# [Factors associated with exercise capacity in patients with a systemic right ventricle.](https://www.ncbi.nlm.nih.gov/pubmed/31256996)

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**Take Home Points:**

* NYHA functional class is a strong predictor of reduced exercise capacity in patients with a systemic right ventricle.
* Impaired right ventricular functional parameters are also associated with limited exercise capacity, while 2D global longitudinal strain correlated best with percent-predicted VO2max.



**Comment from Dr. Inga Voges (Kiel, Germany), section editor of Pediatric Cardiology Journal Watch:** This is a French multicenter study assessing factors related to exercise capacity in a cohort of patients with a systemic right ventricle. The authors included 111 patients with transposition of the great arteries after atrial switch operation (n= 94) and patients with congenitally corrected transposition of the great arteries (n= 17). The mean age was 37.2 ± 8.2 years. Patients who were included in this study had at least a physical examination, a cardiopulmonary exercise test (CPET), an ECG and an echocardiogram.

68.5% of the patients were in NYHA I functional class. A right ventricular assistance or cardiac transplantation project was considered in 10 patients. Conduction disorders were common (70 patients) and included sinus node dysfunction, complete right bundle branch block and complete atrioventricular block. 34 patients had supraventricular tachycardias including atrial flutter and atrial fibrillation. Echocardiographic parameters (TAPSE, S wave, TEI index, RV surface shortening fraction, global longitudinal 2D Strain) suggested RV dysfunction; 17% of the patients had severe tricuspid regurgitation.

The mean VO2max, the ventilatory anaerobic threshold and the VE/VCO2 slope were impaired (mean VO2max 23.3 ± 6.9 ml/kg/min; VO2 13.7 ± 5 ml/kg/min; VE/VCO2 slope 34 ± 8). In the univariate analysis professional status, NYHA functional class, BNP level, the type of systemic right ventricle, decreased right ventricular function values, tricuspid regurgitation, the presence of a pacemaker or an implantable defibrillator, the ventilatory anaerobic threshold, the maximum load, and the maximal heart rate during exercise correlated with VO2max (Table 4). In the multivariate analysis, VO2max correlated with NYHA functional class (Table 4). All RV functional parameters as assessed by echocardiography were related to exercise capacity (Table 4), while 2D global longitudinal strain analysis showed the best correlation.

