

### Decreased Total Lung Capacity in Patients with Tetralogy of Fallot

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**Objectives:** Patients with repaired tetralogy of Fallot (TOF) had an inborn right heart obstructive congenital heart disease, leading to possible lung deficits such as impaired forced volumes (FVC and FEV1) or total lung capacity (TLC). This study aims to prove this hypothesis in children, adolescents or young adults with repaired TOF.

**Methods:** From April to November 2018 forty-one patients with TOF ( $16.2 \pm 5.0$  years, 39% girls) underwent a spirometry and bodyplethysmography. Results are expressed in relation to their reference values as %predicted (mean  $\pm$  SD). Data were tested against 100% with a one sample T-Test.

**Results:** In TOF FVC %predicted TOFs was reduced to  $84 \pm 15$  %, FEV1 %predicted  $83 \pm 14$  % and TLC %predicted  $89 \pm 11$  % ( $p < 0.001$  for all). There was no increase in RV %predicted ( $107 \pm 35$  %,  $p = 0.208$ ) and FEV1/FVC %predicted ( $100 \pm 8$  %,  $p = 0.988$ )

**Conclusions:** FVC, FEV1 and TLC are reduced in TOF patients. These findings suggest that this CHD affects patients' lung development. Further data are needed to evaluate whether this is due to an inborn lung defect associated to TOF, a fetal delay in development or/and a result of the early chest operation.