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Blood eosinophil counts and the development of obstructive lung disease: the Kangbuk Samsung Health Study

Hye Yun Park^{1,8}, Yoosoo Chang^{2,3,4,8}, Danbee Kang⁵, Yun Soo Hong⁶, Di Zhao⁶, Jiin Ahn², Sun Hye Shin ¹, Dave Singh⁷, Eliseo Guallar^{4,6}, Juhee Cho ^{2,4,5,9} and Seungho Ryu^{2,3,4,9}

¹Division of Pulmonary and Critical Care Medicine, Dept of Medicine, Samsung Medical Center, Sungkyunkwan University School of Medicine, Seoul, Republic of Korea. ²Center for Cohort Studies, Total Healthcare Center, Kangbuk Samsung Hospital, Sungkyunkwan University School of Medicine, Seoul, Republic of Korea. ³Dept of Occupational and Environmental Medicine, Kangbuk Samsung Hospital, Sungkyunkwan University School of Medicine, Seoul, Republic of Korea. ⁴Dept of Clinical Research Design and Evaluation, SAIHST, Sungkyunkwan University, Seoul, South Korea. ⁵Center for Clinical Epidemiology, Samsung Medical Center, Seoul, South Korea. ⁶Dept of Epidemiology and Welch Center for Prevention, Epidemiology and Clinical Research, Johns Hopkins University Bloomberg School of Public Health, Baltimore, MD, USA. ⁷Medicines Evaluation Unit, University of Manchester, Manchester University NHS Foundation Trust, Manchester, UK. ⁸Hye Yun Park and Yoosoo Chang contributed equally as first authors. ⁹Seungho Ryu and Juhee Cho contributed equally as lead authors and supervised the work.

Corresponding author: Seungho Ryu (sh703.yoo@gmail.com)



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Blood eosinophil counts were positively associated with the risk of developing obstructive lung disease in a large longitudinal cohort of young and middle-aged men and women <https://bit.ly/37QeCeW>

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Abstract

Aim The impact of blood eosinophil counts on the development of chronic obstructive lung disease (COPD) is unknown. We investigated whether a higher blood eosinophil count was associated with the risk of developing obstructive lung disease (OLD) in a large cohort of men and women free from lung disease at baseline.

Methods This was a cohort study of 359 456 Korean adults without a history of asthma and without OLD at baseline who participated in health screening examinations including spirometry. OLD was defined as pre-bronchodilator forced expiratory volume in 1 s (FEV₁)/forced vital capacity (FVC) <0.7 and FEV₁ <80% predicted.

Results After a median (interquartile range) follow-up of 5.6 (2.9–9.2) years, 5008 participants developed incident OLD (incidence rate 2.1 (95% CI 2.1–2.2) per 1000 person-years). In the fully adjusted model, the hazard ratios for incident OLD comparing eosinophil counts of 100–<200, 200–<300, 300–<500 and ≥500 versus <100 cells·μL⁻¹ were 1.07 (95% CI 1.00–1.15), 1.30 (95% CI 1.20–1.42), 1.46 (95% CI 1.33–1.60) and 1.72 (95% CI 1.51–1.95), respectively (*p*_{trend}<0.001). These associations were consistent in clinically relevant subgroups, including never-, ex- and current smokers.

Conclusion In this large longitudinal cohort study, blood eosinophil counts were positively associated with the risk of developing of OLD. Our findings indicate a potential role of the eosinophil count as an independent risk factor for developing COPD.