

COFFEE CONSUMPTION DOES NOT AFFECT LUNG FUNCTION IN HEALTHY SUBJECTS

Elise McKeon, Chris Nathan, Nigel McArdle, Kevin Gain

Department of Respiratory Medicine, Royal Perth Hospital, Perth WA 6000

Background: We have shown¹ that a heavy meal does not affect lung function in normal subjects. Inclusion of a caffeinated drink with the meal may have had an opposing effect on pulmonary capillary blood volume, potentially masking an effect of the meal, particularly on DLCO. Caffeine is also a weak bronchodilator that may further affect lung function.

Aim: Does drinking coffee prior to testing affect lung function test results?

Methods: Power calculations indicated 6 subjects were required to allow detection of >10% change. Accordingly six healthy, non-smoking subjects performed spirometry and DLCO on 2 separate days. Participants fasted from midnight on both days and tests were performed, per ATS guidelines, at 0800, 0930 and 1130. On Day One, fasting continued whilst on Day Two, the subjects consumed two cups of coffee between 0830 and 0930 (120-180mg caffeine). Analysis was by a linear mixed model to assess the effects of drinking coffee, time and coffee vs time interaction.

Results: 3 males and 3 females (aged between 20 and 55 years) completed the study. Results (mean \pm standard deviation) were:

Time	FEV ₁		FVC		DLCO	
	Fasting	Coffee	Fasting	Coffee	Fasting	Coffee
0800	3.7 \pm 0.8	3.7 \pm 0.8	4.5 \pm 0.9	4.6 \pm 1.0	27.2 \pm 6.3	27.4 \pm 5.5
0930	3.8 \pm 0.8	3.8 \pm 0.9	4.5 \pm 1.0	4.5 \pm 1.0	26.9 \pm 6.4	27.2 \pm 6.2
1130	3.8 \pm 0.9	3.8 \pm 0.9	4.6 \pm 1.0	4.6 \pm 1.0	27.1 \pm 6.4	27.6 \pm 5.9

There were no significant effects of drinking coffee (all P values >0.8), time (all P values >0.9) or coffee vs time interaction (all P values >0.9).

Conclusions: For healthy subjects, lung function results are unchanged from fasting values by drinking coffee prior to testing. The data also showed neither spirometry nor DLCO results changed during the morning.

Key Words: spirometry, DLCO, caffeine, meal effect

¹McKeon *et al*, *Respirology*, 2005, 10, A3.