



Concept Paper Form

Provisional Paper Title: Cannabis and lung function in mid-adult life
Proposing Author: Bob Hancox
Author's Email:
P.I. Sponsor: (if the proposing author is a student or colleague of an original PI)
Today's Date: 7/6/2020

Objective of the study:

To assess the effect of cumulative cannabis use on lung function in mid-adult life.

To further explore changes in lung function as a consequence of quitting cannabis use.

Data analysis methods:

Linear regression of lung function variables on cumulative joint-years of cannabis at age 45. These will be adjusted for tobacco use, standard predictors of lung function (depending on measure: height, sex, weight (or BMI), Hb, exhaled carbon monoxide), and asthma diagnosis.

Logistic regression of the outcome of COPD (based on lung function and symptoms) at age 45 on cannabis use. Also adjusted for the confounders above.

Regression analyses of the effect of quitting cannabis use on lung function, adjusted for confounders as above.

Variables needed at which ages:

Lung function – all adult ages (spirometry, body box, DLco, IOS)

Respiratory symptoms – all adult ages (cough, sputum, wheeze, dyspnea)

Cannabis use – all adult ages

Tobacco use, height, weight, asthma diagnosis.

Significance of the Study (for theory, research methods or clinical practice):

The effect of cannabis on lung function is a controversial but topical issue. This has relevance to the upcoming referendum about legalising cannabis use in NZ and similar debates around the world, to clinicians treating people with lung disease, to public health advice attempting to prevent development of chronic lung disease, and to a very interested general public. The evidence so far suggests that cannabis may have quite different effects from tobacco, which also raises scientific questions about how inhaling these slightly different forms of smoke could produce such different effects.

We recently reviewed the evidence of cannabis and lung disease (1) and it is clear that some of the world's best evidence on cannabis and lung disease comes from earlier reports from the Dunedin study. However, important questions remain about the effects of cannabis in older age and what happens to lung function after quitting cannabis use. We now have an additional 13 years of follow-up since the last report on lung function at age 32 (2), and 7 years additional follow-up since we last reported on symptoms (3). We have the opportunity to address some of the gaps remaining in our knowledge.

It is not yet known whether there will be sufficient number of quitters (heavy cannabis users who have now quit) to address the question of what happens to lung function after stopping cannabis use, but this is an issue that will be explored.

References:

1. Gracie K, Hancox RJ. Cannabis use disorder and the lungs. *Addiction*. 2020.
2. Hancox RJ, Poulton R, Ely M, Welch D, Taylor DR, McLachlan CR, et al. Effects of cannabis on lung function: a population-based cohort study. *Eur Respir J*. 2010;35(1):42-7.
3. Hancox RJ, Gray AR, Poulton R, Sears MR. Effects of quitting cannabis on respiratory symptoms. *Eur Respir J*. 2015:1-8.

Data Security Agreement

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Please keep one copy for your records and return one to the PI Sponsor

Please initial your agreement: (customize as necessary)

	I am current on Human Subjects Training [CITI www.citiprogram.org] or equivalent.
	My project is covered by the Dunedin Study's ethics approval OR I have /will obtain ethical approval from my home institution (please specify).
	<p>I will treat all data as "restricted" and store in a secure fashion. My computer or laptop is:</p> <ul style="list-style-type: none"> • encrypted (recommended programs are FileVault2 for Macs, and Bitlocker for Windows machines) • password-protected • configured to lock-out after 15 minutes of inactivity AND • has an antivirus client installed as well as being patched regularly.
	I will not "sync" the data to a mobile device.
	In the event that my laptop with data on it is lost, stolen or hacked, I will immediately contact my PI Sponsor or Study Director, Richie Poulton (richie.poulton@otago.ac.nz).
	I will not share the data with anyone, including my students or other collaborators not specifically listed on this concept paper.
	<p>I will not post data online or submit the data file to a journal for them to post.</p> <p><i>Some journals are now requesting the data file as part of the manuscript submission process. The Dunedin Study Members have not given informed consent for unrestricted open access, so we have a managed-access process. Speak to your PI Sponsor or Richie Poulton for strategies for achieving compliance with data-sharing policies of journals.</i></p>
	<p>I will delete all data files from my computer after the project is complete. Collaborators and trainees may not take a data file away from the office.</p> <p>The data remains the property of the Study and cannot be used for further analyses without an approved concept paper for new analyses.</p>

Signature: _____