



**P33 Effect of anthropometry on lung function in healthy adult women**

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Spirometry is widely used to assess the lung function in clinical practice. We examine age related trends of lung functions and the independent effects anthropometric parameters on lung function in a group of community dwelling adult females. Using Bope Poddala electoral register, age stratified random sample of 450 women above 30 years of age were invited. Then, 343 attended but spirometry using a portable spirometer was performed in 238 women only. Peak expiratory flow rate (PEFR), forced vital capacity (FVC) and the forced expiratory volume in first second (FEV<sub>1</sub>) were assessed. Body weight, height and skin fold thickness (SFT) was measured in the non-dominant side; over anterior superior iliac spine and mid-triceps. Women were grouped according to age decades (ranged 30.3- 82.6 years) for comparison. The mean (SD) lung function measurements for 30-39 age group were FVC=2.39 (0.46)L, FEV<sub>1</sub> =2.04 (0.4)L/1st sec, PEFR=351(70)LS<sup>-1</sup> and older groups had lower figures and the oldest group (70 or above) had 38-52% lower figures. All other measured variables among the age groups were also significantly different ( $p < 0.001$ ). In simple regression FVC, FEV<sub>1</sub> and PEFR were negatively correlated to age ( $r = -0.52$  to  $-0.66$ ,  $p < 0.001$ ) and positive correlated to height ( $r = 0.38$  to  $0.51$ ,  $p < 0.001$ ), weight ( $r = 0.36$  to  $0.48$ ,  $p < 0.001$ ) BMI ( $r = 0.17$ ,  $p < 0.01$  to  $r = 0.36$   $p < 0.001$ ) and SFT ( $r = 0.23$ ,  $p < 0.01$  to  $r = 0.41$ ,  $p < 0.001$ ). In multiple regression only age (Beta =  $-0.23$  to  $-0.48$   $p < 0.001$ ) and height (Beta =  $0.12$  to  $0.27$ ,  $p < 0.05$  &  $< 0.001$ ), showed a significant correlation with all 3 respiratory parameters. Weight correlated only with PEFR (Beta =  $0.30$  ( $P < 0.01$ )). In this community based study of lung function assessment, we conclude that the lung function in healthy women depends on age and height but not on skin fold thickness and weight.

**Keywords:** spirometry, peak expiratory flow rate, forced vital capacity, forced expiratory volume in first second