 0.27:0.64]). 33 pairs displayed negative genetic correlations, such as skin cancer and rheumatoid arthritis ($R_g = -0.14$ [-0.21:-0.06]), due to potential adverse drug effects. Discordance between genetic and primary care data was also observed, e.g., abdominal aortic aneurysm and bladder cancer co-occurred in primary care but were not genetically correlated (Odds-Ratio = 2.23 [2.09:2.37], $R_g = 0.04$ [-0.20:0.28]) and schizophrenia and fibromyalgia were less likely to co-occur together in primary care but were positively genetically correlated (OR = 0.84 [0.75:0.94], $R_g = 0.20$ [0.11:0.29]).

Interpretation: Most pairs of chronic conditions show evidence of shared genetics, and co-occurrence in primary care, suggesting shared mechanisms. The identified patterns of shared genetics, negative correlations and discordance between genetic and observational data provide a foundation for future multimorbidity research.

Funding: UK Medical Research Council [MR/W014548/1].

Keywords: Chronic disease; Comorbidity; Genotype; Multiple long-term conditions; Observational.

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Conflict of interest statement

Declaration of interests ARL is now an employee of AstraZeneca and has interests in the company. The work undertaken here was prior to his appointment. SK's group has received funding support from Amgen BioPharma outside of this work. JB is a part time employee of Novo Nordisk Research Centre Oxford, limited, unrelated to this work. TF has consulted for several pharmaceutical companies. All other authors have no disclosures to declare.

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. 2025 Feb 4;25(1):32.

doi: 10.1186/s12874-025-02476-7.

[Multiple states clustering analysis \(MSCA\), an unsupervised approach to multiple time-to-event electronic health records applied to multimorbidity associated with myocardial infarction](#)

[Marc Delord](#)¹, [Abdel Douiri](#)²

Affiliations Expand

- PMID: 39905310
- PMCID: [PMC11792209](#)
- DOI: [10.1186/s12874-025-02476-7](#)

Abstract

Multimorbidity is characterized by the accrual of two or more long-term conditions (LTCs) in an individual. This state of health is increasingly prevalent and poses public health challenges. Adapting approaches to effectively analyse electronic health records is needed to better understand multimorbidity. We propose a novel unsupervised clustering approach to multiple time-to-event health records denoted as multiple state clustering analysis (MSCA). In MSCA, patients' pairwise dissimilarities are computed using patients' state matrices which are composed of multiple censored time-to-event indicators reflecting patients' health history. The use of state matrices enables the analysis of an arbitrary number of LTCs without reducing patients' health trajectories to a particular sequence of events. MSCA was applied to analyse multimorbidity associated with myocardial infarction using electronic health records of 26 LTCs, including conventional cardiovascular risk factors (CVRFs) such as diabetes and hypertension, collected from south London general practices between 2005 and 2021 in 5087 patients using the MSCA R library. We identified a typology of 11 clusters, characterised by age at onset of myocardial infarction, sequences of conventional CVRFs and non-conventional risk factors including physical and mental health conditions. Interestingly, multivariate analysis revealed that clusters were also associated with various combinations of socio-demographic characteristics including gender and ethnicity. By identifying meaningful sequences of LTCs associated with myocardial infarction and distinct socio-demographic characteristics, MSCA proves to be an effective approach to the analysis of electronic health records, with the potential to enhance our understanding of multimorbidity for improved prevention and management.

Keywords: Electronic health records; Jaccard dissimilarity index; Multimorbidity; Multiple state analysis; Myocardial infarction; Ward clustering.

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Conflict of interest statement

Declarations. Ethics approval and consent to participate: This study was conducted in accordance with the Declaration of Helsinki. Ethics approval was granted by the Health Research Authority (HRA) ethics committees (IRAS: 282174) and the Confidentiality Advisory Group (CAG: 22/CAG/0022), as well as the local Research Ethics Committees (RECs) at Guy's and St Thomas' NHS Foundation Trust (London, UK), King's College Hospital NHS Foundation Trust (London, UK), Queen Square (London, UK), and Westminster Hospital (London, UK) (REC: 22/SC/0043). **Consent for publication:** Not applicable. **Competing interests:** The authors declare no competing interests.

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Supplementary info

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J Am Heart Assoc

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. 2025 Feb 4;14(3):e036139.

doi: 10.1161/JAHA.124.036139. Epub 2025 Jan 27.

[Cardiovascular Disease Multimorbidity and Decreased Health-Related Quality of Life in Haiti: A Cross-Sectional Study](#)

[Shalom Sabwa](#)¹, [Vanessa Rouzier](#)^{2,3}, [Rodney Sufra](#)³, [Reichling St Sauveur](#)³, [Nour Mourra](#)², [Rehana Rasul](#)^{4,5}, [Joseph Inddy](#)³, [Lily D Yan](#)², [Madeline Sterling](#)⁶, [Laura Pinheiro](#)⁶, [Marie Deschamps](#)³, [Jean William Pape](#)^{2,3}, [Margaret L McNairy](#)^{2,6}

Affiliations Expand

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- DOI: [10.1161/JAHA.124.036139](https://doi.org/10.1161/JAHA.124.036139)

Free article

Abstract

Background: Multimorbidity is increasingly prevalent in lower- and middle-income countries. Health-related quality of life (HRQOL) has been inversely associated with multimorbidity but is understudied in lower- and middle-income countries. We report cardiovascular disease (CVD) multimorbidity in Haiti and its association with HRQOL.

Methods and results: We used data from the Haiti CVD Cohort, a population-based longitudinal cohort of adults. CVD multimorbidity was 2+ CVD risk factors/diseases at enrollment. HRQOL was measured using the Short Form-12, yielding physical component summary/mental component summary scores between 0 and 100, with higher scores indicating better HRQOL. We used linear regressions to assess the association between CVD multimorbidity and HRQOL and individual CVD comorbidities and HRQOL. Additionally, we examined sex and education as potential effect modifiers. Among 2,996 participants, the median age was 40 years (interquartile range [IQR], 27-55), 58.0% were women, and 70.3% earned <1 US dollar per day. CVD multimorbidity prevalence was 24.1%; compared with those without CVD multimorbidity, those with CVD multimorbidity were older (median age, 56.0 years [IQR, 47.0-53.0]) and women (70.5%). Adjusted models revealed CVD multimorbidity was inversely related to physical component summary (-2.7 [95% CI, -3.8 to -1.6]) and mental component summary (-1.0 [95% CI, -1.8 to -0.2]). Heart failure and hypertension showed the strongest CVD morbidities associated with poor HRQOL. In the interaction analysis, among men, CVD multimorbidity was associated with a 4.3-point lower physical component summary score. Among those with less education, CVD multimorbidity was associated with a 4.6-point lower physical component summary score than no CVD multimorbidity.

Conclusions: Our data are among the first to describe HRQOL data with high CVD multimorbidity in a young population in urban Haiti, and CVD multimorbidity was associated with decreased HRQOL.

Registration: URL: <https://www.clinicaltrials.gov>; Unique identifier: [NCT03892265](https://clinicaltrials.gov/ct2/show/study/NCT03892265).

Keywords: cardiovascular disease; global health; multimorbidity.

Supplementary info

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

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J Asthma

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. 2025 Feb 7:1-7.

doi: 10.1080/02770903.2025.2463956. Online ahead of print.

[Evaluating the Efficacy and Safety of Mepolizumab in Elderly Patients with Severe Asthma: Insights from the REDES Study](#)

[Eva Martínez-Moragón¹](#), [Celia Pinedo²](#), [Luis Puente^{3,4}](#), [Mariana Muñoz Esquerre⁵](#), [Ana Gómez-Bastero⁶](#), [Jacinto Ramos⁷](#), [Miguel Díaz Palacios⁸](#), [Tamara Hermida⁹](#), [David Bañas-Conejero¹⁰](#), [Santiago Quirce¹¹](#)

Affiliations Expand

- PMID: 39918279
- DOI: [10.1080/02770903.2025.2463956](https://doi.org/10.1080/02770903.2025.2463956)

Abstract

Objective: Asthma and severe asthma are problems affecting all age groups, but asthma is frequently undiagnosed in the elderly, due to the poor perception of airflow limitation, lack of fitness, and presence of multiple comorbidities. Even so, the proportion of patients with severe asthma aged ≥ 65 is significant, and data on efficacy of asthma medications in the elderly are sometimes limited. We report here the effectiveness and safety of mepolizumab (an IL-5 inhibitor) in elderly (≥ 65 years) patients.

Methods: The REDES study was an observational, multicenter study of the effectiveness and safety of mepolizumab 100mg SC every 4 weeks in 318 severe asthma patients in Spain. This post-hoc analysis compares the effectiveness and safety of patients ≥ 65 years old to patients < 65 years after 12 months of mepolizumab treatment.

Results: 27% of patients were ≥ 65 years old, compared with 73% of patients < 65 years. Elderly patients showed a trend towards less frequent comorbid nasal polyps ($p = 0.06$) and a lower proportion of atopic sensitization (as detected by prick test or specific IgE) ($p = 0.02$). Similar improvements were noted in ACT score ($p < 0.0001$), comparable exacerbation reductions ($p < 0.0001$) and lung function parameters ($p < 0.04$ in elder group and $p < 0.0001$ in younger elder group), although an apparent greater reduction of OCS daily dose was observed in elder patients ($p = 0.0002$). No new safety signals were reported in the elderly population.

Conclusions: This study further supports mepolizumab as an effective and well tolerated therapy in the difficult to treat population of elderly patients with severe asthma.

Keywords: IL-5; comorbidities; difficult to treat; effectiveness; fitness; real-world.

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Clin Exp Ophthalmol

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. 2025 Feb 6.

doi: 10.1111/ceo.14501. Online ahead of print.

[Predictive Potential of Retina-Based Biological Age in Assessing Chronic Obstructive Pulmonary Disease Risk](#)

[Qingsheng Peng](#)^{1,2}, [Tyler Hyungtaek Rim](#)^{3,4}, [Zhi Da Soh](#)^{1,5}, [Miao Li Chee](#)¹, [Yih-Chung Tham](#)^{1,5,6}, [Zhuoting Zhu](#)⁷, [Simon Nusinovi](#)^{1,3}, [Charumathi Sabanayagam](#)^{1,3}, [Ah Young Leem](#)⁸, [Chan Joo Lee](#)⁹, [Byoung Kwon Lee](#)⁹, [Sungha Park](#)⁹, [Sung Soo Kim](#)¹⁰, [Hyeon Chang Kim](#)¹¹, [Marco Chak Yan Yu](#)^{1,3}, [Tien Yin Wong](#)^{1,3}, [Ching-Yu Cheng](#)^{1,3,5,6}

Affiliations Expand

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- DOI: [10.1111/ceo.14501](https://doi.org/10.1111/ceo.14501)

Abstract

Background: Previously, based on retinal photographs, we developed a deep-learning algorithm to predict biological age (termed, RetiAGE) that was associated with future risks of morbidity and mortality. This study specifically aimed to evaluate the performance of RetiAGE in predicting future risks of chronic obstructive pulmonary disease (COPD).

Methods: RetiAGE scores were generated from retinal images in the UK Biobank and stratified into tertiles. We used Cox proportional hazards models to evaluate the longitudinal association between RetiAGE and incident COPD, adjusting for calendar age, gender, smoking, asthma history, and socio-economic status. In addition, we performed a cross-sectional analysis using generalised linear models to examine the association between RetiAGE and baseline respiratory function, specifically the forced expiratory volume in 1 s to forced vital capacity ratio (FEV1/FVC) and peak expiratory flow (PEF), adjusting for the same confounders.

Results: Among 45 438 UK Biobank participants without a history of COPD at baseline, 448 (0.9%) developed COPD over a mean follow-up period of 9.8 ± 0.7 years. Participants in the moderate-risk and high-risk tertiles of RetiAGE had significantly lower baseline respiratory function (all $p < 0.05$) and a higher risk of incident COPD (HR = 1.60; 95% CI, 1.18-2.19) compared to the low-risk tertile, after adjusting for confounders. Adding RetiAGE to the multivariable risk model improved predictive performance, as demonstrated by significant enhancements in C-statistics ($p < 0.001$) and likelihood ratio tests ($p = 0.002$).

Conclusion: Our deep-learning-based retinal aging biomarker, RetiAGE, can potentially stratify the risk of developing COPD.

Keywords: COPD; deep learning; pulmonary function; retinal aging; retinal photography.

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. 2025 Feb 6;15(1):4537.

doi: 10.1038/s41598-025-88345-1.

[Assessing the diagnostic accuracy of machine learning algorithms for identification of asthma in United States adults based on NHANES dataset](#)

[Omid Kohandel Gargari](#)^{#1}, [Mobina Fathi](#)^{#2}³, [Shahryar Rajai Firouzabadi](#)³, [Ida Mohammadi](#)³, [Mohammad Hossein Mahmoudi](#)⁴, [Mehran Sarmadi](#)⁵, [Arman Shafiee](#)¹

Affiliations Expand

- PMID: 39915528
- DOI: [10.1038/s41598-025-88345-1](#)

Free article

Abstract

Asthma diagnosis poses challenges due to underreporting of symptoms, misdiagnoses, and limitations in existing diagnostic tests. Machine learning (ML) offers a promising avenue for addressing these challenges by leveraging demographic and clinical data. In this study, we aim to compare different ML diagnostic models and obtain the most valuable features for asthma diagnosis using data from the National Health and Nutrition Examination Survey (NHANES) dataset. A total of 8,888 participants with available asthma diagnosis data from the 2017-2018 NHANES survey were included. After careful selection of variables related to asthma, various ML algorithms including Support Vector Machine (SVM), Random Forest (RF), AdaBoost (ADA), XGBoost (XGB), K-Nearest Neighbors (KNN), Naive Bayes (NB), and Multi-Layer Perceptron (MLP) were evaluated. SVM and ADA emerged as top performers with the highest area under the curve (AUC) scores of 0.72 and 0.71, respectively. RF exhibited high accuracy but low precision. Feature interpretation using SHapley Additive exPlanations (SHAP) values identified significant predictors such as close relative asthma history, dietary fat intake, and chronic bronchitis. Feature reduction experiments showed promising results without significant loss in predictive performance. Our findings demonstrate the potential diagnosis ability of ML algorithms, particularly SVM and ADA, in asthma diagnosis by incorporating diverse clinical and demographic factors. In addition, close relative asthma history, dietary fat intake, and chronic bronchitis could be suggested as the valuable asthma diagnosis features. These outcomes can bring promising results in early diagnosis of asthma.

Keywords: Asthma; Bronchitis; Machine learning; Support vector machine.

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Conflict of interest statement

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

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Tuberc Respir Dis (Seoul)

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. 2025 Feb 6.

doi: 10.4046/trd.2024.0198. Online ahead of print.

[International Severe Asthma Registry \(ISAR\): 2017-2024 Status and Progress Update](#)

[Désirée Larenas-Linnemann](#)¹, [Chin Kook Rhee](#)², [Alan Altraja](#)³, [John Busby](#)⁴, [Trung N Tran](#)⁵, [Eileen Wang](#)^{6,7}, [Todor A Popov](#)⁸, [Patrick D Mitchell](#)⁹, [Paul E Pfeffer](#)^{10,11}, [Roy Alton Pleasants](#)^{12,13}, [Rohit Katial](#)⁶, [Mariko Siyue Koh](#)^{14,15}, [Arnaud Bourdin](#)¹⁶, [Florence Schleich](#)¹⁷, [Jorge Máspero](#)^{18,19}, [Mark Hew](#)^{20,21}, [Matthew J Peters](#)^{22,23}, [David J Jackson](#)²⁴, [George C Christoff](#)²⁵, [Luis Perez-de-Llano](#)^{26,27}, [Ivan Cherrez-Ojeda](#)^{28,29,30,31}, [João A Fonseca](#)³², [Richard W Costello](#)³³, [Carlos A Torres-Duque](#)^{34,35}, [Piotr Kuna](#)³⁶, [Andrew N Menzies-Gow](#)^{37,38}, [Neda Stjepanovic](#)³⁹, [Peter G Gibson](#)^{40,41}, [Paulo Márcio Pitrez](#)⁴², [Celine Bergeron](#)^{43,44}, [Celeste M Porsbjerg](#)⁴⁵, [Camille Taillé](#)⁴⁶, [Christian Taube](#)⁴⁷, [Nikolaos G Papadopoulos](#)^{48,49}, [Andriana I Papaioannou](#)⁵⁰, [Sundeep Salvi](#)⁵¹, [Giorgio Walter Canonica](#)^{52,53}, [Enrico Heffler](#)^{52,53}, [Takashi Iwanaga](#)⁵⁴, [Mona S Al-Ahmad](#)^{55,56}, [Sverre Lehmann](#)^{57,58}, [Riyad Al-Lehebi](#)^{59,60}, [Borja G Cosio](#)⁶¹, [Diahn-Warng Perng](#)^{62,63}, [Bassam Mahboub](#)^{64,65}, [Liam G Heaney](#)⁶⁶, [Pujan H Patel](#)⁶⁷, [Njira Lugogo](#)⁶⁸, [Michael E Wechsler](#)⁶⁹, [Lakmini Bulathsinhala](#)^{70,71}, [Victoria Carter](#)^{70,71}, [Kirsty Fletton](#)^{70,71}, [David L Neil](#)^{70,71}, [Ghislaine Scelo](#)^{70,71}, [David B Price](#)^{70,71,72}

Affiliations Expand

- PMID: 39915034
- DOI: [10.4046/trd.2024.0198](#)

Free article

Abstract

The International Severe Asthma Registry (ISAR) was established in 2017 to advance the understanding of severe asthma and its management, thereby improving patient care worldwide. As the first global registry for adults with severe asthma, ISAR enabled individual registries to standardize and pool their data, creating a comprehensive, harmonized dataset with sufficient statistical power to address key research questions and knowledge gaps. Today, ISAR is the largest repository of real-world data on severe asthma, curating data on nearly 35,000 patients from 28 countries worldwide, and has become a leading contributor to severe asthma research. Research using ISAR data has provided valuable insights on the characteristics of severe asthma, its burdens and risk factors, real-world treatment effectiveness, and barriers to specialist care, which are collectively informing improved asthma management. Besides changing clinical thinking via research, ISAR aims to advance real-world practice through initiatives that improve registry data quality and severe asthma care. In 2024, ISAR refined essential research variables to enhance data quality and launched QISAR, a web-based data acquisition and reporting system, which integrates data collection with clinical consultations and enables longitudinal data tracking at patient, center, and population levels. Quality improvement priorities include collecting standardized data during consultations and tracking and optimizing patient journeys via QISAR and integrating primary/secondary care pathways to expedite specialist severe asthma management and facilitate clinical trial recruitment. ISAR envisions a future in which timely specialist referral and initiation of biologic therapy can obviate long-term systemic corticosteroid use and enable more patients to achieve remission.

Keywords: Core variables; Delphi consensus; International Severe Asthma Registry (ISAR); Optimum Patient Care Global; Quality improvement; Real-world data.

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. 2025 Feb 6;15(2):e095210.

doi: 10.1136/bmjopen-2024-095210.

[Global, regional and national burden of asthma attributable to NO₂ from 1990 to 2021: an analysis from the Global Burden of Disease Study 2021](#)

[Jingli Li](#)¹, [Chunyi Zhang](#)¹, [E Qin](#)¹, [Jian Sun](#)¹, [Lingjing Liu](#)², [Guimei Pu](#)³

Affiliations Expand

- PMID: 39915028
- PMCID: [PMC11800289](#)
- DOI: [10.1136/bmjopen-2024-095210](#)

Abstract

Objectives: This study aims to systematically assess the global, regional, and national burden of asthma attributable to nitrogen dioxide (NO₂) pollution.

Design and setting: Analysis of population-level data from 1990 to 2021 obtained from the Global Burden of Disease Study 2021, covering 204 countries and territories.

Participants: Participants included patients with asthma attributable to NO₂ pollution.

Main outcomes and measures: Asthma-related disability-adjusted life-years (DALYs) and age-standardised DALY rates (ASDR) attributable to NO₂ pollution across 204 countries and territories. The estimated annual percentage change (EAPC) was used to assess temporal trends to identify regions with increasing or decreasing asthma burdens.

Results: In 2021, NO₂ pollution contributed to approximately 176.73 thousand DALYs globally, with an ASDR of 2.48 per 100 000 population (95% uncertainty interval (UI) -2.26 to 10.30). The global ASDR declined significantly from 1990 to 2021, with an EAPC of -1.93% (95% CI -2.14% to -1.72%). High-income North America had the highest ASDR (10.74 per 100 000; 95% UI 10.12 to 46.56), while Australasia experienced the most significant reduction in ASDR over the study period (EAPC -3.92%; 95% CI -4.46% to -3.37%). In contrast, Oceania and Southeast Asia showed increasing trends in asthma burden, with EAPCs of 2.33% (95% CI 1.57% to 3.10%) and 1.14% (95% CI 0.81% to 1.47%), respectively. The 5-9 age group carried the highest asthma burden, reflecting the vulnerability of younger children to NO₂ exposure. A positive correlation between ASDR and sociodemographic index (SDI) was observed (R=0.637, p<0.001), indicating a greater asthma burden in higher SDI regions.

Conclusion: The findings highlight significant regional and demographic disparities in asthma burden attributable to NO₂ pollution. Tailored public health strategies are needed to address the rising burden in vulnerable regions. Future research should focus on identifying effective interventions to reduce NO₂ exposure and improve asthma outcomes, especially in rapidly developing areas.

Keywords: Asthma; Health policy; PUBLIC HEALTH.

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Conflict of interest statement

Competing interests: None declared.

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- [6 figures](#)

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Multicenter Study

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. 2025 Feb 5;15(2):e089225.

doi: 10.1136/bmjopen-2024-089225.

[Impact of glucocorticoids on patients' quality of life: a qualitative study assessing face validity and feasibility of the Steroid PRO in patients with inflammatory gastroenterology, respiratory and dermatology conditions](#)

[Anne-Marie T Sweeney](#)^{1,2}, [Susan Bridgewater](#)^{1,2}, [Jen Orme](#)^{1,2}, [Sebastian E Sattui](#)³, [Michelle Sharp](#)⁴, [Pamela Richards](#)¹, [Christine A Silverthorne](#)^{1,2}, [Elizabeth Arthurs](#)⁵, [Tom Creed](#)⁵, [Genevieve Osborne](#)⁶, [Giles Dunhill](#)⁶, [Jill Dawson](#)⁷, [Emma Dures](#)^{1,8}, [Shaney L Barratt](#)⁹, [Richard P Ramonell](#)¹⁰, [Timothy Patton](#)¹¹, [Susan M Goodman](#)¹², [Catherine L Hill](#)^{13,14}, [Sarah L Mackie](#)^{15,16}, [Mwidimi Ndosi](#)^{1,2}, [Joanna C Robson](#)^{17,2}

Affiliations Expand

- PMID: 39909511
- PMCID: [PMC11800201](#)
- DOI: [10.1136/bmjopen-2024-089225](#)

Abstract

Objectives: The Steroid PRO is a treatment-specific patient-reported outcome questionnaire which measures the impact of glucocorticoids on health-related quality of life. It has 15 items grouped into 4 domains (Social impact, Impact on Appearance, Psychological Impact and Treatment Concerns). Initially developed and validated in rheumatic diseases, the Steroid PRO demonstrates potential for broader application in patients with other inflammatory conditions. The objective of this study was to assess face validity, content validity and feasibility of the Steroid PRO in (1) patients treated with glucocorticoids for inflammatory respiratory, dermatological and gastroenterological conditions and (2) clinicians working within these specialties in the UK and USA.

Design: Qualitative study with semistructured cognitive interview methods.

Setting: Online or face-to-face interviews with participants from seven departments across three secondary care hospitals in the UK and USA.

Participants: Inclusion criteria: (1) Adult patients with inflammatory respiratory, gastroenterological and dermatological conditions treated with glucocorticoids and (2) healthcare professionals (HCPs) working in respiratory, dermatology and gastroenterology departments in the UK and USA.

Results: Purposive sampling to ensure a range of patient and HCP participants. A total of 42 patient participants were recruited, from respiratory/pulmonology (n=14, 33.3%), dermatology (n=13, 31.0%) and gastroenterology (n=15, 35.8%) medical departments; 32 in the UK and 10 from the USA. Mean age 48.2 years (range 22-71) and 19 (45.2%) were female. Patient participants had a range of inflammatory lung, skin and bowel conditions, with a spectrum of demographics and patterns of glucocorticoid use. 14 HCPs participated from the UK (9) and USA (5). Face validity: 97% (30/31) patients and 100% (14/14) HCPs reported the Steroid PRO was 'relevant or very relevant' to them and their disease.

Feasibility: 97% (30/31) patients and 100% (14/14) HCPs reported the Steroid PRO was 'easy or very easy to complete'. Patients reported that the four domains of the Steroid PRO had relevance to them and that it was validating to see their concerns represented: 'It's obvious you guys know what you're talking about-these are my issues. It's very validating when you realise it's not just you. These problems are real and they matter.... These are not questions my doctor asks me about. Doctors never ask about psychosocial aspects. It would be really great if they used this' (female patient with asthma). Patients and clinicians felt the Steroid PRO would be suitable for use in clinical practice within their specialties and would aid in understanding of the impact of glucocorticoids.

Conclusions: The Steroid PRO demonstrated face validity and content validity for assessing the impact of glucocorticoids in patients with inflammatory respiratory, gastroenterological and dermatological conditions. Additionally, the feasibility of using the Steroid PRO with both patients and HCPs has been established. Future work should include quantitative testing of the Steroid PRO as an outcome measure within clinical trials in these conditions.

Trial registration number: [NCT06314451](#).

Keywords: Asthma; Dermatology; Eczema; Gastroenterology; QUALITATIVE RESEARCH.

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Conflict of interest statement

Competing interests: A-MTS nil; SB: Grants from Sanofi Research and Development unrestrictive academic grant to UWE Bristol for this cross-condition validation study and Vifor Pharma: Independent academic grant to UWE Bristol to develop the Steroid PRO; SB is coinventor of the Steroid PRO (free for academic and clinical use), may in future receive occasional royalty payment related to commercial licences. JO nil; SES: Grants from Bristol Myers Squibb Foundation Robert A. Winn Diversity in Clinical Trials Career Development Awards (Payments to University of Pittsburgh), Rheumatology Research Foundation RISE Pilot Award (Payments to the University of Pittsburgh), AstraZeneca for Clinical trials, research support, GlaxoSmithKline for Clinical trials, research support. Consulting fees from Amgen (payments to the University of Pittsburgh) and Sanofi (payments to the University of Pittsburgh for research support). Payment or honoraria from Fresenius Kabi (payments to the University of Pittsburgh for research support). Participation in data monitoring committee for the MINT trial—University of Pittsburgh. Support for medical writing (no payment) from Genentech, Amgen and Sanofi. MS: National Heart, Lung, And Blood Institute of the National Institutes of Health under Award Numbers K23HL148527 (research support). PR: nil; CAS: nil; EA: nil; TC: nil; GO: nil; GD: nil; MN: Grants from Sanofi Research and Development unrestrictive academic grant to UWE Bristol for this cross-condition validation study and Vifor Pharma: Independent academic grant to UWE Bristol to develop the Steroid PRO; MN is coinventor of the Steroid PRO (free for academic and clinical use), may in future receive occasional royalty payment related to commercial licenses. JD: Grants from Sanofi Independent academic grant to UWE Bristol for this cross-condition validation study and Vifor Pharma: Independent academic grant to UWE Bristol to develop the Steroid PRO; JD is coinventor of the Steroid PRO (free for academic and clinical use), may in future receive occasional royalty payment related to commercial licenses. ED: nil; SLB: nil; RPR: nil; TP: nil; SMG: Grants from Novartis (funding for investigator-initiated study-payments to institution), Arthritis Foundation (Payments to institution) and NIH (Payments to institution). Payments or honoraria for lectures to SMG from Yale, ACR, Florida Rheumatology Association, Japan College of Rheumatology. Payments to SMG from UBC for Data Monitoring Committee. CLH: Arthritis Australia Grant funding for institution for initial qualitative work for Steroid PRO performed in Australia. Leadership roles: Board, The Hospital Research Foundation (unpaid) and Aust NZ Vasculitis Society (unpaid). SLM: Grants from MRC Confidence in Concept scheme, 2021: lead applicant. Grant to develop early diagnosis methods for giant cell arteritis. Internal

grant scheme administered by University of Leeds. This did not include any payment, benefits or salary support for me personally. Coapplicant on research grants with contribution to my salary: 2020: Vifor: development of a patient-reported outcome measure for glucocorticoid therapy (PI: Robson, University of the West of England; 2.5% FTE salary contribution for me), Coapplicant on research grants with contribution to my salary. 2020: Vifor: the glucocorticoid toxicity index in patients with vasculitis and polymyalgia rheumatica (PI: Luqmani, University of Oxford, 5% FTE salary contribution for me). Lead applicant on research grants with contribution to my salary 2021: STERLING-PMR: steroid-reducing options for relapsing PMR. 20% salary contribution to me. Consulting fees (payment to institution) from Roche/Chugai, Sanofi, AbbVie (2021-), AstraZeneca (2021-) and Pfizer (2021-). Honoraria or payment for lectures (all payments to institution) from Roche/Chugai Sept 2021: delivering a talk on giant cell arteritis at an educational day (non-promotional); Pfizer 2022: speaking in short educational videos (non-promotional, not related to Pfizer products.). UCB Oct-Nov 2022: payment to my institution (not to me personally) for speaking at Evolutions in Rheumatology (non-promotional, no mention of UCB products). Vifor April 2022: payment to my institution (not to me personally) for speaking at industry symposium at BSR2022 (non-promotional, no mention of Vifor products). Novartis 2022: payment to my institution (not to me personally) for delivering educational talk to Novartis staff. Support for registration to ACR Convergence 2021 (virtual attendance) from Pfizer. Participation on a Data Safety Monitoring Board or Advisory Board: 1. INCLUDE trial (non-commercially funded trial: CLAHRC and Haywood Foundation). 2017—Chair of trial steering committee. INCLUDE trial (ISRCTN12765345) was a pilot feasibility cluster trial of a package of care for patients with inflammatory rheumatic diseases in the community. 2. Non-commercial trial: GC-SheaLD, member of data monitoring committee 2018-2019. Member of data monitoring committee for phase 2 non-commercially funded trial GC-SheaLD (NCT03313297). Other financial or non-financial interests: (1) Investigator on industry sponsored clinical trials. Has acted as Site Principal Investigator and UK Chief Investigator on clinical trials (giant cell arteritis and polymyalgia rheumatica) for Sanofi. UK Chief Investigator for clinical trial in PMR for Sparrow (awaiting MHRA approval). (2) Infrastructure support from grant on which I am coapplicant UK Medical Research Council (MRC) TARGET Partnership Grant (MR/N011775/1/MRC_/Medical Research Council/UK). (3) Infrastructure support received includes data entry, database management and liaison with ethics committees. (4) Patron of PMRGCAuk. Patron of the patient charity PMRGCAuk. No formal role or contract; not a fiduciary or leadership role. I write a regular column for their Newswire newsletter. This is unpaid (voluntary) work. (5). Support from NIHR Leeds Biomedical Research Centre. JCR: Grants as PI from Sanofi Research and Development unrestricted academic grant to UWE Bristol for this cross-condition validation study and Vifor Pharma: Independent academic grant to UWE Bristol to develop the Steroid PRO; JCR is coinventor of the Steroid PRO (free for academic and clinical use), may in future receive occasional royalty payment related to commercial licences and inventor translation reviews. Honorarium/payment for lectures and chairing sessions from Vifor Pharma in 2022 and 2023, and support to attend EULAR 2023 from Vifor Pharma. Support for medical writing from Vifor Pharma (no payment).

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

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7

J Asthma

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. 2025 Feb 5:1-11.

doi: 10.1080/02770903.2025.2463962. Online ahead of print.

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

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

Affiliations Expand

- PMID: 39907320
- DOI: [10.1080/02770903.2025.2463962](https://doi.org/10.1080/02770903.2025.2463962)

Abstract

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

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

Results: The asthma diagnosis experience rate of the population was 3.1%; 1.6% were currently suffering from asthma, 1.0% were receiving asthma treatment, 0.6% were receiving regular medication, and 1.5% had a disease duration of 11 years or more. The CVD diagnosis rates in the population were 20.2% for hypertension, 2.3% for ischemic heart disease, and 1.8% for stroke. Compared to those who had no asthma diagnosis, those who had been diagnosed with asthma (OR = 2.06, 95% CI = 1.47-2.87), received asthma treatment (OR = 1.93, 95% CI = 1.22-3.04), and had a long duration of asthma (OR = 3.54, 95% CI = 1.71-7.33) had a significantly higher risk of ischemic heart disease. However, hypertension and stroke were not significantly correlated with asthma-related characteristics.

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

Keywords: Angina pectoris; Asthma; Cardiovascular diseases; Hypertension; Myocardial infarction; Stroke.

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BMC Public Health

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. 2025 Feb 4;25(1):456.

doi: 10.1186/s12889-025-21680-0.

[The global burden of chronic respiratory diseases attributable to tobacco from 1990 to 2021: a global burden of disease study 2021](#)

[Haoshen Feng](#) ^{#1}, [Zhe Li](#) ^{#2}, [Rui Zheng](#) ³

Affiliations Expand

- PMID: 39905394

- PMCID: [PMC11796058](#)
- DOI: [10.1186/s12889-025-21680-0](#)

Abstract

Background: Tobacco is a major risk factor for chronic respiratory diseases (CRDs), yet the global distribution and trends of tobacco-related CRD burdens remain inadequately explored.

Methods: This study extracted data on mortality, disability-adjusted life years (DALYs), age-standardized mortality rate (ASMR), and age-standardized DALY rate (ASDR) related to tobacco-attributable CRDs from the 2021 Global Burden of Disease (GBD) study. Joinpoint regression was used to identify temporal trends in age-standardized rates (ASR), while autoregressive integrated moving average (ARIMA) forecasting was applied to project future trends in ASMR and ASDR for tobacco-related CRDs.

Results: In 2021, global tobacco-related CRD deaths and DALYs reached 1,545,686 (95% UI: 1,144,476-1,942,541) and 33,014,429 (95% UI: 24,275,462 - 40,930,821), representing increases of 25.43% and 15.64%, respectively, since 1990. Elderly individuals and males showed a higher disease burden. Between 1990 and 2021, ASMR [average annual percentage change (AAPC) = -2.009 (95% CI: -1.8915 to -2.1263)] and ASDR [AAPC = -2.1057 (95% CI: -2.0123 to -2.199)] for tobacco-related CRDs showed a declining trend globally, with autoregressive integrated moving average forecasting suggesting continued declines in ASMR and ASDR in the future. Regionally, South Asia, East Asia, and Oceania had the highest CRD burdens, while country-specific data indicated that Nepal, Myanmar, Papua New Guinea, Kiribati, and the Democratic People's Republic of Korea bore significant burdens. The ASMR and ASDR of tobacco-related CRDs were highest in regions and countries with Socio-Demographic Index values between 0.4 and 0.5.

Conclusion: Although global tobacco-related CRD deaths and DALYs have continued to increase, ASMR and ASDR are on the decline, with variations across geographic regions. Prevention and control strategies tailored to country-specific disease prevalence are essential to mitigate these burdens.

Keywords: Asthma; Chronic obstructive pulmonary disease; Chronic respiratory diseases; Global burden of disease study; Tobacco.

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Conflict of interest statement

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

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

Supplementary info

MeSH terms, Grants and fundingExpand

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9

Meta-Analysis

Sci Rep

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. 2025 Feb 4;15(1):4191.

doi: 10.1038/s41598-025-88374-w.

[Single inhaler with beclometasone, formoterol, and glycopyrronium versus triple therapies in adults with uncontrolled asthma: a systematic review and meta-analysis](#)

[Fulvio Braido](#)^{1,2}, [Ioanna Vlachaki](#)³, [Georgios F Nikolaidis](#)⁴, [Dimitrios Tzelis](#)⁵, [Ifigeneia Barouma](#)⁵, [Alessio Piraino](#)⁶, [Alessandra Madoni](#)⁶, [Nicola Scichilone](#)⁷

Affiliations Expand

- PMID: 39905183
- PMCID: [PMC11794625](#)
- DOI: [10.1038/s41598-025-88374-w](#)

Abstract

Recent literature has shown that triple therapy is more effective than dual therapy for individuals with uncontrolled asthma. However, the comparative efficacy between different triple therapies remains unclear. The objective of this study was to determine the comparative efficacy of extra-fine single-inhaler medium-dose (MD)

or high-dose (HD) of beclometasone/formoterol/glycopyrronium bromide (BDP/FOR/GLY) compared to other triple therapies in patients whose asthma remains uncontrolled with MD or HD inhaled corticosteroids and long-acting β 2-agonists. A systematic literature review identified randomized control trials on adult patients with uncontrolled asthma. Two separate networks were constructed according to patients' previous inhaled-corticosteroid dosage. Network meta-analyses evaluated severe and moderate-to-severe exacerbations, pre-dose forced expiratory volume, and asthma control questionnaire responses at 52 (\pm 3) weeks. Among single-inhaler triple therapies, MD BDP/FOR/GLY significantly reduced the risk of severe exacerbations (RR [95% CrI] compared to MD fluticasone/umeclidinium/vilanterol: 0.65 [0.49, 0.89]), while HD BDP/FOR/GLY demonstrated an improved trend in reducing severe and moderate-to-severe exacerbations versus HD indacaterol acetate/glycopyrronium bromide/mometasone, fluticasone/umeclidinium/vilanterol, and salmeterol/fluticasone + tiotropium. HD BDP/FOR/GLY and HD BDP/FOR + tiotropium did not differ significantly. Compared to relevant single-inhaler triple therapies, MD and HD BDP/FOR/GLY are associated with a significant benefit or trend for improvement in terms of reducing the rate of severe and moderate-to-severe exacerbations.

Keywords: Asthma; Exacerbation; Network meta-analysis; Triple therapy.

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Conflict of interest statement

Declarations. Competing interests: The authors declare no competing interests. **Ethics approval:** Ethics approval was not obtained because this study did not involve human or animal subjects. **Consent to publish:** Not applicable. **Human and animal rights:** Patients and members of the public were not specifically involved in the design, conduct, and reporting of this research. Nevertheless, the research questions answered in this study is of broad public health and decision-making interest, and results will be disseminated to the general public through websites, public engagement events, and conferences.

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

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. 2025 Feb 3;11(1):00211-2024.

doi: 10.1183/23120541.00211-2024. eCollection 2025 Jan.

[Time is lung: higher preservation of lung function in severe asthma patients after earlier mepolizumab treatment](#)

[Francisco-Javier González-Barcala](#)^{1 2 3}, [Irina Bobolea](#)⁴, [Javier Domínguez-Ortega](#)^{5 6}, [David Bañas-Conejero](#)⁷, [Esteban Antelo-Cea](#)⁷, [Eva Martínez-Moragón](#)⁸, [Teresa Carrillo-Díaz](#)⁹, [Marina Blanco-Aparicio](#)¹⁰, [Christian Domingo](#)^{11 12 13}

Affiliations Expand

- PMID: 39902267
- PMCID: [PMC11788806](#)
- DOI: [10.1183/23120541.00211-2024](#)

Abstract

Introduction: Severe asthma involves a persistent inflammation of the airways that is associated with a greater risk of exacerbations. Exacerbations are associated with a higher lung function decline over time. The prevention of lung function decline could become a strategy for disease modification, and this could be more likely to happen in patients with an earlier therapeutic approach. Thus, this study means to analyse the effect of asthma duration in clinical outcomes such as lung function in patients from the REDES study. REDES was an observational real-world study that assessed the effectiveness and safety of mepolizumab 100 mg s.c. every 4 weeks for 12 months in 318 patients with severe asthma in Spain.

Methods: This *post hoc* analysis evaluated how disease duration affected the study results through a stratification according to quartiles on their disease progression. Continuous analyses were also performed to assess the impact of confounder variables on forced expiratory volume in 1 s (FEV₁) (%).

Results: At baseline, patients with shorter time of disease had a significantly higher lung function than patients with longer asthma duration. At 12 months, pre-bronchodilator (BD) FEV₁ values and the proportion of patients with ≥80% pre-BD FEV₁ were higher according to a shorter disease persistence (Q1>Q2>Q3>Q4).

Conclusion: These results support that time of disease persistence contributes to the lung function decline of patients with severe asthma, uncontrolled while on

previous treatment, and that an earlier approach with mepolizumab may imply a higher preservation of their lung function.

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Conflict of interest statement

Conflict of interest: F-J. González-Barcala has received consulting fees, payment for presentations, support for attending meetings or research grants from ALK, AstraZeneca, Bial, Chiesi, Gebro Pharma, GSK, Menarini, Novartis, Rovi, Roxall, Sanofi, Stallergenes-Greer and Teva; and he is an associate editor of this journal.

Conflict of interest: I. Bobolea has received speaker or consulting fees from AstraZeneca, Chiesi, GSK, Novartis, Teva and Sanofi. **Conflict of interest:** J.

Domínguez-Ortega has received funding for research, honoraria for consultancy and conferences from AstraZeneca, Chiesi and GSK; honoraria for consultancy and conferences from Bial, Novartis, Sanofi and Teva; and speaker fees from ALK, LETI Pharma and Mundipharma. **Conflict of interest:** D. Bañas-Conejero is a GSK

employee and holds GSK stocks/shares. **Conflict of interest:** E. Antelo-Cea is a GSK employee. **Conflict of interest:** E. Martínez-Moragón has received speaker or

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fees from ALK, AstraZeneca, Diater, GSK, LETI and Novartis. **Conflict of interest:** M. Blanco-Aparicio has received speaker or consulting fees from ALK, AstraZeneca,

Chiesi, GSK, Novartis, Teva and Zambón. **Conflict of interest:** C. Domingo has received funding for travel or speaker fees from ALK, Almirall, AstraZeneca, Boehringer Ingelheim, Chiesi, GSK, Menarini, Novartis, Stallergenes and Pfizer.

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Review

J Asthma

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. 2025 Feb 6:1-10.

doi: 10.1080/02770903.2025.2460549. Online ahead of print.

[Computed tomography in severe asthma assessment: a systematic review](#)

[Simona Luzzi](#)¹, [Tommaso Pianigiani](#)¹, [Akter Dilroba](#)¹, [Martina Meocci](#)¹, [Elisa Salvadori](#)¹, [Benedetta Picchi](#)¹, [Vittoria Ventura](#)¹, [Sara Croce](#)¹, [Laura Bergantini](#)¹, [Miriana D'Alessandro](#)¹, [Elena Bargagli](#)¹, [Paolo Cameli](#)

Affiliations Expand

- PMID: 39898584
- DOI: [10.1080/02770903.2025.2460549](https://doi.org/10.1080/02770903.2025.2460549)

Abstract

Objective: Chest computed tomography (CT) is usually performed in patients with severe asthma (SA) to exclude concomitant conditions related to poor clinical control. Despite the growing evidence regarding the utility of CT in the characterization of morphological abnormalities and airway remodeling, its role in SA assessment is still largely unexplored. The aim of our systematic review was to evaluate published data investigating the role of chest CT in patients with SA.

Data sources: The systematic search was conducted on the Medline database through the Pubmed search engine.

Study selections: A total of 53 studies has been included.

Results: Quantitative CT (qCT) parameters generally differ between SA patients compared to mild to moderate asthmatic patients or healthy controls and are related to functional decline. CT parameters allow to identify image-based clusters reflecting remodeling patterns and/or air trapping features. The detection of mucus plugs is more frequent in severe eosinophilic asthma, and it is related to marked airway obstruction and ventilation defects. Benralizumab treatment appears to reduce or vanish mucus plugging. Most studies regarding CT and bronchial thermoplasty (BT) detect the usefulness of this investigation in predicting treatment response. Lastly, conflicting results surround the relation between chest CT and SA assessment in children due to also the scarcity of studies focusing on pediatric population.

Conclusions: The role of CT scans in SA is still debated. Most studies focus on the identification of CT-derived disease clusters while studies primarily evaluating the predicting role of CT scan to different biologics are lacking and could represent an interesting research area.

Keywords: Severe asthma; airway disease; computed tomography; imaging.

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12

Editorial

Respirology

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. 2025 Feb 2.

doi: 10.1111/resp.14891. Online ahead of print.

[Beyond Single Cytokines: Targeting Co-Receptor CD131 in Asthma-COPD Overlap](#)

[Chantal Donovan](#)^{1 2 3}

Affiliations Expand

- PMID: 39895118
- DOI: [10.1111/resp.14891](https://doi.org/10.1111/resp.14891)

No abstract available

Keywords: ACO; CD131; asthma-COPD overlap; fibrosis; inflammation.

- [5 references](#)

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13

Expert Rev Respir Med

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. 2025 Feb 2:1-8.

doi: 10.1080/17476348.2025.2461229. Online ahead of print.

[The usefulness of the forced oscillation technique in the diagnosis of bronchial asthma in seniors](#)

[Martyna Miodońska¹](#), [Andrzej Bożek¹](#), [Ewa Urbaniec²](#), [Aleksandra Mitka¹](#), [Eliza Wasilewska³](#)

Affiliations Expand

- PMID: 39893648
- DOI: [10.1080/17476348.2025.2461229](#)

Abstract

Background: Obstructive pulmonary diseases are common in the elderly but often remain underdiagnosed due to limited spirometry availability or challenges with patient cooperation during testing. This study evaluated the potential of the forced oscillation technique (FOT) as a diagnostic tool for bronchial asthma in individuals over 60 years old.

Research design and methods: A total of 189 patients diagnosed with asthma after age 60 and a control group of nonasthmatic seniors were included. Participants underwent spirometry, FOT, and bronchial reversibility testing using both methods. The primary outcomes were correlations between positive results from resting spirometry and FOT in asthmatics and the agreement between reversibility test results across the two methods.

Results: FOT parameters (FEV1, V5, R5) effectively distinguished asthmatics from nonasthmatics. Positive reversibility test results were observed in 71 (73.2%) patients using FOT and 68 (70.1%) using spirometry, with both methods aligning in 64 (66%) cases.

Conclusion: These results highlight the value of FOT, particularly for bronchial reversibility testing, in improving asthma diagnosis in seniors. FOT offers a practical alternative for patients who face difficulties performing spirometry, addressing a critical need in this population.

Keywords: Asthma; bronchial obstruction; forced oscillation technique; senior; spirometry.

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14

J Asthma

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. 2025 Feb 7:1-10.

doi: 10.1080/02770903.2025.2451690. Online ahead of print.

[Exacerbation during the first year of treatment affects lung function in subjects with asthma - a 10-year follow-up](#)

[Pca Almeida](#)^{1,2}, [Ev Ponte](#)³, [R Stelmach](#)^{2,4}, [Tw Harrison](#)⁵, [N Scichilone](#)⁶, [A Souza-Machado](#)^{2,7}, [Aa Cruz](#)^{2,8}

Affiliations Expand

- PMID: 39888725
- DOI: [10.1080/02770903.2025.2451690](https://doi.org/10.1080/02770903.2025.2451690)

Abstract

Background: Inhaled corticosteroids (ICS) are the preferred treatment for asthma. They improve symptoms and reduce exacerbations and deaths, but their long-term impact on lung function loss remains unclear, especially after delayed treatment. We aimed to characterize the lung function trajectories in subjects with previously untreated severe asthma. The secondary aim was to identify predictors of FEV₁ decline, and future exacerbations.

Methods: This is a *post-hoc* analysis that followed 184 subjects with asthma for 10 years after a delayed start of regular maintenance ICS treatment. Absolute lung function variation was calculated using two different baselines: (i) FEV₁ after one year of regular treatment (V₁) and (ii) best FEV₁ observed any time before the final visit.

Results: Most individuals were female (84%) over 50 years old and had early-onset asthma with a median of 30 years without regular ICS treatment. Ninety-nine (54%) had an FEV₁ decline above 25ml/year, using strategy (i). Those subjects were younger, had shorter duration of asthma, and had better lung function at V₁. Most of the participants without any obstructive pattern (74%) or with mild obstruction (64%) at V₁ showed a faster absolute FEV₁ decline, however PRISm showed faster relative decline than the other groups.

Conclusion: This study showed improved symptoms and quality of life with variable lung function trajectories among individuals with asthma who start regular treatment after decades of delay. Additionally, exacerbation during the first year was a strong predictor of absolute FEV₁ decline and future exacerbations, while time without treatment was a predictor of relative reduction of FEV₁.

Keywords: Asthma long-term follow-up; exacerbation risk; lung function decline; previously untreated severe asthma.

Plain language summary

In 10 years of follow-up and treatment, individuals with previously untreated severe asthma classification showed different lung function trajectories. Exacerbation during the first year increased the odds of faster lung function decline and future exacerbations, even after many years of regular treatment with ICS/ICS+LABA and multidisciplinary care.

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15

J Asthma

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. 2025 Feb 3:1-11.

doi: 10.1080/02770903.2025.2455416. Online ahead of print.

[The efficacy and safety of Fluticasone Furoate/Umeclidinium/vilanterol \(FF/UMEC/VI\) on cough symptoms in adult patients with asthma, a randomized double-blind, placebo-controlled, parallel group study: Chronic Cough in Asthma \(COCOA\) study](#)

[Etsuko Tagaya](#)¹, [Jun Shinada](#)², [Hiroyuki Nagase](#)³, [Junko Terada-Hirashima](#)⁴, [Masayuki Hojo](#)⁴, [Naruhiko Sugihara](#)⁵, [Osamitsu Yagi](#)¹, [Mayoko Tsuji](#)¹, [Tomohiro Akaba](#)¹, [Katsunori Masaki](#)⁶, [Koichi Fukunaga](#)⁶, [Hiroyuki Ohbayashi](#)⁷, [Kaoru Chiba](#)⁸, [Soichiro Hozawa](#)⁹, [Ryo Atsuta](#)¹⁰, [Yasuhiro Aoki](#)¹¹, [Hisato Hiranuma](#)¹², [Yasuhiro Gon](#)¹², [Akihiko Tanaka](#)¹³

Affiliations Expand

- PMID: 39874464
- DOI: [10.1080/02770903.2025.2455416](https://doi.org/10.1080/02770903.2025.2455416)

Abstract

Background: Persistent cough bothers many patients with asthma because it worsens their quality of life; therefore, it must be remedied immediately. The efficacy of triple therapy as a first-line treatment for cough remains unclear. To evaluate the effectiveness and safety of the triple therapy against persistent cough, the clinical effect of regular treatment with fluticasone furoate/umeclidinium/vilanterol (FF/UMEC/VI) or placebo in adult patients with asthma was investigated.

Methods: This randomized, double-blind, placebo-controlled, parallel-group multicenter trial recruited asthma patients with persistent cough from hospitals and primary care clinics between June 2022 and December 2023. Participants were randomly given FF/UMEC/VI 200/62.5/25 µg or placebo for 6 wk. The primary endpoint was the average change in the cough symptom score from baseline to week 6. Secondary outcomes were effectiveness on cough-related disease burdens (asthma control questionnaire [ACQ]-5, Leicester cough questionnaire [LCQ] and nighttime awakening). Furthermore, lung function and adverse events were evaluated.

Results: The decrease from baseline in the cough symptom score at week 6 was significantly greater in the FF/UMEC/VI group than in the placebo group ($p = 0.006$). The ACQ-5 scores showed a greater decrease in the FF/UMEC/VI group than in the placebo group. The change from baseline in morning and evening FEV₁ increased in the FF/UMEC/VI group as with the results of peak expiratory flow. No significant adverse events associated with FF/UMEC/VI were noted.

Conclusions: In asthma patients with persistent cough, FF/UMEC/VI showed an early response and a significant effect on cough and lung function for 6 wk of treatment.

This study is registered with [jRCTs031210412](#).

Keywords: Asthma; clinical study; cough; triple therapy.

Full text links



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

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J Pediatr Health Care

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. 2025 Feb 5:S0891-5245(24)00185-8.

doi: 10.1016/j.pedhc.2024.07.012. Online ahead of print.

[Diagnosis and Management of Pediatric Allergic Rhinoconjunctivitis in the US](#)

[Karen Rance](#), [Nancy Banasiak](#), [Amanda Filippelli](#), [Sarah Heinonen](#)

- PMID: 39918507
- DOI: [10.1016/j.pedhc.2024.07.012](https://doi.org/10.1016/j.pedhc.2024.07.012)

Abstract

Allergic rhinoconjunctivitis (AR/C) is a common pediatric condition. The physical, emotional, and social burden of AR/C in children highlights the need for accurate diagnosis with optimal treatment. This review provides practical information on the diagnosis and management of pediatric AR/C. Key features of the patient history and physical exam needed to diagnose seasonal and perennial AR/C are covered. Various AR/C treatment options are reviewed such as allergen avoidance, pharmacotherapies, and allergy immunotherapy (both subcutaneous injections and sublingual tablets) as well as their mode of action, side effects, and their role in guideline-recommended therapy. Practical information such as pollen calendars, management algorithms, and treatment product characteristics have also been included in this review.

Keywords: Allergy immunotherapy; allergic rhinitis; conjunctivitis; sublingual immunotherapy tablets.

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Conflict of interest statement

Conflicts of Interest K. Rance was an employee of ALK at the time of this work. N. Banasiak has nothing to disclose. A. Filippelli has nothing to disclose. S. Heinonen has nothing to disclose.

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Review

Curr Allergy Asthma Rep

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. 2025 Feb 5;25(1):13.

doi: [10.1007/s11882-025-01192-y](https://doi.org/10.1007/s11882-025-01192-y).

[Effect of Dupilumab in CRSwNP Sinonasal Outcomes from Real Life Studies: A Systematic Review with Meta-analysis](#)

[Miguel Rodriguez-Iglesias](#)^{1,2}, [Christian Calvo-Henríquez](#)^{1,2,3}, [Daniel Martin-Jimenez](#)^{1,4}, [Ainhoa García-Lliverós](#)^{1,5}, [Juan Maza-Solano](#)^{6,7,8}, [Ramon Moreno-Luna](#)⁴, [Adriana Izquierdo-Domínguez](#)^{9,10}, [Gabriel Martínez-Capoccioni](#)^{2,3}, [Isam Alobid](#)¹¹

Affiliations Expand

- PMID: 39907855
- PMCID: [PMC11799128](#)
- DOI: [10.1007/s11882-025-01192-y](https://doi.org/10.1007/s11882-025-01192-y)

Abstract

Purpose of review: Chronic rhinosinusitis with nasal polyps (CRSwNP) is a debilitating inflammatory condition that significantly impacts quality of life. Despite treatment advances, recurrence is common, prompting the exploration of novel therapies such as monoclonal antibodies targeting the type 2 immune response, notably dupilumab. This research aims to evaluate the real-world evidence (RWE) of dupilumab in treating severe CRSwNP, comparing sinonasal outcomes to those observed in randomized clinical trials.

Recent findings: Significant improvements were noted, with the average SNOT-22 score reduction being 37.2 points post-dupilumab treatment. The nasal polyp size

(NPS) showed an average decrease of 3.6 points. The analysis highlighted the practical effectiveness of dupilumab, emphasizing its benefit over conventional therapies in reducing NPS and improving nasal symptoms. The findings advocate for the integration of dupilumab into standard treatment protocols for severe CRSwNP, providing a robust alternative that could potentially reduce the high recurrence rates associated with current management strategies. This study underscores the utility of RWE in assessing the effectiveness of new medical treatments, suggesting that dupilumab offers substantial real-world benefits for patients suffering from this challenging condition.

Keywords: Biologic therapy; Chronic rhinosinusitis with nasal polyps; Dupilumab; Monoclonal antibody; Quality of life.

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Conflict of interest statement

Declarations. Ethical Approval: This article does not contain any studies with human participants performed by any of the authors. **Competing Interests:** The authors declare no competing interests.

- [144 references](#)
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Supplementary info

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Clin Exp Pediatr

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. 2025 Feb 3.

doi: 10.3345/cep.2024.01382. Online ahead of print.

[Eosinophil-derived neurotoxin levels can predict allergic disease development and atopic march in children](#)

[Zak Callaway](#)^{1,2}, [Chang-Keun Kim](#)²

Affiliations Expand

- PMID: 39901719
- DOI: [10.3345/cep.2024.01382](https://doi.org/10.3345/cep.2024.01382)

Free article

Abstract

In some children, atopic manifestations begin with atopic dermatitis and progress to allergic asthma and allergic rhinitis; of them, a small subset experience food allergies as well. This progression shares genetic and environmental predisposing factors and immunological features, such as allergen-specific T helper type 2 responses, that manifest as specific immunoglobulin E production and eosinophil activation. Eosinophil-derived neurotoxin (EDN), which is released by eosinophils during this activation, shows promise as a reliable and accurate biomarker. EDN levels are elevated in a subset of patients with atopic march-associated conditions. Elevated EDN levels predict allergic disease development, demonstrating that EDN is a good biomarker for the prognosis, diagnosis, treatment, and monitoring of allergic diseases comprising atopic march. The early measurement of EDN would help identify those who are more likely to develop allergic diseases later in life. Thus, the early detection and treatment of elevated EDN could lead to better outcomes, including halting atopic march.

Keywords: Allergic rhinitis; Asthma; Atopic dermatitis; Biomarker; Eosinophil-derived neurotoxin.

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Int Immunopharmacol

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. 2025 Feb 6:147:113912.

doi: 10.1016/j.intimp.2024.113912. Epub 2025 Jan 9.

[Genetic variants in PD-1 and its ligands, gene-gene and gene-environment interactions in allergic rhinitis](#)

[Ruo-Xi Chen¹](#), [Zheng Luan¹](#), [Chong Shen²](#), [Meng-Di Dai³](#), [Chang-Yu Qiu⁴](#), [Xin-Jie Zhu¹](#), [Qing-Zhao Zhang¹](#), [Mei-Ping Lu⁵](#), [Lei Cheng⁶](#)

Affiliations Expand

- PMID: 39793230
- DOI: [10.1016/j.intimp.2024.113912](https://doi.org/10.1016/j.intimp.2024.113912)

Abstract

Background: The etiology of allergic rhinitis (AR), in which genetic and environmental factors are closely intertwined, has not yet been completely clarified. Programmed cell death 1 (PD-1) and its ligands (PD-L1 and PD-L2) regulate the immune and inflammatory responses during the development of immune-related and atopic diseases. To clarify the associations of genetic variants in PD-1, PD-L1 and PD-L2 with susceptibility to AR, gene-gene and gene-environment interactions were investigated.

Methods: A total of 452 AR patients and 495 controls were enrolled in this hospital-based case-control study. Eight single nucleotide polymorphisms (SNPs) in the PDCD1, PDCD1LG1 and PDCD1LG2 genes were genotyped. The correlations between SNPs and AR incidence, as well as gene-gene and gene-environment interactions were explored. Differentially expressed genes were screened by the Limma package in two Gene Expression Omnibus (GEO) datasets of AR patients. Expression quantitative trait locus (eQTL) analysis was performed via the Genotype-Tissue Expression (GTEx) database.

Results: The rs2297136 (A/G) in PDCD1LG1 was associated with a significantly increased risk of AR, whereas the PDCD1LG2 rs16923189 G allele was associated with a reduced risk of AR. In the subgroups according to AR-related phenotypes, the rs2297136 G allele increased, while the rs16923189 G allele reduced AR risk. Gene-gene interactions and gene-environment interactions (e.g., PDCD1LG1 polymorphisms with factors such as smoke, main road and cooking fumes) were verified in AR patients, but they were not significant after Bonferroni correction.

Conclusion: PDCD1LG1 rs2297136 and PDCD1LG2 rs16923189 are associated with susceptibility to AR in this Chinese population. The PD-1/PD-L1 and PD-1/PD-L2 signaling pathways may regulate gene-gene and gene-environment interactions in the pathogenesis of AR.

Keywords: Allergic rhinitis; PDCD1; PDCD1LG1; PDCD1LG2; Programmed cell death 1; Single nucleotide polymorphism.

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Conflict of interest statement

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

Supplementary info

MeSH terms, Substances Expand

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chronic cough

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Editorial

Eur Respir J

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. 2025 Feb 6;65(2):2402289.

doi: 10.1183/13993003.02289-2024. Print 2025 Feb.

[How bad is your cough? The McMaster Cough Severity Questionnaire as a new tool to measure chronic cough](#)

[Richard D Turner](#)^{1,2}, [Surinder S Biring](#)^{3,4}

Affiliations Expand

- PMID: 39915047
- DOI: [10.1183/13993003.02289-2024](#)

No abstract available

Conflict of interest statement

Conflict of interest: R.D. Turner has no potential conflicts of interest to disclose. S.S. Biring has received research grants from Merck (paid to institution), personal fees for consulting from GSK, Trevi, Merck, Nacion, Genentech, Nerre, Boehringer Ingelheim and Axalbio, royalties from LCQ, and lecture fees from AstraZeneca.

Comment on

- [The McMaster Cough Severity Questionnaire \(MCSQ\): a cough severity instrument for patients with refractory chronic cough.](#)

Kum E, Guyatt GH, Abdulqawi R, Dicipinigaitis P, Dupont L, Field SK, French CL, Gibson PG, Irwin RS, Johnston F, McGarvey L, Newman R, Popovic N, Smith JA, Song WJ, O'Byrne PM, Satia I. *Eur Respir J*. 2025 Feb 6;65(2):2401565. doi: 10.1183/13993003.01565-2024. Print 2025 Feb. PMID: 39362666 Free PMC article.

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J Asthma

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. 2025 Feb 3:1-11.

doi: 10.1080/02770903.2025.2455416. Online ahead of print.

[The efficacy and safety of Fluticasone Furoate/Umeclidinium/vilanterol \(FF/UMEC/VI\) on cough symptoms in adult patients with asthma, a randomized double-blind, placebo-controlled, parallel group study: Chronic Cough in Asthma \(COCOA\) study](#)

[Etsuko Tagaya](#)¹, [Jun Shinada](#)², [Hiroyuki Nagase](#)³, [Junko Terada-Hirashima](#)⁴, [Masayuki Hojo](#)⁴, [Naruhiko Sugihara](#)⁵, [Osamitsu Yagi](#)¹, [Mayoko Tsuji](#)¹, [Tomohiro Akaba](#)¹, [Katsunori Masaki](#)⁶, [Koichi Fukunaga](#)⁶, [Hiroyuki Ohbayashi](#)⁷, [Kaoru Chiba](#)⁸, [Soichiro Hozawa](#)⁹, [Ryo Atsuta](#)¹⁰, [Yasuhiro Aoki](#)¹¹, [Hisato Hiranuma](#)¹², [Yasuhiro Gon](#)¹², [Akihiko Tanaka](#)¹³

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- PMID: 39874464
- DOI: [10.1080/02770903.2025.2455416](https://doi.org/10.1080/02770903.2025.2455416)

Abstract

Background: Persistent cough bothers many patients with asthma because it worsens their quality of life; therefore, it must be remedied immediately. The efficacy of triple therapy as a first-line treatment for cough remains unclear. To evaluate the effectiveness and safety of the triple therapy against persistent cough, the clinical effect of regular treatment with fluticasone furoate/umeclidinium/vilanterol (FF/UMEC/VI) or placebo in adult patients with asthma was investigated.

Methods: This randomized, double-blind, placebo-controlled, parallel-group multicenter trial recruited asthma patients with persistent cough from hospitals and primary care clinics between June 2022 and December 2023. Participants were randomly given FF/UMEC/VI 200/62.5/25 µg or placebo for 6 wk. The primary endpoint was the average change in the cough symptom score from baseline to week 6. Secondary outcomes were effectiveness on cough-related disease burdens (asthma control questionnaire [ACQ]-5, Leicester cough questionnaire [LCQ] and nighttime awakening). Furthermore, lung function and adverse events were evaluated.

Results: The decrease from baseline in the cough symptom score at week 6 was significantly greater in the FF/UMEC/VI group than in the placebo group ($p = 0.006$). The ACQ-5 scores showed a greater decrease in the FF/UMEC/VI group than in the placebo group. The change from baseline in morning and evening FEV₁ increased in the FF/UMEC/VI group as with the results of peak expiratory flow. No significant adverse events associated with FF/UMEC/VI were noted.

Conclusions: In asthma patients with persistent cough, FF/UMEC/VI showed an early response and a significant effect on cough and lung function for 6 wk of treatment.

This study is registered with jRCTs031210412.

Keywords: Asthma; clinical study; cough; triple therapy.

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Eur Respir J

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. 2025 Feb 6;65(2):2401565.

doi: 10.1183/13993003.01565-2024. Print 2025 Feb.

The McMaster Cough Severity Questionnaire (MCSQ): a cough severity instrument for patients with refractory chronic cough

Elena Kum^{1,2}, **Gordon H Guyatt**^{1,2}, **Rayid Abdulqawi**³, **Peter Dicipinigaitis**⁴, **Lieven Dupont**⁵, **Stephen K Field**⁶, **Cynthia L French**⁷, **Peter G Gibson**⁸, **Richard S Irwin**⁷, **Faye Johnston**⁹, **Lorcan McGarvey**¹⁰, **Robert Newman**⁹, **Nada Popovic**⁹, **Jaclyn A Smith**¹¹, **Woo-Jung Song**¹², **Paul M O'Byrne**^{2,13}, **Imran Satia**^{14,13}

Affiliations Expand

- PMID: 39362666
- PMCID: [PMC11799886](#)
- DOI: [10.1183/13993003.01565-2024](#)

Abstract

Background: Cough severity represents an important end-point to assess the impact of therapies for patients with refractory chronic cough (RCC). Our objective was to develop a new patient-reported outcome measure addressing cough severity in patients with RCC.

Methods: Phase 1 (item generation): a systematic survey, focus groups and expert consultation generated 51 items. Phase 2 (item reduction): from a list of 51 items, 100 patients identified those they had experienced in the previous year and rated their importance on a 5-point scale. The McMaster Cough Severity Questionnaire (MCSQ) included items reported to occur most frequently and that had the highest importance scores. Patient feedback on the MCSQ led to elimination of redundant items. Another 100 patients completed the MCSQ, from which we performed an exploratory factor analysis and a Rasch analysis to further refine items on the MCSQ.

Results: Previous publications report on the details of Phase 1. Phase 2 led to selection of 15 items from the initial 51. Patient feedback on the 15 items led to elimination of five redundant items. An exploratory factor analysis of the 10-item MCSQ led to the selection of two domains, and the elimination of one item that demonstrated cross-loading and another that had high inter-item correlations. A Rasch analysis of the 8-item MCSQ confirmed that the response options functioned in a logically progressive manner and that no items exhibited differential item functioning. The final 8-item MCSQ has a 1-week recall period and includes two domains (intensity and frequency). The 8-item MCSQ had high internal consistency (Cronbach's $\alpha=0.89$), proved able to distinguish different levels of cough severity (person separation index 0.89) and demonstrated high cross-sectional convergent

validity (Pearson's correlation 0.76, 95% CI 0.66-0.83) with the 100-mm cough severity visual analogue scale.

Conclusions: Initial evidence supports the validity of the MCSQ, an 8-item instrument measuring cough severity in patients with RCC. Future studies should evaluate its properties in measuring change over time.

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Conflict of interest statement

Conflicts of interest: E. Kum reports personal fees from Respiplus and that she is supported by a Canadian Institutes of Health Research Canada Graduate Scholarships Doctoral Award (CGS-D). P. Dicipinigaitis reports consulting fees from Merck, GlaxoSmithKline, Reckitt Benckiser, Trevi, Bellus, Bayer, Shionogi and Chiesi, outside the submitted work. S.K. Field reports grants from the Canadian Institutes of Health Research and Bellus/GlaxoSmithKline, consultancy fees from GlaxoSmithKline and Merck, advisory board work for GlaxoSmithKline and Merck, lectures for Boehringer Ingelheim, GlaxoSmithKline, Novartis, Covis and Valeo, leadership roles with Respiplus and Canadian Thoracic Society, and research funding from AstraZeneca, Canadian Institutes of Health Research, InsMed and Novartis, outside of the submitted work. C.L. French and R.S. Irwin disclose that they are co-developers of the Punum Ladder and the Cough Specific Quality of Life Questionnaire (CQLQ), and that they hold the copyright of the CQLQ. They have each received less than USD 700 in fees over the past 3 years for its use in studies. P.G. Gibson reports grants from GlaxoSmithKline, and personal fees from AstraZeneca, Chiesi, GlaxoSmithKline, Novartis and Sanofi, outside the submitted work. L. McGarvey reports honoraria from Chiesi, Bellus Health, GlaxoSmithKline, Merck, NeRRe Therapeutics, Nacion, Trevi, Shionogi Inc. and Reckitt Benckiser, and grant support from Merck and Bellus Health. J.A. Smith reports grants from Merck, Ario Pharma, GlaxoSmithKline, NeRRe Pharmaceuticals, Menlo, Bellus and Bayer, and personal fees from Chiesi, AstraZeneca, Algernon, GlaxoSmithKline, NeRRe Pharmaceuticals, Merck, Menlo, Bellus, Bayer, Boehringer Ingelheim and Seyltx, outside of the submitted work; J.A. Smith is a named inventor on a patent, owned by Manchester University NHS Foundation Trust and licensed to Vitalograph Ltd, describing the detection of cough from sound recordings; the VitaloJAK cough monitoring algorithm has been licensed by Manchester University Foundation Trust (MFT) and the University of Manchester to Vitalograph Ltd and Vitalograph Ireland (Ltd); MFT receives royalties that may be shared with the clinical division in which J.A. Smith works. W-J. Song reports grants from MSD and AstraZeneca, consulting fees from MSD and AstraZeneca, and lecture fees from MSD, AstraZeneca, GlaxoSmithKline and Novartis, outside the submitted work. P.M. O'Byrne reports research grants from AstraZeneca, GlaxoSmithKline, Jasper, Novartis, Medimmune, Biohaven, Merck and Bayer, consultancy or speaking fees from AstraZeneca, GlaxoSmithKline, Regeneron, Teva, Medimmune, Chiesi, Menarini and Covis, and a leadership role on the Board of Governors for the University of Sharjah. I. Satia reports grants paid to McMaster University for investigator-initiated studies from Merck, GlaxoSmithKline and Bellus Health, speaker fees from Merck, GlaxoSmithKline, Respiplus and Bellus Health, consultancy fees from Genentech, Respiplus and Bellus Health; and that he is supported by the E.J. Moran Campbell Early Career Award, Department of Medicine, McMaster University. The remaining authors have no potential conflicts of interest to disclose.

Comment in

- [How bad is your cough? The McMaster Cough Severity Questionnaire as a new tool to measure chronic cough.](#)

Turner RD, Birring SS. Eur Respir J. 2025 Feb 6;65(2):2402289. doi: 10.1183/13993003.02289-2024. Print 2025 Feb. PMID: 39915047 No abstract available.

- [32 references](#)
- [4 figures](#)

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

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Chronic Obstr Pulm Dis

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. 2025 Feb 5.

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

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

[Wang Chun Kwok¹](#), [Terence Chi Chun Tam¹](#), [Chi Hung Chau²](#), [Fai Man Lam²](#), [James Chung Man Ho¹](#)

Affiliations Expand

- PMID: 39912873
- DOI: [10.15326/jcopdf.2024.0582](#)

Free article

Abstract

Background: *Pseudomonas aeruginosa* is an important pathogen in patients with chronic respiratory diseases. It can colonize the airway and could have prognostic value in bronchiectasis and cystic fibrosis. Its role in chronic obstructive pulmonary disease (COPD) is less well defined.

Methods: A prospective study was conducted in Hong Kong to investigate the possible association between *Pseudomonas aeruginosa* colonization and acute exacerbation of COPD (AECOPD) risks.

Results: Among 327 Chinese patients with COPD included, 33 (10.1%) of the patients had *Pseudomonas aeruginosa* colonization. Patients with or without *Pseudomonas aeruginosa* colonization had similar background characteristics. Patients with *Pseudomonas aeruginosa* colonization had increased risks of moderate to severe AECOPD, severe AECOPD and pneumonia with adjusted odds ratio (aOR) of 3.15 (95% CI 1.05 - 9.48, p = 0.042), 2.59 (95% CI 1.01 - 6.64, p = 0.048) and 4.19 (95% CI 1.40 - 12.54, p = 0.011) respectively. Patients with *Pseudomonas aeruginosa* colonization also had increased annual frequency of moderate to severe AECOPD, median 0 [0 - 0.93] in the non-*Pseudomonas aeruginosa* colonization group and 1.35 [0 - 3.39] in the *Pseudomonas aeruginosa* colonization group, with a p-value of 0.005 in multi-variate linear regression.

Conclusion: *Pseudomonas aeruginosa* colonization is a potential independent risk factor for moderate to severe AECOPD and pneumonia among patients with COPD without co-existing bronchiectasis.

Keywords: COPD; COPD exacerbation; *Pseudomonas aeruginosa*; pneumonia.

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Curr Opin Pulm Med

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. 2025 Feb 5.

doi: 10.1097/MCP.0000000000001152. Online ahead of print.

[An updated review of pulmonary radiological features of acute and chronic pulmonary COVID-19](#)

[Raya Tcheroyan](#)¹, [Peter Makhoul](#)², [Scott Simpson](#)²

Affiliations Expand

- PMID: 39902608
- DOI: [10.1097/MCP.0000000000001152](https://doi.org/10.1097/MCP.0000000000001152)

Abstract

Purpose of review: Significant progress has been made in our understanding of the acute and chronic clinical and radiological manifestations of coronavirus-19 (COVID-19). This article provides an updated review on pulmonary COVID-19, while highlighting the key imaging features that can identify and distinguish acute COVID-19 pneumonia and its chronic sequelae from other diseases.

Recent findings: Acute COVID-19 pneumonia typically presents with manifestations of organizing pneumonia on computed tomography (CT). In cases of severe disease, patients clinically progress to acute respiratory distress syndrome, which manifests as diffuse alveolar damage on CT. The most common chronic imaging finding is ground-glass opacities, which commonly resolves, as well as subpleural bands and reticulation. Pulmonary fibrosis is an overall rare complication of COVID-19, with characteristic features, including architectural distortion, and traction bronchiectasis.

Summary: Chest CT can be a helpful adjunct tool in both diagnosing and managing acute COVID-19 pneumonia and its chronic sequelae. It can identify high-risk cases and guide decision-making, particularly in cases of severe or complicated disease. Follow-up imaging can detect persistent lung abnormalities associated with long COVID and guide appropriate management.

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Semin Respir Crit Care Med

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. 2025 Feb 3.

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

[Sleep and respiratory infections](#)

[Ignacio Boira](#)¹, [Eusebi Chiner](#)²

Affiliations Expand

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

Abstract

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

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Conflict of interest statement

The authors declare that they have no conflict of interest.

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