INTRODUCTION: Postoperated children with complex congenital heart disease (CHD) have a decreased functional capacity (FxC) associated with death and hospitalization. Cardio pulmonary exercise test (CPET) assesses their FxC and shows specific patterns according to different physiological adaptations depending on the type of CHD.

OBJECTIVE: The aim of this investigation was to define and compare the exercise performance of postoperated Tetralogy of Fallot children (PTF) against subjects that had undergone a Fontan procedure (FP) through CPET.

METHODS: Retrospective observational study of 25 PTF (mean age 12 ± 3.2 years, weight 43.2 ± 14.55 kg, height 146.7 ± 14.4 cm, 58% male) and 63 Fontan (mean age 11.8 ± 3.4 years, weight 41.9 ± 17 kg, height 146.5 ± 17.5 cm, 56% male). Inclusion criteria admitted pulmonary atresia with VSD in the PTF group and both right or left systemic ventricles in the FT group. Patients with pacemakers, sinus node dysfunction or junctional rhythm were excluded. Ramp treadmill ergometry (Bruce protocol) was performed with expired gas in all cases.

RESULTS: Submaximal exercise tests limited by symptoms were performed, clinically and electrically negative in all cases, with no significant arrhythmias. 38% of FP reached 85% MPHR vs 32% in PTF. From the FP, 62% showed a normal spirometric pattern and 28.6% restrictive vs 56% with normal pattern and 20% restrictive in PTF group. CPET results were:

CONCLUSIONS: Functional capacity is decreased in both PTF and FP patients. Ventilatory efficiency variables revealed V/Q imbalance between FP subjects (according to their condition). This disturbance is only appreciated in PF when significant RV dysfunction develops.