Abstract Highlights

Citation: EMJ Respir. 2025;13[1]:76-84.
https://doi.org/10.33590/emjrespir/JBUN6131

Each year, the European Lung Foundation (ELF) recognises outstanding research that advances patient-centred care and promotes lung health, celebrating studies with the potential to make a real impact on respiratory wellbeing. The following highlights feature the winner of ELF's Best Abstract Grant for Healthy Lungs for Life at the European Respiratory Society (ERS) Congress 2025, along with the two recipients of the ELF Travel Grant for Best Abstract in Patient-Centred Research.

Extreme Heat and Air Pollution Worsen Outcomes in Chronic Airway Diseases

THE STUDY honoured with the ELF's Best Abstract Grant for Healthy Lungs for Life at the ERS Congress 2025 revealed that extreme heat waves and poor air quality significantly worsen symptoms, inflammation, and lung function in individuals with chronic airway diseases, including asthma and COPD.[1]

The research, conducted by Tuğçe Karamustafalıoğlu, Eylem Sercan Özgür, and Sibel Nayci from Mersin University, Türkiye, provides valuable insights into how environmental stressors exacerbate respiratory disease outcomes in real-world conditions.

In this prospective cross-sectional study, 52 patients with asthma and 44 with COPD were evaluated between February–December 2024. Meteorological data and air quality indices were obtained from official national sources. Pulmonary function tests and fractional exhaled nitric oxide (FeNO) measurements were performed during periods of average weather and repeated during extreme heat wave conditions. Disease control and quality of life were assessed using validated tools: the Asthma Control Test (ACT) and Asthma Quality of Life Questionnaire (AQLQ) for asthma, and the modified Medical Research Council (mMRC) scale and COPD Assessment Test (CAT) for COPD.

During extreme heat events, both patients with asthma and patients with COPD exhibited marked increases in airway inflammation and symptom burden. In asthma, FeNO rose significantly (β=23.50; 95% CI: 17.17–29.82), alongside declines in ACT (p=0.005) and AQLQ scores (β=–13.60; 95% CI: –21.95–-5.42). Patients with COPD showed comparable deterioration, with FeNO (β=16.60; 95% CI: 9.93–23.38), mMRC (β=0.25; 95% CI: 0.08–0.41), and CAT (β=2.02; 95% CI: 1.04–3.00) all worsening during heat waves.

High air pollution levels further compounded these effects, causing measurable declines in pulmonary function. Among patients with asthma, forced expiratory volume in 1 second (FEV_1; β=–0.18; 95% CI: –0.03–-0.32) and forced vital capacity (β=–0.87; 95% CI: –0.31–-2.06) decreased, while patients with COPD experienced reductions in FEV_1/forced vital capacity ratio (β=–1.70; 95% CI: –0.62–-4.10) and FEV_1 (β=–0.08; 95% CI: 0.00–-0.17).

The findings emphasise that extreme heat and air pollution jointly impair respiratory health, exacerbating inflammation, worsening symptom control, and diminishing quality of life in people with chronic airway diseases. The study reinforces the urgent need for integrated climate and air quality policies to protect vulnerable respiratory patients.

Chat-GPT Leads in Accuracy and Reliability for Bronchiectasis Patient Education

THE AIR-BE study received the 2025 ELF Travel Grant for Best Abstract in Patient-Centred Research at the ERS Congress 2025, recognising its assessment of AI tools in responding to disease management questions from people with bronchiectasis.[2]

AI chatbots, particularly Chat-GPT, can deliver accurate, clear, and patient-friendly information on bronchiectasis management

Bronchiectasis is a chronic condition characterised by airway damage, persistent cough, sputum production, and recurrent infections. Patients often turn to the internet for accessible information, including AI chatbots, to meet their educational needs. While these tools have the potential to complement clinician-led care, their quality, accuracy, and ability to provide understandable responses tailored to patients' needs remain uncertain. The AIR-BE study was designed to evaluate how effectively three widely available AI models could address patient-focused queries relating to bronchiectasis management.

Fifteen questions of varying complexity, developed by ELF patient representatives, were submitted to Chat-GPT (OpenAI, San Francisco, California, USA), Google Bard (now Gemini; Google, Mountain View, California, USA), and Microsoft Copilot (Microsoft, Redmond, Washington, USA). Reliability was assessed by investigators through repeated submissions of the same question. Responses were independently evaluated for accuracy and comprehensiveness by 28 respiratory experts from ERS Assemblies and the ERS CONNECT Clinical Research Collaboration, and for understandability by 33 patients.

The results revealed that Chat-GPT achieved 14 reliable answers, Google Bard achieved 10, and Microsoft Copilot achieved 13. On a scale of 0–10, the median accuracy scores ranged from 7–9 for Chat-GPT, 6–8 for Google Bard, and 6–8 for Microsoft Copilot, with Chat-GPT scoring higher than the others ($p<0.0001$). Comprehensiveness scores ranged from 7.5–9.0 for Chat-GPT, 6.5–9.0 for Google Bard, and 6.0–8.0 for Microsoft Copilot, with Chat-GPT leading again ($p<0.0001$). For median understandability scores, both Chat-GPT (range: 8–9) and Google Bard (range: 8–10) surpassed Microsoft Copilot (range: 7–9; $p=0.0002$).

These findings show that AI chatbots, particularly Chat-GPT, can deliver accurate, clear, and patient-friendly information on bronchiectasis management. In clinical practice, such tools could complement consultations, reinforce patient education, and potentially improve adherence when integrated with professional guidance. Future research should explore the stability of these outputs over time and their use in real-world care environments to ensure safety and reliability.

Comorbidities Caused by Occupational Exposure to Chromium

THE SECOND study to receive the ELF Travel Grant for Best Abstract in Patient-Centred Research at the ERS Congress 2025 investigated the relationship between skin and respiratory conditions, referred to as the skin–lung axis, in workers exposed to hexavalent chromium.[3]

Hexavalent chromium, used in electroplating, welding, painting, metalworking, and construction, is classified as both a skin and respiratory sensitiser. Occupational exposure has been linked to chronic immune-mediated diseases such as contact dermatitis, occupational asthma, and rhinitis.

The research assessed whether airway symptoms and dermal disorders coexisted in individuals evaluated for chromium-related illnesses under a national compensation programme. Exposure was quantified using a job exposure matrix. Allergic sensitisation was determined through skin prick tests (SPT), where a positive result indicated allergic occupational asthma or rhinitis due to chromium exposure. Delayed-type hypersensitivity, a marker of contact dermatitis, was evaluated through skin patch testing, considered the diagnostic gold standard.

Thirty male participants underwent 37 allergy tests, including 12 SPTs and 25 patch tests. Five workers had only SPTs, 18 had only patch tests, and seven received both. Of all the tests, four (10.8%) were positive, equally divided between SPT and patch results. Symptom prevalence was notable, with 23 participants (76.7%) reporting skin problems, 17 (56.7%) experiencing asthma-like symptoms, and 22 (73.3%) reporting rhinitis.

The findings suggest that workers exhibiting Type IV hypersensitivity to chromium may also display concurrent respiratory symptoms. This supports the concept of a skin–lung axis, where immune responses in the skin can influence airway conditions and vice versa.

Thirty male participants underwent 37 allergy tests, including 12 SPTs and 25 patch tests

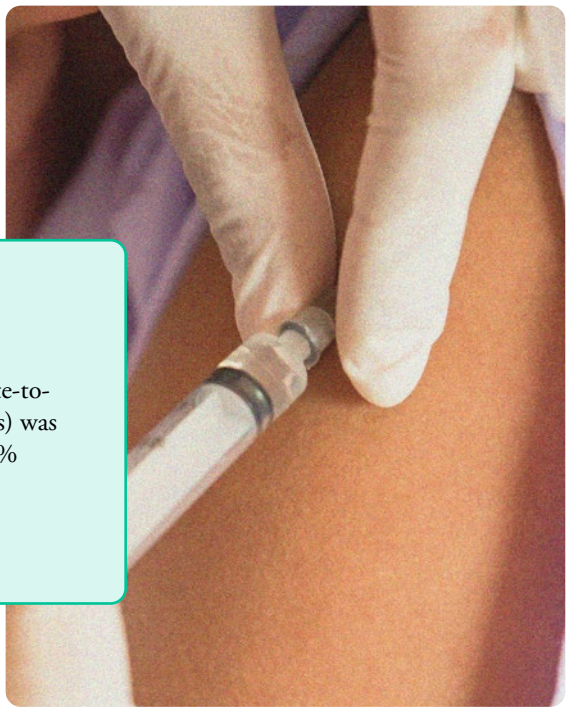
The following abstract highlights spotlight innovative findings from this year's Abstracts Leading to Evolution in Respiratory Medicine Trials (ALERT) sessions, which present pivotal and late-breaking clinical trial data across all areas of respiratory disease. These dynamic sessions encourage discussion among experts and attendees, showcasing research that is shaping future clinical practice.

Biweekly Astegolimab Shows Promise in COPD Management

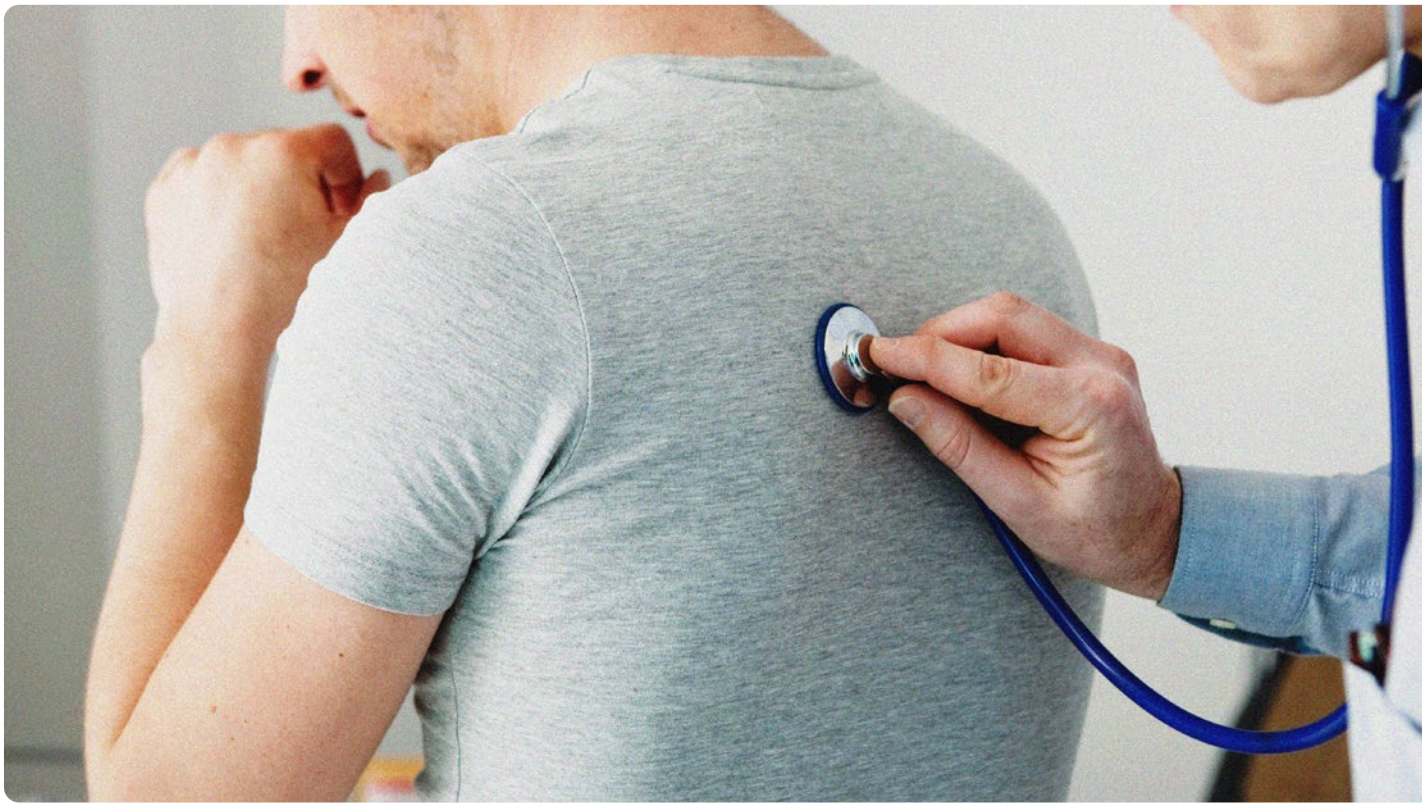
THE PHASE Ib ALIENTO trial, presented at the ERS Congress 2025, investigated the efficacy and safety of astegolimab, an anti-suppression of tumourigenicity 2 (ST2) monoclonal antibody, in patients with COPD.[4]

The randomised, double-blind, placebo-controlled study enrolled 1,301 participants aged 40–90 years, all current or former smokers with a history of frequent exacerbations. Participants were assigned 1:1:1 to receive subcutaneous astegolimab 476 mg every 2 weeks (Q2W), every 4 weeks, or placebo for 52 weeks. At baseline, 79% of participants were receiving inhaled corticosteroids, long-acting β-agonists, and long-acting muscarinic antagonist therapy.

The primary endpoint (annualised rate of moderate-to-severe COPD exacerbations) was significantly reduced by 15% with astegolimab Q2W compared with placebo (p=0.0494), whereas no significant reduction was observed with the participants receiving astegolimab every 4 weeks. With Q2W dosing, exploratory analyses indicated numerical reductions in moderate/severe COPD exacerbation rates in those with baseline eosinophil counts below 300 cells/µL, in severe exacerbation rates, and in the change from baseline to Week 52 in St George's Respiratory Questionnaire for COPD (SGRQ-C) scores, although these differences did not reach statistical significance. Other secondary endpoints at Week 52 showed no meaningful differences between treatment arms.



The primary endpoint (annualised rate of moderate-to-severe COPD exacerbations) was significantly reduced by 15% with astegolimab Q2W.

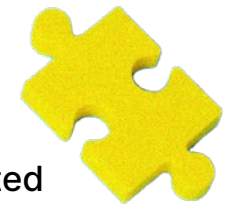


The findings indicate that biweekly administration of astegolimab can reduce COPD exacerbations in a broad population of patients

Astegolimab was generally well tolerated, with adverse events balanced across treatment groups, suggesting a favourable safety profile. The findings indicate that bi-weekly administration of astegolimab can reduce COPD exacerbations in a broad population of patients, irrespective of smoking status or eosinophil level, while also showing trends towards improvement in other clinical outcomes. These results support further evaluation of astegolimab as a potential therapeutic option for patients with COPD, particularly those with frequent exacerbations despite standard inhaled therapy.

Overall, the ALIENTO trial demonstrates that targeting the ST2 pathway with astegolimab may offer a modest but clinically meaningful reduction in exacerbation risk, highlighting the potential for novel biologic approaches in the management of COPD.

Online Cognitive Behavioural Therapy Reduces Anxiety and Improves Asthma Control



A LATE-BREAKING clinical trial presented at the ERS Congress 2025 revealed that internet-delivered cognitive behavioural therapy (ICBT) significantly reduces anxiety related to asthma and improves disease control and quality of life.[5]

The study, led by Marianne Bonnert, Karolinska Institute, Stockholm, Sweden, represents the first RCT to target asthma-related anxiety through a fully digital psychological intervention.

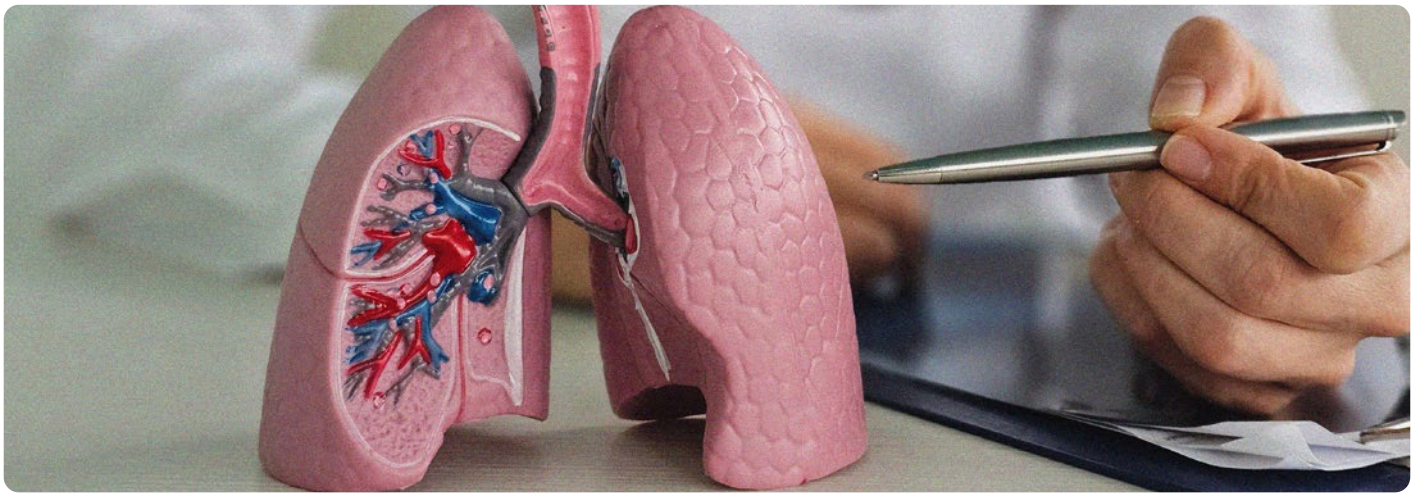
Anxiety associated with asthma is common and often manifests as catastrophising thoughts and avoidance of symptom-triggering situations, both of which can worsen disease management. However, such psychological factors are rarely addressed in standard asthma care.

In this 8-week randomised trial, 90 adults with asthma-related anxiety were assigned to either therapist-guided ICBT or treatment as usual combined with online medical education. The ICBT programme included psychoeducation, exposure-based exercises, and affective labelling, all delivered through an online platform with minimal staff involvement. The primary endpoint was a change in catastrophising scores from baseline to 16 weeks, with secondary outcomes assessing asthma control (asthma control test [ACT] scores), avoidance behaviour, asthma-related quality of life, and lung function (forced expiratory volume in 1 second) measured via digital spirometry.

> **Participants receiving ICBT also showed notable improvements in asthma control, reduced avoidance behaviours, and enhanced quality of life**

Results demonstrated that ICBT led to a significantly greater reduction in catastrophising compared to treatment as usual combined with online medical education (mean difference: –18.53; 95% CI: –25.54–-11.53; p<0.001). Participants receiving ICBT also showed notable improvements in asthma control, reduced avoidance behaviours, and enhanced quality of life. Lung function remained stable across both groups, indicating that the psychological improvements were achieved without physiological deterioration. Importantly, all treatment gains were maintained at 6-month follow-up.

The authors concluded that ICBT is a scalable and effective adjunct to standard asthma care, capable of addressing the psychological dimensions of asthma that often go untreated. By integrating mental health support into respiratory management, this digital approach could help bridge a major gap in comprehensive asthma care and empower patients to manage their symptoms with greater confidence.



FIBRONEER-IPF: Promising Results for Nerandomilast in Reducing Forced Vital Capacity Decline

IDIOPATHIC pulmonary fibrosis (IPF) is a progressive and ultimately fatal lung disease characterised by irreversible scarring of lung tissue, leading to declining lung function and respiratory failure. Despite current therapies, many patients continue to experience disease progression.[6]

The FIBRONEER-IPF trial was designed to evaluate the efficacy and safety of nerandomilast, a selective phosphodiesterase 4B inhibitor, as a potential treatment for IPF. New findings presented at the ERS Congress 2025 confirmed that the trial met its primary endpoint, demonstrating that nerandomilast significantly reduced the decline in forced vital capacity (FVC) over 52 weeks compared with placebo.

To further explore the potential clinical benefits of nerandomilast, time-to-event analyses were conducted. These included time to first acute exacerbation, respiratory-related hospitalisation, or death, as well as other time-to-event endpoints. A total of 1,177 patients were included in the analysis. Patients continued their assigned treatment beyond 52 weeks until the end of the trial. Mean exposure to study drug was 14.8 months, and mean follow-up was 16.4 months.

Although nerandomilast did not demonstrate a statistically significant effect on the key secondary endpoint, a numerical reduction in the risk of death was observed in the 18 mg group compared to placebo (hazard ratio: 0.66; 95% CI: 0.41–1.08). Notably, nerandomilast 18 mg was associated with a statistically significant reduction in the composite outcome of a >10% decline in FVC % predicted, or death, with a hazard ratio of 0.75 (95% CI: 0.59–0.95). FVC trajectories continued to diverge between treatment and placebo groups beyond Week 52, supporting sustained benefit in lung function over time.

These findings suggest that nerandomilast 18 mg may offer long-term benefits in slowing disease progression in IPF, with potential implications for future treatment strategies. However, the absence of statistically significant findings in most time-to-event endpoints, including mortality, emphasises the need for further investigation. The study's limitations include a relatively short follow-up for long-term outcomes, and the exploratory nature of some endpoints. In clinical practice, nerandomilast may provide an additional therapeutic option for patients with IPF, particularly in preserving lung function over time.

References

1. Karamustafalıoğlu T et al. The impact of extreme heat waves and air pollution on the prognosis of chronic airway diseases. Poster 1344. ERS Congress, 27 September-1 October, 2025.
2. Nigro M et al. Performance of artificial intelligence (AI) answering questions on disease management from people with bronchiectasis: results from the AIR-BE study. Poster 4927. ERS Congress, 27 September-1 October, 2025.
3. Dehghani A et al. Comorbidities caused by occupational exposure to chromium: the skin-lung axis. Poster 3739. ERS Congress, 27 September-1 October, 2025.
4. Greening N et al. Randomised, placebo-controlled trial of astegolimab for COPD with frequent exacerbations: ALIENTO. Presentation 1116. ERS Congress, 27 September-1 October, 2025.
5. Bonnert M et al. Online cognitive behaviour therapy for anxiety in asthma: a randomised controlled trial. Presentation 2290. ERS Congress, 27 September-1 October, 2025.
6. Oldham J et al. Effect of nerandomilast on clinical outcomes in patients with idiopathic pulmonary fibrosis (IPF): data from final database lock of the FIBRONEER-IPF trial. Presentation 5336. ERS Congress, 27 September-1 October, 2025.