ERS Congress 2025

Physical activity profiles across the spectrum of chronic airways disease: insights from a meta-analysis

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Background: Physical activity (PA) levels in people with COPD have been extensively studied over the past three decades; however, remain less well-defined in other forms of chronic airway disease (CAD). **Aim:** To provide a comprehensive evaluation of PA profiles across the spectrum of CAD. **Method:** Electronic databases were searched for original research published between 2014-24. Inclusion criteria: adults (≥18 years) with CAD and objective measures of PA via either accelerometer or pedometer. End-points: (1) daily step-based PA; (2) time (minutes per day) spent in moderate-vigorous intensity PA (MVPA). A random-effects model was used to quantify PA status using baseline (pre-intervention) values and 95% confidence intervals (CIs). **Results:** 236 studies with a total of 25,278 adults with CAD met the inclusion criteria (85% COPD; 9% asthma; 4% non-CF bronchiectasis [NCFB]; 2% cystic fibrosis [CF]; 0% primary ciliary dyskinesia). The average daily step-count for CAD was 5394 (95% CI: 5152-5636). Step-count was lower in COPD (4594, 95% CI: 4378-4810) compared to other respiratory conditions: asthma (7200, 95% CI: 6545-7856), NCFB (6836, 95% CI: 6127-7546), and CF (8688, 95% CI: 8192-9183). Time spent in the MVPA domain was also lower in COPD (39.9, 95% CI: 32.9-46.9) compared to asthma (61.6, 95% CI: 41.2-82.0), NCFB (63.9, 95% CI: 22.9-104.9), and CF (46.1, 95% CI: 18.4-73.8). **Conclusion:** Physical inactivity is common in adults with CAD and is likely to be an important treatable trait for targeted intervention. The development of tailored, disease-specific, evidence-based PA promotion interventions, particularly in non-COPD forms of CAD, remains a key priority for future research.