The effects of marijuana smoking on lung function in older people

Wan C. Tan1, Jean Bourbeau2, Shawn D. Aaron3, James C. Hogg1, François Maltais4, Paul Hernandez5, Darcy D. Marciniuk6, Kenneth R. Chapman7, Teresa To8, J. Mark FitzGerald9, Brandi L. Walker10, Jeremy Road9, Liyun Zheng1, Guohai Zhou1, Trevor Yau1, Andrea Benedetti2, Denis O'Donnell11 and Don D. Sin1, on behalf of the CanCOLD Collaborative Research Group12

Affiliations: 1The University of British Columbia, Center for Heart Lung Innovation, St Paul’s Hospital, Vancouver, BC, Canada. 2Research Institute McGill University Health Center, McGill University, Montreal, QC, Canada. 3The Ottawa Hospital Research Institute, University of Ottawa, Ottawa, ON, Canada. 4Institut Universitaire de cardiologie et de pneumologie de Québec, Université Laval, Quebec City, QC, Canada. 5Dept of Medicine, Dalhousie University, Halifax, NS, Canada. 6Respiratory Research Centre, University of Saskatchewan, Saskatoon, SK, Canada. 7Toronto General Hospital Research Institute, University of Toronto, Toronto, ON, Canada. 8Dallas Lana School of Public Health, University of Toronto, Toronto, ON, Canada. 9University of British Columbia, Dept of Medicine, Vancouver General Hospital, Vancouver, BC, Canada. 10Dept of Medicine, University of Calgary, Calgary, AB, Canada. 11Division of Respiratory and Critical Care Medicine, Queen’s University, Kingston, ON, Canada. 12A list of members of the CanCOLD Collaborative Research Group can be found in the acknowledgements section.

Correspondence: Wan C. Tan, University of British Columbia, Centre for Heart Lung Innovation, St Paul’s Hospital, Rm166, 1081 Burrard Street, Vancouver, BC, V6Z 1Y6, Canada. E-mail: wan.tan@hli.ubc.ca

ABSTRACT

Background: Previous studies have associated marijuana exposure with increased respiratory symptoms and chronic bronchitis among long-term cannabis smokers. The long-term effects of smoked marijuana on lung function remain unclear.

Methods: We determined the association of marijuana smoking with the risk of spirometrically defined chronic obstructive pulmonary disease (COPD) (post-bronchodilator forced expiratory volume in 1 s (FEV1)/forced vital capacity ratio <0.7) in 5291 population-based individuals and the rate of decline in FEV1 in a subset of 1285 males and females, aged >40 years, who self-reported use (or non-use) of marijuana and tobacco cigarettes and performed spirometry before and after inhaled bronchodilator on multiple occasions. Analysis for the decline in FEV1 was performed using random mixed effects regression models adjusted for age, sex and body mass index. Heavy marijuana smokers and heavy tobacco smokers experienced a faster decline in FEV1 by 29.5 mL·year−1 (p=0.0007) and 21.1 mL·year−1 (p<0.0001), respectively. Those who smoked both substances experienced a decline of 32.31 mL·year−1 (p<0.0001).

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**Interpretation:** Heavy marijuana smoking increases the risk of COPD and accelerates FEV₁ decline in concomitant tobacco smokers beyond that observed with tobacco alone.