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Effect of different body positions on lung dynamic functions in healthy young non-obese subjects

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Background & Aim: Frequent changes in body position and avoidance of prolonged period in any single position will minimize the risk of cardiorespiratory complications. Body positioning has potent and direct effect on cardiorespiratory functions and dynamics. Hence the purpose of study was to find out effect of different body positions on lung dynamic functions and apply the results of study in a large population for therapeutic purpose.

Methodology: 50 young healthy non-obese subjects (29 females and 21 males) between age group 18-30 years were selected and Pulmonary Function Tests were done in six different positions (sitting upright, reclined sitting (crook), supine, prone, right and left side lying) in a Cardiorespiratory Laboratory of a Superspeciality Hospital. FVC, FEV, PEER, PIFR, FEV1, FVC, FEF 25-75%, SVC, VE, Vt, Vt/Ti and MVV were measured in six different positions. All the data was statistically analyzed and results were documented.

Result: There was statistical significant reduction in PFT parameters in all recumbent positions compared to upright positions ($p < 0.0033$). Further, prone position showed significantly higher flow rates and lung volumes when compared with supine position.

Conclusion: Hence we conclude that reference standard position of upright sitting was the best position among all other positions. Subsequently, prone position was found to be more physiological than supine position.

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