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**Title:** Exercise capacity and limitations in long-term post-pneumectomy patients

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**Body:** Post-pneumectomy patients have impaired pulmonary function and exercise intolerance associated with respiratory limitations. However, little is known regarding the limiting factors in exercise. The aims of the present study were to assess exercise tolerance and functional capacity in post-pneumectomy patients and to identify the limiting factors in exercise. Methods: Seventeen post-pneumectomy patients (6±4 years post operation) (9 males and 8 females) aged 59 ±13 were prospectively studied. Pulmonary function tests (PFT), cardiopulmonary exercise test (CPET), Doppler-echocardiography, 6MWT and "senior fitness tests" were conducted for all patients. Results: Exercise tolerance during CPET was moderately reduced (peak VO<sub>2</sub>- 11.5±3.3 ml/kg/min, 48±17 % predicted). Most patients (n=13) did not use all the breathing reserve (17±12 L) and were primarily limited by cardiovascular system. Functional capacity in walking and strength-agility tests was preserved (6MWT- 490 ±155 m, 89±25 % predicted). PFT was diminished as expected, (FVC %predicted-55±13, FEV<sub>1</sub> % predicted - 46±14, DLCO % predicted- 53±18). Resting Doppler-echocardiography showed normal left ventricle systolic function with mildly elevated sPAP (39±11 mmHg). Conclusions: Long-term post-pneumonctomy patients had reduced PFT, mildly elevated sPAP and moderate exercise intolerance which was primarily limited by cardiovascular system. Although these attenuations, functional capacity in walking and strength-agility tests was well preserved. It seem that most patients can maintain near normal life in activities of daily living, but the late cardiovascular impairments of pneumonectomy should be taken to account for clinical decisions.