

# LIBRA JOURNAL CLUB

## 21-28-OCT-2024

Our legal office confirmed that articles NOT OPEN ACCESS cannot be distributed to the members of the list. Thus, we will transmit only the titles of articles.

ABSTRACTS of almost all these articles are available from PubMed, and full papers can be obtained through your institutions' library.

OPEN ACCESS articles are available by accessing the articles from PubMed using just the PMID for the search (eg PMID: 35514131 without . at the end)

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

Dtsch Med Wochenschr

- 
- 
- 

. 2024 Nov;149(22):1372-1376.

doi: 10.1055/a-2372-1157. Epub 2024 Oct 22.

[\[Vaccinations in pulmonary diseases - part 2: herpes zoste, RSV, pneumococcal infection and pertussis\]](#)

[Article in German]

[Cathrin Kodde](#)<sup>1</sup>, [Leif Erik Sander](#)<sup>1,2</sup>

Affiliations Expand

- PMID: 39437831
- DOI: [10.1055/a-2372-1157](#)

Abstract

in [English, German](#)

Rsv (respiratory syncytial virus): RSV is a common cause of respiratory tract infections, posing a risk of severe disease, particularly for newborns and infants, as well as in older individuals with pre-existing conditions. Two safe and effective RSV vaccines were approved in 2023. These vaccines elicit protective antibodies and offer robust protection with no additional benefit from annual boosters. Both

vaccines have been approved for individuals aged 60 years and older, while one of the vaccines has also been approved in pregnant women to elicit maternal immunity for passive protection of the unborn child. In Germany, RSV vaccination is currently recommended for all individuals aged 75 years and older, as well as people aged 60-74 years of age with severe underlying conditions. PNEUMOCOCCAL

INFECTION: *Streptococcus pneumoniae* is a primary cause of community-acquired pneumonia (CAP). Since early 2022, a 20-valent conjugate vaccine (PCV20) is approved and recommended for people over 60 years of age and individuals over 18 years of age with risk factors. PCV20 replaces the 23-valent polysaccharide vaccine (PPV23) previously recommended for those over 60 years of age.

**Pertussis:** Although viewed primarily as a childhood disease, the majority of infections affect adults. Patients with chronic respiratory diseases are at a higher risk for severe clinical course of pertussis infection. It has therefore been recommended that all adults should get a pertussis booster with their next scheduled tetanus vaccination, given as a combination vaccine (Tdap). For risk groups (healthcare personnel, community facilities) a booster vaccination every 10 years is recommended.

**Herpes zoster:** Herpes Zoster (shingles) is caused by the varicella-zoster virus, and reactivations can lead to painful skin lesions and potential complications such as herpes zoster oticus, meningitis, or postherpetic neuralgia. People with chronic lung diseases such as COPD or asthma are at increased risk of herpes zoster-related complications. A recombinant adjuvanted inactivated vaccine was approved in 2018 and offers robust protection against herpes zoster and its complications. The vaccine is recommended for all people over 60 years of age and for certain risk groups over 50 years of age.

Thieme. All rights reserved.

Conflict of interest statement

Leif Erik Sander gibt Beratertätigkeiten für OM-Pharma SA an.

Supplementary info

Publication types, MeSH terms, SubstancesExpand

Full text links



[Proceed to details](#)

Cite

Share

2

J Clin Transl Hepatol

•

- 
- 

. 2024 Oct 28;12(10):845-856.

doi: 10.14218/JCTH.2024.00201. Epub 2024 Sep 14.

### [Liver Characterization of a Cohort of Alpha-1 Antitrypsin Deficiency Patients with and without Lung Disease](#)

[Naweed Mohammad](#)<sup>1</sup>, [Regina Oshins](#)<sup>1</sup>, [Tongjun Gu](#)<sup>2</sup>, [Virginia Clark](#)<sup>3</sup>, [Jorge Lascano](#)<sup>1</sup>, [Naziheh Assarzadegan](#)<sup>4</sup>, [George Marek](#)<sup>5</sup>, [Mark Brantly](#)<sup>1</sup>, [Nazli Khodayari](#)<sup>1</sup>

#### Affiliations Expand

- PMID: 39440224
- PMCID: [PMC11491504](#)
- DOI: [10.14218/JCTH.2024.00201](#)

#### Abstract

**Background and aims:** Alpha-1 antitrypsin deficiency (AATD) is a genetic disorder characterized by the misfolding and accumulation of the mutant variant of alpha-1 antitrypsin (AAT) within hepatocytes, which limits its access to the circulation and exposes the lungs to protease-mediated tissue damage. This results in progressive liver disease secondary to AAT polymerization and accumulation, and chronic obstructive pulmonary disease (COPD) due to deficient levels of AAT within the lungs. Our goal was to characterize the unique effects of COPD secondary to AATD on liver disease and gene expression.

**Methods:** A subcohort of AATD individuals with COPD (n = 33) and AATD individuals without COPD (n = 14) were evaluated in this study from our previously reported cross-sectional cohort. We used immunohistochemistry to assess the AATD liver phenotype, and RNA sequencing to explore liver transcriptomics. We observed a distinct transcriptomic profile in liver tissues from AATD individuals with COPD compared to those without.

**Results:** A total of 339 genes were differentially expressed. Canonical pathways related to fibrosis, extracellular matrix remodeling, collagen deposition, hepatocellular damage, and inflammation were significantly upregulated in the livers of AATD individuals with COPD. Histopathological analysis also revealed higher levels of fibrosis and hepatocellular damage in these individuals.

**Conclusions:** Our data supports a relationship between the development of COPD and liver disease in AATD and introduces genes and pathways that may play a role in AATD liver disease when COPD is present. We believe addressing lung impairment and airway inflammation may be an approach to managing AATD-related liver disease.

**Keywords:** Alpha-1 antitrypsin deficiency; Chronic obstructive pulmonary disease; Liver biopsy; Liver fibrosis; Liver histology; Transcriptomics.

© 2024 Authors.

**Conflict of interest statement**

The authors have no conflict of interests related to this publication.

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

**Supplementary info**

**Associated data**[Expand](#)

**Full text links**



[Proceed to details](#)

**Cite**

**Share**

3

**Adv Ther**

- 
- 
- 

. 2024 Oct 25.

doi: 10.1007/s12325-024-02999-3. Online ahead of print.

[\*\*Fluticasone Furoate/Umeclidinium/Vilanterol Initiation Following a COPD Exacerbation: Benefits of Prompt Initiation on COPD Outcomes\*\*](#)

[\*\*David Mannino\*\*](#)<sup>1</sup>, [\*\*Kristi DiRocco\*\*](#)<sup>2</sup>, [\*\*Guillaume Germain\*\*](#)<sup>3</sup>, [\*\*François Laliberté\*\*](#)<sup>3</sup>, [\*\*Stephen G Noorduy\*\*](#)<sup>4 5</sup>, [\*\*Ana Urosevic\*\*](#)<sup>3 6</sup>, [\*\*Rosirene Paczkowski\*\*](#)<sup>7</sup>

**Affiliations** [Expand](#)

- PMID: 39453592
- DOI: [10.1007/s12325-024-02999-3](#)

**Abstract**

**Introduction:** Previous real-world evidence suggests that prompt versus delayed initiation of single-inhaler triple therapy (SITT) with fluticasone furoate/umeclidinium/vilanterol (FF/UMEC/VI) following an exacerbation results in improved clinical outcomes for patients with chronic obstructive pulmonary disease (COPD). This prior study was conducted in the first 2 years following FF/UMEC/VI approval, representing early trends. The current updated analysis aims to further elucidate the real-world evidence for FF/UMEC/VI.

**Methods:** This was a retrospective cohort study using the IQVIA PharMetrics® Plus database. Patients with COPD initiating SITT with FF/UMEC/VI within 6 months of an exacerbation (index date) were classified as prompt ( $\leq 30$  days following exacerbation) or delayed (31-180 days) initiators. The baseline period comprised the 12 months prior to index. Inverse probability of treatment weighting was used to balance differences in baseline characteristics between cohorts. COPD exacerbations, hospital readmission rates, and healthcare costs were compared between cohorts post-index.

**Results:** Overall, 5421 patients (prompt, 2057; delayed, 3364) were included. After weighting, baseline characteristics were well balanced between cohorts. For up to 12 months post-index, prompt initiators of FF/UMEC/VI had significantly lower rates of exacerbations per person-year versus delayed initiators (0.74 vs. 1.06; rate ratio 0.70, 95% confidence interval [CI] 0.64-0.77;  $P < 0.001$ ). A 1-day delay in FF/UMEC/VI initiation was associated with a 0.31% increase in the rate of exacerbations. At 90 days post-index, Kaplan-Meier rates of all-cause (hazard ratio [HR] 0.62, 95% CI 0.45-0.86;  $P = 0.004$ ) and COPD-related (HR 0.58, 95% CI 0.35-0.98;  $P = 0.042$ ) hospital readmissions were significantly lower in the prompt versus delayed cohort. Total COPD-related healthcare costs per person per year were significantly lower for patients in the prompt versus delayed cohort.

**Conclusion:** Healthcare providers should consider the positive impact of prompt FF/UMEC/VI initiation on exacerbation rate, hospital readmission rate, and costs when treating patients with COPD at risk of exacerbations.

**Keywords:** Chronic obstructive pulmonary disease; Exacerbation; Fluticasone furoate/umeclidinium/vilanterol; Healthcare costs; Hospital readmission; Single-inhaler triple therapy.

#### Plain language summary

Triple therapy (a combination of three medicines) is recommended for patients with chronic obstructive pulmonary disease (COPD) who experience short-term worsening of symptoms (or COPD attacks). The optimum time for patients who may benefit from triple therapy to initiate their new medication following a COPD attack is still being investigated. This study assesses the effect of initiating treatment with triple therapy with fluticasone furoate/umeclidinium/vilanterol (FF/UMEC/VI) sooner rather than later following a COPD attack. Patients with COPD who experienced a COPD attack and went on to initiate therapy with FF/UMEC/VI were split into two groups—those who initiated FF/UMEC/VI within 30 days of their COPD attack, and those who initiated FF/UMEC/VI between 31 and 180 days following their COPD attack. Patients who initiated FF/UMEC/VI sooner (within 30 days of their original COPD attack) had fewer COPD attacks in the following year compared with patients who initiated FF/UMEC/VI later. Among those who initiated FF/UMEC/VI sooner, there were also fewer patients with hospital readmission, and lower healthcare

costs resulting from COPD, compared with patients who initiated FF/UMEC/VI later. The results of this study suggest that healthcare providers should consider prescribing FF/UMEC/VI for patients with COPD as soon as possible following a COPD attack, rather than delaying the start of therapy, and may encourage patients to start taking FF/UMEC/VI sooner rather than later following a COPD attack.

© 2024. The Author(s).

- [31 references](#)

Full text links



[Proceed to details](#)

Cite

Share

4

Review

Expert Rev Respir Med

- 
- 
- 

. 2024 Oct 25.

doi: [10.1080/17476348.2024.2421843](https://doi.org/10.1080/17476348.2024.2421843). Online ahead of print.

[Effects of cystic fibrosis transmembrane conductance regulator potentiators on clinical outcomes of chronic obstructive pulmonary disease: a systematic review and meta-analysis](#)

[Xi Yan](#)<sup>1</sup>, [Quzhen Deqing](#)<sup>1</sup>, [Feng Yu](#)<sup>1</sup>, [Tao Wang](#)<sup>1</sup>, [Dan Xu](#)<sup>1</sup>, [Fuqiang Wen](#)<sup>1</sup>, [Jun Chen](#)<sup>1</sup>

Affiliations Expand

- PMID: 39450920
- DOI: [10.1080/17476348.2024.2421843](https://doi.org/10.1080/17476348.2024.2421843)

Abstract

**Introduction:** Excessive mucus secretion is pivotal in chronic obstructive pulmonary disease (COPD) pathophysiology, particularly in chronic bronchitis phenotypes. Cystic fibrosis transmembrane conductance regulator (CFTR), has been implicated in COPD-related hypersecretion with acquired dysfunction, and emerged as a therapeutic target. However, the clinical efficacy of CFTR-potentiators in COPD remains controversial.

**Methods:** We searched PubMed, Embase, Cochrane Library, China National Knowledge Infrastructure (CNKI), China Science and Technology Journal (CSTJ) and Wanfang Database to retrieve eligible studies published before 28 May 2024.

**Results:** 1172 COPD patients were included, meta-analysis showed that CFTR-potentiators significantly increased forced expiratory volume in 1 s (FEV<sub>1</sub>) and decreased sweat chloride and fibrinogen levels, with moderate-to-high quality evidence. However, no significant effects were observed on percentage of detected FEV<sub>1</sub> to predicted FEV<sub>1</sub> (FEV<sub>1</sub>% predicted), forced vital capacity (FVC), COPD assessment test (CAT) score, St. George's Respiratory Questionnaire (SGRQ) score or acute exacerbation times, with low-to-moderate quality evidence. Review registration PROSPERO Identifier: CRD42024538708.

**Conclusion:** Our meta-analysis demonstrated CFTR-potentiators' potential efficacy in increasing FEV<sub>1</sub>, decreasing sweat chloride and fibrinogen levels, despite limited impacts on FEV<sub>1</sub>% predicted, FVC, CAT score, SGRQ score and acute exacerbations, underscoring the necessity for future research to evaluate its effects on mucus hypersecretion, acute exacerbations, hospitalizations and mortality in COPD management. Review registration PROSPERO Identifier: CRD42024538708.

**Keywords:** Chronic obstructive pulmonary disease; lcenticaftor; Ivacaftor; cystic fibrosis transmembrane conductance regulator potentiators; forced expiratory volume in 1 s; meta-analysis.

Supplementary info

Publication types [Expand](#)

Full text links



[Proceed to details](#)

Cite

Share

5

Int Immunopharmacol

- 
-

•  
. 2024 Oct 25:140:112765.

doi: 10.1016/j.intimp.2024.112765. Epub 2024 Jul 30.

## [Phenotypes of regulatory T cells in different stages of COPD](#)

[Luan H V Alves](#)<sup>1</sup>, [Juliana T Ito](#)<sup>1</sup>, [Francine M Almeida](#)<sup>1</sup>, [Luana M Oliveira](#)<sup>2</sup>, [Rafael Stelmach](#)<sup>3</sup>, [Lolanda F L C Tibério](#)<sup>3</sup>, [Maria N Sato](#)<sup>2</sup>, [Fernanda D T Q S Lopes](#)<sup>4</sup>

Affiliations [Expand](#)

- PMID: 39083931
- DOI: [10.1016/j.intimp.2024.112765](https://doi.org/10.1016/j.intimp.2024.112765)

Free article

### Abstract

**Background:** Previous studies have shown that failure to control inflammatory processes mediated by regulatory T (Treg) cells contributes to chronic obstructive pulmonary disease (COPD) development and progression. The activity of Treg cells depends on their phenotypic characteristics: resting Treg (rTreg, CD3+CD4+CD25+FOXP3+CD25++CD45RA+) and activated Treg (aTreg, CD3+CD4+CD25+FOXP3+CD25+++CD45RA-) cells exhibit immunosuppressive activity, while cytokine-secreting T cells (FrIII, CD3+CD4+CD25+FOXP3+CD25++CD45RA-) exhibit proinflammatory activity. Previous findings have shown an increased density of cytokine-secreting T cells in COPD patients experiencing exacerbation. However, the methods for evaluating COPD under stable conditions are lacking.

**Aim:** To evaluate Treg cell phenotypes in patients with different stages of COPD under stable conditions.

**Methods:** Peripheral blood mononuclear cells (PBMCs) were isolated from non-obstructed smokers and ex-smokers (NOS group, n = 19) and COPD patients at different stages (COPD I-II group, n = 25; COPD III-IV group, n = 25). The phenotypic characteristics of Treg cells and Th17 cells and their respective intracellular cytokines were analyzed by flow cytometry.

**Results:** Both obstructed groups showed an increase in the proportion of rTregs, while the COPD III-IV group showed additional increases in total Treg and Th17 cells and in IL-10+ cells. There was an increase in proinflammatory mediators (CD3+CD4+IL-17+ cells; CD3+CD4+RORγt+ cells) in the COPD I-II group. In contrast, the NOS group demonstrated high proportions of proinflammatory Treg cells and proinflammatory CD8+ T cells (CD3+CD8+IL-17+).

**Conclusion:** Despite the increase in both total Treg cells and the rTreg phenotype from the early stages of COPD, there was a decrease in cells expressing IL-10, suggesting a failure in controlling the inflammatory process. These events precede the progression of the inflammatory process mediated by Th17 cells.

**Keywords:** COPD; Lymphocytes; Th17; Treg; Treg Phenotypes.

**Copyright © 2024 The Author(s). Published by Elsevier B.V. All rights reserved.**

**Conflict of interest statement**

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

**Supplementary info**

**MeSH terms, SubstancesExpand**

**Full text links**



[Proceed to details](#)

**Cite**

**Share**

**6**

**Review**

**Cureus**

- 
- 
- 

. 2024 Oct 24;16(10):e72252.

doi: 10.7759/cureus.72252. eCollection 2024 Oct.

[N-acetylcysteine Clinical Applications](#)

[Zoubaida Yahia<sup>1</sup>](#), [Amer Yahia<sup>2</sup>](#), [Tarek Abdelaziz<sup>3</sup>](#)

**Affiliations Expand**

- PMID: 39450216
- PMCID: [PMC11499967](#)

- DOI: [10.7759/cureus.72252](https://doi.org/10.7759/cureus.72252)

## Abstract

This study aims to evaluate the therapeutic application of N-acetylcysteine (NAC) as a treatment or adjunct therapy for various medical conditions. While its efficacy in treating acetaminophen overdose, cystic fibrosis, and chronic obstructive pulmonary disease is well-established, emerging evidence suggests that NAC may also benefit a broader spectrum of illnesses due to its safety, simplicity, and affordability. A comprehensive review was conducted by searching PubMed, relevant books, and conference proceedings for publications discussing NAC about the specified health conditions. The clinically relevant data were analysed using the American Family Physician Evidence-Based Medicine Toolkit, following a standard integrated review methodology. NAC shows potential as an adjunctive treatment for a wide range of medical conditions, particularly chronic diseases. It may be beneficial for polycystic ovary syndrome, endometriosis, male infertility, cataracts, glaucoma, dry eye syndrome, parkinsonism, multiple sclerosis, Alzheimer's disease, stroke outcomes, non-acetaminophen-induced acute liver failure, Crohn's disease, ulcerative colitis, schizophrenia, bipolar disorder, and obsessive-compulsive disorder. Although evidence for some conditions is less robust, NAC's therapeutic potential warrants further investigation. Given the aging population and the decline in glutathione levels, the use of NAC should be considered across a variety of medical conditions. This paper suggests that NAC supplementation could play a significant role in reducing morbidity and mortality associated with numerous chronic diseases.

**Keywords:** adjunct therapy; cataracts; chronic diseases; endometriosis; glaucoma; male infertility; n-acetylcysteine; neurodegenerative diseases; polycystic ovary syndrome; psychiatric disorders.

Copyright © 2024, Yahia et al.

## Conflict of interest statement

**Conflicts of interest:** In compliance with the ICMJE uniform disclosure form, all authors declare the following: **Payment/services info:** All authors have declared that no financial support was received from any organization for the submitted work. **Financial relationships:** All authors have declared that they have no financial relationships at present or within the previous three years with any organizations that might have an interest in the submitted work. **Other relationships:** All authors have declared that there are no other relationships or activities that could appear to have influenced the submitted work.

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

## Supplementary info

Publication types [Expand](#)

## Full text links



[Proceed to details](#)

Cite

Share

7

J Occup Med Toxicol

- 
- 
- 

. 2024 Oct 24;19(1):41.

doi: 10.1186/s12995-024-00440-7.

[The prevalence of respiratory symptoms and diseases and declined lung function among foundry workers](#)

[Kirsi Koskela](#)<sup>1,2</sup>, [Lauri Lehtimäki](#)<sup>3</sup>, [Jukka Uitti](#)<sup>4</sup>, [Panu Oksa](#)<sup>5</sup>, [Antti Tikkakoski](#)<sup>6</sup>, [Riitta Sauni](#)<sup>4</sup>

Affiliations Expand

- PMID: 39448978
- DOI: [10.1186/s12995-024-00440-7](#)

Abstract

**Background:** Foundry workers are occupationally exposed to a variety of inhalable chemical substances. Occupational exposure to vapors, gases, dusts, and fumes can lead to adverse health effects on the respiratory system and cause chronic respiratory diseases, such as interstitial lung diseases (ILDs), chronic obstructive lung disease (COPD), chronic bronchitis, and emphysema. Research on respiratory symptoms, diseases, and lung function in foundry workers over the past few decades has been limited. The aim of this cross-sectional study was to assess the prevalence of respiratory symptoms and diseases and declined lung function of current foundry workers, ex-foundry workers, and unexposed controls.

**Methods:** We assessed respiratory symptoms, diseases, and lung function among 335 current foundry workers, 64 ex-foundry workers, and 161 unexposed controls. The cumulative dust exposure (mg-y) of each participant was calculated, and the median cumulative dust exposure according to the main places of exposure was determined.

**Results:** A higher prevalence of chronic bronchitis, as reported in a questionnaire, was found among current and ex-foundry workers compared to unexposed controls, even after adjusting for pack-years of smoking ( $p = 0.009$ ). Additionally,

cough and wheezing in adulthood without respiratory infection, and chronic rhinitis symptoms were more common among current and ex-foundry workers compared to unexposed controls. These differences remained significant even after adjusting for pack-years of smoking and body mass index (BMI) ( $p = 0.007$  and  $p < 0.001$ , respectively). Impaired lung function was more prevalent among both ex-foundry workers (29.7%) and current foundry workers (15.5%) compared to the unexposed controls (8.7%), with the difference remaining significant even after adjusting for the pack-years of smoking and BMI ( $p = 0.009$ ). According to the questionnaire, the number of physician-diagnosed cases of chronic obstructive pulmonary disease (COPD) or chronic bronchitis was unexpectedly low compared to the indications from the symptom questionnaire and lung function test results, suggesting a potential underdiagnosis. The prevalence of silicosis was low (0.8%) among current and ex-foundry workers.

**Conclusions:** Respiratory symptoms are common among foundry workers. Current and ex-foundry workers exhibited lower lung function in spirometry compared to unexposed controls. There is a potential underdiagnosis of COPD and chronic bronchitis among foundry workers.

**Keywords:** Foundry work; Lung function; Occupational exposure; Occupational respiratory diseases.

© 2024. The Author(s).

- [41 references](#)

Full text links



[Proceed to details](#)

Cite

Share

8

Respirology

- 
- 
- 

. 2024 Oct 24.

doi: 10.1111/resp.14843. Online ahead of print.

[Diffusion capacity and static hyperinflation as markers of disease progression predict 3-year mortality in COPD: Results from COSYCONET](#)

[Hendrik Pott](#)<sup>1</sup>, [Barbara Weckler](#)<sup>1</sup>, [Swetlana Gaffron](#)<sup>2</sup>, [Roman Martin](#)<sup>3</sup>, [Dieter Maier](#)<sup>4</sup>, [Peter Alter](#)<sup>5</sup>, [Frank Biertz](#)<sup>6</sup>, [Tim Speicher](#)<sup>5</sup>, [Wilhelm Bertrams](#)<sup>7</sup>, [Anna Lena Jung](#)<sup>7,8</sup>, [Katrin Laakmann](#)<sup>7</sup>, [Dominik Heider](#)<sup>9</sup>, [Miel Wouters](#)<sup>10</sup>, [Claus F Vogelmeier](#)<sup>5</sup>, [Bernd Schmeck](#)<sup>1,7,11</sup>; [COSYCONET Study Group](#)

Collaborators, Affiliations Expand

- PMID: 39448064
- DOI: [10.1111/resp.14843](https://doi.org/10.1111/resp.14843)

Abstract

**Background and objective:** Chronic obstructive pulmonary disease (COPD) exhibits diverse patterns of disease progression, due to underlying disease activity. We hypothesized that changes in static hyperinflation or KCO % predicted would reveal subgroups with disease progression unidentified by preestablished markers (FEV<sub>1</sub>, SGRQ, exacerbation history) and associated with unique baseline biomarker profiles. We explored 18-month measures of disease progression associated with 18-54-month mortality, including changes in hyperinflation parameters and transfer factor, in a large German COPD cohort.

**Methods:** Analysing data of 1364 patients from the German observational COSYCONET-cohort, disease progression and improvement patterns were assessed for their impact on mortality via Cox hazard regression models. Association of biomarkers and COPD Assessment test items with phenotypes of disease progression or improvement were evaluated using logistic regression and random forest models.

**Results:** Increased risk of 18-54-month mortality was linked to decrease in KCO % predicted (7.5% increments) and FEV<sub>1</sub> (20 mL increments), increase in RV/TLC (2% increments) and SGRQ (≥6 points), and an exacerbation grade of 2 at 18 months. Decrease in KCO % predicted ≥7.5% and an increase of RV/TLC ≥2% were the most frequent measures of 18-month disease progression occurring in ~52% and ~46% of patients, respectively. IL-6 and CRP thresholds exhibited significant associations with medium- and long-term disease measures.

**Conclusion:** In a multicentric cohort of COPD, new markers of current disease activity predicted mid-term mortality and could not be anticipated by baseline biomarkers.

**Keywords:** COPD; COSYCONET cohort; chronic obstructive pulmonary disease; clinical respiratory medicine; cytokine; hyperinflation; inflammation; respiratory function tests.

© 2024 The Author(s). *Respirology* published by John Wiley & Sons Australia, Ltd on behalf of Asian Pacific Society of Respirology.

- [50 references](#)

Supplementary info

Grants and fundingExpand

## Full text links



## [Proceed to details](#)

## Cite

## Share

9

## Br J Radiol

- 
- 
- 

. 2024 Oct 24:tqae211.

doi: 10.1093/bjr/tqae211. Online ahead of print.

## [Automated CT-based Decoupling of the Effects of Airway Narrowing and Wall Thinning on Airway Counts in Chronic Obstructive Pulmonary Disease](#)

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

## Affiliations Expand

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

## Abstract

**Objective:** We examine pathways of airway alteration due to wall thinning, narrowing, and obliteration at different COPD severity stages using CT-derived airway metrics.

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

**Results:** TAC, TACp, and WT were significantly lower (p < 0.0001) in mild, moderate, and severe COPD compared to the preserved lung function group. TAC (TACp)

losses attributed to narrowing and obliteration of small airways were 4.59, 13.29, and 32.58% (4.64, 17.82, and 45.51%) in mild, moderate, and severe COPD, while the losses attributed to wall thinning were 8.24, 17.01, and 22.95% (12.79, 25.66, and 33.95%) in respective groups.

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

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

© The Author(s) 2024. Published by Oxford University Press on behalf of the British Institute of Radiology.

Full text links



[Proceed to details](#)

Cite

Share

10

Case Reports

Thorac Cancer

- 
- 
- 

. 2024 Oct 24.

doi: 10.1111/1759-7714.15474. Online ahead of print.

[PET-CT for visualizing the pathophysiology of COPD in patients with early-stage NSCLC](#)

[Haruki Kobayashi](#)<sup>1</sup>, [Tateaki Naito](#)<sup>1</sup>

Affiliations Expand

- PMID: 39446593

- DOI: [10.1111/1759-7714.15474](https://doi.org/10.1111/1759-7714.15474)

Free article

*No abstract available*

- [5 references](#)

Supplementary info

Publication types [Expand](#)

Full text links



[Proceed to details](#)

Cite

Share

11

BMJ Open Respir Res

- 
- 
- 

. 2024 Oct 23;11(1):e002496.

doi: [10.1136/bmjresp-2024-002496](https://doi.org/10.1136/bmjresp-2024-002496).

[Long-term mortality in patients with chronic obstructive pulmonary disease requiring acute non-invasive ventilation with and without obstructive sleep apnoea](#)

[Benjamin Hm Nguyen](#)<sup>1 2 3 4</sup>, [Collette Menadue](#)<sup>2</sup>, [Brendon J Yee](#)<sup>2 3 4</sup>, [Olivia A McGuinness](#)<sup>2 4</sup>, [Keith Kh Wong](#)<sup>2 3 4</sup>, [Nathaniel S Marshall](#)<sup>3 5</sup>, [Edmund Mt Lau](#)<sup>2 4</sup>, [Amanda J Piper](#)<sup>2</sup>

Affiliations [Expand](#)

- PMID: 39448198
- PMCID: [PMC11499800](#)
- DOI: [10.1136/bmjresp-2024-002496](https://doi.org/10.1136/bmjresp-2024-002496)

Abstract

**Introduction:** Chronic obstructive pulmonary disease (COPD)/obstructive sleep apnoea (OSA) overlap syndrome (OVS) is associated with higher mortality compared with COPD alone in stable outpatients. However, the prognosis of patients hospitalised with acute hypercapnic respiratory failure (ARF) is unclear.

**Methods:** In this retrospective cohort study, 124 patients with COPD and 44 patients with OVS were treated with positive airway pressure (PAP) for ARF and followed up for a median of 20.6 months (IQR 3.80-53.4). Patients treated in the emergency or intensive care units and did not continue PAP on the wards were excluded. We compared patient characteristics and overall survival.

**Results:** Mean (SD) age of participants was 71 (9.7) years and 51% were males. Patients with OVS had a higher prevalence of hypertension (75% vs 50.0%,  $p=0.004$ ) and type 2 diabetes mellitus (45.5% vs 19.4%,  $p<0.001$ ). There was no difference in arterial pH or carbon dioxide levels at presentation. On univariate analysis, mortality was lower in OVS compared with patients with COPD alone (HR 0.57, 95% CI 0.37 to 0.87). Median survival was 51.0 (95% CI 38.1 to 93.7) months in OVS and 27.7 (95% CI 16.9 to 35.1) months in COPD alone. Median survival in OVS prescribed home PAP therapy was significantly higher (59.0 months) compared with OVS not discharged on therapy (36.1 months), and to patients with COPD, irrespective of home therapy prescription ( $p=0.022$ ). After adjusting for multiple known confounders, patients with OVS still appeared to have lower mortality; however, this was no longer statistically significant (HR 0.75, 95% CI 0.45 to 1.24).

**Discussion:** We found that patients with COPD and ARF requiring non-invasive ventilation may have higher mortality rates compared with patients with OVS. Patients with OVS treated with home PAP had lower mortality compared with patients not prescribed PAP on discharge. These findings suggest that patients with COPD who present with ARF may benefit from early diagnosis of OSA and initiation of long-term PAP therapy.

**Keywords:** COPD Exacerbations; Non invasive ventilation; Sleep apnoea.

© Author(s) (or their employer(s)) 2024. Re-use permitted under CC BY-NC. No commercial re-use. See rights and permissions. Published by BMJ.

**Conflict of interest statement**

**Competing interests:** None declared.

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

**Supplementary info**

**MeSH terms**Expand

**Full text links**



[Proceed to details](#)

**Cite**

Share

12

BMC Med

- 
- 
- 

. 2024 Oct 23;22(1):488.

doi: 10.1186/s12916-024-03705-4.

[Association of systemic corticosteroid use with prognosis of patients with acute exacerbations of chronic obstructive pulmonary disease in the intensive care unit: a propensity score-matched cohort study](#)

[Le Bai<sup>1</sup>, Pengfei Zhu<sup>1</sup>, Tingyu Pan<sup>1</sup>, Yuanjie Liu<sup>1</sup>, Yong Xu<sup>2</sup>, Hailang He<sup>3</sup>, Xianmei Zhou<sup>4</sup>](#)

Affiliations Expand

- PMID: 39443937
- DOI: [10.1186/s12916-024-03705-4](#)

Free article

Abstract

**Background:** Systemic corticosteroid has been recommended for the treatment of severe acute exacerbations of chronic obstructive pulmonary disease (AECOPD). Little is known about the use of systemic corticosteroid in patients admitted to intensive care units (ICU) since most of previous trials excluded these critically ill patients.

**Methods:** We conducted a matched cohort study based on the Medical Information Mart in Intensive Care-IV database. Patients with AECOPD in ICUs were included. Patients in the exposure group should be intravenously administered with methylprednisolone or treated with oral prednisone within 24 h after ICU admission. The propensity score matching and multivariable analyses were used to adjust for covariates. The primary outcome was 28-day mortality, and secondary outcomes included ICU mortality, in-hospital mortality, the duration of ICU stay, and mechanical ventilation. Subgroup analyses for the primary outcome were performed according to age, sex, type of corticosteroid, type of ICU admission, type of mechanical ventilation, and co-morbidities/complications.

**Results:** The entire cohort and the matched cohort included 763 and 412 patients, respectively. In the matched cohort, the use of systemic corticosteroid had no

impact on 28-day mortality (OR: 1.00, 95% CI: 0.61-1.64, P = 1.000). The results kept consistent in all subgroups. Additionally, systemic corticosteroid showed no benefits on ICU mortality, in-hospital mortality, the length of ICU stay, and the duration of mechanical ventilation.

**Conclusions:** The results of this study do not support routine use of systemic corticosteroid in patients with AECOPD admitted to ICUs.

**Keywords:** Chronic obstructive pulmonary disease; Cohort study; Intensive care unit; Systemic corticosteroid.

© 2024. The Author(s).

- [31 references](#)

Supplementary info

MeSH terms, SubstancesExpand

Full text links



[Proceed to details](#)

Cite

Share

13

PLoS One

- 
- 
- 

. 2024 Oct 23;19(10):e0311537.

doi: 10.1371/journal.pone.0311537. eCollection 2024.

[Association of chronic obstructive pulmonary disease with risk of lung cancer in individuals aged 40 years and older: A cross-sectional study based on NHANES 2013-2018](#)

[Hong Chen](#)<sup>1</sup>, [Xiao-Bo Hu](#)<sup>1</sup>, [Jin Zhou](#)<sup>2</sup>, [Chen-Yun He](#)<sup>1</sup>, [Ke Wang](#)<sup>3</sup>, [Qun Yi](#)<sup>2,3</sup>

Affiliations Expand

- PMID: 39441785
- PMCID: [PMC11498685](#)

- DOI: [10.1371/journal.pone.0311537](https://doi.org/10.1371/journal.pone.0311537)

## Abstract

**Background:** It remains unclear whether chronic obstructive pulmonary disease (COPD) is an independent risk factor for lung cancer after excluding confounding factors such as smoking, age, sex, body mass index (BMI), comorbidities, etc.

**Methods:** Data from 11,440 participants ( $\geq 40$  years old) in the National Health and Nutrition Examination Survey (NHANES) 2013-2018 were analyzed. Weighted multivariable logistic regression models were used to assess the association between COPD and lung cancer risk. Subgroup analyses were based on age, sex, BMI, and smoking.

**Results:** This study included 660 patients with COPD and 10,780 participants without COPD. The prevalence of lung cancer was significantly higher in patients with COPD compared to participants without COPD (3.39% vs 0.14%). After adjusting for confounding factors, COPD was associated with a significantly increased risk of lung cancer (OR, 12.24, 95% CI, 4.99-30.06,  $p < 0.001$ ). This association remained significant in all subgroups, particularly in individuals aged  $> 65$  years (OR, 20.05, 95% CI, 6.85-58.72,  $p < 0.001$ ), smokers (OR, 19.38, 95% CI, 2.02-185.66,  $p = 0.010$ ), males (OR, 17.39, 95% CI, 5.28-57.31,  $p < 0.001$ ), individuals who quit smoking within 10 years (OR, 12.86, 95% CI, 2.59, 63.99,  $p = 0.002$ ), and individuals with a BMI  $> 25$  kg/m<sup>2</sup> (OR, 14.56, 95% CI, 3.88-54.69,  $p < 0.001$ ).

**Conclusions:** COPD is an independent risk factor for lung cancer, especially in certain subgroups. The combination of COPD and smoking greatly amplifies the lung cancer risk. These findings highlight the importance of early lung cancer screening in patients with COPD.

**Copyright:** © 2024 Chen et al. This is an open access article distributed under the terms of the Creative Commons Attribution License, which permits unrestricted use, distribution, and reproduction in any medium, provided the original author and source are credited.

## Conflict of interest statement

The authors have declared that no competing interests exist.

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

## Supplementary info

MeSH terms, Grants and fundingExpand

## Full text links



[Proceed to details](#)

Cite

Share

14

Ann Am Thorac Soc

- 
- 
- 

. 2024 Oct 23.

doi: 10.1513/AnnalsATS.202312-1089OC. Online ahead of print.

**[Comorbidities, Tobacco Exposure, and Geography: Added Risk Factors of Heat and Cold Wave Related Mortality among United States Veterans with COPD](#)**

**[Austin Rau](#)<sup>1</sup>, [Arianne K Baldomero](#)<sup>2,3</sup>, [Chris H Wendt](#)<sup>4</sup>, [Gillian Am Tarr](#)<sup>5</sup>, [Bruce H Alexander](#)<sup>5</sup>, [Jesse D Berman](#)<sup>6</sup>**

Affiliations Expand

- PMID: 39441102
- DOI: [10.1513/AnnalsATS.202312-1089OC](https://doi.org/10.1513/AnnalsATS.202312-1089OC)

Abstract

**Introduction:** Understanding the health risks associated with extreme weather events is needed to inform policies to protect vulnerable populations. To address this need, we estimated heat and cold wave related mortality risks in a cohort of veteran patients with chronic obstructive pulmonary disease (COPD) and explored disparities among strata of comorbidities, tobacco exposure, and urbanicity.

**Methods:** We designed a time stratified case-crossover study among deceased patients with COPD between 2016 to 2021 in the Veterans Health Administration system. Distributed lag models with conditional logistic regression estimated incidence rate ratios (IRR) of heat and cold wave associated mortality risk from lag days 0 to 3 for heatwaves and 0 to 7 for cold waves. Attributable risks (AR) per 100,000 patients were also calculated.

**Results:** Of the 377,545 deceased patients with COPD, the largest heatwave related mortality risk was in patients with COPD and asthma, AR: 14,016 (95% CI: -326, 30,706) across lag days 0 to 3. The largest cold wave related mortality burden was in patients with COPD with no other reported comorbidities, AR: 1,704 (95% CI: 759, 2,686) across lag days 0 to 7. Patients residing in urban settings had the greatest heatwave, AR: 1,062 (95% CI: (576, 1,559), and cold wave AR: 1,261 (95% CI: 440,

2,105) related mortality risk (across lag days 0 to 1 and 0 to 7 respectively). There were no differences in mortality risk by tobacco exposure.

**Conclusion:** Our findings show individuals with COPD are susceptible to heat and cold waves. This information can inform clinical practice and public health policy about the mortality risk vulnerable populations experience with respect to extreme weather conditions. Furthermore, our results may be used in the development and refinement of future extreme weather warning systems designed for public health purposes.

Full text links



[Proceed to details](#)

Cite

Share

15

Review

J Investig Allergol Clin Immunol

- 
- 
- 

. 2024 Oct 23;34(5):282-292.

doi: 10.18176/jiaci.0984. Epub 2023 Dec 19.

[Nonasthmatic Eosinophilic Bronchitis: A Systematic Review of Current Treatment Options](#)

[D Betancor](#)<sup>1</sup>, [M Valverde-Monge](#)<sup>1</sup>, [B Barroso](#)<sup>1</sup>, [A Gomez-Lopez](#)<sup>1</sup>, [J Sastre](#)<sup>1</sup>

Affiliations Expand

- PMID: 38113129
- DOI: [10.18176/jiaci.0984](#)

Abstract

Nonasthmatic eosinophilic bronchitis is characterized by persistent dry or barely productive cough and bronchial eosinophilia without airway obstruction or

bronchial hyperreactivity. It is primarily a chronic disease, in which some patients have clinical and pathophysiological relapses, while others progress to asthma or chronic obstructive pulmonary disease. It accounts for 5% to 30% of cases referred for chronic cough. Exposure to common inhalants and occupational sensitizers has been proposed as a possible cause of the disease, although the etiology and underlying mechanisms are uncertain. Some features are similar to those of asthma, such as airway eosinophilia, inflammatory mediator levels, and airway remodeling. Differences in airway pathophysiology, such as the location of airway inflammation and levels of IL-13 and PGE-2, have been reported. Sputum cell count is the gold standard test for diagnosis, and other biomarkers, such as exhaled nitric oxide, could support the diagnosis. A systematic review of treatments for the disease shows that while inhaled corticosteroids are the primary option, the appropriate dose, the type of corticosteroid, and the duration of treatment remain unknown. Treatment duration is inversely correlated with the relapse rate. Increased doses of inhaled corticosteroids, oral corticosteroids, and leukotriene receptor antagonists are recommended in persistent disease. Anti-IL-5 biologics could be promising in this disease. Studies that investigate biomarkers for diagnosis and prognosis are necessary, as are randomized controlled studies for second-line treatments.

**Keywords:** Chronic cough; Eosinophilic bronchitis; Nonasthmatic eosinophilic bronchitis; Sputum.

Supplementary info

Publication types, MeSH terms, SubstancesExpand

Full text links



[Proceed to details](#)

Cite

Share

16

Review

Eur J Intern Med

- 
- 
- 

. 2024 Oct 22:S0953-6205(24)00435-7.

doi: 10.1016/j.ejim.2024.10.015. Online ahead of print.

## [Chronic obstructive pulmonary disease's eosinophilic phenotype: Clinical characteristics, biomarkers and biotherapy](#)

[Mauro Maniscalco](#)<sup>1</sup>, [Claudio Candia](#)<sup>2</sup>, [Pasquale Ambrosino](#)<sup>3</sup>, [Antonio Iovine](#)<sup>3</sup>, [Salvatore Fuschillo](#)<sup>3</sup>

Affiliations Expand

- PMID: 39443246
- DOI: [10.1016/j.ejim.2024.10.015](#)

Abstract

COPD is a chronic, heterogeneous inflammatory disorder of the airways with persistent and poorly reversible airflow limitation, causing symptoms such as cough, shortness of breath, and sputum production. Despite optimal treatment, some patients remain symptomatic due to the disease's heterogeneity, manifesting in various phenotypes. One notable phenotype involves eosinophilic inflammation, with a variable prevalence. Identifying eosinophilic phenotypes is crucial for tailored therapeutic strategies, as they respond favorably to corticosteroids and potentially biologics. Recent advances in both clinical trials and spontaneous research have helped understand the biological and clinical characteristics of this phenotype, although no universal consensus has been reached yet on the definition of the cut-off values of the eosinophil peripheral blood count. Moreover, there is evidence of novel emerging biomarkers which might go beyond the sole eosinophil count, while significant advancements in terms of pharmacological treatment have been made, with dupilumab being the first biological drug being licensed for COPD patients with elevated circulating eosinophils in the stable phase. In light of the above, although several papers have been written on the relationship between eosinophils and COPD, in the present work we endeavored to summarize and discuss the pivotal literature findings regarding the eosinophilic COPD in order to help define the biological and clinical features of this peculiar phenotype, with particular attention to the use of established and emerging biomarkers, as well as current and future therapeutic perspectives.

Keywords: Biological therapy; Biomarkers; COPD; Disability; Outcome.

Copyright © 2024. Published by Elsevier B.V.

Conflict of interest statement

Disclosures No competing financial interests exist.

Supplementary info

Publication typesExpand

Full text links



[Proceed to details](#)

Cite

Share

17

Observational Study

BMC Pulm Med

- 
- 
- 

. 2024 Oct 22;24(1):525.

doi: 10.1186/s12890-024-03339-5.

[Clinical characteristics, use and switch of drugs for obstructive airway diseases among patients with COPD experiencing an exacerbation: a retrospective analysis of Italian administrative healthcare data](#)

[Letizia Dondi<sup>1</sup>, Giulia Ronconi<sup>1</sup>, Silvia Calabria<sup>2</sup>, Irene Dell'Anno<sup>1</sup>, Leonardo Dondi<sup>1</sup>, Carlo Piccinni<sup>1</sup>, Ovidio Brignoli<sup>3</sup>, Giorgio Walter Canonica<sup>4,5</sup>, Mauro Carone<sup>6</sup>, Fabiano Di Marco<sup>7</sup>, Claudio Micheletto<sup>8</sup>, Carlo Vancheri<sup>9</sup>, Antonella Pedrini<sup>1</sup>, Alice Addesi<sup>10</sup>, Immacolata Esposito<sup>10</sup>, Nello Martini<sup>1</sup>](#)

Affiliations Expand

- PMID: 39438812
- PMCID: [PMC11494943](#)
- DOI: [10.1186/s12890-024-03339-5](#)

Abstract

**Background:** Chronic obstructive pulmonary disease (COPD) represents an important health challenge, despite being preventable and manageable thanks to up-to-date recommendations. In Italy, the pharmaceutical care of COPD patients is still ill-timed and inaccurate. This study aimed to describe the treatment of COPD patients in Italy and possible switches following an exacerbation.

**Methods:** This observational retrospective analysis of Italian administrative healthcare data from the Fondazione Ricerca e Salute (ReS) database identified patients aged  $\geq 45$  years with COPD in 2019 and 2020. At least 6 years of look-back period and absence of concomitant asthma were required. COPD patients were

categorized by treatment (SI-single/MI-multiple inhalers, TT-triple therapy, DT-dual therapy, other respiratory treatments, untreated) at index date (first dispensation during accrual period). Occurrence of moderate/severe exacerbation during one-year preceding index date and treatments during one-year preceding the exacerbation (possible switch) were evaluated.

**Results:** From ~ 4.7 million beneficiaries of the Italian National Health Service in 2019 and 2020, respectively, 105,828 and 103,729 (43 and 41 × 1,000 inhabitants aged ≥ 45 years) were identified as having COPD. Of 2019/2020 patients: 3.4%/5.2% received SI-TT, 20.7%/17.5% MI-TT, 35.9%/38.1% DT, 33.0%/33.1% other treatments, and 7.0%/6.0% were untreated. Males were prevalent and median age was > 73 years for all groups. Of 2019/2020 cohorts, heart failure and coronary artery disease affected 24/20%, 18/17%, and 11%/16% patients with SI-TT, MI-TT, DT, and other treatments, respectively. A previous moderate/severe exacerbation (2019/2020 patients) occurred to 60.5%/56.6%, 39.9%/37.4%, 30.8%/29.2% and 31.9%/29.7% patients treated with SI-TT, MI-TT, DT, and other treatments, respectively. Of 2019/2020 patients experiencing moderate/severe exacerbation: 6.0%/7.0% receiving DT, 5.1%/7.0% receiving other treatments and 4.5%/10.0% untreated, switched to SI-TT; 23.7%/16.9% receiving DT, 21.4%/17.7% receiving other treatments and 15.4%/12.0% untreated, switched to MI-TT.

**Conclusions:** COPD patients receiving TT were older and had more comorbidities, especially cardiovascular diseases, than patients receiving DT or other treatments. The limited number of patients switching after exacerbation suggests that many COPD patients may be inappropriately treated. Ensuring early and adequate treatment, combination of in-hospital and outpatient management, and integration of specialist and primary care is pivotal for the appropriate clinical management of COPD patients.

**Keywords:** Cardiovascular Diseases; Chronic Obstructive Pulmonary Disease; Delivery of Health Care; Disease Exacerbation; Pharmaceutical Services; Retrospective studies.

© 2024. The Author(s).

**Conflict of interest statement**

The authors declare no competing interests.

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

**Supplementary info**

**Publication types, MeSH terms, SubstancesExpand**

**Full text links**



[Proceed to details](#)

**Cite**

Share

18

Meta-Analysis

BMJ Open Respir Res

- 
- 
- 

. 2024 Oct 22;11(1):e002431.

doi: 10.1136/bmjresp-2024-002431.

[High-flow nasal cannula in adults with chronic respiratory diseases during physical exercise: a systematic review and meta-analysis](#)

[Eduardo Moya-Gallardo<sup>1 2 3</sup>, Jeniffer Fajardo-Gutiérrez<sup>2</sup>, Karol Acevedo<sup>2 4</sup>, Francisca Verdugo-Paiva<sup>5 6</sup>, Rocío Bravo-Jeria<sup>7</sup>, Luis Ortiz-Muñoz<sup>5 8</sup>, Felipe Contreras-Briceño<sup>3 9</sup>, Maximiliano Espinosa-Ramírez<sup>2 3 9</sup>](#)

Affiliations Expand

- PMID: 39438081
- PMCID: [PMC11499805](#)
- DOI: [10.1136/bmjresp-2024-002431](#)

Abstract

**Background:** Chronic respiratory diseases (CRDs) affect at least 545 million people globally, leading to symptoms such as dyspnoea, fatigue and limited physical activity. Pulmonary rehabilitation (PR) programmes aim to improve the exercise capacity and quality of life of patients with CRD through exercise training. High-flow nasal cannula (HFNC) therapy shows potential as an adjunct treatment during exercise, but its effects on CRD populations are unclear. The purpose of this systematic review was to evaluate the effects of HFNC during exercise in people with CRD.

**Methods:** A systematic review was conducted and eight databases and other resources were searched from inception (28 June 2022) to 4 April 2023. Studies that used adult patients with CRD and randomised controlled trial that compared the effect of HFNC versus standard care (conventional oxygen therapy or room air) during exercise were included. Two authors independently selected trials, extracted

the data, assessed risks of bias and employed the GRADE (Grading of Recommendations Assessment, Development, and Evaluation) approach to judging the certainty of evidence. We pooled trials using random-effect models and inverse variance estimation.

**Results:** Seventeen studies (n=8406) were included in the review (570 patients). The evidence suggests that HFNC increases exercise time after multiple training sessions (weighted mean difference (WMD)=160.58 s; 95% CI=67.32-253.83, 2 studies) and increase after a single session (WMD=72.10 s; 95% CI=28.95-115.24, 11 studies). HFNC may result in little improvements in secondary outcomes (quality of life, dyspnoea, comfort, complications and adherence).

**Discussion:** The evidence suggests that HFNC may increase functional exercise capacity and positively enhance secondary outcomes. Continued research is justified to elucidate the role of HFNC in PR during exercise training.

Prospero registration number: CRD42022336263.

**Keywords:** COPD Pathology; Exercise; Interstitial Fibrosis; Long Term Oxygen Therapy (LTOT); Pulmonary Rehabilitation; Systemic disease and lungs.

© Author(s) (or their employer(s)) 2024. Re-use permitted under CC BY-NC. No commercial re-use. See rights and permissions. Published by BMJ.

**Conflict of interest statement**

Competing interests: None declared.

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

**Supplementary info**

Publication types, MeSH terms [Expand](#)

**Full text links**



[Proceed to details](#)

**Cite**

**Share**

19

**Comparative Study**

**BMJ Open Respir Res**

•

- 
- 

. 2024 Oct 22;11(1):e002144.

doi: 10.1136/bmjresp-2023-002144.

### [Ventilator performances for non-invasive ventilation: a bench study](#)

[Christian Caillard](#)<sup>1 2 3</sup>, [Emeline Fresnel](#)<sup>3 4</sup>, [Elise Artaud-Macari](#)<sup>3 5</sup>, [Antoine Cuvelier](#)<sup>3 5</sup>, [Fabienne Tamion](#)<sup>2 6</sup>, [Maxime Patout](#)<sup>7</sup>, [Christophe Girault](#)<sup>2 3</sup>

Affiliations Expand

- PMID: 39438080
- PMCID: [PMC11499821](#)
- DOI: [10.1136/bmjresp-2023-002144](#)

### Abstract

**Introduction:** A wide range of recent ventilators, dedicated or not, is available for non-invasive ventilation (NIV) in respiratory or intensive care units (ICU). We conducted a bench study to compare their technical performances.

**Methods:** Ventilators, including five ICU ventilators with NIV mode on, two dedicated NIV ventilators and one transport ventilator, were evaluated on a test bench for NIV, consisting of a 3D manikin head connected to an ASL 5000 lung model via a non-vented mask. Ventilators were tested according to three simulated lung profiles (normal, obstructive, restrictive), three levels of simulated air leakage (0, 15, 30 L/min), two levels of pressure support (8, 14 cmH<sub>2</sub>O) and two respiratory rates (15, 25 cycles/min).

**Results:** The global median Asynchrony Index (AI) was higher with ICU ventilators than with dedicated NIV ventilators (4% (0; 76) vs 0% (0; 15), respectively;  $p < 0.05$ ) and different between all ventilators ( $p < 0.001$ ). The AI was higher with ICU ventilators for the normal and restrictive profiles ( $p < 0.01$ ) and not different between ventilators for the obstructive profile. Auto-triggering represented 43% of all patient-ventilator asynchrony. Triggering delay, cycling delay, inspiratory pressure-time product, pressure rise time and pressure at mask were different between all ventilators ( $p < 0.01$ ). Dedicated NIV ventilators induced a lower pressure-time product than ICU and transport ventilators ( $p < 0.01$ ). There was no difference between ventilators for minute ventilation and peak flow.

**Conclusion:** Despite the integration of NIV algorithms, most recent ICU ventilators appear to be less efficient than dedicated NIV ventilators. Technical performances could change, however, according to the underlying respiratory disease and the level of air leakage.

**Keywords:** COPD Exacerbations; Critical Care; Equipment Evaluations; Non invasive ventilation.

© Author(s) (or their employer(s)) 2024. Re-use permitted under CC BY-NC. No commercial re-use. See rights and permissions. Published by BMJ.

#### Conflict of interest statement

**Competing interests:** Christian Caillard reports non-financial support from Asten. Christophe Girault reports grants and non-financial support from Fischer & Paykel Healthcare, Resmed Ltd., Loweinstein Medical, Asten, outside the submitted work. Antoine Cuvelier, Maxime Patout, Emeline Fresnel, Fabienne Tamion and Elise Artaud-Macari have nothing to disclose.

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

#### Supplementary info

Publication types, MeSH terms [Expand](#)

#### Full text links



[Proceed to details](#)

#### Cite

#### Share

20

#### Editorial

#### Respirology

- 
- 
- 

. 2024 Oct 21.

doi: 10.1111/resp.14845. Online ahead of print.

[Is there a role for chest wall mobilization in the management of COPD?](#)

[Annemarie L Lee](#)<sup>1,2</sup>, [Lissa M Spencer](#)<sup>3,4</sup>

Affiliations [Expand](#)

- PMID: 39434259

- DOI: [10.1111/resp.14845](https://doi.org/10.1111/resp.14845)

*No abstract available*

Keywords: chest wall mobilization; chronic obstructive pulmonary disease (COPD); exercise capacity; respiratory efficiency.

- [10 references](#)

Supplementary info

Publication types [Expand](#)

Full text links



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

1

Expert Rev Cardiovasc Ther

- 
- 
- 

. 2024 Oct 24:1-14.

doi: [10.1080/14779072.2024.2416666](https://doi.org/10.1080/14779072.2024.2416666). Online ahead of print.

[Managing elderly patients with atrial fibrillation and multimorbidity: call for a systematic approach](#)

[Colinda van Deutekom](#)<sup>1</sup>, [Jeroen M L Hendriks](#)<sup>2,3</sup>, [Marius Myrstad](#)<sup>4</sup>, [Isabelle C Van Gelder](#)<sup>1</sup>, [Michiel Rienstra](#)<sup>1</sup>

Affiliations [Expand](#)

- PMID: 39441182
- DOI: [10.1080/14779072.2024.2416666](https://doi.org/10.1080/14779072.2024.2416666)

Abstract

**Introduction:** Atrial fibrillation (AF) is often accompanied by comorbidities. Not only cardiovascular but also non-cardiovascular comorbidities have been associated with AF. Multimorbidity is therefore a common finding in patients with AF, especially in elderly patients. Multimorbidity is associated with adverse outcomes, adds complexity to AF management, and poses a significant burden on healthcare costs. It is expected that the prevalence of elderly patients with multimorbidity will increase significantly. It is therefore crucial to outline implications for clinical practice and guide comprehensive multimorbidity management.

**Areas covered:** This perspective article outlines multimorbidity in AF and the importance of comprehensive comorbidity management. It addresses current clinical practice guided by international guidelines and the need for integrated care including a patient-centered focus, comprehensive AF management, coordinated multidisciplinary care, and supporting technology. Moreover, it proposes a novel model of care delivery following a systematic approach to multimorbidity management.

**Expert opinion:** Providing comprehensive care by means of a multidisciplinary team and patient engagement is crucial to provide optimal personalized care for elderly patients with AF and multimorbidity. A systematic integrated care approach seems promising, but further studies are needed to investigate the feasibility of a systematic approach and prioritization of comorbidity management in patients with multimorbidity.

**Keywords:** Atrial fibrillation; comorbidities; integrated care; management; multimorbidity; systematic approach.

Full text links



[Proceed to details](#)

Cite

Share

2

BMC Public Health

- 
- 
- 

. 2024 Oct 23;24(1):2942.

doi: 10.1186/s12889-024-20443-7.

[Association between healthy lifestyle on life course and multimorbidity in adults: results from two national prospective cohort studies](#)

[Xiaoying Ye](#) <sup>#1</sup>, [Mengdan Liang](#) <sup>#1</sup>, [Zhehui Chen](#) <sup>#1</sup>, [Xiannuan Jiang](#) <sup>#1</sup>, [Mengying Xie](#) <sup>2</sup>, [Xiaowei Xie](#) <sup>3</sup>, [Guohui Lan](#) <sup>1</sup>, [Xiaoli Lu](#) <sup>1</sup>, [Zelin Huang](#) <sup>1</sup>, [Tingting Xu](#) <sup>1</sup>, [Xiaoxu Xie](#) <sup>4 5</sup>

## Affiliations Expand

- PMID: 39443908
- DOI: [10.1186/s12889-024-20443-7](https://doi.org/10.1186/s12889-024-20443-7)

## Free article

## Abstract

**Objectives:** To examine the correlation between healthy lifestyle patterns, their change trajectories, and the risk of multimorbidity in adults.

**Methods:** Based on two representative national cohorts, the English Longitudinal Study of Aging (ELSA) and the Health and Retirement Study (HRS) including adults aged 50 years and over. We employed Cox regression, lifestyle change trajectories, and restricted mean survival times to explore the relationship between lifestyle (assessed by SCORE2, LE'8, and HLS scores) and multimorbidity. We also conducted mediation analysis to investigate the underlying mechanisms.

**Results:** A healthy lifestyle (higher LE'8, higher HLS, or lower SCORE2) can reduce the risk of multimorbidity. 2-10% lower multimorbidity risk per one-point increase in LE'8 and HLS. The hazard ratio of multimorbidity for improvements in unhealthy lifestyles or deterioration in healthy lifestyles compared to always healthy lifestyles ranged from 1.598 to 5.602. Besides, for LE'8 and HLS, participants with higher scores had a slower decrease in survival probability in ELSA. Triglyceride, C-reaction protein, fibrinogen, and cystatin C partly mediate the association between lifestyle and multimorbidity.

**Conclusions:** Keeping a healthy lifestyle over time can help reduce the risk of multimorbidity.

**Keywords:** Healthy lifestyle; Life's essential 8; Multimorbidity; SCORE2; Trajectory.

© 2024. The Author(s).

- [36 references](#)

## Supplementary info

## MeSH terms, Grants and fundingExpand

## Full text links



## [Proceed to details](#)

## Cite

Share

3

Review

Eur J Intern Med

- 
- 
- 

. 2024 Oct 23:S0953-6205(24)00431-X.

doi: 10.1016/j.ejim.2024.10.012. Online ahead of print.

[Treat the patient, not the disease: The embolic stroke of undetermined source as an opportunity to optimize cardiovascular prevention in a holistic approach](#)

[George Ntaios](#)<sup>1</sup>, [Mayank Dalakoti](#)<sup>2</sup>

Affiliations Expand

- PMID: 39443247
- DOI: [10.1016/j.ejim.2024.10.012](#)

Abstract

For any physician treating a patient with a medical condition of unclear etiology, the differential diagnosis aims to identify the actual most probable cause among various potential etiologies, in order to tailor treatment options. In patients with embolic stroke of undetermined source (ESUS), this can be challenging due to the frequent presence of multiple potential embolic sources, raising difficulties to identify the most likely cause. Additionally, despite targeted preventive measures for the presumed embolic source, patients may remain at risk for stroke and cardiovascular events due to other unrecognized or underestimated pathologies. The multi-level complexity and multimorbidity typically associated with ESUS, represents a challenge that requires broad knowledge of the cardiovascular pathophysiology, deep expertise of the available diagnostic and therapeutic options, and interdisciplinary approach. At the same time, it is an ideal opportunity to assess thoroughly the overall cardiovascular status of the patient, which in turn can allow us to optimize therapeutic and preventive strategies in a holistic approach, and prevent future strokes, cardiovascular events and disability through different parallel pathways. In this context, rather than narrowing our perspective on identifying the specific embolic source presumed to be the most likely cause of ESUS, it is crucial to shift our focus from the disease to the patient, and evaluate the overall cardiovascular profile by assessing the risk of all cardiovascular

comorbidities present, no matter if causally associated with ESUS or not. In order to bring across these points and more, this article is centred around a clinical case that serves as a starting point to illustrate the holistic approach to the management of patients with ESUS. After all, this is the beauty, the magic and the art of Internal Medicine: to treat the patient, not the disease, the system or the organ.

Keywords: ESUS; Embolic stroke of undetermined source; Prevention; Stroke.

Copyright © 2024 European Federation of Internal Medicine. Published by Elsevier B.V. All rights reserved.

#### Conflict of interest statement

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

#### Supplementary info

Publication types [Expand](#)

Full text links



[Proceed to details](#)

Cite

Share

4

Sci Rep

- 
- 
- 

. 2024 Oct 22;14(1):24810.

doi: 10.1038/s41598-024-75556-1.

[Comorbidities confound metabolomics studies of human disease](#)

[Madis Jaagura](#)<sup>1</sup>, [Jaanika Kronberg](#)<sup>1</sup>, [Anu Reigo](#)<sup>1</sup>, [Oliver Aasmets](#)<sup>1</sup>, [Tiit Nikopensius](#)<sup>1</sup>, [Urmo Vösa](#)<sup>1</sup>, [Lorenzo Bomba](#)<sup>2</sup>; [Estonian Biobank research team](#); [Karol Estrada](#)<sup>2</sup>, [Arthur Wuster](#)<sup>2</sup>, [Tõnu Esko](#)<sup>1</sup>, [Elin Org](#)<sup>3</sup>

Collaborators, Affiliations [Expand](#)

- PMID: 39438584

- PMID: [PMC11496539](#)
- DOI: [10.1038/s41598-024-75556-1](#)

## Abstract

The co-occurrence of multiple chronic conditions, termed multimorbidity, presents an expanding global health challenge, demanding effective diagnostics and treatment strategies. Chronic ailments such as obesity, diabetes, and cardiovascular diseases have been linked to metabolites interacting between the host and microbiota. In this study, we investigated the impact of co-existing conditions on risk estimations for 1375 plasma metabolites in 919 individuals from population-based Estonian Biobank cohort using liquid chromatography mass spectrometry (LC-MS) method. We leveraged annually linked national electronic health records (EHRs) data to delineate comorbidities in incident cases and controls for the 14 common chronic conditions. Among the 254 associations observed across 13 chronic conditions, we primarily identified disease-specific risk factors (92%, 217/235), with most predictors (93%, 219/235) found to be related to the gut microbiome upon cross-referencing recent literature data. Accounting for comorbidities led to a reduction of common metabolite predictors across various conditions. In conclusion, our study underscores the potential of utilizing biobank-linked retrospective and prospective EHRs for the disease-specific profiling of diverse multifactorial chronic conditions.

**Keywords:** Biobank; Chronic disease; Comorbidities; Electronic health records; Metabolomics; Risk factors.

© 2024. The Author(s).

## Conflict of interest statement

During the drafting of the manuscript, L.B. is an employee of BioMarin.

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

## Supplementary info

MeSH terms, Grants and funding [Expand](#)

## Full text links

nature portfolio 

[Proceed to details](#)

Cite

Share

- 
- 
- 

. 2024 Oct 22:BJGP.2024.0286.

doi: 10.3399/BJGP.2024.0286. Online ahead of print.

[Multimorbidity and Person-Centred care in a socioeconomically deprived community: a qualitative study](#)

[Marianne McCallum](#)<sup>1</sup>, [Sara MacDonald](#)<sup>2</sup>, [Frances S Mair](#)<sup>1</sup>

Affiliations Expand

- PMID: 39438047
- DOI: [10.3399/BJGP.2024.0286](#)

Abstract

**Background:** Multimorbidity (>2 long-term conditions) has poorer outcomes in areas of high socioeconomic deprivation (SED). High-quality Person-Centred Care (PCC) is important in multimorbidity but socially vulnerable populations have not informed current PCC models.

**Aim:** To explore how wider community factors influence management of multimorbidity in the context of high SED, how high-quality PCC is defined by patients, and whether this influences healthcare management.

**Design and setting:** Ethnographically informed case study in community experiencing high SED in Scotland.

**Method:** Participant observation (hours = 142) within 4 community groups who also took part in 2 participatory workshops. 25 in-depth interviews with people with multimorbidity, recruited from local General Practices; emerging findings discussed with interviewees in one focus group. Field notes/transcripts analysed using inductive thematic analysis.

**Results:** Key aspects of PCC were "patient as person", "therapeutic relationship", "co-ordination" and "power-sharing"; power sharing was particularly enabling but rarely happened (barriers often unseen by practitioners). Shared community experiences of "being known", "stigma" and "none of the systems working" influenced how people approached health services, and healthcare decisions. High quality PCC may have been particularly effective in this setting because of its influence on ameliorating wider shared negative community experiences.

**Conclusion:** In a high SED setting PCC is important and can enhance engagement. Wider community factors have a critical influence on engagement with healthcare in areas of high SED and PCC may be particularly important in this context because of its influence ameliorating these. Policy makers should prioritise and resource PCC.

Copyright © 2024, The Authors.

Full text links



[Proceed to details](#)

Cite

Share

6

Review

Expert Rev Neurother

- 
- 
- 

. 2024 Oct 22:1-14.

doi: 10.1080/14737175.2024.2415985. Online ahead of print.

[Novel techniques for early diagnosis and monitoring of Alzheimer's disease](#)

[Parul<sup>1</sup>](#), [Animesh Singh<sup>1</sup>](#), [Shubha Shukla<sup>1,2</sup>](#)

Affiliations Expand

- PMID: 39435792
- DOI: [10.1080/14737175.2024.2415985](https://doi.org/10.1080/14737175.2024.2415985)

Abstract

**Introduction:** Alzheimer's disease (AD) is the most common neurodegenerative disorder, which is characterized by a progressive loss of cognitive functions. The high prevalence, chronicity, and multimorbidity are very common in AD, which significantly impair the quality of life and functioning of patients. Early detection and accurate diagnosis of Alzheimer's disease (AD) can stop the illness from progressing thereby postponing its symptoms. Therefore, for the early diagnosis

and monitoring of AD, more sensitive, noninvasive, straightforward, and affordable screening tools are needed.

**Areas covered:** This review summarizes the importance of early detection methods and novel techniques for Alzheimer's disease diagnosis that can be used by healthcare professionals.

**Expert opinion:** Early diagnosis assists the patient and caregivers to understand the problem establishing reasonable goals and making future plans together. Early diagnosis techniques not only help in monitoring disease progression but also provide crucial information for the development of novel therapeutic targets. Researchers can plan to potentially alleviate symptoms or slow down the progression of Alzheimer's disease by identifying early molecular changes and targeting altered pathways.

**Keywords:** Alzheimer's disease; amyloid beta; cognitive functions; dementia; early diagnosis; genetic markers; metabolomics & proteomics markers; neurofibrillary tangles.

Supplementary info

Publication typesExpand

Full text links



[Proceed to details](#)

Cite

Share

7

Healthc Manage Forum

- 
- 
- 

. 2024 Oct 22:8404704241293051.

doi: 10.1177/08404704241293051. Online ahead of print.

[The Integrated Care Team: A primary care based-approach to support older adults with complex health needs](#)

[George A Heckman](#)<sup>1,2,3</sup>, [Sarah Gimbel](#)<sup>4</sup>, [Chantelle Mensink](#)<sup>4</sup>, [Brittany Kroetsch](#)<sup>1</sup>, [Aaron Jones](#)<sup>5</sup>, [Anooshah Nasim](#)<sup>1</sup>, [Melissa Northwood](#)<sup>5</sup>, [Jacobi Elliott](#)<sup>2,3</sup>, [Adam Morrison](#)<sup>6</sup>

## Affiliations Expand

- PMID: 39434587
- DOI: [10.1177/08404704241293051](https://doi.org/10.1177/08404704241293051)

## Abstract

Many older adults have complex needs and experience high rates of acute care use and institutionalization. Comprehensive Geriatric Assessment (CGA) is a specialized multidimensional interprofessional intervention to prevent such outcomes, but access to CGA in the community is limited. The Integrated Care Team (ICT) is a proactive case-finding intervention to support older adults with complex needs in primary care. The ICT provides nurse practitioner-led shared-care supported by a pharmacist, family physician, and geriatrician. Patients undergo a CGA, and a person-centred plan of care is implemented. We conducted a mixed-methods evaluation of the ICT. Patients were  $81 \pm 9.2$  years old, 71% were women. Patients had a high burden of dementia and multimorbidity and received  $12.8 \pm 5.8$  prescriptions daily. The ICT improved prescribing and reduced emergency department visits by 49.5% ( $P = 0.0001$ ). Patients, care partners, and referring physicians reported high satisfaction with care. The ICT is currently being expanded to support additional primary care providers.

## Conflict of interest statement

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

## Full text links

Sage Journals 

[Proceed to details](#)

## Cite

## Share

8

## Stat Methods Med Res

- 
- 
- 

. 2024 Oct 21:9622802241281959.

doi: 10.1177/09622802241281959. Online ahead of print.

[Bayesian blockwise inference for joint models of longitudinal and multistate data with application to longitudinal multimorbidity analysis](#)

[Sida Chen<sup>1</sup>](#), [Danilo Alvares<sup>1</sup>](#), [Christopher Jackson<sup>1</sup>](#), [Tom Marshall<sup>2</sup>](#), [Krish Nirantharakumar<sup>2</sup>](#), [Sylvia Richardson<sup>1</sup>](#), [Catherine L Saunders<sup>3</sup>](#), [Jessica K Barrett<sup>1</sup>](#)

Affiliations Expand

- PMID: 39428891
- DOI: [10.1177/09622802241281959](#)

Free article

Abstract

Multistate models provide a useful framework for modelling complex event history data in clinical settings and have recently been extended to the joint modelling framework to appropriately handle endogenous longitudinal covariates, such as repeatedly measured biomarkers, which are informative about health status and disease progression. However, the practical application of such joint models faces considerable computational challenges. Motivated by a longitudinal multimorbidity analysis of large-scale UK health records, we introduce novel Bayesian inference approaches for these models that are capable of handling complex multistate processes and large datasets with straightforward implementation. These approaches decompose the original estimation task into smaller inference blocks, leveraging parallel computing and facilitating flexible model specification and comparison. Using extensive simulation studies, we show that the proposed approaches achieve satisfactory estimation accuracy, with notable gains in computational efficiency compared to the standard Bayesian estimation strategy. We illustrate our approaches by analysing the coevolution of routinely measured systolic blood pressure and the progression of three important chronic conditions, using a large dataset from the Clinical Practice Research Datalink Aurum database. Our analysis reveals distinct and previously lesser-known association structures between systolic blood pressure and different disease transitions.

**Keywords:** Bayesian joint model; Markov chain Monte Carlo; electronic health records; multimorbidity; multistate data.

Conflict of interest statement

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

Full text links

 Sage Journals  
Open access full text



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

1

Dtsch Med Wochenschr

- 
- 
- 

. 2024 Nov;149(22):1372-1376.

doi: 10.1055/a-2372-1157. Epub 2024 Oct 22.

[\[Vaccinations in pulmonary diseases - part 2: herpes zoste, RSV, pneumococcal infection and pertussis\]](#)

[Article in German]

[Cathrin Kodde](#)<sup>1</sup>, [Leif Erik Sander](#)<sup>1,2</sup>

Affiliations Expand

- PMID: 39437831
- DOI: [10.1055/a-2372-1157](#)

Abstract

in [English, German](#)

**Rsv (respiratory syncytial virus):** RSV is a common cause of respiratory tract infections, posing a risk of severe disease, particularly for newborns and infants, as well as in older individuals with pre-existing conditions. Two safe and effective RSV vaccines were approved in 2023. These vaccines elicit protective antibodies and offer robust protection with no additional benefit from annual boosters. Both vaccines have been approved for individuals aged 60 years and older, while one of the vaccines has also been approved in pregnant women to elicit maternal immunity for passive protection of the unborn child. In Germany, RSV vaccination is currently recommended for all individuals aged 75 years and older, as well as people aged 60-74 years of age with severe underlying conditions. **PNEUMOCOCCAL**

**INFECTION:** *Streptococcus pneumoniae* is a primary cause of community-acquired pneumonia (CAP). Since early 2022, a 20-valent conjugate vaccine (PCV20) is approved and recommended for people over 60 years of age and individuals over 18 years of age with risk factors. PCV20 replaces the 23-valent polysaccharide vaccine (PPV23) previously recommended for those over 60 years of age.

**Pertussis:** Although viewed primarily as a childhood disease, the majority of infections affect adults. Patients with chronic respiratory diseases are at a higher risk for severe clinical course of pertussis infection. It has therefore been recommended that all adults should get a pertussis booster with their next scheduled tetanus vaccination, given as a combination vaccine (Tdap). For risk

groups (healthcare personnel, community facilities) a booster vaccination every 10 years is recommended.

**Herpes zoster:** Herpes Zoster (shingles) is caused by the varicella-zoster virus, and reactivations can lead to painful skin lesions and potential complications such as herpes zoster oticus, meningitis, or postherpetic neuralgia. People with chronic lung diseases such as COPD or asthma are at increased risk of herpes zoster-related complications. A recombinant adjuvanted inactivated vaccine was approved in 2018 and offers robust protection against herpes zoster and its complications. The vaccine is recommended for all people over 60 years of age and for certain risk groups over 50 years of age.

Thieme. All rights reserved.

Conflict of interest statement

Leif Erik Sander gibt Beratertätigkeiten für OM-Pharma SA an.

Supplementary info

Publication types, MeSH terms, SubstancesExpand

Full text links



[Proceed to details](#)

Cite

Share

2

Observational Study

BMJ Open

- 
- 
- 

. 2024 Oct 26;14(10):e083908.

doi: 10.1136/bmjopen-2024-083908.

[Rapid Access Diagnostics for Asthma \(RADicA\): protocol for a prospective cohort study to determine the optimum series of investigations to diagnose asthma using conventional and novel tests](#)

[Clare S Murray](#)<sup>1,2</sup>, [Stephen Fowler](#)<sup>3,2</sup>, [Sarah Drake](#)<sup>2</sup>, [Ran Wang](#)<sup>3</sup>, [Hannah J Durrington](#)<sup>3,2</sup>, [Hannah Wardman](#)<sup>3</sup>, [Laura Healy](#)<sup>3</sup>, [Miriam Bennett](#)<sup>3</sup>, [Andrew Simpson](#)<sup>4</sup>, [Emma Barrett](#)<sup>2</sup>, [Stephen A Roberts](#)<sup>5</sup>, [Angela Simpson](#)<sup>3,2</sup>

## Affiliations Expand

- PMID: 39461867
- DOI: [10.1136/bmjopen-2024-083908](https://doi.org/10.1136/bmjopen-2024-083908)

## Abstract

**Introduction:** The diagnosis of asthma is often based on characteristic patterns of symptoms in the absence of an alternative explanation, resulting in over and under diagnosis. Therefore, diagnostic guidelines usually recommend including confirmation of variable airflow obstruction. Some recommend using a sequence of objective tests; however the tests used, the specific cut-off values and the specified order are yet to be validated. We aimed to determine the optimal cut-off values and series of investigations to diagnose asthma. We also explore the potential for novel tests of small airways function and biomarkers, which could be incorporated into future diagnostic pathways.

**Methods and analysis:** The Rapid Access Diagnostics for Asthma study is an observational study of 300 symptomatic patients with 'clinician-suspected asthma' and healthy controls (aged  $\geq 3$  to  $< 70$  years), recruited from primary and secondary care in Greater Manchester, UK. Symptomatic participants will undergo four core visits and one optional visit. Participants will complete two baseline visits and undergo a series of established (spirometry, bronchodilator reversibility, exhaled nitric oxide, home peak flow monitoring and bronchial challenge testing) and novel tests. Following visit 2, participants will receive monitored medium-dose inhaled corticosteroid therapy for 6-8 weeks, after which they will return for repeat testing. Patients will be diagnosed with asthma by 'expert panel' opinion (minimum two respiratory specialists) on review of all data (excluding novel tests) pre and post treatment. Healthy controls will attend two visits to establish reference intervals and calculate repeatability coefficients for novel tests where there is a lack of evidence on what threshold constitutes a 'normal' set of values. The primary end point is to determine the optimum diagnostic pathway for diagnosing asthma.

**Ethics and dissemination:** The study was approved by Greater Manchester East Research Ethics Committee (18/NW/0777). All participants or parents/guardians are required to provide written informed consent and children to provide written assent. The results will be published in peer-review journals and disseminated widely at conferences and with the help of Asthma and Lung UK ([www.asthmaandlung.org.uk](http://www.asthmaandlung.org.uk)).

**Trial registration number:** ISRCTN11676160.

**Keywords:** Asthma; Paediatric thoracic medicine; Pulmonary Disease, Chronic Obstructive; Respiratory Function Test.

© Author(s) (or their employer(s)) 2024. Re-use permitted under CC BY. Published by BMJ.

## Conflict of interest statement

Competing interests: CM has received grants from NIHR, Asthma UK, Innovate UK, Moulton Charitable Foundation, GSK and MRC; travel grants from Sanofi and lecture fees from Novartis, GSK and Sanofi. AngS has received grants from NIHR, Asthma UK, Innovate UK, Moulton Charitable Foundation, GSK and MRC. SF reports personal fees from AstraZeneca, Chiesi, GlaxoSmithKline, Novartis and Teva and grants and personal fees from Boehringer Ingelheim. All other authors declare no competing interests.

## Supplementary info

Publication types, MeSH terms, SubstancesExpand

[Proceed to details](#)

## Cite

## Share

3

Randomized Controlled Trial

Ital J Pediatr

- 
- 
- 

. 2024 Oct 25;50(1):220.

doi: [10.1186/s13052-024-01792-w](https://doi.org/10.1186/s13052-024-01792-w).

[A smartphone app for preschool wheezing and reliability of medical history collection](#)

[Nicola Ullmann](#)<sup>1</sup>, [Adriana Fracchiolla](#)<sup>2</sup>, [Alessandra Boni](#)<sup>2</sup>, [Valentina Negro](#)<sup>2</sup>, [Federica Porcaro](#)<sup>2</sup>, [Antonio Di Marco](#)<sup>2</sup>, [Salvatore Tripodi](#)<sup>3</sup>, [Renato Cutrera](#)<sup>2</sup>

Affiliations Expand

- PMID: 39456090
- DOI: [10.1186/s13052-024-01792-w](https://doi.org/10.1186/s13052-024-01792-w)

Free article

Abstract

**Background:** The use of mobile applications helps improving self-management in adolescents with asthma. However, no evidence is available for children with preschool wheezing. In addition, we have no data on the reliability of medical history collected at visits. The first aim was to assess the feasibility of a smartphone app in the management of preschool wheezing; secondly we aimed to evaluate the reliability of anamnestic data collected during face-to-face medical interviews.

**Methods:** Children with recurrent wheezing, age between 25 and 72 months, were randomly assigned to the intervention group, provided with a smartphone app for symptoms monitoring and asthma attack treatment, or to the control group, with a written action plan. At follow-up medical history was collected and the asthma control test and a clinical questionnaire were completed. App acceptability was also explored. Respiratory symptoms, medication and utilization of healthcare resources were collected. Plus, medical information obtained from the paper questionnaires was compared with data daily recorded by the app.

**Results:** We enrolled 85 preschool children with recurrent wheezing: 43 assigned to the intervention and 42 to the control group. The average (SD) adherence to e-Diary compilation was 60 (15)%. The acceptance and usability of the intervention was favorable as 70% and 93% of participants in the intervention arm described the app as "simple and intuitive" at Visit1 (after 3 months from enrollement) and Visit2 (3 months later than Visit1), respectively and 95% and 98% found it useful in symptoms management. There were no significant differences between the two groups in clinical outcomes. At Visit1, the cACT median score (IQR) was 23,5 (21-25) for the control group (42 patients) and 23 (21-24) for the intervention group (43 patients). At Visit2 (41 controls and 42 in the intervention group) it was 25 (24-25) and 24 (24-25), respectively. Secondary analysis of data from the intervention group showed higher incidence of daily symptoms recorded by the app in comparison with the paper questionnaire, suggesting that collection of retrospective medical history may not be completely reliable.

**Conclusions:** The smartphone app is usable and acceptable by families of preschool wheezers. Future controlled trial are needed to prove an impact on clinical outcomes or its efficacy in a telemedicine program. Finally a daily questionnaire could provide physicians with a more reliable clinical picture as reflected better daily asthma symptoms than the written retrospective questionnaire filled at clinical visit.

**Keywords:** Application; Children; Medical history; Mobile; Preschool; Reliable; Smartphone; Wheezing.

© 2024. The Author(s).

- [19 references](#)

Supplementary info

Publication types, MeSH terms, Grants and fundingExpand

Full text links



[Proceed to details](#)

Cite

Share

4

Ann Am Thorac Soc

- 
- 
- 

. 2024 Oct 25.

doi: 10.1513/AnnalsATS.202406-637OC. Online ahead of print.

[Peak Flow Feedback Intervention Improves Under-Perception of Airflow Limitation in Pediatric Asthma: A Randomized Clinical Trial](#)

[Jonathan M Feldman](#)<sup>1,2</sup>, [Deepa Rastogi](#)<sup>3</sup>, [Karen Warman](#)<sup>4</sup>, [Denise Serebrisky](#)<sup>5</sup>, [Kimberly Arcoleo](#)<sup>6</sup>

Affiliations Expand

- PMID: 39454196
- DOI: [10.1513/AnnalsATS.202406-637OC](https://doi.org/10.1513/AnnalsATS.202406-637OC)

Abstract

**Rationale:** Under-perception of asthma symptoms is associated with poor asthma outcomes.

**Objective:** We assessed the effects of a behavioral intervention for improving perception of airflow limitation and asthma outcomes.

**Methods:** A two-arm randomized controlled trial compared peak expiratory flow (PEF) feedback versus supportive counseling. Latino and Black adolescents with asthma ages 10-17 years old and caregivers were recruited from hospitals in the Bronx, NY. PEF feedback sessions reviewed accuracy of PEF guesses and medication adherence data, and targeted behavior change using motivational interviewing and problem-solving skills training. Supportive counseling received emotional support related to asthma. Both groups received 3 sessions across 6 weeks. All participants were blinded to PEF while guessing PEF during pre-intervention, 1, 6, and 12-month follow-up. Children in PEF feedback saw actual PEF after guesses were locked in during the 6-week intervention. Participants and assessors were blinded to group assignment.

**Measurements:** The primary outcome was under-perception of airflow limitation (divergence between actual PEF and guesses) on home spirometers. Secondary outcomes included daily PEF and forced expiratory volume in 1 second (FEV<sub>1</sub>), inhaled corticosteroid adherence measured by electronic monitors, Asthma Control Test, and emergency healthcare use for asthma.

**Results:** The sample comprised 354 children (M = 13.2±2.2 years; 62% Latino, 38% Black) and caregivers. PEF feedback (N = 153 analyzed) demonstrated greater improvements at 1-month follow-up on under-perception of airflow limitation (difference-in-differences, -12.64; 95% CI, -17.54 to -7.74), % personal best PEF (9.89; 95% CI, 7.13 to 12.65), % predicted FEV<sub>1</sub> (4.93; 95% CI, 0.95 to 8.90) and ICS adherence (16.02; 95% CI, 7.15 to 24.89) compared with supportive counseling (N = 152 analyzed). At 12-month follow-up PEF feedback maintained improvements on under-perception of airflow limitation (-13.87; 95% CI, -19.03 to -8.71), higher PEF (14.23; 95% CI, 11.37 to 17.08) and %FEV<sub>1</sub> (5.62; 95% CI, 1.56 to 9.67), and had smaller declines in ICS adherence (17.51; 95% CI, 7.12 to 27.89) versus pre-intervention than supportive counseling. No between-group differences existed for asthma control or healthcare use.

**Conclusion:** The efficacy and sustainability of PEF feedback was established in improving children's perception of airflow limitation, pulmonary function, and medication adherence. Clinical trial registration available at [www](http://www.clinicaltrials.gov).

Clinicaltrials: gov, ID: [NCT02702687](https://clinicaltrials.gov/ct2/show/study/NCT02702687).

Supplementary info

Associated dataExpand

Full text links



[Proceed to details](#)

Cite

Share

5

J Asthma

- 
- 
- 

. 2024 Oct 25:1-12.

doi: 10.1080/02770903.2024.2422419. Online ahead of print.

[Relationships between oxidative balance score and asthma, COPD, with asthma-COPD overlap in American adults: Findings from NHANES 2013-2018](#)

[Shidong Wang](#)<sup>1</sup>, [Runxin Jiang](#)<sup>2</sup>, [Lin Zhang](#)<sup>3</sup>, [Yuelin Cai](#)<sup>3</sup>, [Changsheng Zhou](#)<sup>3</sup>, [Liang Wu](#)<sup>3</sup>

Affiliations Expand

- PMID: 39453786
- DOI: [10.1080/02770903.2024.2422419](#)

Abstract

**Background:** Oxidative stress plays a crucial role in the development of multiple chronic respiratory diseases. Oxidative Balance Score (OBS) composing of 16 dietary factors and 4 lifestyle factors has been developed to evaluate the effect of oxidants/antioxidants produced by dietary intake and lifestyle habits on the overall oxidative balance. However, the relationships between OBS with asthma, COPD, and asthma-COPD overlap (ACO) are still unclear.

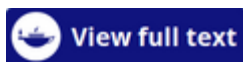
**Methods:** A total of 10,942 adults aged 20 years and older from the 2013-2018 National Health and Nutrition Examination Survey were included in the analyses. ANOVA and chi-square tests were used to compare characteristics between different OBS subgroups. Multiple multivariate logistic regression was used to analyze the associations between OBS and asthma, COPD, and ACO. RCS curves were used to describe the dose-response effect of the associations. Subgroup analyses and interaction effects were employed to reflect the stability of the associations.

**Results:** In the fully adjusted models, OBS was found to be negatively associated with asthma, COPD, and ACO. OBS at Q2, Q3, and Q4 (OR: 0.66, 95% CI: 0.46-0.97) were negatively associated with the risk of asthma. OBS at Q2 and Q4 were negatively associated with the risk of COPD. OBS at Q2 and Q4 were negatively associated with the risk of ACO. The RCS curves reflected the negative dose-response trend of association. Moreover, the associations were stable in various subgroups.

**Conclusion:** The negative associations between OBS and asthma, COPD, and ACO were found in American adults, providing evidence for dietary and lifestyle prevention.

**Keywords:** COPD; NHANES; asthma; oxidative balance score; oxidative stress.

Full text links



[Proceed to details](#)

Cite

Share

6

J Allergy Clin Immunol Pract

- 
- 
- 

. 2024 Oct 24:S2213-2198(24)01071-7.

doi: 10.1016/j.jaip.2024.10.016. Online ahead of print.

[Adverse impacts of corticosteroid treatment on osteoporosis/osteopenia in adult asthmatics: A retrospective ICARUS cohort study](#)

[Junhyuk Chang<sup>1</sup>, Hyun-Seob Jeon<sup>2</sup>, Chungsoo Kim<sup>3</sup>, ChulHyoung Park<sup>4</sup>, Jae-Hyuk Jang<sup>5</sup>, Youngsoo Lee<sup>5</sup>, Eunyoung Lee<sup>6</sup>, Rae Woong Park<sup>7</sup>, Hae-Sim Park<sup>8</sup>](#)

Affiliations Expand

- PMID: 39461589
- DOI: [10.1016/j.jaip.2024.10.016](https://doi.org/10.1016/j.jaip.2024.10.016)

Abstract

**Background and objectives:** Inhaled corticosteroid (ICS) and oral corticosteroid (OCS) are often used in asthma management. This study evaluated the long-term effect of ICS/OCS on osteoporosis, osteopenia, fractures, and bone metabolism in adult asthmatics in real-world clinical practice.

**Methods:** This is a retrospective study investigating de-identified electronic health records from Ajou University Medical Center (Korea). Adult asthmatics receiving maintenance ICS with/without OCS for at least 1 year were enrolled. They were classified into the high/low-dose of ICS or OCS groups. Primary outcomes (incidences of osteoporosis, osteopenia, and fractures) and secondary outcomes (drug prescription and laboratory values related to bone metabolism including albumin and alkaline phosphatase [ALP]) were compared after 5 years of follow-up.

**Results:** After propensity score matching, both high- and low-dose OCS groups included 468 patients, and high/low-dose ICS groups each comprised 1,252 patients. The risk of osteoporosis/major fracture was higher (hazard ratio [95% CI]; 2.00 [1.15-3.57]/3.03 [1.04-11.11]) in the high-dose OCS group (especially in females aged  $\geq 50$  years) than in the low-dose group, although the ICS groups showed no significant differences. The high-dose ICS group showed a higher risk of osteopenia (1.92 [1.05-3.70]) than the low-dose ICS group. The linear mixed model of laboratory values showed significantly decreased serum albumin and increased ALP in the high-dose OCS group than in the low-dose OCS group.

**Conclusions:** The results of this study suggest that long-term use of OCS can increase the risk of osteoporosis and osteoporosis-related fractures, while long-term use of ICS may increase the risk of osteopenia in adult asthmatics.

**Keywords:** Alkaline Phosphatase; Asthma; Fracture; Inhaled corticosteroid; Oral corticosteroid; Osteopenia; Osteoporosis; Serum albumin; Steroids.

Copyright © 2024. Published by Elsevier Inc.

[Proceed to details](#)

Cite

Share

7

Curr Opin Allergy Clin Immunol

- 
- 
- 

. 2024 Oct 24.

doi: 10.1097/ACI.0000000000001043. Online ahead of print.

[New mechanisms in diisocyanate-mediated allergy/toxicity: are microRNAs in play?](#)

[Chen-Chung Lin](#)<sup>1</sup>, [Brandon F Law](#), [Justin M Hettick](#)

Affiliations Expand

- PMID: 39450940
- DOI: [10.1097/ACI.0000000000001043](https://doi.org/10.1097/ACI.0000000000001043)

Abstract

**Purpose of review:** To describe recent findings of diisocyanate-mediated mechanisms in allergy and toxicology by addressing the role of microRNA (miR) in immune responses that may contribute to the development of occupational asthma (OA).

**Recent findings:** Studies of diisocyanate asthma have traditionally focused on the immune and inflammatory patterns associated with diisocyanate exposures; however, recognized knowledge gaps exist regarding the detailed molecular mechanism(s) of pathogenesis. Recent studies demonstrate the critical role endogenous microRNAs play as gene regulators in maintaining homeostasis of the human body, and in the pathophysiology of many diseases including asthma. Given that diisocyanate-OA shares many pathophysiological characteristics with asthma,

it is likely that miR-mediated mechanisms are involved in the pathophysiology of diisocyanate-OA. Recent reports have shown that changes in expression of endogenous miRs are associated with exposure to the occupationally relevant diisocyanates, toluene diisocyanate (TDI) and methylene diphenyl diisocyanate (MDI). Continued mechanistic study of these relevant miRs may lead to the development of novel biomarkers of occupational exposure and/or provide efficacious targets for therapeutic strategies in diisocyanate asthma.

**Summary:** The molecular mechanisms underlying diisocyanate-OA pathophysiology are heterogeneous and complicated. In this review, we highlight recent research into the roles and potential regulation of miRs in diisocyanate-OA.

**Copyright ©** Written work prepared by employees of the Federal Government as part of their official duties is, under the U.S. Copyright Act, a “work of the United States Government” for which copyright protection under Title 17 of the United States Code is not available. As such, copyright does not extend to the contributions of employees of the Federal Government.

- [52 references](#)

Full text links



[Proceed to details](#)

Cite

Share

8

Ann Am Thorac Soc

- 
- 
- 

. 2024 Oct 24.

doi: 10.1513/AnnalsATS.202405-559PS. Online ahead of print.

[Asthma in Prison: When Albuterol Becomes a Controlled Substance](#)

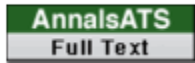
[Sarah L Rhoads](#)<sup>1</sup>, [Michael E Wechsler](#)<sup>2</sup>, [Amen Sergew](#)<sup>3,4</sup>, [Matthew F Griffith](#)<sup>5</sup>

Affiliations Expand

- PMID: 39447123
- DOI: [10.1513/AnnalsATS.202405-559PS](#)

*No abstract available*

Full text links



[Proceed to details](#)

Cite

Share

9

Sci Rep

- 
- 
- 

. 2024 Oct 23;14(1):24965.

doi: 10.1038/s41598-024-75578-9.

[Rapid deposition analysis of inhaled aerosols in human airways](#)

[Hosein Sadafi](#)<sup>1</sup>, [Wilfried De Backer](#)<sup>2</sup>, [Gabriel Krestin](#)<sup>3,4</sup>, [Jan De Backer](#)<sup>4</sup>

Affiliations Expand

- PMID: 39443597
- PMCID: [PMC11499711](#)
- DOI: [10.1038/s41598-024-75578-9](#)

Abstract

A rapid data-driven method for determining regional deposition of inhaled medication aerosols in human airways is presented, which is patient specific. Inhalation patterns, device characteristics, and aerodynamic particle size distribution of medications are considered. The method is developed using dimensional analysis and Buckingham Pi theorem, and provides total, regional, and lobar distributions of aerosol deposition. 34 dimensionless quantities are selected, of which 22 encode features of the airway trees and segmented lobes, 14 pertain to the device and the drug formulation, and 13 the inhalation profile of the subject. The dimensionless correlations are obtained using a large database of computational fluid dynamics results on patient specific airways. The intraclass correlation coefficient between the current method and its training dataset is 0.92. The

difference between the predicted average lobar deposition in the six asthma patients and the in-vivo data is 1.3%. The model has the potential to offer insights into the effectiveness of personalized drug delivery in clinical settings and can aid in drug development cycles.

© 2024. The Author(s).

Conflict of interest statement

All authors (HS, WD, GK, and JD) work at Fluidda.

- [65 references](#)
- [6 figures](#)

Supplementary info

MeSH terms, SubstancesExpand

Full text links

natureportfolio

[Proceed to details](#)

Cite

Share

10

Expert Opin Drug Deliv

- 
- 
- 

. 2024 Oct 23:1-8.

doi: 10.1080/17425247.2024.2416511. Online ahead of print.

[A randomized crossover study assessing critical errors, preferences, and ease of use of two multidose powder inhalers](#)

[Pjotr Tinke](#)<sup>1</sup>, [Wendy van Beurden](#)<sup>2</sup>, [Martijn Goosens](#)<sup>3</sup>, [Job van der Palen](#)<sup>1,4</sup>

Affiliations Expand

- PMID: 39441174
- DOI: [10.1080/17425247.2024.2416511](#)

Abstract

**Background:** The effectiveness of inhaled medications in asthma and COPD is significantly impacted by inhalation errors. Feedback mechanisms, built into the design of the inhaler might reduce the number of critical errors. This study compares critical errors, preferences, and ease of use of two dry powder inhalers, the Nexthaler, and the Turbuhaler.

**Research design and methods:** In this multi-center, prospective, randomized, open-label, cross-over study, the proportions of asthma and COPD patients making critical errors were compared between the Nexthaler and Turbuhaler after 4 weeks of clinical use, after having been trained for the correct use of both inhalers.

**Results:** Ninety and 49 patients with asthma and COPD, respectively, were assessed. No significant difference was found in the number of critical errors between the two inhalers (3 with Nexthaler and 5 with Turbuhaler). However, more patients preferred the Nexthaler (57.6%) over the Turbuhaler (34.5%) ( $p = 0.006$ ), while 7.9% stated no preference.

**Conclusions:** The study found no significant differences in critical error rate between the Nexthaler and Turbuhaler but the Nexthaler was preferred over the Turbuhaler. This study highlights the importance of dedicating sufficient time to instructing patients on the correct inhalation technique, which can lead to long-term retention of the inhalation technique.

**Keywords:** Asthma; chronic obstructive pulmonary disease; critical errors; dry powder inhalers; ease of use; preference.

#### Plain language summary

We compared two inhalers on critical use errors, 4 weeks after a thorough instruction, and asked for a preference for either inhaler. No difference in error rate was observed, but the Nexthaler was preferred over the Turbuhaler.

#### Full text links



[Proceed to details](#)

Cite

Share

11

Ann Am Thorac Soc

- 
- 
- 

. 2024 Oct 23.

doi: 10.1513/AnnalsATS.202312-1089OC. Online ahead of print.

**[Comorbidities, Tobacco Exposure, and Geography: Added Risk Factors of Heat and Cold Wave Related Mortality among United States Veterans with COPD](#)**

**[Austin Rau](#)<sup>1</sup>, [Arianne K Baldomero](#)<sup>2,3</sup>, [Chris H Wendt](#)<sup>4</sup>, [Gillian Am Tarr](#)<sup>5</sup>, [Bruce H Alexander](#)<sup>5</sup>, [Jesse D Berman](#)<sup>6</sup>**

**Affiliations Expand**

- PMID: 39441102
- DOI: [10.1513/AnnalsATS.202312-1089OC](https://doi.org/10.1513/AnnalsATS.202312-1089OC)

**Abstract**

**Introduction:** Understanding the health risks associated with extreme weather events is needed to inform policies to protect vulnerable populations. To address this need, we estimated heat and cold wave related mortality risks in a cohort of veteran patients with chronic obstructive pulmonary disease (COPD) and explored disparities among strata of comorbidities, tobacco exposure, and urbanicity.

**Methods:** We designed a time stratified case-crossover study among deceased patients with COPD between 2016 to 2021 in the Veterans Health Administration system. Distributed lag models with conditional logistic regression estimated incidence rate ratios (IRR) of heat and cold wave associated mortality risk from lag days 0 to 3 for heatwaves and 0 to 7 for cold waves. Attributable risks (AR) per 100,000 patients were also calculated.

**Results:** Of the 377,545 deceased patients with COPD, the largest heatwave related mortality risk was in patients with COPD and asthma, AR: 14,016 (95% CI: -326, 30,706) across lag days 0 to 3. The largest cold wave related mortality burden was in patients with COPD with no other reported comorbidities, AR: 1,704 (95% CI: 759, 2,686) across lag days 0 to 7. Patients residing in urban settings had the greatest heatwave, AR: 1,062 (95% CI: (576, 1,559), and cold wave AR: 1,261 (95% CI: 440, 2,105) related mortality risk (across lag days 0 to 1 and 0 to 7 respectively). There were no differences in mortality risk by tobacco exposure.

**Conclusion:** Our findings show individuals with COPD are susceptible to heat and cold waves. This information can inform clinical practice and public health policy about the mortality risk vulnerable populations experience with respect to extreme weather conditions. Furthermore, our results may be used in the development and refinement of future extreme weather warning systems designed for public health purposes.

**Full text links**



**[Proceed to details](#)**

**Cite**

Share

12

Pediatr Pulmonol

- 
- 
- 

. 2024 Oct 23.

doi: 10.1002/ppul.27328. Online ahead of print.

[A cost-utility analysis of single maintenance and reliever \(SMART\) therapy as compared to step 3 fixed-dose therapy in patients aged 12 years or more with uncontrolled asthma](#)

[Carlos E Rodríguez-Martínez<sup>1,2</sup>, Monica P Sossa-Briceño<sup>3</sup>, Jose A Castro-Rodriguez<sup>4</sup>](#)

Affiliations Expand

- PMID: 39441066
- DOI: [10.1002/ppul.27328](#)

Abstract

**Objectives:** A significant percentage of patients with asthma appear to benefit from the addition of long-acting  $\beta$ 2-agonists (LABAs) to ICS to achieve better control of their disease. The aim of the present study was to determine the cost-utility of single inhaler combination inhaled ICS/LABAs as both maintenance and reliever (SMART) versus remaining at the same treatment step with fixed-dose ICS-LABA maintenance with a short-acting  $\beta$ 2-agonist (SABA) as reliever in patients aged 12 years or more with uncontrolled asthma.

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

**Results:** The base-case analysis showed that compared with remaining at the same GINA treatment step with ICS/LABA maintenance plus SABA reliever, ICS/LABAs as SMART was associated with lower costs, US\$2,906.92 versus \$4,462.02 average cost per patient, and the greatest gain in QALYs, 0.8540 versus 0.8258 QALYs on average per patient, thus leading to dominance.

**Conclusions:** Compared with remaining at the same GINA treatment step with ICS/LABA maintenance plus SABA reliever, ICS/LABAs as SMART is more cost-effective in patients aged 12 years or more with uncontrolled asthma. This is because ICS/LABAs as SMART showed a greater gain in QALYs at lower total treatment costs.

**Keywords:** combination of corticosteroid and long-acting beta 2 agonists; cost-effectiveness; persistent asthma; quality-adjusted life-years; SMART therapy.

© 2024 Wiley Periodicals LLC.

- [22 references](#)

Supplementary info

Grants and fundingExpand

Full text links



[Proceed to details](#)

Cite

Share

13

Expert Rev Respir Med

- 
- 
- 

. 2024 Oct 23:1-7.

doi: 10.1080/17476348.2024.2419543. Online ahead of print.

[Bronchomotor tone imbalance evokes airway hyperresponsiveness](#)

[Joseph A Jude](#)<sup>1</sup>, [Reynold A Panettieri Jr](#)<sup>1</sup>

Affiliations Expand

- PMID: 39435484
- DOI: [10.1080/17476348.2024.2419543](https://doi.org/10.1080/17476348.2024.2419543)

Abstract

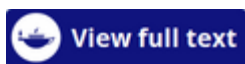
**Introduction:** Obstructive airway diseases asthma and COPD represent a significant healthcare burden. Airway hyperresponsiveness (AHR), a salient feature of these two diseases, remains the main therapeutic target. Airway smooth muscle (ASM) cell is pivotal for bronchomotor tone and development of AHR in airway diseases. The contractile and relaxation processes in ASM cells maintain a homeostatic bronchomotor tone. It is critical to understand the molecular mechanisms that disrupt the homeostasis to identify novel therapeutic strategies for AHR.

**Areas covered:** Based on review of literature and published findings from our laboratory, we describe intrinsic and extrinsic factors - disease phenotype, toxicants, inflammatory/remodeling mediators- that amplify excitation-contraction (E-C) coupling and ASM shortening and or diminish relaxation to alter bronchomotor homeostasis. We posit that an understanding of the ASM mechanisms involved in bronchomotor tone imbalance will provide platforms to develop novel therapeutic approaches to treat AHR in asthma and COPD.

**Expert opinion:** Contractile and relaxation processes in ASM cell are modulated by intrinsic and extrinsic factors to elicit bronchomotor tone imbalance. Innovative experimental approaches will serve as essential tools for elucidating the imbalance mechanisms and to identify novel therapeutic targets for AHR.

**Keywords:** Airway Hyperresponsiveness; airway smooth muscle; asthma; bronchomotor tone; excitation-contraction coupling.

Full text links



[Proceed to details](#)

Cite

Share

14

Pharm Dev Technol

- 
- 
- 

. 2024 Oct 23:1-10.

doi: 10.1080/10837450.2024.2413145. Online ahead of print.

[Formulation and evaluation of carrier-based dry powders containing budesonide and arformoterol for inhalation therapy](#)

[Dong-Won Oh](#)<sup>1</sup>, [Ji Hoon Choi](#)<sup>1</sup>, [Gweon Hee Yu](#)<sup>1</sup>, [Bo Kyung Kim](#)<sup>1</sup>, [Sang Min Cho](#)<sup>1</sup>, [Youn Woong Choi](#)<sup>1</sup>, [Jin-Hyuk Jeong](#)<sup>2</sup>, [Ji-Hyun Kang](#)<sup>3</sup>, [Dong-Wook Kim](#)<sup>4</sup>, [Chun-Woong Park](#)<sup>2</sup>

## Affiliations Expand

- PMID: 39422557
- DOI: [10.1080/10837450.2024.2413145](https://doi.org/10.1080/10837450.2024.2413145)

## Abstract

Asthma and Chronic Obstructive Pulmonary Disease (COPD) are major global health concerns, with inhalation therapy being a primary treatment method. Dry powder inhalers (DPIs) often face challenges related to particle aggregation, which can diminish drug delivery efficiency. This study investigates particle aggregation and aims to optimize the cohesion-adhesion balance to improve inhalation efficiency. Advanced techniques like atomic force microscopy and Raman imaging were used to analyze particle interactions, focusing on lactose ratios, particle morphology, and drug-drug interactions. The therapeutic efficacy of optimized formulations containing budesonide (BUD) and Arformoterol (AFT) was assessed using an asthma model, showing significant improvements in sRAW, neutrophil count, and tidal volume compared to the positive control, with  $p$ -values below 0.01. AFT exhibited comparable efficacy to Formoterol at half the dose. Additionally, pharmacokinetic studies demonstrated similar in vivo behavior between the drugs, confirming the therapeutic advantage of AFT, with  $p$ -values for  $AUC_{0-t}$  and  $C_{max}$  of .646 and .153, respectively. The fine particle fractions for AFT and BUD were 39.4% and 50.6%, respectively, indicating improved drug delivery efficiency and potential for better clinical outcomes in asthma and COPD patients.

**Keywords:** Dry powder inhaler; Raman imaging; cohesion–adhesion; drug–drug interaction; particle interaction.

## Full text links



[Proceed to details](#)

## Cite

## Share

15

## Review

## J Investig Allergol Clin Immunol

- 
- 
-

. 2024 Oct 23;34(5):293-302.

doi: 10.18176/jiaci.1012. Epub 2024 Jul 26.

[Role of Thymic Stromal Lymphopoietin in the Pathophysiology of Asthma and Clinical and Biological Effects of Blockade With Tezepelumab](#)

[C Venegas Garrido](#)<sup>1</sup>, [P Nair](#)<sup>1</sup>, [I Dávila](#)<sup>2,3,4</sup>, [L Pérez de Llano](#)<sup>5,6</sup>

Affiliations Expand

- PMID: 39056463
- DOI: [10.18176/jiaci.1012](https://doi.org/10.18176/jiaci.1012)

Abstract

The airway epithelium is the first line of defense of the respiratory system against the external environment. It plays an active role in the initiation of immune and allergic responses against potential hazards. Among the various specialized cells and cytokines that participate in epithelium-induced responses, alarmins are particularly interesting, given their ample role in mediating T2 and non-T2 inflammatory mechanisms involved in the pathogenesis of asthma. Thymic stromal lymphopoietin (TSLP) is an alarmin with broad effects in asthma that result from its widespread action on multiple cell types, including eosinophils, mast cells, dendritic cells, and group-2 innate lymphoid cells. Its role in allergy-mediated responses, eosinophilic inflammation, airway hyperresponsiveness, mucus hyperproduction, viral tolerance, and airway remodeling is of the utmost importance, as more comprehensive asthma assessments have been developed to explore these pathogenic features. Therefore, blockade with targeting molecules, such as monoclonal antibodies, has emerged as a promising therapeutic option, particularly in patients with multiple pathogenic pathways. In this review, we examine the roles of alarmins (mainly TSLP) in the pathogenesis of asthma and clinical expression and discuss the effects of inhibiting TSLP on several inflammatory and clinical outcomes. We also review the literature supporting treatment with anti-TSLP biologics and the unanswered questions and unmet needs associated with targeting alarmins in asthma.

Keywords: Airway epithelium; Alarmins; Biologicals; Severe asthma; TSLP; Tezepelumab.

Supplementary info

Publication types, MeSH terms, SubstancesExpand

[Proceed to details](#)

Cite

Share

## Review

J Investig Allergol Clin Immunol

- 
- 
- 

. 2024 Oct 23;34(5):282-292.

doi: 10.18176/jiaci.0984. Epub 2023 Dec 19.

### [Nonasthmatic Eosinophilic Bronchitis: A Systematic Review of Current Treatment Options](#)

[D Betancor](#)<sup>1</sup>, [M Valverde-Monge](#)<sup>1</sup>, [B Barroso](#)<sup>1</sup>, [A Gomez-Lopez](#)<sup>1</sup>, [J Sastre](#)<sup>1</sup>

Affiliations Expand

- PMID: 38113129
- DOI: [10.18176/jiaci.0984](#)

## Abstract

Nonasthmatic eosinophilic bronchitis is characterized by persistent dry or barely productive cough and bronchial eosinophilia without airway obstruction or bronchial hyperreactivity. It is primarily a chronic disease, in which some patients have clinical and pathophysiological relapses, while others progress to asthma or chronic obstructive pulmonary disease. It accounts for 5% to 30% of cases referred for chronic cough. Exposure to common inhalants and occupational sensitizers has been proposed as a possible cause of the disease, although the etiology and underlying mechanisms are uncertain. Some features are similar to those of asthma, such as airway eosinophilia, inflammatory mediator levels, and airway remodeling. Differences in airway pathophysiology, such as the location of airway inflammation and levels of IL-13 and PGE-2, have been reported. Sputum cell count is the gold standard test for diagnosis, and other biomarkers, such as exhaled nitric oxide, could support the diagnosis. A systematic review of treatments for the disease shows that while inhaled corticosteroids are the primary option, the appropriate dose, the type of corticosteroid, and the duration of treatment remain unknown. Treatment duration is inversely correlated with the relapse rate. Increased doses of inhaled corticosteroids, oral corticosteroids, and leukotriene receptor antagonists are recommended in persistent disease. Anti-IL-5 biologics could be promising in this disease. Studies that investigate biomarkers for diagnosis and prognosis are necessary, as are randomized controlled studies for second-line treatments.

**Keywords:** Chronic cough; Eosinophilic bronchitis; Nonasthmatic eosinophilic bronchitis; Sputum.

## Supplementary info

Publication types, MeSH terms, SubstancesExpand

[Proceed to details](#)

Cite

Share

17

Review

Cureus

- 
- 
- 

. 2024 Oct 22;16(10):e72144.

doi: 10.7759/cureus.72144. eCollection 2024 Oct.

[Effectiveness of Telemedicine in Managing Health-Related Issues in the Pediatric Population: A Systematic Review](#)

[Iman Mohammed Taher Do Alfughar](#)<sup>1</sup>, [Alaa Eldirdiri Ali Khalafalla](#)<sup>2</sup>, [Salma Hassan Mahmoud Ali](#)<sup>3</sup>, [Elwaleed Idrees Aydaross Adam](#)<sup>4</sup>, [Hanady M Osman](#)<sup>5</sup>, [Rwabi Safar Alrabie](#)<sup>3</sup>

Affiliations Expand

- PMID: 39440160
- PMCID: [PMC11495680](#)
- DOI: [10.7759/cureus.72144](#)

Abstract

Healthcare delivery is made more convenient and effective via telemedicine, which enables physicians to conduct virtual consultations and evaluations with pediatric patients. The purpose of this systematic review was to evaluate the efficacy of telemedicine as compared to physical appointments in the pediatric population. We used Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) guidelines to search for the available literature using pre-specified inclusion and exclusion criteria. These databases provided 968 relevant research

articles, which Endnote software screened for duplicates. Fourteen studies were considered relevant for full-text evaluation. After complete text evaluation, only 11 of these articles were found to be relevant. The Newcastle-Ottawa Scale (NOS) was used for the risk of bias assessment of all included studies. Eleven articles in all satisfied the requirements for inclusion and were added to the review. Every study was classified as either a cluster randomized trial (27%) or a randomized controlled trial (RCT) (73%). There were between 22 and 400 participants in each trial. Medical conditions evaluated included obesity (27%), mental health disorders (9%), asthma (18%), otitis media (9%), skin disorders (9%), type 1 diabetes (9%), attention deficit hyperactivity disorder (ADHD) (9%), and pancreatic insufficiency associated with cystic fibrosis (1/11). Telemedicine strategies employed included telemedicine-based screening visits (9%), smartphone-based therapies (27%), phone counseling (18%), and videoconferencing visits between patients and doctors (45%). The outcomes of the telemedicine procedures in every included study were on par with or superior to those of the control groups. Medication adherence, appointment completion rates, life satisfaction, symptom management, and disease progression were all outcomes associated with these findings. Although more research is needed, the evidence from this review suggests that telemedicine services for the general public and pediatric care are comparable to or better than in-person services. Patients, healthcare professionals, and caregivers may benefit from using both telemedicine services and traditional in-person healthcare services. To maximize the potential of telemedicine, future research should focus on improving patients' access to care, increasing the cost-effectiveness of telemedicine services, and eliminating barriers to telemedicine use.

**Keywords:** mobile health technology; pediatrics; sars-cov-2; tele-health; telemedicine.

**Copyright © 2024, Taher Do Alfuqhar et al.**

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

**Conflicts of interest:** In compliance with the ICMJE uniform disclosure form, all authors declare the following: **Payment/services info:** All authors have declared that no financial support was received from any organization for the submitted work. **Financial relationships:** All authors have declared that they have no financial relationships at present or within the previous three years with any organizations that might have an interest in the submitted work. **Other relationships:** All authors have declared that there are no other relationships or activities that could appear to have influenced the submitted work.

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

**Supplementary info**

**Publication types**Expand

**Full text links**

[Proceed to details](#)

**Cite**

Share

18

JCI Insight

- 
- 
- 

. 2024 Oct 22:e181219.

doi: 10.1172/jci.insight.181219. Online ahead of print.

[Increased expression of Cathepsin C in airway epithelia exacerbates airway remodeling in asthma](#)

[Lin Yuan<sup>1</sup>](#), [Qingwu Qin<sup>2</sup>](#), [Ye Yao<sup>1</sup>](#), [Long Chen<sup>1</sup>](#), [Huijun Liu<sup>1</sup>](#), [Xizi Du<sup>1</sup>](#), [Ming Ji<sup>1</sup>](#), [Xinyu Wu<sup>1</sup>](#), [Weijie Wang<sup>1</sup>](#), [Qiuyan Qin<sup>1</sup>](#), [Yang Xiang<sup>1</sup>](#), [Bei Qing<sup>3</sup>](#), [Xiangping Qu<sup>1</sup>](#), [Ming Yang<sup>4</sup>](#), [Xiaoqun Qin<sup>1</sup>](#), [Zhenkun Xia<sup>3</sup>](#), [Chi Liu<sup>1</sup>](#)

Affiliations Expand

- PMID: 39436705
- DOI: [10.1172/jci.insight.181219](#)

Free article

Abstract

Airway remodeling is a critical factor determining the pathogenesis and treatment sensitivity of severe asthma (SA) or uncontrolled asthma (UA). The activation of epithelial-mesenchymal trophic units (EMTUs) regulated by airway epithelial cells (AECs) has been proven to induce airway remodeling directly. However, the triggers for EMTU activation and the underlying mechanism of airway remodeling are not fully elucidated. Here, we screened the differentially expressed gene Cathepsin C (CTSC)/dipeptidyl peptidase 1 (DPP-1) in epithelia of SA and UA patients using RNA sequencing data and further verified the increased expression of CTSC in induced sputum of asthma patients which was positively correlated with the severity and airway remodeling. Moreover, direct instillation of exogenous CTSC induced airway remodeling. Genetic inhibition of CTSC suppressed EMTU activation and airway remodeling in two asthma models with airway remodeling. Mechanistically, increased secretion of CTSC from AECs induced EMTU activation through p38-mediated pathway, further inducing airway remodeling. Meanwhile, inhibition of CTSC also reduced the infiltration of inflammatory cells and the production of inflammatory factors in the lungs of asthmatic mice. Consequently, targeting CTSC with compound AZD7986 protected against airway inflammation, EMTU activation and remodeling in asthma model. Based on the dual effects of CTSC on airway

inflammation and remodeling, CTSC is a potential biomarker and therapeutic target for SA or UA.

Keywords: Asthma; Pulmonology; Respiration; Therapeutics.

Full text links

VIEW ARTICLE  
FULL TEXT

[Proceed to details](#)

Cite

Share

19

Pediatr Pulmonol

- 
- 
- 

. 2024 Oct 22.

doi: 10.1002/ppul.27280. Online ahead of print.

[Viral: Bacterial interactions in childhood asthma](#)

[Peter D Sly<sup>1</sup>](#)

Affiliations Expand

- PMID: 39436106
- DOI: [10.1002/ppul.27280](https://doi.org/10.1002/ppul.27280)

*No abstract available*

Keywords: human rhinovirus; innate immunity; respiratory syncytial virus.

- [5 references](#)

Full text links

WILEY Full Text  
Article

[Proceed to details](#)

Cite

Share

20

J Adv Res

- 
- 
- 

. 2024 Oct 21:S2090-1232(24)00475-2.

doi: 10.1016/j.jare.2024.10.020. Online ahead of print.

[Contribution of Pseudomonas aeruginosa - mediated club cell necroptosis to the bias of type 17 inflammation and steroid insensitivity in asthma](#)

[Jieying Guan](#)<sup>1</sup>, [Wenruo Yao](#)<sup>2</sup>, [Le Zhang](#)<sup>2</sup>, [Huancheng Xie](#)<sup>2</sup>, [Linmei Li](#)<sup>2</sup>, [Yuhuan Wen](#)<sup>2</sup>, [Honglv Chen](#)<sup>2</sup>, [Yuyi Huang](#)<sup>2</sup>, [Junjie Wen](#)<sup>3</sup>, [Changxing Ou](#)<sup>3</sup>, [Canyang Liang](#)<sup>2</sup>, [Jing Wang](#)<sup>2</sup>, [Qingling Zhang](#)<sup>4</sup>, [Ailin Tao](#)<sup>5</sup>, [Jie Yan](#)<sup>6</sup>

Affiliations Expand

- PMID: 39442871
- DOI: [10.1016/j.jare.2024.10.020](#)

Free article

Abstract

**Introduction:** Opportunistic pathogen infection is one of the important inducements for asthma exacerbation. *Pseudomonas aeruginosa* (PA) is a kind of dominant pathogenic bacteria in the respiratory tract that is associated with severe asthma, but the underlying mechanisms still remains unclear.

**Objectives:** To examine the role of PA infection in the bias of the inflammatory endotype in asthma and its effect on the sensitivity to steroid therapy.

**Methods:** An adjusted HDM (House Dust Mite) -induced asthma model with PA inoculation in the airway was utilized to mimic the process of opportunistic PA infection in asthma, focusing on the interaction between bacteria and epithelium. Dexamethasone administration in vivo was used to test the sensitivity to steroid therapy.

**Results:** It was uncovered that PA could promote the loss of club cells in the necroptosis pattern through cellular CYP450 activation, leading to an imbalance of inflammatory response and steroid insensitivity. Club cell loss results in the activation of cellular E-cadherin/ $\beta$ -catenin axis in the rest of club cells for goblet metaplasia and mucus hypersecretion, as well as epithelial damage and GR downregulation for steroid resistance. For clinical applications, the necroptosis inhibitor Nec-1 can effectively relieve the pathological symptoms of asthma in vivo.

Meanwhile, CCSP administration in the airway can regulate the pulmonary inflammation and restore the steroid sensitivity in asthma.

**Conclusion:** These experiments provide a novel mechanism of concurrent PA infection in asthma through club cell necroptosis and the pathological consequences. Nec-1 treatment and CCSP supplementation may be possible therapeutic strategies for asthma treatment.

**Keywords:** Asthma; CCSP; Club cell; Necroptosis; Pseudomonas aeruginosa; Steroid sensitivity.

Copyright © 2024. Production and hosting by Elsevier B.V.

**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.

**Full text links**



[Proceed to details](#)

**Cite**

**Share**

21

J Allergy Clin Immunol

- 
- 
- 

. 2024 Oct 21:S0091-6749(24)00983-7.

doi: 10.1016/j.jaci.2024.05.033. Online ahead of print.

[Defining the overlap between asthma and bronchiectasis: A call for consensus definition](#)

[Sang Hyuk Kim](#)<sup>1</sup>, [Bumhee Yang](#)<sup>2</sup>, [Kyung Hoon Min](#)<sup>3</sup>, [Hyun Lee](#)<sup>4</sup>

**Affiliations Expand**

- PMID: 39436332
- DOI: [10.1016/j.jaci.2024.05.033](https://doi.org/10.1016/j.jaci.2024.05.033)

*No abstract available*

Conflict of interest statement

Disclosure Statement Disclosure of potential conflict of interest: The authors declare that they have no relevant conflicts of interest.

Supplementary info

Publication typesExpand

Full text links



[Proceed to details](#)

Cite

Share

22

Review

BMC Public Health

- 
- 
- 

. 2024 Oct 21;24(1):2915.

doi: 10.1186/s12889-024-20418-8.

[Self-reported questionnaires to assess indoor home environmental exposures in asthma patients: a scoping review](#)

[Dhanusha Punyadasa](#)<sup>1,2</sup>, [Nicola J Adderley](#)<sup>3</sup>, [Gavin Rudge](#)<sup>3</sup>, [Prasad Nagakumar](#)<sup>4,5</sup>, [Shamil Haroon](#)<sup>3</sup>

Affiliations Expand

- PMID: 39434085
- PMCID: [PMC11494864](#)
- DOI: [10.1186/s12889-024-20418-8](#)

## Abstract

**Background:** The indoor home environment plays a crucial role in determining the outcome of respiratory diseases, including asthma. Researchers, clinicians, and patients would benefit from self-reported questionnaires to assess indoor home environmental exposures that may impact on respiratory health.

**Objective:** To review self-reported instruments for assessing indoor home environmental exposures in asthma patients and to characterise their content, development, and psychometric properties.

**Design:** A scoping review was conducted with content assessment.

**Methods:** A literature search was conducted in Embase and PubMed using the key words housing quality, questionnaire and asthma and their index terms, covering articles published in English between January 2000 to July 2023. Articles in which questionnaires or single item questions were used to assess indoor home environmental exposures in asthma patients in middle- and high-income countries were included. We excluded articles in which the questionnaire required an interviewer or onsite observations and those conducted in low-income countries.

**Results:** We screened 1584 articles to identify 44 studies containing self-reported questionnaires measuring indoor home environmental exposures. 36 studies (82%) were cross sectional, 35 (80%) had a sample size of greater than 1000 participants, and 29 (66%) were conducted in children. Most studies (86%, n = 38) had binary (yes/no) or multiple-choice responses. 25 studies (57%) included a recall period of 12 months. 32 studies (73%) had a response rate of greater than 50%. Dampness, biological exposures (e.g. mould), and second-hand tobacco smoke were the most assessed indoor home environmental exposures. Childhood asthma (54%, n = 24) and asthma symptoms (36%, n = 16) were the most examined asthma related outcomes. The exposure most associated with adverse asthma outcomes was exposure to damp (79%, n = 35). 13 studies (29%) had developed a self-reported instrument by adapting questions from previous studies and almost all instruments (n = 42 studies, 95%) had not been validated.

**Conclusions:** The scoping review did not identify a comprehensive, validated self-reported questionnaire for assessing indoor home environmental exposures in patients with asthma. There is need to develop and validate a robust but pragmatic self-reported instrument, incorporating the findings from this review.

**Keywords:** Asthma; Environmental exposures; Home; Indoor; Questionnaires; Self-reported.

© 2024. The Author(s).

### Conflict of interest statement

The authors declare no competing interests.

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

Supplementary info

Publication types, MeSH termsExpand

Full text links



[Proceed to details](#)

Cite

Share

23

Allergy

- 
- 
- 

. 2024 Oct 21.

doi: 10.1111/all.16359. Online ahead of print.

[Early-life exposure to residential greenness and risk of asthma in a U.S. bronchiolitis cohort](#)

[Wojciech Feleszko](#)<sup>1,2</sup>, [Heidi Makrinioti](#)<sup>1,3</sup>, [Marta Nalej](#)<sup>4</sup>, [Tadao Ooka](#)<sup>1,5</sup>, [Zhaozhong Zhu](#)<sup>1</sup>, [Ashley F Sullivan](#)<sup>1</sup>, [Tuomas Jartti](#)<sup>6</sup>, [Kohei Hasegawa](#)<sup>1</sup>, [Carlos A Camargo Jr](#)<sup>1</sup>

Affiliations Expand

- PMID: 39429165
- DOI: [10.1111/all.16359](#)

Abstract

**Introduction:** Severe bronchiolitis (i.e., bronchiolitis requiring hospitalization) is linked to childhood asthma development. Despite a growing understanding of risk factors for developing post-bronchiolitis asthma, protective factors remain unclear. In this study, we aimed to investigate whether exposure to residential greenness between birth and bronchiolitis hospitalization is associated with asthma and atopic asthma development by age 6 years.

**Methods:** We analyzed a US severe bronchiolitis cohort from hospitalization to age 6 years, investigating how the normalized difference vegetation index (NDVI) and chlorophyll index green (CI green), measured in small (100 m) and large (500 m) radiuses around homes, relate to asthma and atopic asthma by age 6 years. We also explored whether maternal antibiotic use, daycare attendance, and respiratory virus type during hospitalization act as effect modifiers.

**Results:** The study cohort included 861 infants, with 239 (28%) developing asthma by age 6 years-152 atopic, 17 nonatopic, and 70 unclassified. Early life residential exposure to high NDVI and CI green levels was associated with lower odds of asthma (OR<sub>Adj</sub> for NDVI within a 100 m radius, 0.18; 95% CI, 0.05-0.78; and OR<sub>Adj</sub> for CI green levels within a 100 m radius, 0.53; 95% CI, 0.31-0.90). Associations also were significant for the development of atopic asthma (OR<sub>Adj</sub> 0.16; 95% CI, 0.03-0.96; and OR<sub>Adj</sub> 0.46; 95% CI, 0.25-0.92; respectively). Results were similar for the 500 m radius exposures. No effect modification was noted.

**Conclusion:** In a U.S. bronchiolitis cohort, exposure to residential greenness between birth and bronchiolitis hospitalization is linked to lower asthma and atopic asthma risk by age 6 years.

**Keywords:** asthma; bronchiolitis; chlorophyll index; greenness; vegetation.

© 2024 European Academy of Allergy and Clinical Immunology and John Wiley & Sons Ltd.

- [40 references](#)

Supplementary info

Grants and fundingExpand

Full text links



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

1

Sci Rep

- 
- 
- 

. 2024 Oct 26;14(1):25467.

doi: 10.1038/s41598-024-73575-6.

[Predictive value of Der p 2-specific IgE for subcutaneous immunotherapy in children with allergic rhinitis](#)

[Jiayan Wang](#)<sup>1</sup>, [Bohuai Xu](#)<sup>2</sup>, [Xujin Jia](#)<sup>1</sup>, [Yong He](#)<sup>2</sup>, [Beibei Jia](#)<sup>2</sup>, [Junyuan Li](#)<sup>2</sup>, [Ming Xu](#)<sup>3</sup>

Affiliations Expand

- PMID: 39461966

- DOI: [10.1038/s41598-024-73575-6](https://doi.org/10.1038/s41598-024-73575-6)

## Abstract

**Dermatophagoides pteronyssinus (Der p) subcutaneous immunotherapy (SCIT) has demonstrated efficacy in clinical trials of childhood allergic rhinitis (AR). Currently, there is a lack of some generally accepted biomarkers that may predict the clinical response to SCIT to eventually achieve personalized therapy. In this study, 28 children with AR received Der p SCIT for 26-30 months at baseline, and four efficacy endpoints, serum interleukin (IL)-5, periostin, Der p-specific IgE (sIgE), and Der p sIgG4, were measured by ELSIA. Clinical symptoms and characteristics were assessed by questionnaires, and the associations among periostin, Der p 2 sIgE and clinical efficacy were analyzed. The results showed that SCIT demonstrated a significant reduction in Der p 1 sIgE ( $P < 0.05$ ) and Der p 2 sIgE ( $P < 0.01$ ), an increase in Der p sIgG4 ( $P < 0.001$ ) and an improvement in clinical efficacy at the fourth efficacy endpoint compared with that at baseline. A positive linear correlation was found in serum periostin and Der p sIgE ( $P < 0.05$ ), Der p sIgG4 ( $P < 0.05$ ), and clinical efficacy. Importantly, the concentration of serum Der p 2 sIgE showed a positive linear correlation with clinical efficacy and serum periostin ( $P < 0.05$ ). These results suggest that SCIT can result in reduced type 2 cytokines and Der p sIgE and has long-term efficacy in children with AR. Der p 2 sIgE has a positive linear correlation with clinical efficiency and serum periostin and may be a useful biomarker for the prediction of SCIT.**

**Keywords:** Allergic rhinitis; Biomarkers; Childhood; Dermatophagoides pteronyssinus; Subcutaneous immunotherapy.

© 2024. The Author(s).

- [33 references](#)

## Supplementary info

MeSH terms, Substances, Grants and funding [Expand](#)

[Proceed to details](#)

## Cite

## Share

2

## Sci Rep

- 
- 
- 

. 2024 Oct 25;14(1):25406.

doi: 10.1038/s41598-024-77131-0.

## Causal relationships between allergic and autoimmune diseases with chronic rhinosinusitis

Junhao Tu <sup>#1,2,3</sup>, Zhiqiang Zhang <sup>#1</sup>, Fan Jiang <sup>1</sup>, Jinyang Wen <sup>4</sup>, Qing Luo <sup>1</sup>, Jing Ye <sup>5,6,7</sup>

### Affiliations Expand

- PMID: 39455747
- PMCID: [PMC11511928](#)
- DOI: [10.1038/s41598-024-77131-0](#)

### Abstract

Chronic rhinosinusitis (CRS) is a prevalent inflammatory airway disease affecting over 10% of the global population, leading to considerable socio-economic impacts, especially in developing countries. The pathogenesis of CRS is multifactorial, involving potential contributions from both genetic and environmental factors. While the influence of allergic and autoimmune diseases on CRS has been observed, the causal relationships between these diseases and CRS remain unclear. We extracted data from large-scale genome-wide association studies (GWAS) and utilized a bidirectional two-sample Mendelian randomization (MR) analysis to explore the causal relationships between CRS and ten autoimmune and allergic diseases, including asthma, allergic rhinitis (AR), atopic dermatitis (AD), psoriasis, type 1 diabetes (T1D), hypothyroidism, celiac disease (CeD), multiple sclerosis (MS), rheumatoid arthritis (RA), and systemic lupus erythematosus (SLE). Additionally, we conducted colocalization analysis to determine whether the allergic/autoimmune diseases showing statistical causal relationships with CRS are driven by the same genetic variants. The MR analysis identified that AR (OR = 1.30; 95% CI = 1.21-1.40; P = 3.26E-13), asthma (OR = 1.35; 95% CI = 1.25-1.45; P = 1.35E-14), and AD (OR = 1.17; 95% CI = 1.06-1.30; P = 0.003) were significantly associated with an increased risk of developing CRS. Interestingly, psoriasis (OR = 0.05; 95% CI = 0.01-0.37; P = 0.004) appeared to have a protective effect against CRS. Associations for T1D and hypothyroidism were also suggestive as potential risk factors for CRS. No significant associations in the reverse MR analysis, suggesting a one-directional relationship. Colocalization analysis indicated that asthma (PP.H4 = 0.99) shared the same genetic variant (IL-33 rs3939286) with CRS. In conclusion, our study confirmed the causal relationships between allergic and autoimmune diseases (AR, asthma, AD, and psoriasis) and CRS. Notably, we identified a shared genetic variant, rs3939286 in the IL-33 gene, between asthma and CRS, suggesting that targeting the IL-33 pathway may provide a therapeutic strategy for both diseases.

**Keywords:** Allergic diseases; Autoimmune diseases; Chronic rhinosinusitis; Mendelian randomization.

## Conflict of interest statement

The authors declare no competing interests.

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

## Supplementary info

MeSH terms, Grants and fundingExpand

Full text links

nature portfolio

[Proceed to details](#)

Cite

Share

3

J Occup Med Toxicol

- 
- 
- 

. 2024 Oct 24;19(1):41.

doi: 10.1186/s12995-024-00440-7.

[The prevalence of respiratory symptoms and diseases and declined lung function among foundry workers](#)

[Kirsi Koskela](#)<sup>1,2</sup>, [Lauri Lehtimäki](#)<sup>3</sup>, [Jukka Uitti](#)<sup>4</sup>, [Panu Oksa](#)<sup>5</sup>, [Antti Tikkakoski](#)<sup>6</sup>, [Riitta Sauni](#)<sup>4</sup>

Affiliations Expand

- PMID: 39448978
- DOI: [10.1186/s12995-024-00440-7](#)

Free article

Abstract

**Background:** Foundry workers are occupationally exposed to a variety of inhalable chemical substances. Occupational exposure to vapors, gases, dusts, and fumes can lead to adverse health effects on the respiratory system and cause chronic

respiratory diseases, such as interstitial lung diseases (ILDs), chronic obstructive lung disease (COPD), chronic bronchitis, and emphysema. Research on respiratory symptoms, diseases, and lung function in foundry workers over the past few decades has been limited. The aim of this cross-sectional study was to assess the prevalence of respiratory symptoms and diseases and declined lung function of current foundry workers, ex-foundry workers, and unexposed controls.

**Methods:** We assessed respiratory symptoms, diseases, and lung function among 335 current foundry workers, 64 ex-foundry workers, and 161 unexposed controls. The cumulative dust exposure (mg-y) of each participant was calculated, and the median cumulative dust exposure according to the main places of exposure was determined.

**Results:** A higher prevalence of chronic bronchitis, as reported in a questionnaire, was found among current and ex-foundry workers compared to unexposed controls, even after adjusting for pack-years of smoking ( $p = 0.009$ ). Additionally, cough and wheezing in adulthood without respiratory infection, and chronic rhinitis symptoms were more common among current and ex-foundry workers compared to unexposed controls. These differences remained significant even after adjusting for pack-years of smoking and body mass index (BMI) ( $p = 0.007$  and  $p < 0.001$ , respectively). Impaired lung function was more prevalent among both ex-foundry workers (29.7%) and current foundry workers (15.5%) compared to the unexposed controls (8.7%), with the difference remaining significant even after adjusting for the pack-years of smoking and BMI ( $p = 0.009$ ). According to the questionnaire, the number of physician-diagnosed cases of chronic obstructive pulmonary disease (COPD) or chronic bronchitis was unexpectedly low compared to the indications from the symptom questionnaire and lung function test results, suggesting a potential underdiagnosis. The prevalence of silicosis was low (0.8%) among current and ex-foundry workers.

**Conclusions:** Respiratory symptoms are common among foundry workers. Current and ex-foundry workers exhibited lower lung function in spirometry compared to unexposed controls. There is a potential underdiagnosis of COPD and chronic bronchitis among foundry workers.

**Keywords:** Foundry work; Lung function; Occupational exposure; Occupational respiratory diseases.

© 2024. The Author(s).

- [41 references](#)

Full text links



[Proceed to details](#)

Cite

Share

4

JAMA

- 
- 
- 

. 2024 Oct 24.

doi: 10.1001/jama.2024.14237. Online ahead of print.

[What Is Allergic Rhinitis?](#)

[Rebecca Voelker](#)<sup>1</sup>

Affiliations Expand

- PMID: 39446335
- DOI: [10.1001/jama.2024.14237](https://doi.org/10.1001/jama.2024.14237)

*No abstract available*

Plain language summary

This JAMA Patient Page describes allergic rhinitis and its risk factors, diagnosis, and treatment.

Full text links



[Proceed to details](#)

Cite

Share

5

Comment

OTO Open

- 
- 
-

. 2024 Oct 22;8(4):e154.

doi: 10.1002/oto2.154. eCollection 2024 Oct-Dec.

[Reply to Letter Regarding "Improvement in Nasal Symptoms of Chronic Rhinitis After Cryoablation of the Posterior Nasal Nerve"](#)

[Mattie Rosi-Schumacher](#)<sup>1</sup>, [Paul R Young](#)<sup>2</sup>

Affiliations Expand

- PMID: 39439903
- PMCID: [PMC11494482](#)
- DOI: [10.1002/oto2.154](#)

*No abstract available*

Conflict of interest statement

None.

Comment on

- [Letter Regarding "Improvement in Nasal Symptoms of Chronic Rhinitis after Cryoablation of the Posterior Nasal Nerve": Toward a Unified Airway Approach.](#)

Conti DM, Correa EJ.OTO Open. 2024 Jun 1;8(2):e153. doi: 10.1002/oto2.153. eCollection 2024 Apr-Jun.PMID: 38826639 Free PMC article. No abstract available.

- [5 references](#)

Supplementary info

Publication typesExpand

Full text links



[Proceed to details](#)

Cite

Share

6

Pediatr Res

- 
- 
- 

. 2024 Oct 21.

doi: 10.1038/s41390-024-03645-y. Online ahead of print.

## [Gut microbiome impact on childhood allergic rhinitis and house dust mite IgE responses](#)

[Junyang Li](#)<sup>#1</sup>, [Nan Shen](#)<sup>#2,3</sup>, [Wenjun He](#)<sup>1</sup>, [Yi Pan](#)<sup>2</sup>, [Jing Wu](#)<sup>2</sup>, [Ruike Zhao](#)<sup>2</sup>, [Xi Mo](#)<sup>2</sup>, [Youjin Li](#)<sup>4,5</sup>

### Affiliations Expand

- PMID: 39433961
- DOI: [10.1038/s41390-024-03645-y](#)

### Abstract

**Background:** The correlation between the gut microbiota and airway inflammation in childhood allergic rhinitis (AR), particularly concerning allergen exposure, remains insufficiently explored. This study aimed to link gut microbiota changes with house dust mite (HDM)-specific IgE responses in pediatric AR.

**Methods:** Using metagenomic shotgun sequencing, we compared the fecal microbiota of 60 children with HDM-AR to 48 healthy controls (HC), analyzing the link to IgE reactions. We examined the effects of oral *Escherichia* (*E.*) *fergusonii* treatment in mice sensitized with ovalbumin and HDM on allergic symptoms, mucosal cell infiltration, Th1/Th2/Tregs balance in the spleen, serum cytokine levels, and *E. fergusonii* presence in feces.

**Results:** Children with HDM-AR have a less diverse gut microbiome and lower levels of *E. fergusonii* compared to controls, with a negative correlation between *E. fergusonii* abundance and HDM-specific IgE levels. In mice sensitized with OVA and HDM, oral administration of *E. fergusonii* improved allergic symptoms, reduced nasal eosinophils/mast cells infiltration and adjusted Th cell populations towards a non-allergic profile in splenic lymphocytes with exception of IFN- $\gamma$  change in serum.

**Conclusion:** These findings underline the potential of targeting gut microbiota, particularly *E. fergusonii*, in managing childhood HDM-AR, suggesting a promising approach for future interventions.

**Impact:** The composition and distribution of gut microbiota in children with HDM-AR are significantly changed. The abundance of *Escherichia* genus is decreased in HDM-AR children. HDM-specific IgE levels are strongly negatively associated with *E. fergusonii* abundance. Oral administration of *E. fergusonii* effectively suppresses allergic responses in murine model. These findings offer novel insights into the diagnosis and treatment of HDM-AR, which suggested that *E. fergusonii* holds promise as a potential therapeutic avenue for managing HDM-AR.

© 2024. The Author(s), under exclusive licence to the International Pediatric Research Foundation, Inc.

- [39 references](#)

Full text links

nature portfolio

## chronic cough

1

Dtsch Med Wochenschr

- 
- 
- 

. 2024 Nov;149(22):1372-1376.

doi: 10.1055/a-2372-1157. Epub 2024 Oct 22.

[\[Vaccinations in pulmonary diseases - part 2: herpes zoste, RSV, pneumococcal infection and pertussis\]](#)

[Article in German]

[Cathrin Kodde](#)<sup>1</sup>, [Leif Erik Sander](#)<sup>1,2</sup>

Affiliations Expand

- PMID: 39437831
- DOI: [10.1055/a-2372-1157](https://doi.org/10.1055/a-2372-1157)

### Abstract

in [English, German](#)

**Rsv (respiratory syncytial virus):** RSV is a common cause of respiratory tract infections, posing a risk of severe disease, particularly for newborns and infants, as well as in older individuals with pre-existing conditions. Two safe and effective RSV vaccines were approved in 2023. These vaccines elicit protective antibodies and offer robust protection with no additional benefit from annual boosters. Both vaccines have been approved for individuals aged 60 years and older, while one of the vaccines has also been approved in pregnant women to elicit maternal immunity for passive protection of the unborn child. In

Germany, RSV vaccination is currently recommended for all individuals aged 75 years and older, as well as people aged 60-74 years of age with severe underlying conditions. PNEUMOCOCCAL INFECTION: *Streptococcus pneumoniae* is a primary cause of community-acquired pneumonia (CAP). Since early 2022, a 20-valent conjugate vaccine (PCV20) is approved and recommended for people over 60 years of age and individuals over 18 years of age with risk factors. PCV20 replaces the 23-valent polysaccharide vaccine (PPV23) previously recommended for those over 60 years of age.

**Pertussis:** Although viewed primarily as a childhood disease, the majority of infections affect adults. Patients with chronic respiratory diseases are at a higher risk for severe clinical course of pertussis infection. It has therefore been recommended that all adults should get a pertussis booster with their next scheduled tetanus vaccination, given as a combination vaccine (Tdap). For risk groups (healthcare personnel, community facilities) a booster vaccination every 10 years is recommended.

**Herpes zoster:** Herpes Zoster (shingles) is caused by the varicella-zoster virus, and reactivations can lead to painful skin lesions and potential complications such as herpes zoster oticus, meningitis, or postherpetic neuralgia. People with chronic lung diseases such as COPD or asthma are at increased risk of herpes zoster-related complications. A recombinant adjuvanted inactivated vaccine was approved in 2018 and offers robust protection against herpes zoster and its complications. The vaccine is recommended for all people over 60 years of age and for certain risk groups over 50 years of age.

Thieme. All rights reserved.

### **Conflict of interest statement**

Leif Erik Sander gibt Beratertätigkeiten für OM-Pharma SA an.

Supplementary info

Publication types, MeSH terms, SubstancesExpand

Full text links



[Proceed to details](#)

Cite

Share

2

J Occup Med Toxicol

•

- 
- 

. 2024 Oct 24;19(1):41.

doi: 10.1186/s12995-024-00440-7.

## [The prevalence of respiratory symptoms and diseases and declined lung function among foundry workers](#)

[Kirsi Koskela](#)<sup>1,2</sup>, [Lauri Lehtimäki](#)<sup>3</sup>, [Jukka Uitti](#)<sup>4</sup>, [Panu Oksa](#)<sup>5</sup>, [Antti Tikkakoski](#)<sup>6</sup>, [Riitta Sauni](#)<sup>4</sup>

Affiliations Expand

- PMID: 39448978
- DOI: [10.1186/s12995-024-00440-7](https://doi.org/10.1186/s12995-024-00440-7)

### Free article

### Abstract

**Background:** Foundry workers are occupationally exposed to a variety of inhalable chemical substances. Occupational exposure to vapors, gases, dusts, and fumes can lead to adverse health effects on the respiratory system and cause chronic respiratory diseases, such as interstitial lung diseases (ILDs), chronic obstructive lung disease (COPD), chronic bronchitis, and emphysema. Research on respiratory symptoms, diseases, and lung function in foundry workers over the past few decades has been limited. The aim of this cross-sectional study was to assess the prevalence of respiratory symptoms and diseases and declined lung function of current foundry workers, ex-foundry workers, and unexposed controls.

**Methods:** We assessed respiratory symptoms, diseases, and lung function among 335 current foundry workers, 64 ex-foundry workers, and 161 unexposed controls. The cumulative dust exposure (mg-y) of each participant was calculated, and the median cumulative dust exposure according to the main places of exposure was determined.

**Results:** A higher prevalence of chronic bronchitis, as reported in a questionnaire, was found among current and ex-foundry workers compared to unexposed controls, even after adjusting for pack-years of smoking ( $p = 0.009$ ). Additionally, cough and wheezing in adulthood without respiratory infection, and chronic rhinitis symptoms were more common among current and ex-foundry workers compared to unexposed controls. These differences remained significant even after adjusting for pack-years of smoking and body mass index (BMI) ( $p = 0.007$  and  $p < 0.001$ , respectively). Impaired lung function was more prevalent among both ex-foundry workers (29.7%) and current foundry workers (15.5%) compared to the unexposed controls (8.7%), with the difference remaining significant even

after adjusting for the pack-years of smoking and BMI ( $p = 0.009$ ). According to the questionnaire, the number of physician-diagnosed cases of chronic obstructive pulmonary disease (COPD) or chronic bronchitis was unexpectedly low compared to the indications from the symptom questionnaire and lung function test results, suggesting a potential underdiagnosis. The prevalence of silicosis was low (0.8%) among current and ex-foundry workers.

**Conclusions:** Respiratory symptoms are common among foundry workers. Current and ex-foundry workers exhibited lower lung function in spirometry compared to unexposed controls. There is a potential underdiagnosis of COPD and chronic bronchitis among foundry workers.

**Keywords:** Foundry work; Lung function; Occupational exposure; Occupational respiratory diseases.

© 2024. The Author(s).

- [41 references](#)

Full text links



[Proceed to details](#)

Cite

Share

3

Review

J Investig Allergol Clin Immunol

- 
- 
- 

. 2024 Oct 23;34(5):282-292.

doi: 10.18176/jiaci.0984. Epub 2023 Dec 19.

[\*\*Nonasthmatic Eosinophilic Bronchitis: A Systematic Review of Current Treatment Options\*\*](#)

[D Betancor](#)<sup>1</sup>, [M Valverde-Monge](#)<sup>1</sup>, [B Barroso](#)<sup>1</sup>, [A Gomez-Lopez](#)<sup>1</sup>, [J Sastre](#)<sup>1</sup>

Affiliations Expand

- PMID: 38113129
- DOI: [10.18176/jiaci.0984](https://doi.org/10.18176/jiaci.0984)

## Abstract

Nonasthmatic eosinophilic bronchitis is characterized by persistent dry or barely productive cough and bronchial eosinophilia without airway obstruction or bronchial hyperreactivity. It is primarily a chronic disease, in which some patients have clinical and pathophysiological relapses, while others progress to asthma or chronic obstructive pulmonary disease. It accounts for 5% to 30% of cases referred for chronic cough. Exposure to common inhalants and occupational sensitizers has been proposed as a possible cause of the disease, although the etiology and underlying mechanisms are uncertain. Some features are similar to those of asthma, such as airway eosinophilia, inflammatory mediator levels, and airway remodeling. Differences in airway pathophysiology, such as the location of airway inflammation and levels of IL-13 and PGE-2, have been reported. Sputum cell count is the gold standard test for diagnosis, and other biomarkers, such as exhaled nitric oxide, could support the diagnosis. A systematic review of treatments for the disease shows that while inhaled corticosteroids are the primary option, the appropriate dose, the type of corticosteroid, and the duration of treatment remain unknown. Treatment duration is inversely correlated with the relapse rate. Increased doses of inhaled corticosteroids, oral corticosteroids, and leukotriene receptor antagonists are recommended in persistent disease. Anti-IL-5 biologics could be promising in this disease. Studies that investigate biomarkers for diagnosis and prognosis are necessary, as are randomized controlled studies for second-line treatments.

**Keywords:** Chronic cough; Eosinophilic bronchitis; Nonasthmatic eosinophilic bronchitis; Sputum.

Supplementary info

Publication types, MeSH terms, SubstancesExpand

[Proceed to details](#)

Cite

Share

4

Review

Eur J Intern Med

- 
- 
- 

. 2024 Oct 22:S0953-6205(24)00435-7.

doi: 10.1016/j.ejim.2024.10.015. Online ahead of print.

### **Chronic obstructive pulmonary disease's eosinophilic phenotype: Clinical characteristics, biomarkers and biotherapy**

[Mauro Maniscalco<sup>1</sup>](#), [Claudio Candia<sup>2</sup>](#), [Pasquale Ambrosino<sup>3</sup>](#), [Antonio Iovine<sup>3</sup>](#), [Salvatore Fuschillo<sup>3</sup>](#)

Affiliations Expand

- PMID: 39443246
- DOI: [10.1016/j.ejim.2024.10.015](https://doi.org/10.1016/j.ejim.2024.10.015)

### **Abstract**

COPD is a chronic, heterogeneous inflammatory disorder of the airways with persistent and poorly reversible airflow limitation, causing symptoms such as cough, shortness of breath, and sputum production. Despite optimal treatment, some patients remain symptomatic due to the disease's heterogeneity, manifesting in various phenotypes. One notable phenotype involves eosinophilic inflammation, with a variable prevalence. Identifying eosinophilic phenotypes is crucial for tailored therapeutic strategies, as they respond favorably to corticosteroids and potentially biologics. Recent advances in both clinical trials and spontaneous research have helped understand the biological and clinical characteristics of this phenotype, although no universal consensus has been reached yet on the definition of the cut-off values of the eosinophil peripheral blood count. Moreover, there is evidence of novel emerging biomarkers which might go beyond the sole eosinophil count, while significant advancements in terms of pharmacological treatment have been made, with dupilumab being the first biological drug being licensed for COPD patients with elevated circulating eosinophils in the stable phase. In light of the above, although several papers have been written on the relationship between eosinophils and COPD, in the present work we endeavored to summarize and discuss the pivotal literature findings regarding the eosinophilic COPD in order to help define the biological and clinical features of this peculiar phenotype, with particular attention to the use of established and emerging biomarkers, as well as current and future therapeutic perspectives.

**Keywords:** Biological therapy; Biomarkers; COPD; Disability; Outcome.

Copyright © 2024. Published by Elsevier B.V.

### **Conflict of interest statement**

Disclosures No competing financial interests exist.

Supplementary info

Publication typesExpand

Full text links



[Proceed to details](#)

Cite

Share

5

Review

Expert Opin Pharmacother

- 
- 
- 

. 2024 Oct 22.

doi: 10.1080/14656566.2024.2418983. Online ahead of print.

**[Current and emerging opioids for the treatment of chronic cough: a mini review](#)**

[Mengru Zhang](#)<sup>1</sup>, [Alyn H Morice](#)<sup>1</sup>

Affiliations Expand

- PMID: 39434699
- DOI: [10.1080/14656566.2024.2418983](https://doi.org/10.1080/14656566.2024.2418983)

## Abstract

**Introduction:** Chronic cough has increasingly been recognized as a distinct clinical entity that affects a significant portion of the global population. Despite advancements in understanding its pathophysiology, treatment options remain limited. Opioid analgesics have long been used for cough and some have proven clear antitussive potential. However, these have yet to be approved by regulatory authorities for the treatment of chronic cough. Several novel synthetic opioid modulators that demonstrated antitussive effects in early-stage studies also failed to translate into clinical practice.

**Areas covered:** This mini review aims to summarize the implications of opioid receptors in the development of cough medicines and highlight recent advances of opioid analgesics in cough trials. PUB MED/CINAHL/Web of Science/Scopus were searched (September 2024).

**Expert opinion:** Our understanding of the precise sites of action and the involvement of peripheral opioid receptors in cough remains limited. Despite these gaps in knowledge, opioids remain a viable option for some patients until more novel effective treatments are available. Due to the frequent opioid side effects, new opioids derivatives with improved properties are needed. The development of tailored or biased delta-opioid receptor ligands and mixed agonists of opioid receptor-like 1/mu receptors may offer hope for new opioid-based drug discovery for chronic cough.

**Keywords:** Antitussive effect; chronic cough; cough hypersensitivity syndrome; opiates; opioid receptor.

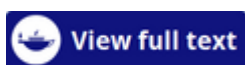
## Plain language summary

Chronic cough is a common and challenging condition that affects many people. Although opiates have long been used in the treatment of cough, none are currently approved by health authorities specifically for this condition. Morphine has been suggested as a treatment option for chronic cough due to its antitussive efficacy shown in several clinical trials. This review looks at how opioid receptors play a role in cough and discusses recent progress in cough trials involving opioid-based medications. Although we still don't fully understand how opioids work to reduce coughing, they remain a useful option in those whose cough is refractory to other treatments. Because opioids are associated with side effects, there is a need for new opioid-based medications with an improved safety profile.

Supplementary info

Publication typesExpand

Full text links



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

1

Respir Res

- 
- 
- 

. 2024 Oct 26;25(1):385.

doi: 10.1186/s12931-024-03019-2.

[Multi-drug resistant Pseudomonas aeruginosa isolation is an independent risk factor for recurrent hemoptysis after bronchial artery embolization in patients with idiopathic bronchiectasis: a retrospective cohort study](#)

[Jibo Sun](#)<sup>#1,2</sup>, [Xiang Tong](#)<sup>#1,2</sup>, [Dongguang Wang](#)<sup>1,2</sup>, [Lian Wang](#)<sup>1,2</sup>, [Shijie Zhang](#)<sup>1,2</sup>, [Sitong Liu](#)<sup>1,2</sup>, [Xiu Li](#)<sup>1,2</sup>, [Qingqing Jia](#)<sup>1,2</sup>, [Jiehao Chen](#)<sup>3</sup>, [Yao Ma](#)<sup>4</sup>, [Hong Fan](#)<sup>5,6</sup>

Affiliations Expand

- PMID: 39462395
- DOI: [10.1186/s12931-024-03019-2](https://doi.org/10.1186/s12931-024-03019-2)

Abstract

**Background:** Currently, there is a lack of research on multi-drug resistant *Pseudomonas aeruginosa* (MDR-PA) isolation in bronchiectasis-related hemoptysis. The aim of this study to analyze the risk factors for recurrent hemoptysis following bronchial artery embolization (BAE) and compare the recurrent hemoptysis-free rates between MDR-PA, non-MDR-PA, and non-PA isolation.

**Methods:** A retrospective study was performed of patients diagnosed with idiopathic bronchiectasis-related recurrent hemoptysis who underwent BAE at an university-affiliated hospital. Patients were categorized based on PA susceptibility tests into non-PA, non-MDR-PA, and MDR-PA groups. Univariate and multivariate Cox regression were conducted to identify independent risk factors for recurrent hemoptysis. The Kaplan-Meier curves was conducted to compare recurrent hemoptysis-free rates after BAE for non-PA, non-MDR-PA, and MDR-PA.

**Results:** A total of 432 patients were included. 181 (41.90%) patients experienced recurrent hemoptysis during a median follow-up period of 25 months. MDR-PA isolation (adjusted hazard ratio (aHR) 2.120; 95% confidence interval (CI) [1.249, 3.597],  $p = 0.005$ ) was identified as an independent risk factor for recurrent

hemoptysis. Antibiotic treatment (aHR 0.666; 95% CI [0.476, 0.932], p = 0.018) reduced the risk of recurrent hemoptysis. The cumulative recurrent hemoptysis-free rates for non-PA, non-MDR-PA, and MDR-PA were as follows: at 3 months, 88.96%, 88.24%, and 75.86%, respectively; at 1 year, 73.13%, 69.10%, and 51.72%; and at 3 years, 61.91%, 51.69%, and 41.10% (p = 0.034).

**Conclusion:** MDR-PA isolation was an independent risk factor of recurrent hemoptysis post-BAE. Reducing the occurrence of MDR-PA may effectively decrease the recurrence rates of hemoptysis.

**Keywords:** BAE; Bronchiectasis; Isolation; MDR-PA; Recurrent hemoptysis.

© 2024. The Author(s).

- [31 references](#)

Supplementary info

MeSH terms, Grants and fundingExpand

[Proceed to details](#)

Cite

Share

2

Review

Crit Rev Microbiol

- 
- 
- 

. 2024 Oct 25:1-13.

doi: 10.1080/1040841X.2024.2418130. Online ahead of print.

[\*Mycobacteroides abscessus\* ability to interact with the host mucosal cells plays an important role in pathogenesis of the infection](#)

[Amy Leestemaker-Palmer<sup>1</sup>, Luiz E Bermudez<sup>1,2</sup>](#)

Affiliations Expand

- PMID: 39460453
- DOI: [10.1080/1040841X.2024.2418130](#)

## Abstract

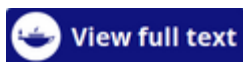
Non-tuberculous mycobacteria (NTM) are opportunistic pathogens ubiquitous in the environment. *Mycobacteroides abscessus* is a relatively new pathogen associated with underlying lung chronic pathologies, accounting for most of the pulmonary infections linked to the rapidly growing mycobacteria group. This includes chronic obstructive pulmonary disease, bronchiectasis, or cystic fibrosis. Patient outcomes from *M. abscessus* infections are poor due to complicated treatments and other factors. Intrinsic drug resistance plays an important role. The *M. abscessus* toolbox of resistance is varied leading to complex strategies for treatment. Mechanisms include waxy cell walls, drug export mechanisms, and acquired resistance. Many studies have also shown the impact of extracellular DNA found in the biofilm matrix during early infection and its possible advantage in pathogenicity. In this review, we discuss the current knowledge of early infection focusing on biofilm formation, an environmental strategy, and which treatments prevent its formation improving current antibiotic treatment outcomes in preliminary studies.

**Keywords:** *Mycobacteroides abscessus*; biofilms; extracellular DNA; mucosal epithelial cells; pathogenesis.

Supplementary info

Publication types [Expand](#)

Full text links



[Proceed to details](#)

Cite

Share

3

Chest

- 
- 
- 

. 2024 Oct 24:S0012-3692(24)05400-X.

doi: 10.1016/j.chest.2024.06.3843. Online ahead of print.

[Aspergillus serology and clinical outcomes in patients with bronchiectasis: data from the European Bronchiectasis Registry \(EMBARC\)](#)

[J Pollock](#)<sup>1</sup>, [P C Goeminne](#)<sup>2</sup>, [S Aliberti](#)<sup>3</sup>, [E Polverino](#)<sup>4</sup>, [M L Crichton](#)<sup>1</sup>, [F C Ringshausen](#)<sup>5</sup>, [R Dhar](#)<sup>6</sup>, [M Vendrell](#)<sup>7</sup>, [P R Burgel](#)<sup>8</sup>, [C S Haworth](#)<sup>9</sup>, [A De Soyza](#)<sup>10</sup>, [J De Gracia](#)<sup>11</sup>, [A Bossios](#)<sup>12</sup>, [J Rademacher](#)<sup>5</sup>, [A Grünewaldt](#)<sup>13</sup>, [M McDonnell](#)<sup>14</sup>, [D](#)

[Stolz](#) <sup>15</sup>, [O Sibila](#) <sup>16</sup>, [M van der Eerden](#) <sup>17</sup>, [P Kauppi](#) <sup>18</sup>, [A T Hill](#) <sup>19</sup>, [R Wilson](#) <sup>20</sup>, [A Amorim](#) <sup>21</sup>, [O Munteanu](#) <sup>22</sup>, [R Menendez](#) <sup>23</sup>, [A Torres](#) <sup>24</sup>, [T Welte](#) <sup>5</sup>, [F Blasi](#) <sup>25</sup>, [W Boersma](#) <sup>26</sup>, [J S Elborn](#) <sup>27</sup>, [M Shteinberg](#) <sup>28</sup>, [K Dimakou](#) <sup>29</sup>, [J D Chalmers](#) <sup>30</sup>, [M R Loebinger](#) <sup>20</sup>; [EMBARC registry investigators](#)

## Affiliations Expand

- PMID: 39461553
- DOI: [10.1016/j.chest.2024.06.3843](https://doi.org/10.1016/j.chest.2024.06.3843)

## Abstract

**Introduction:** *Aspergillus* sp. cause diverse clinical manifestations in bronchiectasis including Allergic bronchopulmonary aspergillosis (ABPA), *Aspergillus* sensitization (AS) and raised IgG indicating exposure or infection with *Aspergillus*.

**Research question:** What is the prevalence and clinical significance of *Aspergillus*-associated conditions in individuals with bronchiectasis?

**Methods:** Bronchiectasis patients enrolled into the EMBARC registry from 2015 to 2022 with laboratory testing for *Aspergillus* lung disease (total IgE, specific IgE to *Aspergillus* or *Aspergillus* skin test, IgG to *Aspergillus* and blood eosinophil counts) were included for analysis. Modified-ISHAM-ABPA working group criteria (2021) were used to define ABPA.

**Results:** 9953 patients were included. 608 (6.1%) were classified as having ABPA, 570 (5.7%) showed *Aspergillus* sensitization, 806 (8.1%) had raised *Aspergillus*-specific IgG without sensitisation, 184 (1.8%) were both sensitised to *Aspergillus* and had raised *Aspergillus*-specific IgG and 619 (6.2%) had eosinophilic bronchiectasis (elevated eosinophil counts without evidence of *Aspergillus* lung disease). The remaining 72.0% had negative *Aspergillus* serology. Patients with ABPA, *Aspergillus* sensitization, and raised *Aspergillus*-specific IgG had more severe disease, with worse lung function and more frequent exacerbations at baseline. During long-term follow-up, patients with raised *Aspergillus*-specific IgG had higher exacerbation frequency and more severe exacerbations. *Aspergillus* sensitization associated with increased exacerbations and hospitalisations only in patients not receiving inhaled corticosteroids.

**Interpretation:** *Aspergillus* lung disease is common in bronchiectasis. Raised IgG to *Aspergillus* is associated with significantly worse outcomes while ABPA and *Aspergillus* sensitization are associated with severe disease and exacerbations with a risk that is attenuated by inhaled corticosteroid use.

**Keywords:** aspergillus; bronchiectasis; exacerbations; fungi; prognosis.

Copyright © 2024. Published by Elsevier Inc.

[Proceed to details](#)

Cite

Share

4

Observational Study

BMC Pulm Med

- 
- 
- 

. 2024 Oct 24;24(1):531.

doi: 10.1186/s12890-024-03337-7.

[Epidemiology of bronchiectasis at a single center in Japan: a retrospective cohort study](#)

[Kazuki Hashimoto](#) <sup>#1</sup>, [Yuko Abe](#) <sup>#1</sup>, [Kiyoharu Fukushima](#) <sup>#2,3</sup>, [Takayuki Niitsu](#) <sup>1</sup>, [Sho Komukai](#) <sup>4</sup>, [Satoshi Miyamoto](#) <sup>5</sup>, [Takuro Nii](#) <sup>5</sup>, [Takanori Matsuki](#) <sup>5</sup>, [Noriyuki Takeuchi](#) <sup>6</sup>, [Kozo Morimoto](#) <sup>7</sup>, [Hiroshi Kida](#) <sup>5</sup>

Affiliations Expand

- PMID: 39448945
- DOI: [10.1186/s12890-024-03337-7](https://doi.org/10.1186/s12890-024-03337-7)

Free article

Abstract

**Background:** The characteristics of bronchiectasis (BE) in Asia, including Japan, remain largely unknown. We aimed to provide insights into the clinical characteristics and treatment outcomes of BE, especially regarding nontuberculous mycobacteria (NTM) infection and its poorly understood impact on prognosis. We also aimed to clarify the effect of long-term macrolide antibiotic use in patients with BE, who had no history of exacerbations.

**Methods:** In this single-center, retrospective study, the medical records of patients who satisfied the BE criteria between January 1, 2012, and August 31, 2023, were reviewed. Severe exacerbations and mortality during the observation period were recorded. Baseline characteristics and overall survival of patients with and without NTM infection, and factors influencing the time to the first exacerbation and death were analyzed. Additionally, the effects of long-term macrolide antibiotic use in patients without a history of severe exacerbations were estimated.

**Results:** In a cohort of 1044 patients with BE, the rate of severe exacerbation was 22.3%, with mortality rates of 3.2% over 3 years. Notably, the high prevalence of NTM infection (n = 410, 39.3%) in this cohort was distinctive. NTM infection was not

associated with either the time to first severe exacerbation ( $p = 0.5676$ , adjusted hazard ratio = 1.11) or mortality ( $p = 0.4139$ , adjusted hazard ratio = 0.78). Compared with the NTM group, the non-NTM group had a higher proportion of elevated inflammatory markers, with significant differences in C-reactive protein levels ( $p = 0.0301$ ) and blood neutrophil counts ( $p = 0.0273$ ). *Pseudomonas aeruginosa* colonization was more frequent in the non-NTM group ( $p = 0.0003$ ). Among patients with non-NTM infection and without a history of exacerbation in the past 2 years, 38.2% received long-term macrolide antibiotics that did not invariably prolong the time to first severe exacerbation ( $p = 0.4517$ , IPW  $p = 0.3555$ ).

**Conclusions:** This study highlights BE epidemiology in Japan, noting that the presence of NTM infection may not necessarily worsen the prognostic outcomes and advising caution in the casual use of macrolides for milder cases without a history of exacerbations.

**Clinical trial registration:** UMIN Clinical Trials Registry Number: UMIN000054726 (Registered on 21 June 2024).

**Keywords:** Bronchiectasis; Macrolides; Nontuberculous mycobacteria; TB.

© 2024. The Author(s).

- [36 references](#)

Supplementary info

Publication types, MeSH terms, Substances, Grants and fundingExpand

Full text links



[Proceed to details](#)

Cite

Share

5

Rheumatol Immunol Res

- 
- 
- 

. 2024 Oct 21;5(3):166-174.

doi: 10.2478/rir-2024-0023. eCollection 2024 Sep.

[High resolution computed tomography in systemic sclerosis: From diagnosis to follow-up](#)

[Roberta Eufrasia Ledda](#)<sup>1,2</sup>, [Corrado Campochiaro](#)<sup>1,2</sup>

Affiliations Expand

- PMID: 39439975
- PMCID: [PMC11492825](#)
- DOI: [10.2478/rir-2024-0023](#)

Abstract

Early diagnosis of interstitial lung disease (ILD) and pulmonary hypertension (PH) is crucial in systemic sclerosis (SSc) for both management and treatment. However, diagnosing SSc-ILD can be challenging because symptoms of lung involvement are often non-specific at the early stages of disease. High-resolution computed tomography (HRCT) of the chest is recognized as the most accurate imaging modality for baseline and follow-up evaluation of SSc-ILD. Key features of SSc-ILD on HRCT include a non-specific interstitial pneumonia (NSIP) pattern, with peripheral ground-glass opacities and extensive traction bronchiectasis. Less common HRCT manifestations include usual interstitial pneumonia (UIP) pattern, followed by diffuse alveolar damage (DAD), diffuse alveolar hemorrhage (DAH) and organizing pneumonia (OP). The extent of disease on HRCT is known to relate with prognosis and serial assessments can be helpful in monitoring disease progression or treatment response. We discuss the main chest computed tomography (CT) manifestations of SSc, highlighting the role of imaging at both baseline and follow-up evaluations.

**Keywords:** high-resolution computed tomography; interstitial lung disease; pulmonary hypertension; systemic sclerosis.

© 2024 Roberta Eufrasia Ledda, Corrado Campochiaro, published by De Gruyter on behalf of NCRC-DID.

Conflict of interest statement

Conflict of interest None declared.

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

Supplementary info

Grants and fundingExpand

Full text links

[Proceed to details](#)

Cite

Share

6

J Allergy Clin Immunol

- 
- 
- 

. 2024 Oct 21:S0091-6749(24)00983-7.

doi: 10.1016/j.jaci.2024.05.033. Online ahead of print.

[Defining the overlap between asthma and bronchiectasis: A call for consensus definition](#)

[Sang Hyuk Kim](#)<sup>1</sup>, [Bumhee Yang](#)<sup>2</sup>, [Kyung Hoon Min](#)<sup>3</sup>, [Hyun Lee](#)<sup>4</sup>

Affiliations Expand

- PMID: 39436332
- DOI: [10.1016/j.jaci.2024.05.033](https://doi.org/10.1016/j.jaci.2024.05.033)

*No abstract available*

Conflict of interest statement

Disclosure Statement Disclosure of potential conflict of interest: The authors declare that they have no relevant conflicts of interest.

Supplementary info

Publication typesExpand

Full text links

