

THE EFFECT OF REDUCING THE TIME BETWEEN DL,CO TESTS

Wallace LA¹, Graham B² and Swanney MP¹

(1) Respiratory Physiology Laboratory, Christchurch Hospital, Christchurch, New Zealand. (2) Charles Sturt University, Wagga Wagga, NSW, Australia

Introduction: The ATS/ERS guideline recommends waiting at least 4 minutes between single-breath diffusing capacity (DL,CO) tests and up to 10 minutes for patients with airway obstruction (AO)¹. This recommendation may be excessive and reducing the time could lead to testing efficiencies. **Aim:** To investigate the effect of reducing the time between DL,CO tests within patient diagnostic groups. **Methods:** We compared DL,CO test data from 85 patients, using two sets of three repeats, with intervals of > 4 and < 2 minutes. **Results:** The mean (SD) time for the reduced interval was 98(5) seconds. Mean intra-test variability between repeat DL,CO tests was within 3 mL COSTPD/min/mmHg or 10% of the highest result for all groups. The change (Δ) in the mean \pm SE (%) DL,CO using the two timing methods is shown in the table.

Spirometric categories	Normal n=20	Restricted n=15	Mild AO n=15	Moderate AO n=19	Severe AO n=16
Δ Mean DL,CO mL/min/mmHg (<2 min - >4 min)	- 0.1 \pm 0.2 (0.0)	0.1 \pm 0.1 (0.6)	0.0 \pm 0.2 (1.0)	0.1 \pm 0.2 (1.8)	- 0.2 \pm 0.2 (-0.8)

There was a statistically significant decrease in the mean VA and increase in the mean DL,CO/VA in some patient groups. **Discussion:** There was no significant effect on DL,CO when the interval between tests was reduced. While a change in the mean VA and DL,CO/VA was observed, the effect was not greater than the accepted variability of the test. Reducing the time between repeat DL,CO tests does not appear to effect the results, even in patients with airway obstruction.

Key Words: Diffusing capacity, DLCO, DLCO/VA.

Nomination: Bird Healthcare Young Investigator Award

¹ MacIntyre NR, Crapo RO., et al. (2005) "Standardisation of the single breath determination of carbon monoxide uptake in the lung." Eur Respir J 26(4): 720-735.