ERJ advances: epigenetic ageing and leveraging DNA methylation in chronic respiratory diseases

Ana I. Hernandez Cordero [1,2] **and Janice M. Leung** [1,2,3]

[1]Centre for Heart Lung Innovation, St. Paul's Hospital and University of British Columbia, Vancouver, BC, Canada. [2]Edwin S.H. Leong Healthy Aging Program, Faculty of Medicine, University of British Columbia, Vancouver, BC, Canada. [3]Division of Respiratory Medicine, Department of Medicine, University of British Columbia, Vancouver, BC, Canada.

Corresponding author: Ana I. Hernandez Cordero (ana.hernandez@hli.ubc.ca)

Shareable abstract (@ERSpublications)
Epigenetic age is a novel biomarker utilising DNA methylation profiles that can detect accelerated biological ageing. Potential uses in respiratory disease include risk stratification for vulnerable patients and prognostication for poor clinical outcomes. https://bit.ly/3ZMTAK1

Cite this article as: Hernandez Cordero AI, Leung JM. ERJ advances: epigenetic ageing and leveraging DNA methylation in chronic respiratory diseases. *Eur Respir J* 2024; 64: 2401257 [DOI: 10.1183/13993003.01257-2024].

Chronic respiratory diseases are the third leading cause of death and affect more than 450 million people worldwide [1]. Major risk factors such as cigarette smoking have long been studied in their pathogenesis, but as the global population ages, increasing attention must now be paid to the contributory role of ageing [2]. Epidemiological evidence indicates a decline in lung health over time with lung function classically reaching its peak between 20–30 years of age and starting an inevitable descent thereafter [3]. Modern paradigms suggest that this rise and descent may occur at different rates along the lifespan, which may indicate that the links between age and lung function may be variable between individuals [4]. Deciphering how lung ageing influences the development of chronic respiratory diseases may hold powerful clues into novel therapeutics and management strategies.

Received: 28 June 2024
Accepted: 24 Sept 2024