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

1

Int J Tuberc Lung Dis

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. 2024 May 1;28(5):253-255.

doi: 10.5588/ijtld.23.0491.

[Pulse oximetry has limited utility in identifying potential patients for long-term oxygen therapy](#)

[C J Crooks](#)¹, [J West](#)², [J R Morling](#)³, [M Simmonds](#)⁴, [I Juurlink](#)⁴, [S Cruickshank](#)⁴, [S Briggs](#)⁴, [S Hammond-Pears](#)⁵, [D Shaw](#)⁶, [T R Card](#)⁷, [A W Fogarty](#)⁷

Affiliations expand

- PMID: 38659138
- DOI: [10.5588/ijtld.23.0491](https://doi.org/10.5588/ijtld.23.0491)

No abstract available

SUPPLEMENTARY INFO

Publication types, MeSH termsexpand

FULL TEXT LINKS



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Meta-Analysis

Respir Investig

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. 2024 May;62(3):503-511.

doi: 10.1016/j.resinv.2024.03.009. Epub 2024 Apr 9.

[Treatment with systemic corticosteroid versus placebo for exacerbations of COPD: A systematic review and meta-analysis](#)

[Akira Koarai](#)¹, [Mitsuhiro Yamada](#)², [Tomohiro Ichikawa](#)², [Naoya Fujino](#)², [Hisatoshi Sugiura](#)²

Affiliations expand

- PMID: 38599052

- DOI: [10.1016/j.resinv.2024.03.009](https://doi.org/10.1016/j.resinv.2024.03.009)

Abstract

Background: For the treatment of COPD exacerbations, systemic corticosteroids are recommended in addition to short-acting bronchodilators. Although there have been several systemic reviews, many of the included studies were conducted before 2007 and a re-evaluation has not been performed since 2014. Therefore, we conducted a systematic review and meta-analysis to evaluate the efficacy and safety profile of systemic corticosteroids in patients with COPD during exacerbations.

Methods: We searched relevant randomized control trials (RCTs) and analyzed the treatment failure, relapse, lung function, improvement in PaO₂ and PaCO₂, dyspnea, quality of life (QOL), length of stay in hospital and adverse events including hyperglycemia and mortality as the outcomes of interest.

Results: We identified a total of 12 RCTs (N = 1336). Systemic corticosteroids significantly reduced the treatment failure (odds ratios; OR 0.41, 95% confidence intervals; CI 0.25 to 0.67) and hospital length of stay (mean difference; MD -1.57 days, 95% CI -2.36 to -0.78) and improved FEV₁ (MD 0.18 L, 95% CI 0.08 to 0.28) and dyspnea (transitional dyspnea index; MD 1.90, 95% CI 0.26 to 3.54) in COPD exacerbations compared to placebo. However, systemic corticosteroids were associated with a significantly higher incidence of adverse events (OR 1.83, 95% CI 1.25 to 2.69) and hyperglycemia (OR 2.94, 95% CI 1.68 to 5.14).

Conclusions: In patients with moderate and severe COPD and severe obstructive impairment during exacerbations, systemic corticosteroids cause more adverse events, including hyperglycemia, than placebo but significantly reduce the treatment failure and hospital length of stay and improve FEV₁ and dyspnea.

Keywords: Dyspnea; FEV₁; Hospital length of stay; Hyperglycemia; Treatment failure.

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Conflict of interest statement

Declaration of Competing interest AK and TI have nothing to disclose. MY reports personal fees for lectures from AstraZeneca and Boehringer Ingelheim. NF reports grants outside the submitted work and personal fees for lectures from AstraZeneca. HS reports subsidies from Boehringer Ingelheim outside the submitted work and personal fees for lectures from AstraZeneca, Boehringer Ingelheim, GlaxoSmithKline and Novartis Pharma.

SUPPLEMENTARY INFO

Publication types, MeSH terms, Substancesexpand

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Respir Med

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. 2024 May;226:107625.

doi: 10.1016/j.rmed.2024.107625. Epub 2024 Apr 2.

[Association of inadequate social support and clinical outcomes in patients with chronic obstructive pulmonary disease - A cross-sectional study](#)

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Affiliations expand

- PMID: 38570144
- DOI: [10.1016/j.rmed.2024.107625](https://doi.org/10.1016/j.rmed.2024.107625)

Abstract

Introduction: In patients with chronic obstructive pulmonary disease (COPD), loneliness and social isolation are associated with increased morbidity and decreased mobility, self-reliance, and health-related quality of life. Social support has been shown to improve these outcomes.

Aims: This cross-sectional study aimed to investigate the level of experienced social support and the clinical outcomes associated with inadequate social support among patients with COPD with a resident loved one.

Methods: Level of social support was assessed with the Medical Outcomes Study - Social Support Survey (MOS-SSS) in patients with COPD with a resident loved one. Patients were sub-grouped into adequate or inadequate social support. Multiple clinical outcomes were assessed, including lung function, degree of dyspnoea, health status, symptoms of anxiety and depression, the degree of care dependency, functional status, and mobility.

Results: The study included 191 Dutch patients with COPD (53.4% men, age: 65.6 ± 8.9 years, FEV₁: $47.3 \pm 17.7\%$ predicted). Eighteen percent of the patients reported inadequate social support. Patients with inadequate social support reported a significantly symptom severity of COPD ($p = 0.004$), a higher care dependency level ($p = 0.04$) and a higher level of depression ($p = 0.004$) compared to patients with adequate social support. Other traits were comparable for both groups.

Conclusion: Patients with COPD with a resident loved one who perceive an inadequate level of social support are more likely to report a higher impact of COPD, a higher care dependency and symptoms of depression. Other characteristics are comparable with patients who perceive adequate social support.

Keywords: COPD; Care dependency; Depression; Social support.

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Conflict of interest statement

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

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Publication types, MeSH termsexpand

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4

Respir Med



. 2024 May;226:107607.

doi: 10.1016/j.rmed.2024.107607. Epub 2024 Mar 26.

[A comprehensive evaluation of online inhaler use techniques for obstructive airway disease](#)

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Affiliations expand

- PMID: 38548142
- DOI: [10.1016/j.rmed.2024.107607](https://doi.org/10.1016/j.rmed.2024.107607)

Free article

Abstract

Background: Pulmonary inhaler therapy is a core treatment modality for >600 million individuals affected by obstructive airways disease globally. Poor inhaler technique is associated with reduced disease control and increased health care utilization; however, many patients rely on the internet as a technical resource. This study assesses the content and quality of online resources describing inhaler techniques.

Methods: A Google search was conducted in April 2023 capturing the top 5 search results for 12 common inhaler devices. Websites were compared to product monographs for preparation/first use, inhalational technique, and post-usage/device care. They were also assessed using accepted quality metrics (GQS, DISCERN, JAMA Benchmark scores) and clinically relevant aspects based on the literature and consensus statements.

Results: Websites regularly excluded critical steps important for proper inhaler technique. They performed best on information related directly to inhalation technique (average median score 78%), whereas steps related to preparation/first use (58%) or post-usage/device care (50%) were less frequently addressed. Median GQS, DISCERN, and JAMA Benchmark scores were 3 [IQR 3-4], 3 [IQR 2-4], and 1 [IQR 1-3], respectively. Clinically relevant factors were only addressed in about one-fifth of websites with no websites addressing smoking cessation, environmental considerations, or risk factors for poor technique.

Conclusions: This study highlights gaps in online resources describing inhaler technique, particularly related to preparation/first use and post-usage/device care steps. Clinically relevant factors were rarely addressed across websites. Improvements in these areas could lead to enhanced inhaler technique and clinical outcomes.

Keywords: Asthma; COPD; Inhaler technique; Internet; Patient education; Websites.

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Conflict of interest statement

Declaration of competing interest The authors declare the following financial interests/personal relationships which may be considered as potential competing interests: Funding sources: BL and DR are supported by Temerty Faculty of Medicine. DR receives support from Sandra Faire and Ivan Fecan Professorship. This work was supported by a grant from the PSI Foundation (Grant R23-20). Potential conflicts of interest: Speaking honoraria has been accepted by LF (Boehringer Ingelheim, Astrazeneca, and Pfizer), NB (Boehringer Ingelheim, Valeo Pharma, AstraZeneca and GlaxoSmithKline), AL (Boehringer Ingelheim), HK (GlaxoSmithKline), and AB (AstraZeneca).

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Association between long-term ozone exposure and readmission for chronic obstructive pulmonary disease exacerbation

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Affiliations expand

- PMID: 38531467
- DOI: [10.1016/j.envpol.2024.123811](https://doi.org/10.1016/j.envpol.2024.123811)

Free article

Abstract

The relationship between long-term ozone (O₃) exposure and readmission for acute exacerbations of chronic obstructive pulmonary disease (AECOPD) remains elusive. In this study, we collected individual-level information on AECOPD hospitalizations from a standardized electronic database in Guangzhou from January 1, 2014, to December 31, 2015. We calculated the annual mean O₃ concentration prior to the dates of the index hospitalization for AECOPD using patients' residential addresses. Employing Cox proportional hazards models, we assessed the association between long-term O₃ concentration and the risk of AECOPD readmission across several time frames (30 days, 90 days, 180 days, and 365 days). We estimated the disease and economic burden of AECOPD readmissions attributable to O₃ using a counterfactual approach. Of the 4574 patients included in the study, 1398 (30.6%) were readmitted during the study period, with 262 (5.7%) readmitted within 30 days. The annual mean O₃ concentration was 90.3 µg/m³ (standard deviation [SD] = 8.2 µg/m³). A 10-µg/m³ increase in long-term O₃ concentration resulted in a hazard ratio (HR) for AECOPD readmission within 30 days of

1.28 (95% confidence interval [CI], 1.09 to 1.49), with similar results for readmission within 90, 180, and 365 days. Older patients (aged 75 years or above) and males were more susceptible (HR, 1.33; 95% CI, 1.10-1.61 and HR, 1.29; 95% CI, 1.09-1.53, respectively). The population attributable fraction for 30-day readmission due to O₃ exposure was 29.0% (95% CI, 28.4%-30.0%), and the attributable mean cost per participant was 362.3 USD (354.5-370.2). Long-term exposure to elevated O₃ concentrations is associated with an increased risk of AECOPD readmission, contributing to a significant disease and economic burden.

Keywords: Air pollution; Chronic obstructive pulmonary disease; Ozone; Readmission.

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Conflict of interest statement

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

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[Review](#)

Pharmacol Ther

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. 2024 May;257:108635.

doi: 10.1016/j.pharmthera.2024.108635. Epub 2024 Mar 18.

Musculoskeletal crosstalk in chronic obstructive pulmonary disease and comorbidities: Emerging roles and therapeutic potentials

[Kevin Mou](#)¹, [Stanley M H Chan](#)¹, [Ross Vlahos](#)²

Affiliations expand

- PMID: 38508342
- DOI: [10.1016/j.pharmthera.2024.108635](https://doi.org/10.1016/j.pharmthera.2024.108635)

Free article

Abstract

Chronic Obstructive Pulmonary Disease (COPD) is a multifaceted respiratory disorder characterized by progressive airflow limitation and systemic implications. It has become increasingly apparent that COPD exerts its influence far beyond the respiratory system, extending its impact to various organ systems. Among these, the musculoskeletal system emerges as a central player in both the pathogenesis and management of COPD and its associated comorbidities. Muscle dysfunction and osteoporosis are prevalent musculoskeletal disorders in COPD patients, leading to a substantial decline in exercise capacity and overall health. These manifestations are influenced by systemic inflammation, oxidative stress, and hormonal imbalances, all hallmarks of COPD. Recent research has uncovered an intricate interplay between COPD and musculoskeletal comorbidities, suggesting that muscle and bone tissues may cross-communicate through the release of signalling molecules, known as "myokines" and "osteokines". We explored this dynamic relationship, with a particular focus on the role of the immune system in mediating the cross-communication between muscle and bone in COPD. Moreover, we delved into existing and emerging therapeutic strategies for managing musculoskeletal disorders in COPD. It underscores the development of personalized treatment approaches that target both the respiratory and musculoskeletal aspects of COPD, offering the promise of improved well-being and quality of life for individuals grappling with this complex condition. This comprehensive review underscores the significance of recognizing the profound impact of COPD on the musculoskeletal system and its comorbidities. By unravelling the intricate connections between these systems and exploring innovative treatment avenues, we can aspire to enhance the overall care and outcomes for COPD patients, ultimately offering hope for improved health and well-being.

Keywords: Antioxidant; Exacerbations; Macrophage polarisation; Musculoskeletal-lung axis; Precision medicine; Pulmonary rehabilitation.

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Conflict of interest statement

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

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Respirology

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. 2024 May;29(5):428-429.

doi: 10.1111/resp.14706. Epub 2024 Mar 18.

Transforming recruitment to clinical trials in COPD

[Tanya Patrick](#)¹, [John R Hurst](#)¹

Affiliations expand

- PMID: 38497378
- DOI: [10.1111/resp.14706](https://doi.org/10.1111/resp.14706)

Free article

No abstract available

Keywords: COPD; clinical research; lung cancer screening.

SUPPLEMENTARY INFO

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8

Review

Heart Lung

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. 2024 May-Jun:65:1-10.

doi: 10.1016/j.hrtlng.2024.01.011. Epub 2024 Feb 7.

[Effectiveness of virtual reality-based therapy in pulmonary rehabilitation of chronic obstructive pulmonary disease. A systematic review with meta-analysis](#)

[Esteban Obrero-Gaitán](#)¹, [Celim Yem Chau-Cubero](#)¹, [Rafael Lomas-Vega](#)¹, [María Catalina Osuna-Pérez](#)¹, [Héctor García-López](#)², [Irene Cortés-Pérez](#)¹

Affiliations expand

- PMID: 38330853

- DOI: [10.1016/j.hrtlng.2024.01.011](https://doi.org/10.1016/j.hrtlng.2024.01.011)

Free article

Abstract

Background: In addition to conventional pulmonary rehabilitation (PR) programs for the treatment of chronic obstructive pulmonary disease (COPD), the use of virtual reality-based therapy (VRBT) has been proposed as an effective complementary tool to be included in PR programs for COPD.

Objectives: To analyze the effectiveness of VRBT on functional capacity, pulmonary function, and functional mobility in patients with COPD.

Methods: A meta-analysis was carried out through a bibliographic search in PubMed (Medline), WOS, PEDro, CINAHL, CENTRAL, and Scopus since inception up to June 2023. The risk of bias was assessed using the PEDro scale, and the effect was determined using the standardized mean difference (SMD) and its 95 % confidence interval (95 % CI) in a random effects model.

Results: Five RCTs, providing data from 344 participants with a mean age 65.7 ± 5.3 years old, were included. The mean methodological quality of the studies included was good (6.8 ± 1.6 points). The meta-analysis showed that VRBT was effective in increasing functional capacity, assessed with the 6 Min Walking Test, (SMD=0.4, 95 % CI 0.07 to 0.71, $p = 0.017$); pulmonary function, assessed with FEV1 (SMD=0.33, 95 %CI 0.01 to 0.65, $p = 0.048$); and functional mobility, assessed with the Get Up and Go Test (SMD=0.77, 95 % CI 0.5 to 1.1, $p < 0.001$) in patients with COPD.

Conclusion: VRBT is suggested to be effective in increasing functional capacity, pulmonary function, and functional mobility in patients with COPD. Non-immersive VRBT is the most used modality of VRBT in PR.

Keywords: Pulmonary disease, chronic obstructive; Pulmonary rehabilitation; Respiratory function tests; Video games; Virtual reality.

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Conflict of interest statement

Declaration of competing interest None

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Practice Guideline

Can Assoc Radiol J

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. 2024 May;75(2):296-303.

doi: 10.1177/08465371231214699. Epub 2023 Dec 15.

[Canadian Association of Radiologists Thoracic Imaging Referral Guideline](#)

[Candyce Hamel](#)¹, [Barb Avar](#)², [Catherine Belanger](#)³, [Patrick Bourgouin](#)⁴, [Stephen Lam](#)⁵, [Daria Manos](#)⁶, [Alan Michaud](#)⁷, [Brian H Rowe](#)⁸, [Kevin Sanders](#)², [Ana-Maria Bilawich](#)⁹

Affiliations expand

- PMID: 38099468
- DOI: [10.1177/08465371231214699](https://doi.org/10.1177/08465371231214699)

Free article

Abstract

The Canadian Association of Radiologists (CAR) Thoracic Expert Panel consists of radiologists, respirologists, emergency and family physicians, a patient advisor, and an

epidemiologist/guideline methodologist. After developing a list of 24 clinical/diagnostic scenarios, a rapid scoping review was undertaken to identify systematically produced referral guidelines that provide recommendations for one or more of these clinical/diagnostic scenarios. Recommendations from 30 guidelines and contextualization criteria in the Grading of Recommendations, Assessment, Development, and Evaluations (GRADE) for guidelines framework were used to develop 48 recommendation statements across the 24 scenarios. This guideline presents the methods of development and the referral recommendations for screening/asymptomatic individuals, non-specific chest pain, hospital admission for non-thoracic conditions, long-term care admission, routine pre-operative imaging, post-interventional chest procedure, upper respiratory tract infection, acute exacerbation of asthma, acute exacerbation of chronic obstructive pulmonary disease, suspect pneumonia, pneumonia follow-up, immunosuppressed patient with respiratory symptoms/febrile neutropenia, chronic cough, suspected pneumothorax (non-traumatic), clinically suspected pleural effusion, hemoptysis, chronic dyspnea of non-cardiovascular origin, suspected interstitial lung disease, incidental lung nodule, suspected mediastinal lesion, suspected mediastinal lymphadenopathy, and elevated diaphragm on chest radiograph.

Keywords: chest; diagnostic imaging; guideline; lung; referrals; thoracic.

Conflict of interest statement

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

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Respir Care

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. 2024 Apr 30:respcare.11699.

doi: 10.4187/respcare.11699. Online ahead of print.

Pulmonary Rehabilitation Reimbursement Challenges

[Chris Garvey](#)¹

Affiliations expand

- PMID: 38688548
- DOI: [10.4187/respcare.11699](https://doi.org/10.4187/respcare.11699)

Abstract

Pulmonary rehabilitation (PR) is a highly effective intervention for persons with chronic respiratory diseases, resulting in improvement in exercise capacity, dyspnea, health-related quality of life, mood, reduced hospitalization, and improved survival and cost savings post-COPD hospitalization. Despite demonstrated effectiveness, PR is underutilized in part due to lack of awareness, limited access, and inadequate PR reimbursement. Poor payment is a long-standing barrier to PR's financial stability and access. Addressing PR payment, access, and utilization is a complex challenge and requires strategic, collaborative long-term approaches to meaningful solutions. Strategies to overcome payment disparities begin with legislative approaches to address limitations of Centers for Medicare and Medicaid Services coverage. Additional priorities include permanent approval for remote physician and advanced practice provider (APP) PR supervision, PR referrals by APPs, telerehabilitation using two-way audio/video technology, and elimination of the PR lifetime maximum limit of 72 h or units/patient. Methods are needed to effectively link appropriate PR prescribing and encouragement with primary care providers, hospitalists, case managers, and hospital navigators to optimize PR referrals. There is an important need to address inadequate PR access in rural settings. Potential opportunities to improve PR referrals and access include exploration of PR synergies with value-based care models that emphasize high-quality care and cost savings. Development and use of effective PR provider tools and resources may help address the above challenges as well as financially benefit PR programs.

Keywords: Medicare; access; awareness; exercise; insurance; payment; pulmonary rehabilitation; reimbursement.

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Respir Care

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[Psychosocial Support in Pulmonary Rehabilitation](#)

[Abebaw Mengistu Yohannes](#)¹

Affiliations expand

- PMID: 38688547
- DOI: [10.4187/respcare.11850](https://doi.org/10.4187/respcare.11850)

Abstract

Pulmonary rehabilitation (PR) improves exercise capacity and quality of life (QOL) while reducing dyspnea in patients with COPD. However, little is known about the efficacy of PR, cognitive behavioral therapy (CBT), or antidepressant drug therapy on psychosocial factors in patients with COPD. Knowledge gaps include which therapy is most efficacious, what barriers exist for each treatment, and the optimal duration of each intervention. Potential barriers to antidepressant therapy include patient fears of potential adverse effects, apprehension and misconception, and stigma related to depression. Both CBT and PR reduce anxiety and depressive symptoms in short-term studies. However, their potential benefits over medium-to-long-term follow-up and specifically on psychosocial factors

warrant exploration. Furthermore, new emerging treatment strategies such as the collaborative care model and home-based telehealth coaching are promising interventions to promote patient-centered care treatment and reduce psychosocial factors adversely affecting patients with COPD. This update and critical synthesis reviews the effectiveness of both pharmacologic and non-pharmacologic interventions on psychosocial factors in patients with COPD. It also provides brief screening tools used in the assessment of anxiety and depression for patients with COPD.

Keywords: antidepressant drug therapy and psychosocial factors; anxiety; cognitive behavioral therapy; depression; pulmonary rehabilitation.

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Respir Care



. 2024 Apr 30:respcare.11478.

doi: 10.4187/respcare.11478. Online ahead of print.

[Pulmonologist Education of the Teach-to-Goal Inhaler Technique for Those With Asthma and COPD](#)

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Affiliations expand

- PMID: 38688545

- DOI: [10.4187/respcare.11478](https://doi.org/10.4187/respcare.11478)

Abstract

Background: Inhaler education for patients with asthma and patients with COPD is typically provided by non-pulmonologists. We studied inhaler education by pulmonologists to determine changes in clinical outcomes and inhaler use.

Methods: This was a retrospective study of 296 subjects diagnosed with asthma, COPD, or both that evaluated use of inhaler technique education and its impact on (1) inhaler/dosage change consisting of dosage change in the same class of inhaler and/or change in number of inhalers, (2) forced expiratory volume in one second/forced vital capacity (FEV₁/FVC%), (3) disease symptom control, (4) out-patient visits, (5) urgent care visits (6) emergency department visits, and (7) hospital admissions. One group received inhaler technique education by a pulmonologist while the other group did not.

Results: The pulmonologist inhaler technique-educated group had significantly decreased relative risk for inhaler/dosage increase (relative risk ratio 0.57 [95% CI 0.34-0.96], *P* = .03) and significantly increased odds for symptom control (odds 2.15 [95% CI 1.24-3.74], *P* = .01) at 1-y follow-up as compared to the no education group. No differences occurred for FEV₁/FVC%, out-patient visits, urgent care visits, emergency department visits, and hospital admissions.

Conclusions: Pulmonologist education of inhaler technique for patients with asthma and patients with COPD was associated with decreased relative risk for inhaler/dosage increase and increased odds for symptom control. We recommend pulmonologists provide education of inhaler technique to patients with asthma and patients with COPD and not rely on non-pulmonologist education alone. Prospective research is needed to confirm the importance of proper inhaler techniques.

Keywords: COPD; asthma; education; nebulizers and vaporizers; pulmonologists.

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Review

Eur Respir Rev

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. 2024 Apr 24;33(172):230253.

doi: 10.1183/16000617.0253-2023. Print 2024 Apr 30.

Gait differences between COPD and healthy controls: systematic review and meta-analysis

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Affiliations expand

- PMID: 38657998
- PMCID: [PMC11040389](#)
- DOI: [10.1183/16000617.0253-2023](#)

Abstract

Background: Despite the importance of gait as a determinant of falls, disability and mortality in older people, understanding of gait impairment in COPD is limited. This study aimed to identify differences in gait characteristics during supervised walking tests between people with COPD and healthy controls.

Methods: We searched 11 electronic databases, supplemented by Google Scholar searches and manual collation of references, in November 2019 and updated the search in

July 2021. Record screening and information extraction were performed independently by one reviewer and checked for accuracy by a second. Meta-analyses were performed in studies not considered at a high risk of bias.

Results: Searches yielded 21 085 unique records, of which 25 were included in the systematic review (including 1015 people with COPD and 2229 healthy controls). Gait speed was assessed in 17 studies (usual speed: 12; fast speed: three; both speeds: two), step length in nine, step duration in seven, cadence in six, and step width in five. Five studies were considered at a high risk of bias. Low-quality evidence indicated that people with COPD walk more slowly than healthy controls at their usual speed (mean difference (MD) $-19 \text{ cm}\cdot\text{s}^{-1}$, 95% CI -28 to $-11 \text{ cm}\cdot\text{s}^{-1}$) and at a fast speed (MD $-30 \text{ cm}\cdot\text{s}^{-1}$, 95% CI -47 to $-13 \text{ cm}\cdot\text{s}^{-1}$). Alterations in other gait characteristics were not statistically significant.

Conclusion: Low-quality evidence shows that people with COPD walk more slowly than healthy controls, which could contribute to an increased falls risk. The evidence for alterations in spatial and temporal components of gait was inconclusive. Gait impairment appears to be an important but understudied area in COPD.

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Conflict of interest statement

Conflict of interest: A. Polhemus is a paid employee of Merck & Co, Inc. and IQVIA AG. S.C. BATTERY reports educational speaker fees for Pulmonx. J. Garcia-Aymerich reports speaker honoraria from Chiesi and a grant from AstraZeneca paid to her institution for a COVID-19-related project and is also a paid advisory board member for AstraZeneca. All other authors report no conflicts of interest.

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

SUPPLEMENTARY INFO

Publication types, MeSH termsexpand

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Eur Respir Rev

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. 2024 Apr 10;33(172):230225.

doi: 10.1183/16000617.0225-2023. Print 2024 Apr 30.

Changes in physical activity, sedentary behaviour and sleep following pulmonary rehabilitation: a systematic review and network meta-analysis

[James Manifold](#)^{1,2}, [Yousuf Chaudhry](#)³, [Sally J Singh](#)^{3,2}, [Thomas J C Ward](#)^{3,2}, [Maxine E Whelan](#)⁴, [Mark W Orme](#)^{3,2}

Affiliations expand

- PMID: 38599676
- PMCID: [PMC11004771](#)
- DOI: [10.1183/16000617.0225-2023](#)

Abstract

Background: The variety of innovations to traditional centre-based pulmonary rehabilitation (CBPR), including different modes of delivery and adjuncts, are likely to lead to differential responses in physical activity, sedentary behaviour and sleep.

Objectives: To examine the relative effectiveness of different pulmonary rehabilitation-based interventions on physical activity, sedentary behaviour and sleep.

Methods: Randomised trials in chronic respiratory disease involving pulmonary rehabilitation-based interventions were systematically searched for. Network meta-analyses compared interventions for changes in physical activity, sedentary behaviour and sleep in COPD.

Results: 46 studies were included, and analyses were performed on most common outcomes: steps per day (k=24), time spent in moderate-to-vigorous physical activity (MVPA; k=12) and sedentary time (k=8). There were insufficient data on sleep outcomes (k=3). CBPR resulted in greater steps per day and MVPA and reduced sedentary time compared to usual care. CBPR+physical activity promotion resulted in greater increases in steps per day compared to both usual care and CBPR, with greater increases in MVPA and reductions in sedentary time compared to usual care, but not CBPR. Home-based pulmonary rehabilitation resulted in greater increases in steps per day and decreases in sedentary time compared to usual care. Compared to usual care, CBPR+physical activity promotion was the only intervention where the lower 95% confidence interval for steps per day surpassed the minimal important difference. No pulmonary rehabilitation-related intervention resulted in greater increases in MVPA or reductions in sedentary time compared to CBPR.

Conclusion: The addition of physical activity promotion to pulmonary rehabilitation improves volume of physical activity, but not intensity, compared to CBPR. High risk of bias and low certainty of evidence suggests that these results should be viewed with caution.

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Conflict of interest statement

Conflicts of interest: No conflicts to declare.

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

SUPPLEMENTARY INFO

Publication types, MeSH terms [expand](#)

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Gerontol Geriatr Med



. 2024 Apr 28:10:23337214241246435.

doi: 10.1177/23337214241246435. eCollection 2024 Jan-Dec.

Feasibility of a Novel Geriatric Rehabilitation Program for People With COPD-induced Malnutrition and Muscle Wasting: A Qualitative Study

[Marieke Geerars-van der Veen](#)^{1,2,3}, [Judith Ballemans](#)^{1,2}, [Anna M Bongers](#)^{1,2}, [Anouk van Loon](#)^{1,4}, [Ewout B Smit](#)^{1,4}

Affiliations expand

- PMID: 38686098
- PMCID: [PMC11057339](#)
- DOI: [10.1177/23337214241246435](#)

Abstract

Background and Purpose: Patients with COPD-induced malnutrition and muscle wasting are often frail. Consequently, traditional rehabilitation may be even counterproductive due to energy costs and there is a need for specialized rehabilitation programs, which are lacking for these patients. We developed such a program, which includes resistance training, following Nonlinear Periodized Exercise principles and physical energy management, in combination with a restriction of physical activities. The purpose of the study was to investigate the feasibility and the potential effects of this program. **Methods:** Patients who are eligible for the program are those with COPD gold III/IV and a fat free mass index below standard. We conducted a qualitative feasibility study and interviewed both patients and healthcare professionals (HCPs), using a deductive

approach. The open interviews were qualitatively analyzed focussing on six areas of Bowens' feasibility model: acceptability, demand, implementation, practicality, limited efficacy, and integration. **Results and discussions:** Seven patients and seven HCPs were interviewed. For patients, key factors that helped to adhere to the program were knowledge about energy management, alternative skills to cope with COPD, and social support. They found the program beneficial. However, several patients considered a limitation of walking and ADL activities challenging. HCPs considered the program feasible and beneficial especially for those patients who accept they need a behavior change and who adhere to the program. For HCPs, key factors were the consistent approach and coaching skills of the multidisciplinary team members, and the monitoring role of the nurses. The limitation of physical activity and endurance training deviates from existing geriatric rehabilitation programs which propagate functional activity and training. Still, evidence from the current study suggests that our tailored approach for these patients might be more appropriate and also potentially effective without harm for physical function. **Conclusions:** Our novel, multidisciplinary rehabilitation program is considered feasible and clinically relevant by both patients and healthcare professionals. The next step is to explore its effects on muscle strength, physical functioning, and quality of life.

Keywords: COPD; frailty; geriatric rehabilitation; malnutrition; physical activity.

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Conflict of interest statement

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

- [31 references](#)

FULL TEXT LINKS



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

J Pain Symptom Manage

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. 2024 May;67(5):453-462.

Palliative Approach Remains Lacking in Terminal Hospital Admissions for Chronic Disease Across Rural Settings: Multisite Retrospective Medical Record Audit

[Rebecca Disler](#)¹, [Amy Pascoe](#)², [Xinye Esther Chen](#)³, [Emily Lawson](#)⁴, [Michael Cahyadi](#)⁵, [Ajanth Paalendra](#)⁵, [Helen Hickson](#)⁴, [Julian Wright](#)⁶, [Bronwyn Phillips](#)⁷, [Sivakumar Subramaniam](#)⁶, [Kristen Glenister](#)⁴, [Jennifer Philip](#)⁸, [Doranne Donesky](#)⁹, [Natasha Smallwood](#)¹⁰

Affiliations expand

- PMID: 38365070
- DOI: [10.1016/j.jpainsymman.2024.02.009](https://doi.org/10.1016/j.jpainsymman.2024.02.009)

Free article

Abstract

Introduction/aim: Despite clear benefit from palliative care in end-stage chronic diseases, access is often limited, and rural access largely undescribed. This study sought to determine if a palliative approach is provided to people with chronic disease in their terminal hospital admission.

Methods: Multisite, retrospective medical record audit, of decedents with a primary diagnosis of chronic lung, heart, or renal failure, or multimorbidity of these conditions over 2019.

Results: Of 241 decedents, across five clinical sites, 143 (59.3%) were men, with mean age 80.47 years (SD 11.509), and diagnoses of chronic lung (n = 56, 23.2%), heart (n = 56, 23.2%), renal (n = 24, 10.0%) or multimorbidity disease (n = 105, 43.6%), and had 2.88 (3.04SD) admissions within 12 months. Outpatient chronic disease care was evident (n = 171, 73.7%), however, contact with a private physician (n = 91, 37.8%), chronic disease program (n = 61, 25.3%), or specialist nurse (n = 17, 7.1%) were less apparent. "Not-for-resuscitation" orders were common (n = 139, 57.7%), however, advance care planning (n = 71, 29.5%), preferred place of death (n = 18, 7.9%), and spiritual support (n = 18, 7.5%) were rarely documented. Referral to and input from palliative services were low (n = 74,

30.7% and n = 49, 20.3%), as was review of nonessential medications or blood tests (n = 86, 35.7%, and n = 78, 32.4%). Opioids were prescribed in 45.2% (n = 109). Hospital site and diagnosis were significantly associated with outpatient care and palliative approach (P<0.001).

Conclusions: End-of-life planning and specialist palliative care involvement occurred infrequently for people with chronic disease who died in rural hospitals. Targeted strategies are necessary to improve care for these prevalent and high needs rural populations.

Keywords: Chronic disease; Palliative care; Rural.

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Conflict of interest statement

Disclosures The authors declare that there is no conflict of interest.

SUPPLEMENTARY INFO

MeSH termsexpand

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Br J Gen Pract

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. 2024 Apr 25;74(742):e307-e314.

doi: 10.3399/BJGP.2023.0114. Print 2024 May.

[Predicting anticipated benefit from an extended consultation to personalise](#)

care in multimorbidity: a development and internal validation study of a prioritisation algorithm in general practice

[Mieke JI Bogerd](#)¹, [Collin Jc Exmann](#)¹, [Pauline Slottje](#)¹, [Jettie Bont](#)¹, [Hein Pj Van Hout](#)¹

Affiliations expand

- PMID: 38164549
- PMCID: [PMC11044021](#)
- DOI: [10.3399/BJGP.2023.0114](#)

Abstract

Background: Persons with multimorbidity may gain from person-centred care compared with the current protocolised chronic-disease management in Dutch general practice. Given time constraints and limited resources, it is essential to prioritise those most in need of an assessment of person-centred chronic-care needs.

Aim: To develop and validate a prioritisation algorithm based on routine electronic medical record (EMR) data that distinguishes between patients with multimorbidity who would, and those who would not, benefit from an extended person-centred consultation to assess person-centred chronic-care needs, as judged by GPs.

Design and setting: A mixed-methods study was conducted in five general practices in the north-west region of the Netherlands. Four out of the five practices were situated in rural areas.

Method: Multivariable logistic regression using EMR data to predict the GPs' judgement on patients' anticipated benefit from an extended consultation, as well as a thematic analysis of a focus group exploring GPs' clinical reasoning for this judgement were conducted. Internal validation was performed using 10-fold cross-validation. Multimorbidity was defined as the presence of ≥ 3 chronic conditions.

Results: In total, EMRs from 1032 patients were included in the analysis; of these, 352 (34.1%) were judged to have anticipated benefit. The model's cross-validated C-statistic

was 0.72 (95% confidence interval = 0.70 to 0.75). Calibration was good. Presence of home visit(s) and history of myocardial infarction were associated with anticipated benefit. Thematic analysis revealed three dimensions feeding anticipated benefit: GPs' cause for concern, patients' mindset regarding their conditions, and balance between received care/expected care needed.

Conclusion: This algorithm may facilitate automated prioritisation, potentially avoiding the need for GPs to personally triage the whole practice population that has multimorbidity. However, external validation of the algorithm and evaluation of actual benefit of consultation is recommended before implementation.

Keywords: general practice; multimorbidity; person-centred care; primary care.

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Conflict of interest statement

The authors have declared no competing interests.

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

SUPPLEMENTARY INFO

Publication types, MeSH termsexpand

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PLoS One

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. 2024 Apr 30;19(4):e0302535.

doi: 10.1371/journal.pone.0302535. eCollection 2024.

Clusters from chronic conditions in the Danish adult population

[Anders Stockmarr](#)¹, [Anne Frølich](#)^{2,3}

Affiliations expand

- PMID: 38687772
- DOI: [10.1371/journal.pone.0302535](https://doi.org/10.1371/journal.pone.0302535)

Abstract

Multimorbidity, the presence of 2 or more chronic conditions in a person at the same time, is an increasing public health concern, which affects individuals through reduced health related quality of life, and society through increased need for healthcare services. Yet the structure of chronic conditions in individuals with multimorbidity, viewed as a population, is largely unmapped. We use algorithmic diagnoses and the K-means algorithm to cluster the entire 2015 Danish multimorbidity population into 5 clusters. The study introduces the concept of rim data as an additional tool for determining the number of clusters. We label the 5 clusters the Allergies, Chronic Heart Conditions, Diabetes, Hypercholesterolemia, and Musculoskeletal and Psychiatric Conditions clusters, and demonstrate that for 99.32% of the population, the cluster allocation can be determined from the diagnoses of 4-5 conditions. Clusters are characterized through most prevalent conditions, absent conditions, over- or under-represented conditions, and co-occurrence of conditions. Clusters are further characterized through socioeconomic variables and healthcare service utilizations. Additionally, geographical variations throughout Denmark are studied at the regional and municipality level. We find that subdivision into municipality levels suggests that the Allergies cluster frequency is positively associated with socioeconomic status, while the subdivision suggests that frequencies for clusters Diabetes and Hypercholesterolemia are negatively correlated with socioeconomic status. We detect no indication of association to socioeconomic status for the Chronic Heart Conditions cluster and the Musculoskeletal and Psychiatric Conditions cluster. Additional spatial variation is revealed, some of which may be related to urban/rural populations. Our work constitutes a step in the process of characterizing multimorbidity populations, leading to increased comprehension of the nature of multimorbidity, and towards potential applications to individual-based care, prevention, the development of clinical guidelines, and population management.

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Conflict of interest statement

The authors have declared that no competing interests exist.

SUPPLEMENTARY INFO

Publication types, MeSH termsexpand

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Occup Med (Lond)

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. 2024 Apr 30:kqae010.

doi: 10.1093/occmed/kqae010. Online ahead of print.

Economic inactivity and mental-physical multimorbidity

[Max Henderson](#)¹, [Adam Martin](#)¹, [Damien McElvenny](#)², [Sam Relton](#)¹, [Sharon Stevelink](#)³

Affiliations expand

- PMID: 38686841
- DOI: [10.1093/occmed/kqae010](https://doi.org/10.1093/occmed/kqae010)

No abstract available

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Diabetes Obes Metab

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. 2024 Apr 30.

doi: 10.1111/dom.15610. Online ahead of print.

[Adiposity indicators exhibit depot- and sex-specific associations with multimorbidity onset: A cohort study of the UK Biobank](#)

[Lu Ma](#)^{1,2}, [Ying Li](#)³, [Gaixia Li](#)⁴, [Jiajun Sun](#)^{5,6}, [Xueli Zhang](#)^{7,8}, [Zumin Shi](#)⁹, [Yating Yan](#)¹, [Yutian Duan](#)¹⁰, [Jing Wang](#)⁴, [Zengbin Li](#)⁴, [Lei Zhang](#)^{2,4,5,6}

Affiliations expand

- PMID: 38686512
- DOI: [10.1111/dom.15610](https://doi.org/10.1111/dom.15610)

Abstract

Aim: This study investigated the depot- and sex-specific associations of adiposity indicators with incident multimorbidity and comorbidity pairs.

Materials and methods: We selected 382 678 adults without multimorbidity (≥ 2 chronic diseases) at baseline from the UK Biobank. General obesity, abdominal obesity and body fat percentage indices were measured.

Results: Cox proportional hazard regression analyses of general obesity indices revealed that for every one-unit increase in body mass index, the risk of incident multimorbidity increased by 5.2% (95% confidence interval 5.0%-5.4%). A dose-response relationship was observed between general obesity degrees and incident multimorbidity. The analysis of abdominal obesity indices showed that for every 0.1 increment in waist-to-height ratio and waist-to-hip ratio, the risk of incident multimorbidity increased by 42.0% (37.9%-46.2%) and 27.9% (25.7%-30.0%), respectively. Central obesity, as defined by waist circumference, contributed to a 23.2% increased risk of incident multimorbidity. Hip circumference and hip-to-height ratio had protective effects on multimorbidity onset. Consistent findings were observed for males and females. Body fat percentage elevated 3% (0.2%-5.9%) and 5.3% (1.1%-9.7%) risks of incident multimorbidity in all adults and females, respectively. Arm fat percentages elevated 5.3% (0.8%-9.9%) and 19.4% (11.0%-28.5%) risks of incident multimorbidity in all adults and males, respectively. The general obesity indices, waist circumference, waist-to-height ratio, waist-to-hip ratio and central obesity increased the onset of comorbidity pairs, whereas hip circumference and hip-to-height ratio decreased the onset of comorbidity pairs. These adiposity indicators mainly affect diabetes mellitus-related comorbidity onset in males and hypertensive-related comorbidity onset in females.

Conclusions: Adiposity indicators are predictors of multimorbidity and comorbidity pairs and represent a promising approach for intervention.

Keywords: adults; body fat percentage; central obesity; general obesity; multimorbidity.

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- [51 references](#)

SUPPLEMENTARY INFO

Grants and funding [expand](#)

FULL TEXT LINKS



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



. 2024 May 7;121(19):e2319057121.

doi: 10.1073/pnas.2319057121. Epub 2024 Apr 30.

CCR3-dependent eosinophil recruitment is regulated by sialyltransferase ST3Gal-IV

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Affiliations [expand](#)

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- DOI: [10.1073/pnas.2319057121](https://doi.org/10.1073/pnas.2319057121)

Abstract

Eosinophil recruitment is a pathological hallmark of many allergic and helminthic diseases. Here, we investigated chemokine receptor CCR3-induced eosinophil recruitment in sialyltransferase *St3gal4*^{-/-} mice. We found a marked decrease in eosinophil extravasation into CCL11-stimulated cremaster muscles and into the inflamed peritoneal cavity of *St3gal4*^{-/-} mice. Ex vivo flow chamber assays uncovered reduced adhesion of *St3gal4*^{-/-} compared to wild type eosinophils. Using flow cytometry, we show reduced binding of CCL11 to *St3gal4*^{-/-} eosinophils. Further, we noted reduced binding of CCL11 to its chemokine receptor CCR3 isolated from *St3gal4*^{-/-} eosinophils. This was accompanied by almost absent CCR3 internalization of CCL11-stimulated *St3gal4*^{-/-} eosinophils. Applying an ovalbumin-induced allergic airway disease model, we found a dramatic reduction in eosinophil numbers in bronchoalveolar lavage fluid following intratracheal challenge with ovalbumin in *St3gal4*-deficient mice. Finally, we also investigated tissue-resident eosinophils under homeostatic conditions and found reduced resident eosinophil numbers in the thymus and adipose tissue in the absence of ST3Gal-IV. Taken together, our results demonstrate an important role of ST3Gal-IV in CCR3-induced eosinophil recruitment in vivo rendering this enzyme an attractive target in reducing unwanted eosinophil infiltration in various disorders including allergic diseases.

Keywords: asthma; chemokines; eosinophil; inflammation; sialylation.

Conflict of interest statement

Competing interests statement: The authors declare no competing interest.

SUPPLEMENTARY INFO

Publication types, MeSH terms, Substances, Grants and funding expand

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Respir Med

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. 2024 May;226:107629.

doi: 10.1016/j.rmed.2024.107629. Epub 2024 Apr 7.

Frequency and economic burden of exacerbations in inhaled corticosteroid/long-acting beta-agonist-treated patients with asthma: A retrospective US claims study

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Affiliations expand

- PMID: 38593885

- DOI: [10.1016/j.rmed.2024.107629](https://doi.org/10.1016/j.rmed.2024.107629)

Abstract

Introduction: Despite adherence to inhaled corticosteroid/long-acting β_2 -agonist (ICS/LABA) therapy, many patients with asthma experience moderate exacerbations. Data on the impact of moderate exacerbations on the healthcare system are limited. This study assessed the frequency and economic burden of moderate exacerbations in patients receiving ICS/LABA.

Methods: Retrospective, longitudinal study analyzed data from Optum's de-identified Clinformatics® Data Mart Database recorded between October 1, 2015, and December 31, 2019. Eligibility criteria included patients ≥ 18 years of age with ≥ 1 ICS/LABA claim and ≥ 1 medical claim for asthma in the 12 months pre-index (first ICS/LABA claim). Primary objectives included describing moderate exacerbation frequency, and associated healthcare resource utilization (HRU) and costs. A secondary objective was assessing the relationship between moderate exacerbations and subsequent risk of severe exacerbations. Patients were stratified by moderate exacerbation frequency in the 12 months post index. Moderate exacerbations were identified using a newly developed algorithm.

Results: In the first 12 months post index 61.6% of patients experienced ≥ 1 moderate exacerbation. Mean number of asthma-related visits was 4.1 per person/year and median total asthma-related costs was \$3544. HRU and costs increased with increasing exacerbation frequency. Outpatient and inpatient visits accounted for a similar proportion of these costs. Moderate exacerbations were associated with an increased rate and risk of future severe exacerbations (incidence rate ratio, 1.56; hazard ratio, 1.51 [both $p < 0.001$]).

Conclusions: This study highlighted that a high proportion of patients continue to experience moderate exacerbations despite ICS/LABA therapy and subsequently experience increased economic burden and risk of future severe exacerbations.

Keywords: Adult asthma; Dual therapy; Healthcare resource utilization; Moderate exacerbation; Severe exacerbation.

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Conflict of interest statement

Declaration of competing interest MSD, WYC, PT-L, AG, and AZ are employees of Analysis Group, Inc, a consulting company that received research funds from GSK to conduct this study. MHR received research funds from Analysis Group for this study. KJR, SZ, and DS are

employees of GSK and hold stocks or shares in GSK. AC was an employee of GSK at the time of the study. DM has received research grant funding from AstraZeneca, GSK, and Sunovion Pharmaceuticals, and has served as a consultant to AstraZeneca, GSK, Theravance, and Novartis.

SUPPLEMENTARY INFO

Publication types, MeSH terms, Substancesexpand

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Paediatr Child Health

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. 2024 Apr 5;29(2):122-132.

doi: 10.1093/pch/pxae006. eCollection 2024 May.

[The management of very mild and mild asthma in preschoolers, children, and adolescents](#)

[Article in English, English]

[Connie L Yang](#)¹, [Zofia Zysman-Colman](#)¹, [Estelle Chétrit](#)¹, [Anne Hicks](#)¹, [Joseph Reisman](#)¹, [Amy Glicksman](#)¹

Affiliations expand

- PMID: 38586489

- PMID: PMC10996457 (available on 2025-04-05)

- DOI: [10.1093/pch/pxae006](https://doi.org/10.1093/pch/pxae006)

Abstract

This practice point summarizes recommendations from the Canadian Thoracic Society's 2021 "Guideline update: Diagnosis and management of asthma in preschoolers, children, and adults." New recommendations include: a decrease in the frequency of daytime symptoms and reliever use to ≤ 2 per week in the asthma control criteria; assessing for risk of asthma exacerbation; not using as-needed short-acting beta-agonists alone in patients at higher risk for exacerbation; and the option of as-needed budesonide/formoterol (bud/form) in those ≥ 12 years old if they are unable to take daily inhaled corticosteroids despite extensive asthma education and support. The preference for daily inhaled corticosteroids to manage mild asthma in children, and the recommendation against intermittent short courses of inhaled corticosteroids, are unchanged.

Keywords: Asthma; Canadian Thoracic Society; Mild asthma; Very mild asthma.

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Conflict of interest statement

All authors: No reported conflicts of interest. All authors have submitted the ICMJE Form for Disclosure of Potential Conflicts of Interest. Conflicts that the editors consider relevant to the content of the manuscript have been disclosed.

- [5 references](#)

FULL TEXT LINKS



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Respir Med

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. 2024 May;226:107610.

doi: 10.1016/j.rmed.2024.107610. Epub 2024 Mar 30.

[A network meta-analysis of the association between patient traits and response to regular dosing with ICS plus short-acting \$\beta_2\$ -agonist reliever or ICS/formoterol reliever only in mild asthma](#)

[Arzu Yorgancıoğlu](#)¹, [Alvaro A Cruz](#)², [Gabriel Garcia](#)³, [Kim L Lavoie](#)⁴, [Nicolas Roche](#)⁵, [Manish Verma](#)⁶, [Anurita Majumdar](#)⁷, [Swarnendu Chatterjee](#)⁸

Affiliations expand

- PMID: 38561078
- DOI: [10.1016/j.rmed.2024.107610](https://doi.org/10.1016/j.rmed.2024.107610)

Free article

Abstract

Introduction/background: Mild asthma treatment recommendations include intermittent inhaled corticosteroid (ICS)/formoterol dosing or regular ICS dosing with short-acting β_2 -agonist reliever. Due to the heterogeneity of asthma, identification of traits associated with improved outcomes to specific treatments would be clinically beneficial.

Aims/objectives: To assess the impact of patient traits on treatment outcomes of regular ICS dosing compared with intermittent ICS/formoterol dosing, a systematic literature review (SLR) and network meta-analysis (NMA) was conducted. Searches identified

randomised controlled trials (RCTs) of patients with asthma aged ≥ 12 years, containing ≥ 1 regular ICS dosing or intermittent ICS/formoterol dosing treatment arm, reporting traits and outcomes of interest.

Results: The SLR identified 11 RCTs of mild asthma, of 14,516 patients. A total of 11 traits and 11 outcomes of interest were identified. Of these, a feasibility assessment indicated possible assessment of three traits (age, baseline lung function, smoking history) and two outcomes (exacerbation rate, change in lung function). The NMA found no significant association of any trait with any outcome with regular ICS dosing relative to intermittent ICS/formoterol dosing. Inconsistent reporting of traits and outcomes between RCTs limited analysis.

Conclusions: This is the first systematic analysis of associations between patient traits and differential treatment outcomes in mild asthma. Although the traits analysed were not found to significantly interact with relative treatment response, inconsistent reporting from the RCTs prevented assessment of some of the most clinically relevant traits and outcomes, such as adherence. More consistent reporting of respiratory RCTs would provide more comparable data and aid future analyses.

Keywords: Asthma; Maintenance therapy; Patient characteristics; Reliever therapy.

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Conflict of interest statement

Declaration of competing interest The authors declare the following financial interests/personal relationships which may be considered as potential competing interests: Arzu Yorgancıoğlu has received research grants from Novartis, MSD, AstraZeneca and Sanofi, and has acted as a speaker/consultant for AstraZeneca, Abdi Ibrahim, GSK, Novartis, Chiesi and Bilim. Alvaro A. Cruz has received personal fees from GSK, AstraZeneca, Sanofi, Boehringer Ingelheim, Chiesi, Crossjet, Eurofarma, Abdi Ibrahim and Glenmark. Gabriel Garcia has received research grants from Novartis, GSK, Boehringer Ingelheim, AstraZeneca and Sanofi, and for acting as a consultant/advisor/speaker for GSK, AstraZeneca, Novartis and Sanofi. Kim L. Lavoie has received consulting fees/speaker fees from GSK, Abbvie, Boehringer Ingelheim, Janssen, Bausch, Astellas, Novartis, AstraZeneca, X-Facto and Sojecci Inc. Nicolas Roche has received grants and personal fees from Boehringer Ingelheim, Novartis, Pfizer, GSK and personal fees from Austral, Biosency, MSD, AstraZeneca, Chiesi, Sanofi and Zambon. Manish Verma, Anurita Majumdar and Swarnendu Chatterjee are full-time employees of GSK and hold stocks/shares in GSK.

SUPPLEMENTARY INFO

Publication types, MeSH terms, Substances expand

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J Allergy Clin Immunol Glob

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. 2024 Feb 13;3(2):100228.

doi: 10.1016/j.jacig.2024.100228. eCollection 2024 May.

Improving asthma outcomes: Clinicians' perspectives on peripheral airways

[Gregory G King](#)¹, [Li Ping Chung](#)², [Omar S Usmani](#)³, [Kris Nilsen](#)⁴, [Bruce R Thompson](#)⁵

Affiliations expand

- PMID: 38544576
- PMCID: [PMC10965810](#)
- DOI: [10.1016/j.jacig.2024.100228](#)

Abstract

Disease of the peripheral (or small) airways is fundamental in asthma, being closely related to symptoms (or lack of control of them), airway hyperresponsiveness, spirometric abnormalities, risk of loss of control, or exacerbations and inflammation. Current technology now allows routine measurement of peripheral airway function. Having a working concept of peripheral airways disease in asthma is arguably very useful to clinicians and beneficial to patients because it allows a more comprehensive assessment of

asthma severity (rather than just symptoms alone, which is the norm), tracking of progress or deterioration, and assessing response to treatment. Oscillometry is a sensitive way to monitor the peripheral airways, whereas multiple breath nitrogen washout parameters are excellent measures of future risk. In the longer term, physiologic measurements will be crucial in research to define causes and find new disease-modifying treatments.

Keywords: Asthma management; inhaler particle size; multiple breath nitrogen washout; oscillometry; peripheral airways; respiratory function assessment; small airways dysfunction; treatable trait.

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Conflict of interest statement

Chiesi Australia supported the authors with the resources of a medical writer (George Krassas, Scius Healthcare Solutions), who has assisted with coordinating meetings of the author group, minuting decisions, and has assisted with the final formatting the manuscript for submission. There was no involvement in drafting or editing the manuscript which was done solely by the authors. Disclosure of potential conflict of interest: G. G. King is a nonexecutive board member of Cyclomedica Australia Ltd and has received honoraria for consultative services to AstraZeneca, Boehringer Ingelheim, Chiesi, GSK, and Sanofi. K. Nilsen is a full time employee of 4DMedical. B. R. Thompson is on the Medical Advisory Board of NDD, Chiesi, and 4DMedical. The rest of the authors declare that they have no relevant conflicts of interest.

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- [5 figures](#)

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Adv Ther

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. 2024 May;41(5):1995-2009.

doi: 10.1007/s12325-024-02823-y. Epub 2024 Mar 27.

Pharmacological Basis of Differences in Dose Response, Dose Equivalence, and Duration of Action of Inhaled Corticosteroids

[Peter T Daley-Yates](#)¹, [Bhumika Aggarwal](#)², [Maximilian Plank](#)^{3,4}

Affiliations expand

- PMID: 38532238
- PMCID: [PMC11052795](#)
- DOI: [10.1007/s12325-024-02823-y](#)

Abstract

Introduction: Asthma treatment guidelines classify inhaled corticosteroid (ICS) regimens as low, medium, or high dose. However, efficacy and safety are not independently assessed accordingly. Moreover, differences in ICS duration of action are not considered when a dose regimen is selected. We investigated the efficacy and safety implications of these limitations for available ICS molecules.

Methods: Published pharmacodynamic and pharmacokinetic parameters were used, alongside physiological and pharmacological principles, to estimate the efficacy and safety of available ICS molecules. Extent and duration of glucocorticoid receptor (GR) occupancy in the lung (efficacy) and cortisol suppression (systemic exposure and safety) were estimated.

Results: Some ICS regimens (e.g., fluticasone furoate, fluticasone propionate, and ciclesonide) rank high for efficacy but low for systemic exposure, contrary to how ICS dose equivalence is currently viewed. Differences in dose-response relationships for efficacy and

systemic exposure were unique for each ICS regimen and reflected in their therapeutic indices. Notably, even low doses of most ICSs can generate high GR occupancy ($\geq 90\%$) across the entire dose interval at steady state, which may explain previously reported difficulties in obtaining dose responses within the clinical dose range and observations that most clinical benefit typically occurs at low doses. The estimated post dose duration of lung GR occupancy for ICS molecules was categorized as 4-6 h (short), 14-16 h (medium), 25-40 h (long), or > 80 h (ultra-long), suggesting potentially large differences in anti-inflammatory duration of action.

Conclusion: In a real-world clinical setting where there may be poor adherence to prescribed therapy, our findings suggest a significant therapeutic advantage for longer-acting ICS molecules in patients with asthma.

Keywords: Dose equivalence; Dose response; Duration of action; Inhaled corticosteroid.

Plain language summary

Patients with asthma often rely on inhaled corticosteroids to manage their symptoms by controlling lung inflammation. Inhaled corticosteroids can be used at low, medium, or high doses; however, the effectiveness, safety, and how long the effects last for a particular inhaled corticosteroid molecule are not considered when choosing them. This study investigated the safety and efficacy of different inhaled corticosteroid molecules. Leveraging published data on the mode of anti-inflammatory action and the rates these molecules are absorbed and eliminated from the body, we estimated their effectiveness and safety profiles, including duration of action in the lungs and systemic exposure levels. Some inhaled corticosteroid molecules such as fluticasone furoate, fluticasone propionate, and ciclesonide were found to exhibit high anti-inflammatory effectiveness in the lungs with minimal systemic exposure, contrasting the perceived similarities among currently used drug molecules. Anti-inflammatory duration of the unwanted systemic effect in the rest of the body was unique for each inhaled corticosteroid molecule. Notably, even the lowest doses of most inhaled corticosteroids were found to be effective in the lungs when taken as prescribed, supporting previous observations that clinical benefits are mostly realized at lower doses. Furthermore, estimated post dose durations of effectiveness for different inhaled corticosteroid molecules varied widely among different molecules, with some lasting a few hours and others lasting more than 80 h, suggesting significant differences in their duration of action. Overall, these findings demonstrate the potential advantage of using longer-acting inhaled corticosteroids, particularly for patients with asthma who may face challenges in adhering to prescribed regimens.

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Conflict of interest statement

Peter T. Daley-Yates was an employee and a shareholder of GSK at the time of the study. Bhumika Aggarwal and Maximilian Plank are employees and shareholders of GSK.

- [Cited by 1 article](#)
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J Allergy Clin Immunol Glob

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. 2024 Feb 2;3(2):100225.

doi: 10.1016/j.jacig.2024.100225. eCollection 2024 May.

[Longitudinal patterns of intermittent oral corticosteroid therapy for asthma in the United Kingdom](#)

[Trung N Tran](#)¹, [Heath Heatley](#)², [Jennifer Rowell](#)³, [Jeffrey Shi Kai Chan](#)¹, [Arnaud Bourdin](#)⁴, [Jatin Chapaneri](#)³, [Benjamin Emmanuel](#)¹, [Danny Gibson](#)³, [David J Jackson](#)⁵, [Andrew N Menzies-Gow](#)^{6,7}, [Ruth Murray](#)⁸, [Derek Skinner](#)², [David B Price](#)^{2,9}

Affiliations expand

- PMID: 38524787

- PMID: [PMC10959664](#)
- DOI: [10.1016/j.jacig.2024.100225](#)

Abstract

Background: Increasing frequency of intermittent oral corticosteroid (OCS) prescription and cumulative OCS exposure increase the risk of OCS-related adverse outcomes.

Objective: We sought to describe the evolution and trajectory of intermittent OCS prescription patterns in patients with asthma and investigate risk factors independently associated with transitioning to a frequent prescription pattern.

Methods: This historical cohort study included patients with active asthma managed in UK primary care and included in the Optimum Patient Care Research Database (OPCRD; [opcrd.co.uk](#)). Intermittent OCS prescription patterns were categorized as sporadic, infrequent, moderately frequent, or frequent. Prescription pattern sequences were described for those who had a frequent sequence in their final year of prescribing. We examined associations between OCS prescription pattern and the hazard of transitioning into a frequent intermittent OCS prescription pattern using multivariable Cox regression with a 10-year look-back period.

Results: Of 105,229 patients with intermittent OCS prescriptions, 57.1% (n = 60,083) had a frequent OCS prescription pattern at some point. Irrespective of baseline pattern, most patients transitioned to frequent prescription during the look back. The strongest risk factors were a more frequent prescription pattern at the start of look-back period, a lower percentage peak expiratory flow rate, and higher Global Initiative for Asthma treatment step. Older age, female sex, obesity, and active smoking were also associated with a higher risk of transitioning.

Conclusion: Our findings help identify those most at risk of transitioning to frequent intermittent OCS receipt and encourage earlier intervention with OCS-sparing treatments.

Keywords: OCS; asthma; intermittent; prescription; risk.

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- [2 figures](#)

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Respir Investig

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. 2024 May;62(3):442-448.

doi: 10.1016/j.resinv.2024.02.017. Epub 2024 Mar 23.

Prevalence and causes of chronic cough in Japan

[Yoshihisa Ishiura](#)¹, [Masaki Fujimura](#)², [Haruhiko Ogawa](#)³, [Johsuke Hara](#)⁴, [Hiromoto Shintani](#)⁵, [Soichiro Hozawa](#)⁶, [Ryo Atsuta](#)⁷, [Kensuke Fukumitsu](#)⁸, [Hideki Inoue](#)⁹, [Takanobu Shioya](#)¹⁰, [Masato Muraki](#)¹¹, [Tokunao Amemiya](#)¹², [Noriyuki Ohkura](#)⁴, [Yoshitaka Oribe](#)¹³, [Hiroshi Tanaka](#)¹⁴, [Takechiyo Yamada](#)¹⁵, [Mikio Toyoshima](#)¹⁶, [Katsuya Fujimori](#)¹⁷, [Tamotsu Ishizuka](#)¹⁸, [Manabu Kagaya](#)¹⁹, [Takeshi Suzuki](#)²⁰, [Toshiyuki Kita](#)²¹, [Koichi Nishi](#)²², [Akihito Ueda](#)²³, [Yoshito Miyata](#)²⁴, [Junya Kitada](#)²⁵, [Kenta Yamamura](#)²⁶, [Miki Abo](#)⁴, [Norihisa Takeda](#)⁸, [Toshihiro Shirai](#)²⁷, [Tomoko Tajiri](#)⁸, [Shigemi Yoshihara](#)²⁸, [Taisuke Akamatsu](#)²⁷, [Hirochiyo Sawaguchi](#)¹¹, [Tatsuya Nagano](#)²⁹, [Soichiro Hanada](#)¹¹, [Sawako Masuda](#)³⁰, [Mitsuhide Ohmichi](#)²⁵, [Tomoki Ito](#)³¹, [Hironori Sagara](#)²⁴, [Hisako Matsumoto](#)³², [Akio Niimi](#)⁸; [Japan Cough Society](#)

Affiliations expand

- PMID: 38522360
- DOI: [10.1016/j.resinv.2024.02.017](https://doi.org/10.1016/j.resinv.2024.02.017)

Free article

Abstract

Background: Chronic cough is one of the most common symptoms of respiratory diseases and can adversely affect patients' quality of life and interfere with social activities, resulting in a significant social burden. A survey is required to elucidate the frequency and treatment

effect of chronic cough. However, clinical studies that cover all of Japan have not yet been conducted.

Methods: Patients who presented with a cough that lasted longer than 8 weeks and visited the respiratory clinics or hospitals affiliated with the Japan Cough Society during the 2-year study period were registered.

Results: A total of 379 patients were enrolled, and those who did not meet the definition of chronic cough were excluded. A total of 334 patients were analyzed: 201 patients had a single cause, and 113 patients had two or more causes. The main causative diseases were cough variant asthma in 92 patients, sinobronchial syndrome (SBS) in 36 patients, atopic cough in 31 patients, and gastroesophageal reflux (GER)-associated cough in 10 patients. The time required to treat undiagnosed patients and those with SBS was significantly longer and the treatment success rate for GER-associated cough was considerably poor.

Conclusions: We confirmed that the main causes of chronic cough were cough variant asthma, SBS, atopic cough, and their complications. We also showed that complicated GER-associated cough was more likely to become refractory. This is the first nationwide study in Japan of the causes and treatment effects of chronic cough.

Keywords: Atopic cough; Chronic cough; Cough variant asthma; Refractory chronic cough; Unexplained chronic cough.

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Conflict of interest statement

Declaration of competing interest JH received honoraria from AstraZeneca Pharmaceuticals, United Kingdom; GlaxoSmithKline Pharmaceuticals, United Kingdom. SH received honoraria from AstraZeneca Pharmaceuticals, GlaxoSmithKline Pharmaceuticals, Kyorin Pharmaceuticals, Japan; Novartis Pharmaceuticals, Switzerland. NO received honoraria from AstraZeneca Pharmaceuticals and research funding from Konica Minolta K.K, Japan. HT received honoraria from AstraZeneca Pharmaceuticals, GlaxoSmithKline Pharmaceuticals, Kyorin Pharmaceuticals, Novartis Pharmaceuticals. TY received honoraria from Mitsubishi Tanabe Pharmaceuticals, Japan; Sanofi Pharmaceuticals, France; Kyorin Pharmaceuticals. TN received honoraria from AstraZeneca Pharmaceuticals, GlaxoSmithKline Pharmaceuticals, Kyorin Pharmaceuticals, Novartis Pharmaceuticals, Sanofi Pharmaceuticals. HiSag received honoraria from AstraZeneca Pharmaceuticals, GlaxoSmithKline Pharmaceuticals, Kracie Pharmaceuticals, Japan; Kyorin Pharmaceuticals, Novartis Pharmaceuticals, Sanofi Pharmaceuticals. HM received honoraria from Kyorin Pharmaceuticals. AN received honoraria from AstraZeneca Pharmaceuticals, GlaxoSmithKline Pharmaceuticals, Kyorin Pharmaceuticals, Novartis Pharmaceuticals, Sanofi Pharmaceuticals. The rest of the authors have no conflicts of interest.

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Review

Curr Opin Pulm Med

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. 2024 May 1;30(3):313-324.

doi: 10.1097/MCP.0000000000001072. Epub 2024 Mar 13.

[Asthma in pregnancy: a review of recent literature](#)

[Kelly Colas](#)¹, [Jennifer Namazy](#)²

Affiliations expand

- PMID: 38477324
- DOI: [10.1097/MCP.0000000000001072](https://doi.org/10.1097/MCP.0000000000001072)

Abstract

Purpose of review: Asthma remains the most common respiratory disease in pregnancy. Identifying risk factors for asthma exacerbations during pregnancy is critical, as uncontrolled asthma can have detrimental effects for both mother and baby. In this review,

we discuss recent literature exploring risk factors, fetal and maternal effects, and treatment options for asthma during pregnancy.

Recent findings: Recent literature suggests that optimizing asthma during pregnancy improves outcomes for both mother and baby, as well as later in childhood. Current research affirms that the benefit of asthma medication use outweighs any potential risks related to the medications themselves. Limited information is available regarding the use of newer therapies such as biologics during pregnancy.

Summary: Identifying risk factors for asthma exacerbations during pregnancy is critical to prevent adverse outcomes for both mother and baby. Recent evidence continues to affirm the safety of asthma medication use; more studies are needed regarding the use of new therapies during pregnancy.

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Curr Opin Pulm Med

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. 2024 May 1;30(3):294-302.

doi: 10.1097/MCP.0000000000001073. Epub 2024 Mar 4.

Obesity-related asthma: new insights leading to a different approach

[Adjan Witte](#)¹, [Yasemin Türk](#)^{1,2}, [Gert-Jan Braunstahl](#)^{1,3}

Affiliations expand

- PMID: 38441436
- DOI: [10.1097/MCP.0000000000001073](https://doi.org/10.1097/MCP.0000000000001073)

Abstract

Purpose of review: Obesity is a growing global health threat that significantly contributes to the burden of asthma by increasing the risk of developing asthma and exerting a distinct effect on lung function and inflammation. The treatment of obesity-related asthma is hindered by a poor response to standard asthma treatments, leading to worse asthma control. Weight loss strategies have a significant effect on asthma symptoms but are not feasible for a large proportion of patients, underscoring the need for a better understanding of the pathophysiology and the development of additional treatment options.

Recent findings: Recent literature focusing on pathophysiology particularly delved into nontype 2 inflammatory mechanisms, associations with the metabolic syndrome and small airway impairment. Additionally, several new treatment options are currently investigated, including biologics, weight reduction interventions, and novel antiobesity drugs.

Summary: Obesity-related asthma is a highly prevalent asthma phenotype for which weight loss strategies currently stand as the most specific treatment. Furthermore, novel pharmacological interventions aiming at metabolic processes are on the way.

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- [86 references](#)

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Review

Curr Opin Pulm Med



. 2024 May 1;30(3):325-329.

doi: 10.1097/MCP.0000000000001068. Epub 2024 Mar 5.

[Remission in asthma](#)

[Marek Lommatzsch](#)¹

Affiliations expand

- PMID: 38441430
- PMCID: [PMC10990011](#)
- DOI: [10.1097/MCP.0000000000001068](#)

Abstract

Purpose of review: To review the current concepts of remission in asthma.

Recent findings: Until 2023, asthma guidelines have been promoting the concept of disease control, recommending the step-wise addition of drugs until the best possible disease control is achieved. With the advent of highly effective, anti-inflammatory disease-modifying antiasthmatic drugs (DMAADs), treatment goals of asthma have changed. Several national guidelines have now announced remission as a general treatment goal in asthma. Currently, all guidelines agree that asthma remission is defined by the presence of

at least three characteristics over a period of at least one 1 year: absence of exacerbations, no systemic corticosteroid use for the treatment of asthma and minimal asthma-related symptoms. In the future, a generally accepted, evidence-based and easy-to-use definition of remission will be needed for daily clinical practice. It is clear, however, that precise phenotyping (including measurement of biomarkers) is an essential prerequisite to achieve clinical remission in each individual patient.

Summary: Remission has been included as the treatment goal in asthma in several national guidelines, reflecting the paradigm shift in asthma, from short-term symptom control to long-term symptom prevention. An international consensus on the criteria for asthma remission is expected in the near future.

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Conflict of interest statement

M.L. reports grants for research or clinical trials, paid to his institution, from AstraZeneca, Deutsche Forschungsgemeinschaft (DFG), and GSK; and consulting fees, travel expenses, or honoraria for lectures from ALK, Allergopharma, AstraZeneca, Berlin-Chemie, Boehringer Ingelheim, Chiesi, GSK, HAL Allergy, Leti, Novartis, MSD, Sanofi, Stallergenes, and Teva.

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[Review](#)



. 2024 May 1;30(3):281-286.

doi: 10.1097/MCP.0000000000001062. Epub 2024 Feb 28.

Recent developments in occupational asthma

[Claudia Blouin](#)^{1,2}, [Catherine Lemière](#)^{1,2}

Affiliations expand

- PMID: 38415698
- DOI: [10.1097/MCP.0000000000001062](https://doi.org/10.1097/MCP.0000000000001062)

Abstract

Purpose of review: Occupational asthma (OA) is a complex condition that can be difficult to diagnose. The purpose of this review is to describe some recent findings regarding the epidemiology of OA, the occupational sensitizing agents, the prognosis of OA, and its primary prevention.

Recent findings: The risk of developing OA varies according to the geographic localization of the worker, the type of industry and the type of sensitizing agents. New findings have been reported for several known sensitizing agents, such as isocyanates, seafood & cleaning agents, and their related industries, such as hairdressing salons and schools. Moreover, a few new sensitizing agents, such as cannabis, have been identified in the past few years. The prognosis of OA seems worse than that of nonwork-related asthma. It is mainly determined by the duration and the level of exposure. Primary prevention is crucial to reduce the number of new cases of OA. Complete avoidance of exposure to the causal agent remains the optimal treatment of sensitizer-induced OA.

Summary: Improving our knowledge regarding OA and its causative agents is key to enable an early recognition of this condition and improve its prognosis. Further research is still needed to improve primary prevention.

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- [40 references](#)

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Curr Opin Pulm Med

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. 2024 May 1;30(3):287-293.

doi: 10.1097/MCP.0000000000001061. Epub 2024 Feb 26.

[Viral infections causing asthma exacerbations in the age of biologics and the COVID-19 pandemic](#)

[Pedro A Lamothe](#)¹, [Violeta Capric](#), [F Eun-Hyung Lee](#)

Affiliations expand

- PMID: 38411178
- PMCID: PMC10959678 (available on 2025-05-01)
- DOI: [10.1097/MCP.0000000000001061](https://doi.org/10.1097/MCP.0000000000001061)

Abstract

Purpose of review: Asthma exacerbations are associated with substantial symptom burden and healthcare costs. Viral infections are the most common identified cause of asthma exacerbations. The epidemiology of viral respiratory infections has undergone a significant evolution during the COVID-19 pandemic. The relationship between viruses and asthmatic hosts has long been recognized but it is still incompletely understood. The use of newly approved asthma biologics has helped us understand this interaction better.

Recent findings: We review recent updates on the interaction between asthma and respiratory viruses, and we address how biologics and immunotherapies could affect this relationship by altering the respiratory mucosa cytokine milieu. By exploring the evolving epidemiological landscape of viral infections during the different phases of the COVID-19 pandemic, we emphasize the early post-pandemic stage, where a resurgence of pre-pandemic viruses with atypical seasonality patterns occurred. Finally, we discuss the newly developed RSV and SARS-CoV-2 vaccines and how they reduce respiratory infections.

Summary: Characterizing how respiratory viruses interact with asthmatic hosts will allow us to identify tailored therapies to reduce the burden of asthma exacerbations. New vaccination strategies are likely to shape the future viral asthma exacerbation landscape.

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Conflict of interest statement

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- [55 references](#)

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Review

Curr Opin Pulm Med

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. 2024 May 1;30(3):268-275.

doi: 10.1097/MCP.0000000000001057. Epub 2024 Feb 15.

The role of oscillometry in asthma

[Patrick A Donohue](#)¹, [David A Kaminsky](#)²

Affiliations expand

- PMID: 38411171
- DOI: [10.1097/MCP.0000000000001057](https://doi.org/10.1097/MCP.0000000000001057)

Abstract

Purpose of review: Oscillometry is a noninvasive pulmonary function test that has gained significant interest in the evaluation of lung disease. Currently, oscillometry is primarily a research tool, but there is a growing body of evidence supporting its clinical use. This review describes the recent work evaluating the role of oscillometry in the diagnosis and treatment of asthma.

Recent findings: A large body of observational data supports the ability of oscillometry to distinguish healthy individuals from those with respiratory symptoms or lung disease. Oscillometry may not be as useful as an isolated diagnostic test in asthma, but the combination with other pulmonary function tests may improve its diagnostic ability. Oscillometry can detect peripheral airways dysfunction in asthma, which is associated with symptoms and the risk for exacerbations. To help guide future research, minimal clinically important differences for specific oscillometry variables have been developed. Oscillometry may be useful in monitoring the response to biological therapy and has potential for

personalizing treatment for individual patients. Oscillometry also has potential in uncovering unique aspects of the pathophysiology of asthma in obesity.

Summary: Oscillometry is a promising tool in the diagnosis and management of asthma. More research is needed to support its routine clinical use.

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Review

Pediatr Pulmonol

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. 2024 May;59(5):1143-1152.

doi: 10.1002/ppul.26935. Epub 2024 Feb 21.

[Time-dependent gene-environment interactions are essential drivers of asthma initiation and persistence](#)

[Grigorios Chatziparasidis](#)^{1,2}, [Maria R Chatziparasidi](#)³, [Ahmad Kantar](#)^{4,5}, [Andrew Bush](#)⁶

Affiliations expand

- PMID: 38380964
- DOI: [10.1002/ppul.26935](https://doi.org/10.1002/ppul.26935)

Abstract

Asthma is a clinical syndrome caused by heterogeneous underlying mechanisms with some of them having a strong genetic component. It is known that up to 82% of atopic asthma has a genetic background with the rest being influenced by environmental factors that cause epigenetic modification(s) of gene expression. The interaction between the gene(s) and the environment has long been regarded as the most likely explanation of asthma initiation and persistence. Lately, much attention has been given to the time frame the interaction occurs since the host response (immune or biological) to environmental triggers, differs at different developmental ages. The integration of the time variant into asthma pathogenesis is appearing to be equally important as the gene(s)-environment interaction. It seems that, all three factors should be present to trigger the asthma initiation and persistence cascade. Herein, we introduce the importance of the time variant in asthma pathogenesis and emphasize the long-term clinical significance of the time-dependent gene-environment interactions in childhood.

Keywords: asthma; environment; gene; pathogenesis; time.

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- [106 references](#)

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. 2024 May;59(5):1505-1506.

doi: 10.1002/ppul.26918. Epub 2024 Feb 15.

Allergen immunotherapy in patients with severe asthma: A need for prospective trials

[Margaret P Huntwork](#)¹, [John C Carlson](#)²

Affiliations expand

- PMID: 38358039
- DOI: [10.1002/ppul.26918](https://doi.org/10.1002/ppul.26918)

No abstract available

Keywords: allergy shots; clinical trials.

SUPPLEMENTARY INFO

Publication types, MeSH terms, Substances, Grants and funding expand

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. 2024 May;59(5):1321-1329.

doi: 10.1002/ppul.26909. Epub 2024 Feb 14.

Impulse oscillometry bronchodilator response in preschool children

[Aniello Meoli](#)^{1,2}, [Jordis Trischler](#)¹, [Martin Hutter](#)¹, [Melanie Dressler](#)¹, [Susanna Esposito](#)², [Katharina Blümchen](#)¹, [Stefan Zielen](#)¹, [Johannes Schulze](#)¹

Affiliations expand

- PMID: 38353391
- DOI: [10.1002/ppul.26909](https://doi.org/10.1002/ppul.26909)

Abstract

Background: In preschoolers, performing an acceptable spirometry and measuring bronchodilator response (BDR) is challenging; in this context, impulse oscillometry (IOS) represents a valid alternative. However, more studies on the standardization of BDR for IOS in young children are required.

Objective: The objective of the study was to identify optimal thresholds to define a positive BDR test with IOS in preschoolers with suspected asthma.

Methods: Children aged 3-6 years with suspected asthma and their lung function investigated with both IOS and spirometry pre- and post-BDR were retrospectively analyzed. The spirometric BDR was defined as positive when the change of FEV₁ was $\geq 12\%$ or ≥ 200 mL. The oscillometric BDR was defined as positive in case of change of at least -40% in R5, +50% in X5, and -80% in AX.

Results: Among 72 patients, 36 (age 5.2 ± 1 years; 64% boys) were selected for the subsequent analysis according to ATS/ERS quality criteria of measurements; specifically, 19 patients did not meet IOS and 36 did not meet spirometry criteria. The spirometric BDR was found positive in seven subjects (19.4%); conversely, a positive oscillometric BDR was identified in four patients (11.1%). No patient presented a positive BDR response with both methods. In IOS, the mean decrease in R5 and AX was $19.9\% \pm 10\%$ and $44\% \pm 22.1\%$, and the mean increase in X5 was $23.3\% \pm 17.8\%$, respectively. A decrease in R5 of 25.7% (AUC 0.77, $p = .03$) and an increase in X5 of 25.7% (AUC 0.75, $p = .04$) showed the best

combination of sensitivity and specificity to detect an increase of $FEV_1 \geq 12\%$ and/or ≥ 200 mL.

Conclusion: The IOS represents a valid alternative to spirometry to measure BDR in preschool children and should be the gold standard in this age group. We are considering a decrease of 26% in R5 and an increase of 26% in X5 as diagnostic threshold for BDR.

Keywords: bronchodilator response; oscillometry; preschool asthma; spirometry.

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J Allergy Clin Immunol Glob

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. 2024 Jan 6;3(2):100206.

doi: 10.1016/j.jacig.2024.100206. eCollection 2024 May.

[Long-term efficacy of house dust mite sublingual immunotherapy on clinical and pulmonary function in patients with asthma and allergic rhinitis](#)

[Makoto Hoshino](#)¹, [Kenta Akitsu](#)², [Junichi Ohtawa](#)², [Kengo Kubota](#)²

Affiliations expand

- PMID: 38328802
- PMCID: [PMC10847160](#)
- DOI: [10.1016/j.jacig.2024.100206](#)

Abstract

Background: A previous study reported that house dust mite (HDM) sublingual immunotherapy (SLIT) for 48 weeks was effective as add-on treatment for allergic asthma; however, data regarding its long-term efficacy are scarce.

Objective: We sought to evaluate the effect of HDM SLIT on asthma control, pulmonary function, and airway inflammation and remodeling throughout the 5-year treatment period.

Methods: A total of 140 patients with asthma and allergic rhinitis sensitized to HDM were randomized to receive either drugs alone or drugs plus SLIT for 5 years. The 5-item Asthma Control Questionnaire (ACQ-5), Asthma Quality of Life Questionnaire (AQLQ), Rhinoconjunctivitis Quality of Life Questionnaire (RQLQ), spirometry, quantitative computed tomography, and type 2 biomarkers were assessed.

Results: An improvement in the ACQ-5, AQLQ, and RQLQ scores was observed in the SLIT group compared with the control group. HDM SLIT increased lung function and reduced the percentage of airway wall area. The levels of fractional exhaled nitric oxide (Feno), blood eosinophil, serum specific IgE for HDM, and total IgE decreased and were sustained during the 5 years. The change in type 2 biomarkers correlated with change in the AQLQ score. On the basis of receiver-operating characteristic analysis for predicting responders, the area under the receiver-operating characteristic curve in FEV₁% predicted, airway wall area, Feno, and specific IgE was high. Multivariate regression analysis showed that the strongest predictor of responders was Feno.

Conclusions: HDM SLIT continued to provide sustained efficacy, improve lung function, and prevent progression of airway inflammation and remodeling in asthma throughout the 5-year treatment period.

Keywords: Airway inflammation; allergic rhinitis; asthma; house dust mite sublingual immunotherapy; long-term efficacy; pulmonary function; quality of life; remodeling; symptom; type 2 biomarker.

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

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Practice Guideline

Can Assoc Radiol J

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. 2024 May;75(2):296-303.

doi: 10.1177/08465371231214699. Epub 2023 Dec 15.

Canadian Association of Radiologists Thoracic Imaging Referral Guideline

[Candyce Hamel](#)¹, [Barb Avar](#)², [Catherine Belanger](#)³, [Patrick Bourgouin](#)⁴, [Stephen Lam](#)⁵, [Daria Manos](#)⁶, [Alan Michaud](#)⁷, [Brian H Rowe](#)⁸, [Kevin Sanders](#)², [Ana-Maria Bilawich](#)⁹

Affiliations expand

- PMID: 38099468

- DOI: [10.1177/08465371231214699](https://doi.org/10.1177/08465371231214699)

Free article

Abstract

The Canadian Association of Radiologists (CAR) Thoracic Expert Panel consists of radiologists, respirologists, emergency and family physicians, a patient advisor, and an epidemiologist/guideline methodologist. After developing a list of 24 clinical/diagnostic scenarios, a rapid scoping review was undertaken to identify systematically produced referral guidelines that provide recommendations for one or more of these clinical/diagnostic scenarios. Recommendations from 30 guidelines and contextualization criteria in the Grading of Recommendations, Assessment, Development, and Evaluations (GRADE) for guidelines framework were used to develop 48 recommendation statements across the 24 scenarios. This guideline presents the methods of development and the referral recommendations for screening/asymptomatic individuals, non-specific chest pain, hospital admission for non-thoracic conditions, long-term care admission, routine pre-operative imaging, post-interventional chest procedure, upper respiratory tract infection, acute exacerbation of asthma, acute exacerbation of chronic obstructive pulmonary disease, suspect pneumonia, pneumonia follow-up, immunosuppressed patient with respiratory symptoms/febrile neutropenia, chronic cough, suspected pneumothorax (non-traumatic), clinically suspected pleural effusion, hemoptysis, chronic dyspnea of non-cardiovascular origin, suspected interstitial lung disease, incidental lung nodule, suspected mediastinal lesion, suspected mediastinal lymphadenopathy, and elevated diaphragm on chest radiograph.

Keywords: chest; diagnostic imaging; guideline; lung; referrals; thoracic.

Conflict of interest statement

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

SUPPLEMENTARY INFO

Publication types, MeSH termsexpand

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Sage Journals
Open access full text



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Review

J Asthma

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. 2024 May;61(5):387-395.

doi: 10.1080/02770903.2023.2288317. Epub 2023 Dec 4.

[Risk factors associated with uncontrolled asthma in children - a systematic review and meta-analysis](#)

[Muhammad Imran Arif](#)¹, [Liang Ru](#)¹, [Yanan Wang](#)¹

Affiliations expand

- PMID: 37999990
- DOI: [10.1080/02770903.2023.2288317](https://doi.org/10.1080/02770903.2023.2288317)

Abstract

Objective: We aim to assess the risk factors of uncontrolled asthma in children and adolescents.

Methods: A systemic search was conducted from electronic databases (PubMed/Medline, Cochrane Library, and Google Scholar) from inception to July 17, 2023. All statistical analyses were conducted in Review Manager 5.4.1. Studies meeting inclusion criteria were selected. A random-effects model was used when heterogeneity was seen to pool the studies, and the result was reported in the odds ratio and the corresponding 95% confidence interval. We also used a narrative approach where it was not feasible to quantitatively assess the outcome.

Results: Ten observational studies were used to conduct this systematic review and meta-analysis. A quantitative analysis of five factors was done. Pooled analysis showed a

statistically significant risk of uncontrolled asthma in association with past hypersensitivity reactions (standardized mean difference [SMD] = 1.51 (1.16, 1.98); $p = .002$; $I^2 = 84\%$) and incomplete controller adherence (SMD = 3.15 (1.83, 5.41); $p < .0001$; $I^2 = 94\%$). While non-significant relation was seen in parental asthma (SMD = 1.23 (0.98, 1.55); $p = .07$; $I^2 = 15\%$), oral corticosteroid use (SMD = 0.99 (0.72, 1.36); $p = .96$; $I^2 = 81\%$) and education of caregivers (SMD = 0.99 (0.72, 1.36); $p = .96$; $I^2 = 81\%$). Some other factors were also discussed qualitatively.

Conclusion: Our study shows that some significant risk factors might cause uncontrolled asthma in children and adolescents like past hypersensitivity reactions and incomplete controller adherence.

Keywords: Uncontrolled asthma; adolescents; children; risk factors.

SUPPLEMENTARY INFO

Publication types, MeSH terms, Substancesexpand

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Randomized Controlled Trial

J Asthma

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. 2024 May;61(5):396-404.

doi: 10.1080/02770903.2023.2280906. Epub 2023 Nov 15.

Asthma and anxiety in children and adolescents: characteristics and treatment outcomes

[Nicole J Fleischer¹](#), [Elizabeth Gosch²](#), [Michael B Roberts²](#), [Anne Marie Albano³](#), [Golda Ginsburg⁴](#), [John Piacentini⁵](#), [Boris Birmaher⁶](#), [Scott N Compton⁷](#), [John Walkup⁸](#), [Philip C Kendall⁹](#), [Matthew M Carper¹⁰](#)

Affiliations expand

- PMID: 37930754
- DOI: [10.1080/02770903.2023.2280906](https://doi.org/10.1080/02770903.2023.2280906)

Abstract

Objective: This study (a) examined anxious youth with and without asthma on measures of negative self-talk, parental psychopathology, worry content, physical symptoms, panic symptoms, generalized symptoms, and separation anxiety symptoms, and (b) tested if outpatient CBT or medication were differentially effective in reducing anxiety for youth with asthma and anxiety.

Methods: This secondary analysis separated youth with an anxiety disorder into asthma and non-asthma groups. Youth were also compared on response to treatments (i.e. CBT, sertraline, combined, and placebo).

Results: A total of 488 participants participated in the original study, with an average age of 10 years (*SD* 2.87). Youth with comorbid asthma and anxiety demonstrated higher rates of negative self-talk. Youth with comorbid asthma and anxiety did not differ from the non-asthma group on measures of physical symptoms, anxiety disorder specific symptoms, parental psychopathology, or worry content. Youth with asthma and anxiety responded similarly to the non-asthma group to treatment across treatment conditions.

Conclusions: Treatment was comparably effective for youth with comorbid asthma and anxiety and youth with anxiety. Future research could examine the effects of psychopharmaceuticals on asthma and anxiety comorbidity.

Keywords: Pediatrics; behavioral health; behavioral medicine; psychopathology.

SUPPLEMENTARY INFO

Publication types, MeSH terms, Substances expand

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22

Indian J Pediatr

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. 2024 May;91(5):441-447.

doi: 10.1007/s12098-023-04706-6. Epub 2023 Jul 7.

[Effect of Long-term Inhaled Corticosteroids on the Hypothalamic-Pituitary-Adrenal Axis in Children with Asthma](#)

[Lekshmi Sambhu Hema](#)¹, [Prawin Kumar](#)², [Jagdish Prasad Goyal](#)¹, [Varuna Vyas](#)¹, [Kuldeep Singh](#)¹

Affiliations expand

- PMID: 37418102
- DOI: [10.1007/s12098-023-04706-6](https://doi.org/10.1007/s12098-023-04706-6)

Abstract

Objectives: To assess the effect of the long-term use of inhaled corticosteroids (ICS) on the hypothalamic-pituitary-adrenal (HPA) axis.

Methods: Children (5-18 y) diagnosed with asthma and on ICS therapy for ≥ 6 mo were included. In the first step, screening with fasting at 8 AM, cortisol level was measured; a

value <15 mcg/dl was considered low. Children with low fasting cortisol levels were subjected to adreno-corticotrophic hormone (ACTH) stimulation test in the second step. Post-ACTH stimulation, cortisol level <18 mcg/dl was considered to have HPA axis suppression.

Results: A total of 78 children (males 55, 70.5%) diagnosed with asthma, with a median age of 11.5 (8, 14) y, were enrolled. The median duration of ICS use was 12 (12-24) mo. The median value of post-ACTH stimulation cortisol level was 22.5 (20.6, 25.5) mcg/dl, and a value <18 mcg/dl was observed in 4 (5.1%; 95% CI 0.2-10%) children. There was statistically no significant correlation between low post-ACTH stimulation cortisol level with ICS dose ($p = 0.23$) and asthma control ($p = 0.67$). None of the children had clinical features of adrenal insufficiency.

Conclusions: In this study, a few children had low post-ACTH stimulation cortisol values; however, none had clinical evidence of HPA axis suppression. Therefore, ICS is a safe drug in children for treating asthma, even for long-term use.

Keywords: ACTH stimulation test; Asthma; Cortisol; Hypothalamic-pituitary-adrenal (HPA) axis; Inhaled corticosteroid (ICS).

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- [Cited by 1 article](#)
- [21 references](#)

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23

BMC Pediatr

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. 2024 Apr 30;24(1):288.

doi: 10.1186/s12887-024-04762-7.

Risk factors of sleep-disordered breathing and poor asthma control in children with asthma

[Minghui Tao](#) ^{#1}, [Yanping Zhang](#) ^{#2}, [Ling Ding](#) ³, [Donghong Peng](#) ⁴

Affiliations expand

- PMID: 38689232
- DOI: [10.1186/s12887-024-04762-7](https://doi.org/10.1186/s12887-024-04762-7)

Abstract

Background: Sleep-disordered breathing (SDB) may lead to poor asthma control in children.

Objective: To identify risk factors of SDB in children with asthma and assess its impact on asthma control.

Methods: In this cross-sectional study, we collected data of outpatients with asthma at the Children's Hospital of Chongqing Medical University from June 2020 to August 2021. The Pediatric Sleep Questionnaire-Sleep-Related Breathing Disorder and the age-appropriate asthma control tests Childhood Asthma Control Test and Test for Respiratory and Asthma Control in Kids were completed.

Results: We enrolled 397 children with a male-to-female ratio of 1.7:1 and a mean age of 5.70 ± 2.53 years. The prevalence of SDB was 21.6%. Allergic rhinitis (odds ratio OR = 3.316), chronic tonsillitis (OR = 2.246), gastroesophageal reflux (OR = 7.518), adenoid hypertrophy (OR = 3.479), recurrent respiratory infections (OR = 2.195), and a family history of snoring (OR = 2.048) were risk factors for the development of combined SDB in children with asthma ($p < 0.05$). Asthma was poorly controlled in 19.6% of the children. SDB (OR = 2.391) and irregular medication use (OR = 2.571) were risk factors for poor asthma control ($p < 0.05$).

Conclusions: Allergic rhinitis, chronic tonsillitis, gastroesophageal reflux, adenoid hypertrophy, recurrent respiratory infections, and a family history of snoring were

independent risk factors for the development of SDB in children with asthma. SDB and irregular medication use were independent risk factors for poor asthma control.

Keywords: Asthma; Children; Risk factors; Sleep-disordered breathing.

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- [56 references](#)

SUPPLEMENTARY INFO

Publication types, MeSH termsexpand

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Cite

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24

J Asthma

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. 2024 Apr 30:1-7.

doi: 10.1080/02770903.2024.2349605. Online ahead of print.

[Early response to Tezepelumab in type-2 severe asthma patients non-responders to other biological treatments: a real-life study](#)

[Miguel Jiménez-Gómez¹](#), [Rocío Magdalena Díaz-Campos^{1,2}](#), [Álvaro Gimeno-Díaz-De-Atauri^{2,3}](#), [Consuelo Fernández-Rodríguez^{2,4}](#), [Jesús Fernández-Crespo^{2,4}](#), [Ismael García-Moguel^{2,4}](#)

Affiliations expand

- PMID: 38686823

- DOI: [10.1080/02770903.2024.2349605](https://doi.org/10.1080/02770903.2024.2349605)

Abstract

BACKGROUND. Biologic therapies play a crucial role in the treatment of severe asthma. Tezepelumab, a human monoclonal antibody (mAb), inhibits thymic stromal lymphopoietin, a pivotal factor in the pathophysiology of asthma. Although randomized clinical trials have demonstrated the efficacy of Tezepelumab, evidence gaps remain in real-world scenarios. **OBJECTIVE.** We sought investigate Tezepelumab's response in a clinical setting, focusing on patients who previously failed to other asthma mAbs. **METHODS.** Real-life study with severe uncontrolled asthma patients despite mAb treatment, requiring a switch to Tezepelumab. Follow-up was done four to six months after initiation of Tezepelumab. The primary endpoint was to evaluate the response in patients with poor response or intolerance to other mAbs. **RESULTS.** Nine patients were followed up during 7 months. Patients were predominantly middle-aged females with eosinophilic or eosinophilic-allergic phenotypes. Patients had a median failure rate of 2 mAbs (IQR 2-3), with an uncontrolled asthma (median of 2 severe exacerbations the previous year, airflow obstruction and 78% corticosteroid dependence). Tezepelumab demonstrated after 4 to 6 months of treatment reduce corticosteroid dependence (complete withdrawal in 2/7 patients), no exacerbations in 6/9, symptoms control improvement (Asthma Control Test score improved in 5/9) and modulate lung function (improving in 3/9 patients). These findings align with clinical trial results, suggesting Tezepelumab's potential in real-world settings. **CONCLUSION.** In real-world scenarios, despite the study's limitations, our results underscore Tezepelumab's promise as a therapeutic option for uncontrolled severe asthma, and may be useful for non-responders to other mAbs. Further studies are needed to corroborate these findings.

Keywords: Tezepelumab; biologic treatment; severe uncontrolled asthma.

FULL TEXT LINKS



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Allergy



. 2024 Apr 30.

doi: 10.1111/all.16146. Online ahead of print.

The effects of inhaled corticosteroids on healthy airways

[Emanuele Marchi](#)¹, [Timothy S C Hinks](#)¹, [Matthew Richardson](#)², [Latifa Khalfaoui](#)², [Fiona A Symon](#)², [Poojitha Rajasekar](#)³, [Rachel Clifford](#)³, [Beverley Hargadon](#)², [Cary D Austin](#)⁴, [Julia L Maclsaac](#)⁵, [Michael S Kobor](#)⁵, [Salman Siddiqui](#)², [Jordan S Mar](#)⁴, [Joseph R Arron](#)⁴, [David F Choy](#)⁴, [Peter Bradding](#)²

Affiliations expand

- PMID: 38686450
- DOI: [10.1111/all.16146](https://doi.org/10.1111/all.16146)

Abstract

Background: The effects of inhaled corticosteroids (ICS) on healthy airways are poorly defined.

Objectives: To delineate the effects of ICS on gene expression in healthy airways, without confounding caused by changes in disease-related genes and disease-related alterations in ICS responsiveness.

Methods: Randomized open-label bronchoscopy study of high-dose ICS therapy in 30 healthy adult volunteers randomized 2:1 to (i) fluticasone propionate 500 mcg bd daily or (ii) no treatment, for 4 weeks. Laboratory staff were blinded to allocation. Biopsies and brushings were analysed by immunohistochemistry, bulk RNA sequencing, DNA methylation array and metagenomics.

Results: ICS induced small between-group differences in blood and lamina propria eosinophil numbers, but not in other immunopathological features, blood neutrophils, FeNO, FEV₁, microbiome or DNA methylation. ICS treatment upregulated 72 genes in brushings and 53 genes in biopsies, and downregulated 82 genes in brushings and 416 genes in biopsies. The most downregulated genes in both tissues were canonical markers of type-2 inflammation (FCER1A, CPA3, IL33, CLEC10A, SERPINB10 and CCR5), T cell-

mediated adaptive immunity (TARP, TRBC1, TRBC2, PTPN22, TRAC, CD2, CD8A, HLA-DQB2, CD96, PTPN7), B-cell immunity (CD20, immunoglobulin heavy and light chains) and innate immunity, including CD48, Hobit, RANTES, Langerin and GFI1. An IL-17-dependent gene signature was not upregulated by ICS.

Conclusions: In healthy airways, 4-week ICS exposure reduces gene expression related to both innate and adaptive immunity, and reduces markers of type-2 inflammation. This implies that homeostasis in health involves tonic type-2 signalling in the airway mucosa, which is exquisitely sensitive to ICS.

Keywords: asthma; bronchial biopsy; epigenetics; health; inhaled corticosteroids; microbiome; transcriptome.

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Grants and funding [expand](#)

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[Review](#)

Eur Respir Rev

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. 2024 Apr 24;33(172):230238.

doi: 10.1183/16000617.0238-2023. Print 2024 Apr 30.

Biologic agents licensed for severe asthma: a systematic review and meta-analysis of randomised controlled trials

[Christos Kyriakopoulos](#)¹, [Athena Gogali](#)¹, [Georgios Markozannes](#)², [Konstantinos Kostikas](#)³

Affiliations expand

- PMID: 38657997
- PMCID: [PMC11040390](#)
- DOI: [10.1183/16000617.0238-2023](#)

Abstract

Background: Six biologic agents are now approved for patients with severe asthma. This meta-analysis aimed to assess the efficacy and safety of licensed biologic agents in patients with severe asthma, including the recently approved tezepelumab.

Methods: We searched MEDLINE, Embase and CENTRAL to identify randomised controlled trials involving licensed biologics until 31 January 2023. We used random-effects meta-analysis models for efficacy, including subgroup analyses by individual agents and markers of T2-high inflammation (blood eosinophils and fractional exhaled nitric oxide), and assessed safety.

Results: 48 studies with 16 350 patients were included in the meta-analysis. Biologics were associated with a 44% reduction in the annualised rate of asthma exacerbations (rate ratio 0.56, 95% CI 0.51-0.62) and 60% reduction of hospitalisations (rate ratio 0.40, 95% CI 0.27-0.60), a mean increase in the forced expiratory volume in 1 s of 0.11 L (95% CI 0.09-0.14), a reduction in asthma control questionnaire by 0.34 points (95% CI -0.46--0.23) and an increase in asthma quality of life questionnaire by 0.38 points (95% CI 0.26-0.49). There was heterogeneity between different classes of biologics in certain outcomes, with overall greater efficacy in patients with T2 inflammation. Overall, biologics exhibited a favourable safety profile.

Conclusions: This comprehensive meta-analysis demonstrated that licensed asthma biologics reduce exacerbations and hospitalisations, improve lung function, asthma control

and quality of life, and limit the use of systemic corticosteroids, with a favourable safety profile. These effects are more prominent in patients with evidence of T2 inflammation.

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Conflict of interest statement

Conflict of interest: A. Gogali has received consulting fees from Boehringer Ingelheim and Chiesi; and payment or honoraria for lectures, presentations or educational events from AstraZeneca, Boehringer Ingelheim, Chiesi, ELPEN, GSK and Novartis. K. Kostikas has received grants from AstraZeneca, Boehringer Ingelheim, Chiesi, Innovis, ELPEN, GSK, Menarini, Novartis and NuvoAir; consulting fees from AstraZeneca, Boehringer Ingelheim, Chiesi, CSL Behring, ELPEN, GSK, Menarini, Novartis, Pfizer and Sanofi Genzyme; and payment or honoraria for lectures, presentations or educational events from AstraZeneca, Boehringer Ingelheim, Chiesi, CSL Behring, ELPEN, GSK, Menarini, Novartis, Pfizer and Sanofi Genzyme. K. Kostikas is a member of the GOLD Assembly. C. Kyriakopoulos and G. Markozannes declare no competing interests.

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

SUPPLEMENTARY INFO

Publication types, MeSH terms, Substancesexpand

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27

BMC Pulm Med

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. 2024 Apr 29;24(1):210.

doi: 10.1186/s12890-024-03028-3.

The diagnostic impact of fractional exhaled nitric oxide for asthmatic cough in nontuberculous mycobacterial pulmonary disease

[Mari Miki](#)^{1,2}, [Keisuke Miki](#)³, [Eri Akiba](#)³, [Hiroyuki Kagawa](#)⁴, [Yohei Oshitani](#)⁵, [Takanori Matsuki](#)³, [Kazuyuki Tsujino](#)³, [Seigo Kitada](#)⁶, [Ryoji Maekura](#)³, [Hiroshi Kida](#)³

Affiliations expand

- PMID: 38684989
- PMCID: [PMC11059766](#)
- DOI: [10.1186/s12890-024-03028-3](#)

Abstract

Background: Measurement of exhaled nitric oxide (FeNO) is a potentially useful diagnostic test for asthma. However, no study has explored the relationship between FeNO and respiratory symptoms of nontuberculous mycobacterial pulmonary disease (NTM-PD) complicated with asthma. The objective of this study was to assess the utility of measuring FeNO levels in patients with NTM-PD complicated by asthma.

Methods: In this single-center retrospective cohort study, 140 NTM-PD patients with FeNO measured were enrolled. We selected NTM-PD patients who complicated with asthma as the NTM+BA group, defined using the following criteria: NTM patients with symptoms consistent with asthma, and NTM patients with symptomatic improvement after diagnostic therapy with ICS ± a long-acting beta 2-agonist (LABA). We then calculated a diagnostic cutoff point to distinguish between the NTM+BA groups and the NTM groups (all others). High-resolution computed tomography (HRCT) images were evaluated using the CT scoring system and their association with FeNO was examined.

Results: A total of 89 patients were included in the study. (31 in the NTM+BA group and 58 in the NTM group). Compared with the NTM group, the NTM+BA group had higher rates of allergic disease (51.6% vs. 22.4%; $p=0.0085$) and higher FeNO values (median, 23 [interquartile range {IQR}, 15.0-43.0] ppb vs. median, 17 [IQR, 11.8-23.0] ppb; $p=0.015$). With diagnostic asthma care using mainly ICS/LABA with reference to the FeNO, most patients (91.0%, 20/22) in the NTM-preceding subgroup in the NTM+BA group

demonstrated a prompt improvement of their symptoms and AFB culture findings did not worsen (Culture positive rate (%): Pre-treatment: 59.1% vs. Post-treatment: 40.9%, $p=0.3660$) at 6 months after starting diagnostic therapy. The optimal diagnostic cutoff point of FeNO to distinguish between the two groups was calculated as 21.5 ppb by the ROC curve (sensitivity 75%, specificity 71.93%, $p<0.0001$; area under the curve: 0.7989). No significant correlation was observed between FeNO and the severity of CT images in the patients.

Conclusions: A certain number of patients with NTM-PD showed exacerbated respiratory symptoms due to asthmatic complications. Elevated FeNO levels suggest asthma complications, even in patients with NTM.

Keywords: Asthma; Bronchial ectasia; Exhaled nitric oxide; High-resolution computed tomography; Nontuberculous mycobacteria.

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Conflict of interest statement

The authors declare no competing interests.

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

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MeSH terms, Substances [expand](#)

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[Review](#)

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. 2024 Apr 29;34(1):6.

doi: 10.1038/s41533-024-00363-0.

Reducing short-acting beta-agonist use in asthma: Impact of national incentives on prescribing practices in England and the findings from SENTINEL Plus early adopter sites

[M G Crooks](#)^{1,2}, [H Cummings](#)³, [A H Morice](#)^{4,3}, [D Sykes](#)^{4,3}, [S Brooks](#)⁵, [A Jackson](#)⁵, [Y Xu](#)⁵

Affiliations expand

- PMID: 38684652
- PMCID: [PMC11058200](#)
- DOI: [10.1038/s41533-024-00363-0](#)

Abstract

Short-acting beta-agonist (SABA) over-use in asthma is harmful for patients and the environment. The Investment and Impact Fund (IIF) 2022/2023 financially rewarded English primary care networks that achieved specific targets, including reducing SABA over-use (RESP-02) and lowering the mean carbon footprint per salbutamol inhaler prescribed (ES-02). SENTINEL Plus is a co-designed quality improvement package that aims to improve asthma outcomes and reduce asthma's environmental impact by addressing SABA over-use. We investigated the impact of (i) the IIF incentives and (ii) SENTINEL Plus implementation on asthma prescribing. Using Openprescribing.net data, we demonstrate that IIF 2022-2023 had no significant impact on the total number of SABA prescribed in England (25,927,252 during 12-months pre- and 25,885,213 12-months post-IIF; 0.16% decrease; $p=NS$), but lower carbon footprint SABA inhaler use increased (Salamol™ prescribing increased from 5.1% to 19% of SABA prescriptions, $p < 0.01$). In contrast,

SENTINEL Plus sites significantly reduced SABA prescribing post-implementation (5.43% decrease, $p < 0.05$).

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Conflict of interest statement

Michael G Crooks has received grants from the National Institute for Health and Care Research, AstraZeneca, Boehringer Ingelheim, Chiesi, Phillips, and Pfizer; honoraria and/or non-financial support from AstraZeneca, Boehringer Ingelheim, Chiesi, GlaxoSmithKline, Novartis and Pfizer. Helena Cummings has received honoraria from AstraZeneca, Chiesi, Sandoz, and Pfizer. Alyn H Morice received grants from AstraZeneca, Boehringer Ingelheim, Chiesi, MSD and Bayer; honoraria and/or non-financial support from AstraZeneca, Boehringer Ingelheim, Chiesi and MSD. Dominic Sykes has nothing to disclose. Samantha Brooks, Arthur Jackson and Yang Xu are employees of AstraZeneca. Arthur Jackson and Yang Xu own stock in AstraZeneca.

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

SUPPLEMENTARY INFO

Publication types, MeSH terms, Substances, Grants and funding [expand](#)

FULL TEXT LINKS



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Cite

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[Editorial](#)

Br J Gen Pract

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. 2024 Apr 29:bjgp24X738201.

doi: 10.3399/bjgp24X738201. Online ahead of print.

[Asthma deaths in children in the UK the last straw!](#)

[Mark L Levy](#)¹, [Louise Fleming](#)², [Andrew Bush](#)³

Affiliations expand

- PMID: 38684376
- DOI: [10.3399/bjgp24X738201](https://doi.org/10.3399/bjgp24X738201)

No abstract available

SUPPLEMENTARY INFO

Publication types expand

FULL TEXT LINKS



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Cite

Share

30

Randomized Controlled Trial

J Med Internet Res

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. 2024 Apr 29;26:e50855.

doi: 10.2196/50855.

Digital Self-Management Platform for Adult Asthma: Randomized Attention-Placebo Controlled Trial

[Aaron Kandola](#)^{1,2}, [Kyra Edwards](#)³, [Joris Straatman](#)², [Bettina Dührkoop](#)², [Bettina Hein](#)², [Joseph Hayes](#)^{2,3,4}

Affiliations expand

- PMID: 38684084
- DOI: [10.2196/50855](https://doi.org/10.2196/50855)

Free article

Abstract

Background: Asthma is one of the most common chronic conditions worldwide, with a substantial individual and health care burden. Digital apps hold promise as a highly accessible, low-cost method of enhancing self-management in asthma, which is critical to effective asthma control.

Objective: We conducted a fully remote randomized controlled trial (RCT) to assess the efficacy of juli, a commercially available smartphone self-management platform for asthma.

Methods: We conducted a pragmatic single-blind, RCT of juli for asthma management. Our study included participants aged 18 years and older who self-identified as having asthma and had an Asthma Control Test (ACT) score of 19 or lower (indicating uncontrolled asthma) at the beginning of the trial. Participants were randomized (1:1 ratio) to receive juli for 8 weeks or a limited attention-placebo control version of the app. The primary outcome measure was the difference in ACT scores after 8 weeks. Secondary outcomes included remission (ACT score greater than 19), minimal clinically important difference (an improvement of 3 or more points on the ACT), worsening of asthma, and health-related quality of life. The primary analysis included participants using the app for 8 weeks (per-protocol analysis), and the secondary analysis used a modified intention-to-treat (ITT) analysis.

Results: We randomized 411 participants between May 2021 and April 2023: a total of 152 (37%) participants engaged with the app for 8 weeks and were included in the per-protocol analysis, and 262 (63.7%) participants completed the week-2 outcome assessment and were included in the modified ITT analysis. Total attrition between baseline and week 8

was 259 (63%) individuals. In the per-protocol analysis, the intervention group had a higher mean ACT score (17.93, SD 4.72) than the control group (16.24, SD 5.78) by week 8 (baseline adjusted coefficient 1.91, 95% CI 0.31-3.51; P=.02). Participants using juli had greater odds of achieving or exceeding the minimal clinically important difference at 8 weeks (adjusted odds ratio 2.38, 95% CI 1.20-4.70; P=.01). There were no between group differences in the other secondary outcomes at 8 weeks. The results from the modified ITT analyses were similar.

Conclusions: Users of juli had improved asthma symptom control over 8 weeks compared with users of a version of the app with limited functionality. These findings suggest that juli is an effective digital self-management platform that could augment existing care pathways for asthma. The retention of patients in RCTs and real-world use of digital health care apps is a major challenge.

Trial registration: International Standard Randomised Controlled Trial Number (ISRCTN) registry ISRCTN87679686; <https://www.isrctn.com/ISRCTN87679686>.

Keywords: RCT; RCTs; app; application; applications; apps; asthma; breathing; chronic; controlled trial; controlled trials; digital health; disease management; mHealth; mobile health; mobile phone; platform; pulmonary; randomized; randomized controlled trial; respiratory; self-management; smartphone.

©Aaron Kandola, Kyra Edwards, Joris Straatman, Bettina Dührkoop, Bettina Hein, Joseph Hayes. Originally published in the Journal of Medical Internet Research (<https://www.jmir.org>), 29.04.2024.

SUPPLEMENTARY INFO

Publication types, MeSH termsexpand

FULL TEXT LINKS



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

1
Clin Transl Allergy

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. 2024 May;14(5):e12353.

doi: 10.1002/ctt2.12353.

Proof-of-concept study of anti-Fel d 1 IgY antibodies in cat food using the MASK-air® app

[Jean Bousquet](#)^{1,2,3}, [Alina Gherasim](#)⁴, [Frédéric de Blay](#)^{5,6}, [Eve Mathieu-Dupas](#)⁷, [Géraldine Batot](#)⁷, [Daniel Laune](#)⁷, [Bernardo Sousa-Pinto](#)^{8,9}, [Torsten Zuberbier](#)^{1,2}, [Nhân Pham-Thi](#)^{10,11,12}; [MASK-cat study group](#)

Collaborators, Affiliations expand

- PMID: 38676659
- PMCID: [PMC11055507](#)
- DOI: [10.1002/ctt2.12353](#)

Abstract

Background: An innovation to better manage cat-allergic patients utilises anti-Fel d 1 IgY antibodies to neutralise Fel d 1 after its production by the cat. However, there is no published study showing its clinical efficacy in humans in a home setting. A longitudinal, open-label, proof-of-concept study was carried out to approach clinical efficacy of the cat food in cat-allergic patients.

Methods: After a baseline evaluation, the cats ate only the cat food for the following 4 months. Daily evaluation of efficacy was performed for 2 weeks at baseline and after 1, 2 and 3 months of intervention for periods of 2 weeks. The MASK-air app was used daily to assess symptoms, work productivity and medications.

Results: Of the 49 patients screened, 42 were followed up and 33 (78.5%) reported MASK-air data at all 3 evaluation periods. The primary end point (visual analogue scale [VAS] for global allergy symptoms) was significantly improved ($p < 0.0001$). All symptoms (VAS nose, eye, and asthma), VAS work and the combined symptom-medication score significantly improved after 1 month. The percentage of uncontrolled days (VAS > 20/100) decreased from 64% at baseline to 35% at 1 month ($p < 0.0001$) and 14% at 3 months. A sensitivity analysis in patients with uncontrolled disease at baseline found similar results.

Discussion: A cat diet containing anti-Fel d 1 antibodies was able to (i) show decreased allergic symptoms and related outcomes, (ii) inform the design and feasibility of future studies with a control arm and (iii) estimate the sample size of the study.

Study registration number: clinicaltrials.gov: [NCT05656482](https://clinicaltrials.gov/ct2/show/study/NCT05656482).

Keywords: anti-Fel d 1 antibodies; asthma; cat allergy; cat food; combined symptom-medication score; conjunctivitis; rhinitis.

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Conflict of interest statement

JB reports personal fees from Cipla, Menarini, Mylan, Novartis, Purina, Sanofi-Aventis, Teva, Noucor, other from KYomed-Innov, other from Mask-air-SAS, outside the submitted work. TZ reports grants and personal fees from Novartis, grants and personal fees from Henkel, personal fees from Bayer, personal fees from FAES, personal fees from Astra Zeneca, personal fees from AbbVie, personal fees from ALK, personal fees from Almirall, personal fees from Astellas, personal fees from Bayer, personal fees from Bencard, personal fees from Berlin Chemie, personal fees from FAES, personal fees from Hal, personal fees from Leti, personal fees from Mesa, personal fees from Menarini, personal fees from Merck, personal fees from MSD, personal fees from Novartis, personal fees from Pfizer, personal fees from Sanofi, personal fees from Stallergenes, personal fees from Takeda, personal fees from Teva, personal fees from UCB, personal fees from Henkel, personal fees from Kryolan, personal fees from L'Oreal, outside the submitted work; and Organisational affiliations: Committee member: WHO-Initiative "Allergic Rhinitis and Its Impact on Asthma" (ARIA); Member of the Board: German Society for Allergy and Clinical Immunology (DGAKI); Head: European Centre for Allergy Research Foundation (ECARF); President: Global Allergy and Asthma European Network (GA2LEN); Member: Committee on Allergy Diagnosis and Molecular Allergology, World Allergy Organisation (WAO). FdB reports other from NOVARTIS, other from ALK, other from STALLERGENES, other from REGENERON, other from DBV, other from SANOFI, other from BOEHRINGER, and other from ASTRAZENECA, outside the submitted work. The other authors have nothing to disclose, outside the submitted work.

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

SUPPLEMENTARY INFO

Associated data, Grants and fundingexpand

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Pediatr Pulmonol

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. 2024 May;59(5):1313-1320.

doi: 10.1002/ppul.26908. Epub 2024 Feb 14.

Acute exposure to pollen and airway inflammation in adolescents

[Nicholas J Nassikas](#)¹, [Heike Luttmann-Gibson](#)², [Sheryl L Rifas-Shiman](#)³, [Emily Oken](#)³, [Diane R Gold](#)^{2,4}, [Mary B Rice](#)¹

Affiliations expand

- PMID: 38353177
- PMCID: PMC11058013 (available on 2025-05-01)
- DOI: [10.1002/ppul.26908](https://doi.org/10.1002/ppul.26908)

Abstract

Introduction: Pollen exposure is known to exacerbate allergic asthma and allergic rhinitis symptoms, yet few studies have investigated if exposure to pollen affects lung function or airway inflammation in healthy children.

Methods: We evaluated the extent to which higher pollen exposure was associated with differences in airway inflammation and lung function among 490 early adolescent participants (mean age of 12.9 years) in Project Viva, a prebirth cohort based in

Massachusetts. We obtained regional daily total pollen counts, including tree, grass, and weed pollen, from a Rotorod pollen counter. We evaluated associations of 3- and 7-day moving averages of pollen with fractional exhaled nitric oxide (FeNO) and lung function using linear regression models and evaluated the linearity of associations with penalized splines. We tested if associations of pollen with FeNO and lung function were modified by current asthma diagnosis, history of allergic rhinitis, aeroallergen sensitivity, temperature, precipitation, and air pollution.

Results: Three- and 7-day median pollen concentrations were 19.0 grains/m³ (IQR: 73.4) and 20.9 grains/m³ (IQR: 89.7). In main models, higher concentrations of total pollen over the preceding 3 and 7 days were associated with a 4.6% (95% CI: 0.1,9.2) and 7.4% (95% CI: 0.9,14.3) higher FeNO per IQR of pollen, respectively. We did not find associations of pollen with lung function in main models. Asthma, allergic rhinitis, precipitation, and air pollution (nitrogen dioxide and ozone) modified associations of pollen with lung function ($P_{\text{interaction}} < 0.1$), while temperature, sex, and aeroallergen sensitization did not.

Conclusion: Short-term exposure to pollen was associated with higher FeNO in early adolescents, even in the absence of allergic sensitization and asthma.

Keywords: aeroallergen; asthma; climate change; exhaled nitric oxide; lung function.

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Conflict of interest statement

Summary conflict of interest statements: Dr. Nassikas reports receiving grant from the NIH, honoraria from Stanford University and Columbia University, and payments from Industrial Economics, Inc., unrelated to this work. Drs. Gold and Oken report receiving grants from the NIH. Dr. Rice reports receiving grants from the NIH, honoraria paid by USC, U. Utah, NYU, UNC, and UVM for serving as visiting professor and giving a lecture, and payments from the Conservation Law Foundation, unrelated to the submitted work.

Conflict of interest statement

The authors have no potential conflicts of interest to disclose.

- [40 references](#)

SUPPLEMENTARY INFO

Publication types, MeSH terms, Substances, Grants and fundingexpand

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Randomized Controlled Trial

Am J Rhinol Allergy

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. 2024 May;38(3):153-158.

doi: 10.1177/19458924241229160. Epub 2024 Feb 8.

The Surprising Effect of Priming on SNOT-22 Results

[Ibtisam Mohammad](#)^{1,2}, [Taylor Stack](#)¹, [Meghan Norris](#)¹, [Sulgi Kim](#)¹, [Meredith Lamb](#)¹, [Brian D Thorp](#)¹, [Christine Klatt-Cromwell](#)¹, [Charles S Ebert Jr](#)¹, [Adam J Kimple](#)¹, [Brent A Senior](#)¹

Affiliations expand

- PMID: 38332587
- PMCID: [PMC11000435](#)
- DOI: [10.1177/19458924241229160](#)

Abstract

Background: Priming is a psychological phenomenon where subconscious cues in the environment impact our behavioral responses in certain situations. Well studied in the worlds of business, marketing, and even politics, it is unclear how the priming phenomenon impacts patient perception of their own disease state nor how they report that perception using tools like the Sinonasal Outcomes Test (SNOT-22), used to measure that perception in chronic rhinosinusitis.

Objective: To determine the impact of positive or negative priming on self-reported patient perception of their chronic rhinosinusitis disease using the SNOT-22 disease-specific quality of life instrument.

Methods: Single-blind, randomized, prospective cohort pilot study of 206 consecutive adult patients with a clinical diagnosis of chronic rhinosinusitis presenting to a university rhinology clinic. Patients were randomized to receive "positive priming" (103) or "negative priming" (103) by reading a passage about the positive or negative aspects of chronic sinusitis and its treatment respectively. Patients were then asked to fill out the SNOT-22 and results between the two groups were compared.

Results: The negative priming group had a higher median SNOT-22 score of 49 [IQR = 39] compared to the positive priming groups' score of 22 [IQR = 27], $p < 0.0001$, a difference of nearly three times the minimal clinical impactful difference (MCID). This effect was consistent regardless of age or sex of the patient. Subgroup analysis revealed a greater impact when priming was performed by the senior male attending regardless of patient age or sex ($p < 0.001$), while priming performed by the younger female research fellow had greater impact on older patients (> 59 years, $p = 0.001$) and female patients ($p = 0.003$).

Conclusions: Priming impacts how patient's perceive their chronic rhinosinusitis as determined by the SNOT-22. It is imperative that the rhinologist understand this when using this instrument in research applications and in clinical decision-making for patients.

Keywords: SNOT-22; allergic rhinitis; chronic rhinosinusitis; health burden; outcomes; priming; psychology; quality of life; septal deviation; sinus surgery.

Conflict of interest statement

Declaration of Conflicting InterestsThe authors declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

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

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J Allergy Clin Immunol Glob

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. 2024 Jan 6;3(2):100206.

doi: 10.1016/j.jacig.2024.100206. eCollection 2024 May.

Long-term efficacy of house dust mite sublingual immunotherapy on clinical and pulmonary function in patients with asthma and allergic rhinitis

[Makoto Hoshino](#)¹, [Kenta Akitsu](#)², [Junichi Ohtawa](#)², [Kengo Kubota](#)²

Affiliations expand

- PMID: 38328802
- PMCID: [PMC10847160](#)
- DOI: [10.1016/j.jacig.2024.100206](#)

Abstract

Background: A previous study reported that house dust mite (HDM) sublingual immunotherapy (SLIT) for 48 weeks was effective as add-on treatment for allergic asthma; however, data regarding its long-term efficacy are scarce.

Objective: We sought to evaluate the effect of HDM SLIT on asthma control, pulmonary function, and airway inflammation and remodeling throughout the 5-year treatment period.

Methods: A total of 140 patients with asthma and allergic rhinitis sensitized to HDM were randomized to receive either drugs alone or drugs plus SLIT for 5 years. The 5-item Asthma Control Questionnaire (ACQ-5), Asthma Quality of Life Questionnaire (AQLQ), Rhinoconjunctivitis Quality of Life Questionnaire (RQLQ), spirometry, quantitative computed tomography, and type 2 biomarkers were assessed.

Results: An improvement in the ACQ-5, AQLQ, and RQLQ scores was observed in the SLIT group compared with the control group. HDM SLIT increased lung function and reduced the percentage of airway wall area. The levels of fractional exhaled nitric oxide (Feno), blood eosinophil, serum specific IgE for HDM, and total IgE decreased and were sustained during the 5 years. The change in type 2 biomarkers correlated with change in the AQLQ score. On the basis of receiver-operating characteristic analysis for predicting responders, the area under the receiver-operating characteristic curve in FEV₁% predicted, airway wall area, Feno, and specific IgE was high. Multivariate regression analysis showed that the strongest predictor of responders was Feno.

Conclusions: HDM SLIT continued to provide sustained efficacy, improve lung function, and prevent progression of airway inflammation and remodeling in asthma throughout the 5-year treatment period.

Keywords: Airway inflammation; allergic rhinitis; asthma; house dust mite sublingual immunotherapy; long-term efficacy; pulmonary function; quality of life; remodeling; symptom; type 2 biomarker.

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

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Laryngoscope

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. 2024 May;134(5):2077-2084.

doi: 10.1002/lary.31120. Epub 2023 Nov 2.

Two-Year Outcomes After Radiofrequency Neurolysis of Posterior Nasal Nerve in Chronic Rhinitis

[Jivianne T Lee](#)¹, [Gregory M Abbas](#)², [Daniel D Charous](#)³, [Mandy Cuevas](#)⁴, [Önder Göktas](#)⁵, [Patricia A Loftus](#)⁶, [Nathan E Nachlas](#)⁷, [Elina M Toskala](#)⁸, [Jeremy P Watkins](#)⁹, [Detlef Brehmer](#)^{10 11 12}

Affiliations expand

- PMID: 37916848
- DOI: [10.1002/lary.31120](https://doi.org/10.1002/lary.31120)

Abstract

Objective: To assess the long-term safety and effectiveness of temperature-controlled radiofrequency (TCRF) neurolysis of the posterior nasal nerve (PNN), a minimally invasive treatment for chronic rhinitis.

Methods: A prospective, single-arm study of 129 patients at 16 centers (United States, Germany) was conducted. Patient-reported outcome measures were the 24-h reflective total nasal symptom score (rTNSS) and mini rhinoconjunctivitis quality of life questionnaire (MiniRQLQ). Postnasal drip and cough symptoms were assessed using a 4-point scale.

Results: The mean pretreatment rTNSS was 7.8 (95% CI, 7.5-8.1). The significant rTNSS treatment effect at 3 months (-4.2 [95% CI, -4.6 to -3.8]; $p < 0.001$) was sustained through 2 years (-4.5 [95% CI, -5.0 to -3.9]; $p < 0.001$), a 57.7% improvement. At 2 years, the proportion of patients with a minimal clinically important difference (MCID) of $\geq 30\%$ improvement in rTNSS from baseline was 80.0% (95% CI, 71.4%-86.5%). Individual postnasal drip and cough symptom scores were significantly improved from baseline through 2 years. The proportion of patients who reached the MCID for the MiniRQLQ (≥ 0.4 -point improvement) at 2 years was 77.4% (95% CI, 68.5%-84.3%). Of 81 patients using chronic rhinitis medications at baseline, 61.7% either stopped all medication use (28.4%) or stopped or decreased (33.3%) use of ≥ 1 medication class at 2 years. No device/procedure-related serious adverse events were reported throughout 2 years.

Conclusion: TCRF neurolysis of the PNN resulted in sustained improvements in chronic rhinitis symptom burden and quality of life through 2 years, accompanied by a substantial decrease in medication burden.

Level of evidence: 4 Laryngoscope, 134:2077-2084, 2024.

Keywords: MiniRQLQ; chronic rhinitis; neurolysis; posterior nasal nerve; quality of life; rTNSS; radiofrequency; temperature-controlled.

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- [29 references](#)

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Randomized Controlled Trial

Laryngoscope

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. 2024 May;134(5):2085-2092.

doi: 10.1002/lary.31137. Epub 2023 Nov 2.

The Efficacy of Budesonide as Intrapolyp Injection Agent in the Management of Type 2 CRSwNP

[Saad Elzayat¹](#), [Hesham Lasheen²](#), [Ibrahim Gehad¹](#), [Mohamed E El-Deeb¹](#), [Islam Soltan¹](#), [Mohammad M Aouf¹](#), [Ahmed Elgendy¹](#)

Affiliations expand

- PMID: 37916779
- DOI: [10.1002/lary.31137](https://doi.org/10.1002/lary.31137)

Abstract

Objectives: To assess the efficacy and safety of budesonide as an intrapolyp injection in chronic rhinosinusitis with nasal polyps (CRSwNP) in comparison to control and systemic steroids.

Method: In a prospective double-blinded controlled randomized clinical trial, 150 patients with CRSwNP were divided into 3 groups in a ratio 1:1:1 where group (A) was given oral prednisolone 1 mg/kg tapered daily for 2 weeks, group (B) was given budesonide intrapolyp injection weekly for 5 consecutive weeks, and group (C) was given intrapolyp injection with saline as the control group. Patients were assessed upon Sinonasal Outcome Test (SNOT-22) score, Total Nasal Polyp score (TNPS), Serum IgE, absolute eosinophilic count, and morning cortisol level before treatment, 1 week and 6 months after completing their treatment protocol.

Results: SNOT 22 score improved significantly in all groups compared to those at baseline. Reduction in the oral and injection groups was much greater than the control group ($P_2 < 0.001$), ($P_3 < 0.001$), and the same trend concerning TNPS score ($P_2 < 0.001$), ($P_3 < 0.001$) but with no significant change in the control group.

Conclusion: Intrapolyp steroid injection is considered a safe and effective method in nasal polyposis with limited side effects in comparison to systemic steroids. Using Budesonide as an agent for intrapolyp injection appears to be promising. It's advisable in patients with multiple relapses or high-risk patients to avoid repeated courses of oral steroids.

Level of evidence: 2 Laryngoscope, 134:2085-2092, 2024.

Keywords: Budesonide; chronic rhinosinusitis with nasal polyps; nasal polyps; oral steroid; prednisone.

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- [24 references](#)

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Int Forum Allergy Rhinol

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. 2024 May;14(5):928-938.

doi: 10.1002/alr.23288. Epub 2023 Oct 14.

[Elexacafter-tezacaftor-ivacaftor decreases pseudomonas abundance in the sinonasal microbiome in cystic fibrosis](#)

[Anna C Zemke](#)¹, [Yasmin Hilliam](#)², [Amanda L Stapleton](#)³, [Adam J Kimple](#)⁴, [Jennifer L Goralski](#)⁵, [Amber D Shaffer](#)³, [Joseph M Pilewski](#)¹, [Brent A Senior](#)⁴, [Stella E Lee](#)^{3,6}, [Vaughn S Cooper](#)⁷

Affiliations expand

- PMID: 37837613

- DOI: [10.1002/alr.23288](https://doi.org/10.1002/alr.23288)

Abstract

Background: Chronic rhinosinusitis (CRS) is common in individuals with cystic fibrosis (CF) and is marked by chronic inflammation and episodes of infection that negatively impact quality of life. Several studies have shown that elexacaftor-tezacaftor-ivacaftor (ETI) improves symptoms and examination findings in CF-CRS. The current study determines the effect of ETI on the sinonasal microbiota in CF.

Methods: Sinonasal samples were collected under endoscopic visualization before and after starting ETI. Samples were subjected to 16S amplicon sequencing and sequences were processed with the QIIME2 pipeline with subsequent analysis using the vegan R-package.

Results: Twenty-nine individual baseline samples and 23 sample pairs pre-/post-ETI were available. At baseline, the cohort had samples dominated by *Staphylococcus*, and alpha diversity was lower than that of a published reference set of individuals without sinonasal disease. Individuals with prior sinus surgery had lower alpha diversity as measured by Shannon Index, Observed Richness, and Faith's phylogenetic diversity Index. Beta diversity differed between individuals with and without allergic rhinitis, with higher *Staphylococcus* abundance in those with allergic rhinitis. No change in alpha or beta diversity was seen after a median of 9 months on ETI. With ETI, the *Pseudomonas* genus and the genus containing *Burkholderia* decreased in samples containing these taxa at baseline. *Pseudomonas* abundance decreased with treatment as measured by qPCR. Core sinonasal microbiome members *Staphylococcus*, *Corynebacterium*, and *Streptococcus* were unchanged, while *Moraxella* increased with ETI.

Conclusions: Treatment with ETI leads to a reduction in *Pseudomonas* abundance within the sinonasal microbiome of individuals with *Pseudomonas* at baseline.

Keywords: chronic rhinosinusitis; elexacaftor–ivacaftor–tezacaftor; microbiome; microbiota.

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- [34 references](#)

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Randomized Controlled Trial

Int Forum Allergy Rhinol

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. 2024 May;14(5):919-927.

doi: 10.1002/alr.23284. Epub 2023 Oct 9.

[Acoustic resonance therapy is safe and effective for the treatment of nasal congestion in rhinitis: A randomized sham-controlled trial](#)

[Amber U Luong](#)^{1,2}, [Michael Yong](#)³, [Peter H Hwang](#)⁴, [Bryant Y Lin](#)⁵, [Paramesh Gopi](#)⁶, [Vivek Mohan](#)⁶, [Yifei Ma](#)⁴, [Jacob Johnson](#)⁷, [David M Yen](#)⁸, [Richard S DeMera](#)⁹, [Benjamin S Bleier](#)¹⁰

Affiliations expand

- PMID: 37812532
- DOI: [10.1002/alr.23284](https://doi.org/10.1002/alr.23284)

Abstract

Background: Acoustic resonance therapy (ART) is a novel vibrational treatment that delivers patient-specific resonant frequency acoustic energy to the sinonasal cavities. In a pilot study, ART was effective for the acute treatment of nasal congestion. We conducted a sham-controlled randomized trial to validate the efficacy of ART when administered daily for 2 weeks.

Methods: A total of 52 adult patients were enrolled in a multi-center, randomized, double-blinded, sham-controlled, interventional study evaluating ART administered by a vibrational headband. Patients received either active treatment or a non-therapeutic sham treatment twice daily over 2 weeks. Clinical endpoints were the average change in nasal congestion sub-score of the Total Nasal Symptom Score (TNSS) and the average change in composite TNSS.

Results: ART resulted in a significantly greater mean change in the nasal congestion sub-score compared to sham (-0.87 [95% confidence interval [CI] -1.11, -0.62] vs. -0.44 [95% CI -0.64, -0.23], $p = 0.008$). ART also resulted in a significantly greater reduction in the composite TNSS versus sham, (-2.85 [95% CI -3.85, -1.85], vs. -1.32 [95% CI -2.27, -0.36], $p = 0.027$). The response rate, determined by a nasal congestion sub-score minimal clinically important difference of 0.23, was 80.8% for ART and 46.2% for sham, with an adjusted risk ratio of 1.95 (95% CI 1.26, 3.02, $p = 0.003$) in favor of ART. Safety endpoints showed no adverse events.

Conclusion: ART is a safe and effective non-pharmacologic alternative for the treatment of nasal congestion.

Keywords: acoustic resonance; allergic rhinitis; humming; nasal congestion; non-allergic rhinitis; randomized trial; vibration.

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Int Forum Allergy Rhinol



. 2024 May;14(5):939-949.

doi: 10.1002/alr.23283. Epub 2023 Oct 4.

Histopathologic features of biologic therapy nonresponders in chronic rhinosinusitis with nasal polyposis

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Affiliations expand

- PMID: 37792287
- DOI: [10.1002/alr.23283](https://doi.org/10.1002/alr.23283)

Abstract

Background: Biologics are effective for chronic rhinosinusitis with nasal polyposis (CRSwNP) by reducing type 2 inflammation. Nonresponders often require functional endoscopic sinus surgery (FESS) and represent a challenging population potentially due to non-type 2 pathophysiology. This study characterizes the histopathologic features of biologic nonresponders.

Methods: A retrospective review of 257 CRSwNP patients undergoing FESS was conducted. The biologic nonresponder group included patients with prior biologic therapy who exhibited persistent symptoms and polyp burden. Those with CRSwNP not prescribed biologic therapy were selected as controls. Demographics, comorbidities, and structured histopathology consisting of 13 variables were collected.

Results: Of 257 CRSwNP patients, 20 were on biologics prior to FESS. Fourteen patients (70.0%) received dupilumab, one (5.0%) received mepolizumab, one (5.0%) received

omalizumab, and four (20.0%) tried multiple biologics. The mean age for the biologic nonresponder group was 45.8 years compared to 50.4 years for the controls. Nonresponders had a significantly increased incidence of reduced tissue eosinophilia, defined as <5 per high power field (55% vs. 31.2%, $p = 0.044$) and increased basement membrane thickening (100% vs. 78.1%, $p = 0.019$). The remaining 11 variables did not reach statistical significance.

Conclusion: Histopathologic analysis of biologic nonresponders demonstrates decreased eosinophilia and thickened basement membranes. These findings, particularly low tissue eosinophils, are consistent with a non-type 2 CRSwNP that may be recalcitrant to biologic therapies. Histopathologic analysis done in conjunction with FESS may aid clinicians in understanding response to biologic therapies in patients with CRSwNP who have persistent symptom burden necessitating FESS.

Keywords: biologic therapy; chronic rhinosinusitis; endotypes; nasal polyps; structured histopathology.

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Clinical Trial

J Clin Pharmacol

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. 2024 May;64(5):529-543.

Safety, Tolerability, Pharmacokinetics, and Pharmacodynamics of PF-06817024 in Healthy Participants, Participants with Chronic Rhinosinusitis with Nasal Polyps, and Participants with Atopic Dermatitis: A Phase 1, Randomized, Double-Blind, Placebo-Controlled Study

[Spencer I Danto](#)¹, [Nikolaos Tsamandouras](#)¹, [Padmalatha Reddy](#)¹, [Steven Gilbert](#)¹, [Jessica Mancuso](#)¹, [Karen Page](#)¹, [Elena Peeva](#)¹, [Michael S Vincent](#)¹, [Jean S Beebe](#)¹

Affiliations expand

- PMID: 37772436
- DOI: [10.1002/jcph.2360](https://doi.org/10.1002/jcph.2360)

Abstract

PF-06817024 is a high affinity, humanized antibody that binds interleukin-33, a proinflammatory type 2 cytokine, and thereby has the potential to inhibit downstream type 2 inflammation. This Phase 1, randomized, placebo-controlled study was conducted in 3 parts to evaluate the safety, tolerability, pharmacokinetics (PK), immunogenicity, and pharmacodynamics of escalating single and limited repeat PF-06817024 doses in healthy participants (Part 1), a single dose of PF-06817024 in participants with chronic rhinosinusitis with nasal polyps (Part 2), and repeat doses of PF-06817024 in participants with moderate to severe atopic dermatitis (atopic dermatitis; Part 3). PF-06817024 was generally well tolerated in all participant populations. Most participants experienced a treatment-emergent adverse event (healthy participants, 78.4% and 100%; participants with chronic rhinosinusitis with nasal polyps, 90.9% and 88.9%; and participants with atopic dermatitis, 60.0% and 62.5% in the PF-06817024 and placebo groups, respectively). No substantial deviations from dose proportionality were observed for single intravenous doses of 10-1000 mg, indicating linear PK in healthy participants. Mean terminal half-life ranged from 83 to 94 days after single intravenous administration in healthy participants

and was similar to that observed after administration in the studied patient populations. Incidences of antidrug antibodies in the studied populations were 10.8%, 9.1%, and 5.0% for healthy participants, participants with chronic rhinosinusitis with nasal polyps, and participants with atopic dermatitis, respectively. In addition, dose-dependent increases were observed in total serum interleukin-33 levels of treated participants, indicating target engagement. Overall, the PK and safety profile of PF-06817024 supports further investigation of the drug as a potential treatment for allergic diseases.

Keywords: Phase 1; anti-IL-33 antibody; atopic dermatitis; chronic rhinosinusitis with nasal polyps; healthy participants; safety.

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11

BMC Pediatr

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. 2024 Apr 30;24(1):288.

doi: 10.1186/s12887-024-04762-7.

[Risk factors of sleep-disordered breathing and poor asthma control in children with asthma](#)

[Minghui Tao](#) ^{#1}, [Yanping Zhang](#) ^{#2}, [Ling Ding](#) ³, [Donghong Peng](#) ⁴

Affiliations expand

- PMID: 38689232
- DOI: [10.1186/s12887-024-04762-7](https://doi.org/10.1186/s12887-024-04762-7)

Abstract

Background: Sleep-disordered breathing (SDB) may lead to poor asthma control in children.

Objective: To identify risk factors of SDB in children with asthma and assess its impact on asthma control.

Methods: In this cross-sectional study, we collected data of outpatients with asthma at the Children's Hospital of Chongqing Medical University from June 2020 to August 2021. The Pediatric Sleep Questionnaire-Sleep-Related Breathing Disorder and the age-appropriate asthma control tests Childhood Asthma Control Test and Test for Respiratory and Asthma Control in Kids were completed.

Results: We enrolled 397 children with a male-to-female ratio of 1.7:1 and a mean age of 5.70 ± 2.53 years. The prevalence of SDB was 21.6%. Allergic rhinitis (odds ratio OR = 3.316), chronic tonsillitis (OR = 2.246), gastroesophageal reflux (OR = 7.518), adenoid hypertrophy (OR = 3.479), recurrent respiratory infections (OR = 2.195), and a family history of snoring (OR = 2.048) were risk factors for the development of combined SDB in children with asthma ($p < 0.05$). Asthma was poorly controlled in 19.6% of the children. SDB (OR = 2.391) and irregular medication use (OR = 2.571) were risk factors for poor asthma control ($p < 0.05$).

Conclusions: Allergic rhinitis, chronic tonsillitis, gastroesophageal reflux, adenoid hypertrophy, recurrent respiratory infections, and a family history of snoring were independent risk factors for the development of SDB in children with asthma. SDB and irregular medication use were independent risk factors for poor asthma control.

Keywords: Asthma; Children; Risk factors; Sleep-disordered breathing.

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- [56 references](#)

SUPPLEMENTARY INFO

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12

Review

Eur Respir Rev

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. 2024 Apr 24;33(172):230126.

doi: 10.1183/16000617.0126-2023. Print 2024 Apr 30.

[Airborne indoor allergen serine proteases and their contribution to sensitisation and activation of innate immunity in allergic airway disease](#)

[Xuan Ouyang](#)¹, [James A Reihill](#)¹, [Lisa E J Douglas](#)¹, [S Lorraine Martin](#)²

Affiliations expand

- PMID: 38657996
- PMCID: [PMC11040391](#)
- DOI: [10.1183/16000617.0126-2023](#)

Abstract

Common airborne allergens (pollen, animal dander and those from fungi and insects) are the main triggers of type I allergic disorder in the respiratory system and are associated with allergic rhinitis, allergic asthma, as well as immunoglobulin E (IgE)-mediated allergic bronchopulmonary aspergillosis. These allergens promote IgE crosslinking, vasodilation, infiltration of inflammatory cells, mucosal barrier dysfunction, extracellular matrix deposition and smooth muscle spasm, which collectively cause remodelling of the airways. Fungus and insect (house dust mite and cockroaches) indoor allergens are particularly rich in proteases. Indeed, more than 40 different types of aeroallergen proteases, which have both IgE-neutralising and tissue-destructive activities, have been documented in the Allergen Nomenclature database. Of all the inhaled protease allergens, 85% are classed as serine protease activities and include trypsin-like, chymotrypsin-like and collagenolytic serine proteases. In this article, we review and compare the allergenicity and proteolytic effect of allergen serine proteases as listed in the Allergen Nomenclature and MEROPS databases and highlight their contribution to allergic sensitisation, disruption of the epithelial barrier and activation of innate immunity in allergic airways disease. The utility of small-molecule inhibitors of allergen serine proteases as a potential treatment strategy for allergic airways disease will also be discussed.

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Conflict of interest statement

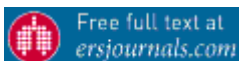
Conflict of interest: All authors have nothing to disclose.

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

SUPPLEMENTARY INFO

Publication types, MeSH terms, Substancesexpand

FULL TEXT LINKS



chronic cough

Clin Case Rep



. 2024 Apr 26;12(5):e8823.

doi: 10.1002/ccr3.8823. eCollection 2024 May.

Rib fracture secondary to cough-induced trauma

[Ahmed Qasim Mohammed Alhatemi](#)¹, [Hashim Talib Hashim](#)², [Ali Talib Hashim](#)³

Affiliations expand

- PMID: 38681031
- PMCID: [PMC11052678](#)
- DOI: [10.1002/ccr3.8823](#)

Abstract

Early identification of rib fractures, even in young patients without chronic diseases, is essential. Prompt diagnosis facilitates appropriate management, aiding in pain control and addressing underlying causes such as persistent coughing. Additionally, vigilance for complications such as pneumothorax and rib displacement is crucial for optimizing patient care.

Keywords: imaging and radiology; orthopaedics; respiratory medicine.

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Conflict of interest statement

The authors declare that they have no competing interests.

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

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Respir Investig

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. 2024 May;62(3):442-448.

doi: 10.1016/j.resinv.2024.02.017. Epub 2024 Mar 23.

[Prevalence and causes of chronic cough in Japan](#)

[Yoshihisa Ishiura](#)¹, [Masaki Fujimura](#)², [Haruhiko Ogawa](#)³, [Johsuke Hara](#)⁴, [Hiromoto Shintani](#)⁵, [Soichiro Hozawa](#)⁶, [Ryo Atsuta](#)⁷, [Kensuke Fukumitsu](#)⁸, [Hideki Inoue](#)⁹, [Takanobu Shioya](#)¹⁰, [Masato Muraki](#)¹¹, [Tokunao Amemiya](#)¹², [Noriyuki Ohkura](#)⁴, [Yoshitaka Oribe](#)¹³, [Hiroshi Tanaka](#)¹⁴, [Takechiyo Yamada](#)¹⁵, [Mikio Toyoshima](#)¹⁶, [Katsuya Fujimori](#)¹⁷, [Tamotsu Ishizuka](#)¹⁸, [Manabu Kagaya](#)¹⁹, [Takeshi Suzuki](#)²⁰, [Toshiyuki Kita](#)²¹, [Koichi Nishi](#)²², [Akihito Ueda](#)²³, [Yoshito Miyata](#)²⁴, [Junya Kitada](#)²⁵, [Kenta Yamamura](#)²⁶, [Miki Abo](#)⁴, [Norihisa Takeda](#)⁸, [Toshihiro Shirai](#)²⁷, [Tomoko Tajiri](#)⁸, [Shigemi Yoshihara](#)²⁸, [Taisuke Akamatsu](#)²⁷, [Hirochiyo Sawaguchi](#)¹¹, [Tatsuya Nagano](#)²⁹, [Soichiro Hanada](#)¹¹, [Sawako Masuda](#)³⁰, [Mitsuhide Ohmichi](#)²⁵, [Tomoki Ito](#)³¹, [Hironori Sagara](#)²⁴, [Hisako Matsumoto](#)³², [Akio Niimi](#)⁸; [Japan Cough Society](#)

Affiliations [expand](#)

- PMID: 38522360
- DOI: [10.1016/j.resinv.2024.02.017](https://doi.org/10.1016/j.resinv.2024.02.017)

Abstract

Background: Chronic cough is one of the most common symptoms of respiratory diseases and can adversely affect patients' quality of life and interfere with social activities, resulting in a significant social burden. A survey is required to elucidate the frequency and treatment effect of chronic cough. However, clinical studies that cover all of Japan have not yet been conducted.

Methods: Patients who presented with a cough that lasted longer than 8 weeks and visited the respiratory clinics or hospitals affiliated with the Japan Cough Society during the 2-year study period were registered.

Results: A total of 379 patients were enrolled, and those who did not meet the definition of chronic cough were excluded. A total of 334 patients were analyzed: 201 patients had a single cause, and 113 patients had two or more causes. The main causative diseases were cough variant asthma in 92 patients, sinobronchial syndrome (SBS) in 36 patients, atopic cough in 31 patients, and gastroesophageal reflux (GER)-associated cough in 10 patients. The time required to treat undiagnosed patients and those with SBS was significantly longer and the treatment success rate for GER-associated cough was considerably poor.

Conclusions: We confirmed that the main causes of chronic cough were cough variant asthma, SBS, atopic cough, and their complications. We also showed that complicated GER-associated cough was more likely to become refractory. This is the first nationwide study in Japan of the causes and treatment effects of chronic cough.

Keywords: Atopic cough; Chronic cough; Cough variant asthma; Refractory chronic cough; Unexplained chronic cough.

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Conflict of interest statement

Declaration of competing interest JH received honoraria from AstraZeneca Pharmaceuticals, United Kingdom; GlaxoSmithKline Pharmaceuticals, United Kingdom. SH received honoraria from AstraZeneca Pharmaceuticals, GlaxoSmithKline Pharmaceuticals, Kyorin Pharmaceuticals, Japan; Novartis Pharmaceuticals, Switzerland. NO received honoraria from AstraZeneca Pharmaceuticals and research funding from Konica Minolta K.K, Japan. HT received honoraria from AstraZeneca Pharmaceuticals, GlaxoSmithKline Pharmaceuticals, Kyorin Pharmaceuticals, Novartis Pharmaceuticals. TY received honoraria from Mitsubishi Tanabe Pharmaceuticals, Japan; Sanofi Pharmaceuticals, France; Kyorin Pharmaceuticals. TN received honoraria from AstraZeneca Pharmaceuticals, GlaxoSmithKline Pharmaceuticals, Kyorin Pharmaceuticals, Novartis Pharmaceuticals, Sanofi Pharmaceuticals. HiSag received honoraria from AstraZeneca Pharmaceuticals,

GlaxoSmithKline Pharmaceuticals, Kracie Pharmaceuticals, Japan; Kyorin Pharmaceuticals, Novartis Pharmaceuticals, Sanofi Pharmaceuticals. HM received honoraria from Kyorin Pharmaceuticals. AN received honoraria from AstraZeneca Pharmaceuticals, GlaxoSmithKline Pharmaceuticals, Kyorin Pharmaceuticals, Novartis Pharmaceuticals, Sanofi Pharmaceuticals. The rest of the authors have no conflicts of interest.

SUPPLEMENTARY INFO

MeSH termsexpand

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Neurogastroenterol Motil

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. 2024 May;36(5):e14775.

doi: 10.1111/nmo.14775. Epub 2024 Feb 29.

[Proximal esophageal impedance baseline increases the yield of impedance-pH and is associated with response to PPIs in chronic cough patients](#)

[Mentore Ribolsi](#)¹, [Nicola De Bortoli](#)², [Marzio Frazzoni](#)³, [Lorenzo Marchetti](#)¹, [Edoardo Savarino](#)⁴, [Michele Cicala](#)¹

Affiliations expand

- PMID: 38424679

- DOI: [10.1111/nmo.14775](https://doi.org/10.1111/nmo.14775)

Abstract

Background: Chronic cough significantly impairs the quality of life. Although various studies focused on MNBI as assessed in the distal esophagus, scarce data are available on the clinical value of proximal measurements.

Aim: To investigate the role of proximal MNBI in the workup of patients with chronic cough and its ability to predict PPI response.

Methods: Demographic, clinical, endoscopy findings, impedance-pH and HRM tracings from consecutive cough patients were evaluated. MNBI was calculated at proximal and distal esophagus.

Results: One hundred and sixty four patients were included. In addition to traditional variables, when considering also the PSPW index or MNBI at 3 cm or 15 cm, the proportion of patients with pathological impedance-pH monitoring significantly increased. 70/164 patients were responders, while 94 (57.3%) were non-responder to double PPI dose ($p < 0.05$). Patients with pathologic MNBI at 3 cm and/or 15 cm as well as those with pathologic PSPW index were characterized by a significantly higher proportion of responders than that observed among patients with normal impedance-pH variables ($p < 0.001$). The proportion of responders with pathological MNBI at 15 cm was significantly higher than the proportion of responders with pathological MNBI at 3 cm (82.8% vs. 64.3%, $p < 0.05$). At multivariable model, pathological MNBI at both 3 cm and 15 cm as well as PSPW index were associated with PPI responsiveness. The strongest association with PPI response was observed for MNBI at 15 cm.

Conclusions: The assessment of MNBI at proximal esophagus increases the diagnostic yield of impedance-pH monitoring and may represent a useful predictor of PPI responsiveness in the cumbersome clinical setting of suspected reflux-related cough.

Keywords: GERD; MNBI; PPI; PSPW; impedance-pH.

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- [37 references](#)

SUPPLEMENTARY INFO

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4

Respirology

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. 2024 May;29(5):366-368.

doi: 10.1111/resp.14686. Epub 2024 Feb 27.

Chronic cough: New guidelines, new approaches and new treatments

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

Affiliations expand

- PMID: 38410044
- DOI: [10.1111/resp.14686](https://doi.org/10.1111/resp.14686)

Free article

No abstract available

Keywords: chronic cough; cough.

- [17 references](#)

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MeSH termsexpand

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5

Practice Guideline

Can Assoc Radiol J



. 2024 May;75(2):296-303.

doi: 10.1177/08465371231214699. Epub 2023 Dec 15.

Canadian Association of Radiologists Thoracic Imaging Referral Guideline

[Candyce Hamel](#)¹, [Barb Avard](#)², [Catherine Belanger](#)³, [Patrick Bourgouin](#)⁴, [Stephen Lam](#)⁵, [Daria Manos](#)⁶, [Alan Michaud](#)⁷, [Brian H Rowe](#)⁸, [Kevin Sanders](#)², [Ana-Maria Bilawich](#)⁹

Affiliations expand

- PMID: 38099468
- DOI: [10.1177/08465371231214699](https://doi.org/10.1177/08465371231214699)

Free article

Abstract

The Canadian Association of Radiologists (CAR) Thoracic Expert Panel consists of radiologists, respirologists, emergency and family physicians, a patient advisor, and an epidemiologist/guideline methodologist. After developing a list of 24 clinical/diagnostic scenarios, a rapid scoping review was undertaken to identify systematically produced referral guidelines that provide recommendations for one or more of these clinical/diagnostic scenarios. Recommendations from 30 guidelines and contextualization criteria in the Grading of Recommendations, Assessment, Development, and Evaluations

(GRADE) for guidelines framework were used to develop 48 recommendation statements across the 24 scenarios. This guideline presents the methods of development and the referral recommendations for screening/asymptomatic individuals, non-specific chest pain, hospital admission for non-thoracic conditions, long-term care admission, routine pre-operative imaging, post-interventional chest procedure, upper respiratory tract infection, acute exacerbation of asthma, acute exacerbation of chronic obstructive pulmonary disease, suspect pneumonia, pneumonia follow-up, immunosuppressed patient with respiratory symptoms/febrile neutropenia, chronic cough, suspected pneumothorax (non-traumatic), clinically suspected pleural effusion, hemoptysis, chronic dyspnea of non-cardiovascular origin, suspected interstitial lung disease, incidental lung nodule, suspected mediastinal lesion, suspected mediastinal lymphadenopathy, and elevated diaphragm on chest radiograph.

Keywords: chest; diagnostic imaging; guideline; lung; referrals; thoracic.

Conflict of interest statement

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

SUPPLEMENTARY INFO

Publication types, MeSH termsexpand

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Sage Journals
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Patient

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. 2024 May;17(3):253-262.

doi: 10.1007/s40271-023-00654-7. Epub 2023 Dec 7.

Quality of Life in Adults with Chronic Cough: A Mixed Methods Study Informing the Development of a Quantitative Patient Preference Study

[Theresa Coles](#)¹, [Molly McFatrach](#)², [Helen Ding](#)³, [Nicole Lucas](#)², [Erin Daniell](#)², [Aparna Swaminathan](#)^{4,5}, [Jonathan Schelfhout](#)³, [Reed Johnson](#)^{2,4,6}

Affiliations expand

- PMID: 38062222
- DOI: [10.1007/s40271-023-00654-7](https://doi.org/10.1007/s40271-023-00654-7)

Abstract

Objectives: This study aimed to describe quality of life for patients with chronic cough (CC) and identify meaningful attributes that affect patient treatment preferences to inform the design of a quantitative preference study.

Methods: Eligible patients (≥ 18 years) with a CC (> 8 weeks) participated in qualitative interviews with two defined steps. Step one: concept elicitation and bidding games were used to collect descriptions of patient experiences with CC and identify important CC-related attributes. Step two: attributes were confirmed using concept elicitation and bidding games and prioritized using structured card sort activities. Purposive sampling ensured diversity of patient experiences. Qualitative content analysis was used to analyze participant narratives, and descriptive statistics were used to summarize card sort results. This study follows a fully mixed concurrent dominant status design, with qualitative (dominant) and quantitative components.

Results: A total of 20 participants were interviewed with a mean age of 61.4 years (range 24-79 years). Coughing episodes, described as intense consecutive coughs that made catching breath difficult, were important to most participants ($n = 17$). Participants emphasized the emotional impact of episodes including feelings of uncertainty, loss of control, self-consciousness, and fear. Severity of CC was most often judged by frequency ($n = 11$) and intensity ($n = 12$) of cough. Daily, physical, or social activities were impacted for most participants. Impact on sleep ($n = 14$) included waking during the night, difficulty falling asleep, and daytime fatigue. Medication-related taste disturbances were an important consideration for what participants were willing to accept in exchange for cough relief.

Conclusions: This study emphasizes the importance of coughing episodes for adults with CC and provides initial evidence that taste alterations are an important component of patient treatment decisions for CC.

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- [29 references](#)

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Laryngoscope

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. 2024 May;134(5):2077-2084.

doi: 10.1002/lary.31120. Epub 2023 Nov 2.

[Two-Year Outcomes After Radiofrequency Neurolysis of Posterior Nasal Nerve in Chronic Rhinitis](#)

[Jivianne T Lee](#)¹, [Gregory M Abbas](#)², [Daniel D Charous](#)³, [Mandy Cuevas](#)⁴, [Önder Göktas](#)⁵, [Patricia A Loftus](#)⁶, [Nathan E Nachlas](#)⁷, [Elina M Toskala](#)⁸, [Jeremy P Watkins](#)⁹, [Detlef Brehmer](#)^{10 11 12}

Affiliations expand

- PMID: 37916848

- DOI: [10.1002/lary.31120](https://doi.org/10.1002/lary.31120)

Abstract

Objective: To assess the long-term safety and effectiveness of temperature-controlled radiofrequency (TCRF) neurolysis of the posterior nasal nerve (PNN), a minimally invasive treatment for chronic rhinitis.

Methods: A prospective, single-arm study of 129 patients at 16 centers (United States, Germany) was conducted. Patient-reported outcome measures were the 24-h reflective total nasal symptom score (rTNSS) and mini rhinoconjunctivitis quality of life questionnaire (MiniRQLQ). Postnasal drip and cough symptoms were assessed using a 4-point scale.

Results: The mean pretreatment rTNSS was 7.8 (95% CI, 7.5-8.1). The significant rTNSS treatment effect at 3 months (-4.2 [95% CI, -4.6 to -3.8]; $p < 0.001$) was sustained through 2 years (-4.5 [95% CI, -5.0 to -3.9]; $p < 0.001$), a 57.7% improvement. At 2 years, the proportion of patients with a minimal clinically important difference (MCID) of $\geq 30\%$ improvement in rTNSS from baseline was 80.0% (95% CI, 71.4%-86.5%). Individual postnasal drip and cough symptom scores were significantly improved from baseline through 2 years. The proportion of patients who reached the MCID for the MiniRQLQ (≥ 0.4 -point improvement) at 2 years was 77.4% (95% CI, 68.5%-84.3%). Of 81 patients using chronic rhinitis medications at baseline, 61.7% either stopped all medication use (28.4%) or stopped or decreased (33.3%) use of ≥ 1 medication class at 2 years. No device/procedure-related serious adverse events were reported throughout 2 years.

Conclusion: TCRF neurolysis of the PNN resulted in sustained improvements in chronic rhinitis symptom burden and quality of life through 2 years, accompanied by a substantial decrease in medication burden.

Level of evidence: 4 Laryngoscope, 134:2077-2084, 2024.

Keywords: MiniRQLQ; chronic rhinitis; neurolysis; posterior nasal nerve; quality of life; rTNSS; radiofrequency; temperature-controlled.

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- [29 references](#)

SUPPLEMENTARY INFO

MeSH terms, Grants and fundingexpand

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8

Review

J Voice

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. 2024 May;38(3):703-710.

doi: 10.1016/j.jvoice.2021.12.012. Epub 2022 Jan 8.

[Clinical Parameters of the Speech-Language Pathology Assessment of the Chronic Cough: A Scoping Review](#)

[Rodrigo Dornelas](#)¹, [Maria Christina Bussamara Casmerides](#)², [Rebeca Cardoso da Silva](#)³, [Maria Victória Dos Anjos Souza](#)⁴, [Lucas Tito Pereira](#)⁵, [Vanessa Veis Ribeiro](#)⁶, [Mara Behlau](#)⁷

Affiliations expand

- PMID: 35012819
- DOI: [10.1016/j.jvoice.2021.12.012](https://doi.org/10.1016/j.jvoice.2021.12.012)

Abstract

Objective: to map the clinical parameters used in the speech-language pathology assessment of the chronic cough.

Methods: a scoping review was performed to answer the clinical question: "What are the clinical parameters included in the speech-language pathology assessment of patients with chronic cough?" Evidence was searched by electronic and manual search. The electronic search included: MEDLINE, Cochrane Library, EMBASE, Web of Science, SCOPUS, and LILACS. Each database had a specific search strategy. The manual search included Journal of Voice, Chest, and Thorax, Brazilian Library of Theses and Dissertations, Open Grey, and Clinical Trials, in addition to scanning the references of the included studies. The extracted data considered information regarding the publication, sample, assessment, and measures used when assessing chronic cough.

Results: the electronic search found 289 studies; the manual search found 1036 studies; 12 were selected for the present study. The most used assessments were: self-assessment (75%), aerodynamic analysis (66.67%), the perceptual auditory judgment of the voice quality (58.33%), acoustic analysis of the voice (41.67%), cough frequency, and cough threshold (41.67%) and electroglottography (25%).

Conclusions: the subjective instruments were used more frequently, while specific objective instruments, which are recent, were used less frequently. Complementary assessments such as vocal assessment, have been frequently used, also, with no other parameter. A lack of homogeneity was identified in the speech-language pathology assessment and measures of patients with chronic cough, thus, the comparison among studies and clinical analysis is difficult.

Keywords: Chronic cough; Scoping review; Speech-language pathology assessment.

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Publication types, MeSH termsexpand

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J Voice

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. 2024 May;38(3):674-682.

doi: 10.1016/j.jvoice.2021.11.018. Epub 2021 Dec 27.

Efficacy of Speech-language Pathology Therapy in Chronic Cough: Systematic Review With Meta-analysis

[Vanessa Veis Ribeiro](#)¹, [Maria Christina Bussamara Casmerides](#)², [Zélia Maria Conceição da Silva Reis](#)³, [Ícaro Vinícius de Santana](#)³, [Rodrigo Dornelas do Carmo](#)⁴, [Mara Behlau](#)⁵

Affiliations expand

- PMID: 34969556
- DOI: [10.1016/j.jvoice.2021.11.018](https://doi.org/10.1016/j.jvoice.2021.11.018)

Abstract

Objectives: To analyze the efficacy of speech-language pathology therapy in the self-assessment, in the cough frequency, and the vocal quality of adults with chronic cough.

Methods: This is a systematic review with meta-analysis that answered the clinical question: "In adults with chronic cough, what is the effect of the speech-language pathology therapy in the self-assessment, in the cough frequency, and the vocal quality, compared to another intervention?" (PROSPERO 2021/CRD42021226729). An electronic search (MEDLINE, Web of Science, EMBASE, SCOPUS, Cochrane Library, and Lilacs), and a manual search (Journal of Voice, Brazilian Library of Theses and Dissertations, Open Grey and Clinical Trials) with specific search strategies was performed. The risk of bias was assessed using the Cochrane Collaboration's tool for assessing the risk of bias in randomized trials. Meta-analysis (standardized difference of means, Inverse Variance, and random effects model) and heterogeneity analysis (Chi², Tau², and I²) were performed.

Results: We found 610 studies and selected three. There was an uncertain risk of detection bias. The data were heterogeneous, and there was no difference between interventions in self-perception of cough severity ($z = 0.09$, $P = 0.930$; $\tau^2 = 0.65$, $I^2 = 90\%$) and in the self-perception of the effects of chronic cough on health status ($z = 0.30$, $P = 0.77$; $\tau^2 = 0.99$, $I^2 = 97\%$). The estimated mean difference was 0.97 to cough frequency, and it was differ significantly from zero ($z = 4.47$, $P < 0.001$) but the results are heterogeneous ($\text{Chi}^2 (1) = 22.22$, $P < 0.001$, $I^2 = 95\%$).

Conclusion: The speech-language pathology therapy had a greater effect size than the control interventions on cough frequency. However, in the subjects' perception, there were no differences between the interventions.

Keywords: Chronic cough—Speech-language pathology therapy—Systematic review.

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Conflict of interest statement

Declaration of competing interest There are no conflicts of interest to declare.

SUPPLEMENTARY INFO

Publication types, MeSH termsexpand

FULL TEXT LINKS



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

1

Review

Curr Opin Pulm Med

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. 2024 May 1;30(3):235-242.

Bacteriophages for bronchiectasis: treatment of the future?

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Affiliations expand

- PMID: 38345396
- DOI: [10.1097/MCP.0000000000001050](https://doi.org/10.1097/MCP.0000000000001050)

Abstract

Purpose of review: Bronchiectasis is a chronic respiratory disease characterized by dilated airways, persistent sputum production and recurrent infective exacerbations. The microbiology of bronchiectasis includes various potentially pathogenic microorganisms including *Pseudomonas aeruginosa* which is commonly cultured from patients' sputum. *P. aeruginosa* is difficult to eradicate and frequently exhibits antimicrobial resistance. Bacteriophage therapy offers a novel and alternative method to treating bronchiectasis and can be used in conjunction with antibiotics to improve patient outcome.

Recent findings: Thirteen case reports/series to date have successfully used phages to treat infections in bronchiectasis patients, however these studies were constrained to few patients (n = 32) and utilized personalized phage preparations and adjunct antibiotics. In these studies, phage therapy was delivered by inhalation, intravenously or orally and was well tolerated in most patients without any unfavourable effects. Favourable clinical or microbiological outcomes were seen following phage therapy in many patients. Longitudinal patient follow-up reported regrowth of bacteria and phage neutralization in some studies. There are five randomized clinical controlled trials ongoing aiming to use phage therapy to treat *P. aeruginosa* associated respiratory conditions, with limited results available to date.

Summary: More research, particularly robust clinical trials, into how phages can clear respiratory infections, interact with resident microbiota, and how bacteria might develop resistance will be important to establish to ensure the success of this promising therapeutic alternative.

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Int Forum Allergy Rhinol



. 2024 May;14(5):990-994.

doi: 10.1002/alr.23303. Epub 2023 Nov 23.

[Histologic characterization of primary ciliary dyskinesia chronic rhinosinusitis](#)

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Affiliations expand

- PMID: 37997295
- DOI: [10.1002/alr.23303](https://doi.org/10.1002/alr.23303)

Abstract

We present the largest cohort of structured histopathology reports on primary ciliary dyskinesia-related chronic rhinosinusitis (PCD-CRS). Despite endoscopic differences, PCD-

CRS and cystic fibrosis-related chronic rhinosinusitis (CF-CRS) had similar structured histopathology reports. Compared to healthy patients and those with idiopathic chronic rhinosinusitis without nasal polyps, patients with PCD-CRS had an increased neutrophil count.

Keywords: chronic rhinosinusitis; ciliary motility; hereditary; musocilliary clearance.

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- [10 references](#)

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Ital J Pediatr

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. 2024 Apr 29;50(1):90.

doi: 10.1186/s13052-024-01654-5.

[Association between arachidonate lipoyxygenase 15,c.-292 C > T gene polymorphism and non-cystic fibrosis bronchiectasis in children: a pilot study](#)

on the effects on airway lipoxin A₄ and disease phenotype

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Affiliations expand

- PMID: 38685084
- PMCID: [PMC11059722](#)
- DOI: [10.1186/s13052-024-01654-5](#)

Abstract

Background: Persistent airway inflammation is a central feature of bronchiectasis. Arachidonate 15-lipoxygenase (ALOX-15) controls production of endogenous lipid mediators, including lipoxins that regulate airway inflammation. Mutations at various positions in ALOX-15 gene can influence airway disease development. We investigated association between ALOX-15,c.-292 C > T gene polymorphism and bronchiectasis unrelated to cystic fibrosis in Egyptian children. Also, lipoxin A₄ (LXA₄) level in bronchoalveolar lavage (BAL) was studied in relation to polymorphism genotypes and disease phenotypes determined by clinical, pulmonary functions, and radiological severity parameters.

Methods: This was an exploratory study that included 60 participants. Thirty children with non-cystic fibrosis bronchiectasis (NCFB) were compared with 30 age and sex-matched controls. ALOX-15,c.-292 C > T polymorphism was genotyped using TaqMan-based Real-time PCR. LXA₄ was measured in BAL using ELISA method.

Results: There was no significant difference between patients and controls regarding ALOX-15,c.-292 C > T polymorphism genotypes and alleles (OR = 1.75; 95% CI (0.53-5.7), P = 0.35) (OR = 1; 95% CI (0.48-2), p = 1). BAL LXA₄ level was significantly lower in patients, median (IQR) of 576.9 (147.6-1510) ng/ml compared to controls, median (IQR) of 1675 (536.8-2542) (p = 0.002). Patients with severe bronchiectasis had a significantly lower LXA₄ level (p < 0.001). There were significant correlations with exacerbations frequency (r = -0.54, p = 0.002) and FEV₁% predicted (r = 0.64, p = 0.001). Heterozygous CT genotype carriers showed higher LXA₄ levels compared to other genotypes (p = 0.005).

Conclusions: Low airway LXA4 in children with NCFB is associated with severe disease phenotype and lung function deterioration. CT genotype of ALOX-15,c.-292 C > T polymorphism might be a protective genetic factor against bronchiectasis development and/or progression due to enhanced LXA4 production.

Keywords: ALOX-15 polymorphism; BAL; Bronchiectasis; Lipoxin A4.

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Conflict of interest statement

The authors have no relevant financial or non-financial interests to disclose.

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BMC Pulm Med

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. 2024 Apr 29;24(1):209.

doi: 10.1186/s12890-024-03027-4.

[Clinical significance and potential pathogenesis of VCAN in adult non-](#)

cystic fibrosis bronchiectasis: a retrospective study

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Affiliations expand

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- PMCID: [PMC11059678](#)
- DOI: [10.1186/s12890-024-03027-4](#)

Abstract

Background: The pathogenesis of adult non-cystic fibrosis (CF) bronchiectasis is complex, and the relevant molecular mechanism remains ambiguous. Versican (VCAN) is a key factor in inflammation through interactions with adhesion molecules. This study constructs a stable panoramic map of mRNA, reveals the possible pathogenesis of bronchiectasis, and provides new ideas and methods for bronchiectasis.

Methods: Peripheral blood and tissue gene expression data from patients with bronchiectasis and normal control were selected by bioinformatics analysis. The expression of VCAN in peripheral blood and bronchial tissues of bronchiectasis were obtained by transcriptome sequencing. The protein expression levels of VCAN in serums were verified by the enzyme-linked immunosorbent assay (ELISA). The mRNA expression levels of VCAN in co-culture of *Pseudomonas aeruginosa* and bronchial epithelial cells were verified by real-time quantitative polymerase chain reaction (RT-qPCR). In addition, the biological function of VCAN was detected by the transwell assay.

Results: The expression of VCAN was upregulated in the bronchiectasis group by sequencing analysis ($P < 0.001$). The expression of VCAN in the bronchial epithelial cell line BEAS-2B was increased in *P. aeruginosa* (P.a), which was co-cultured with BEAS-2B cells ($P < 0.05$). The concentration of VCAN protein in the serum of patients with bronchiectasis was higher than that in the normal control group ($P < 0.05$). Transwell experiments showed that exogenous VCAN protein induced the migration of neutrophils ($P < 0.0001$).

Conclusions: Our findings indicate that VCAN may be involved in the development of bronchiectasis by increasing the migration of neutrophils and play an important role in bronchial pathogenesis.

Keywords: Bronchiectasis; Pathogenesis; Transcriptomics; VCAN.

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Conflict of interest statement

The authors declare no competing interests.

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