

Nowadays, Children With Congenital Heart Disease are not Limited in Their Submaximal Exercise Performance

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Objective: Formerly, adolescents and adults with congenital heart disease (CHD) showed a reduced exercise capacity even in defects considered to be simple. Nowadays, the children might get a better medical management and less restriction concerning an active lifestyle or sport activities. The exercise performance of this new generation of children with CHD has to be evaluated.

Patients and Methods: In the year 2010, eighty-eight children (12.7 years, 52 male) eleven to fourteen years old with various congenital heart diseases performed a cardiopulmonary exercise test in our institution. These children were matched for age and gender with healthy subjects, who underwent the same procedure at a school survey.

Results: In comparison to healthy controls, children with CHD had a diminished peak oxygen uptake (CHD: 35.5 ml/min/kg vs. controls: 42.4 ml/min/kg; $p < .001$) corresponding to 87.1% (CHD) and 99.5% (Controls) of the reference value, respectively. Peak oxygen uptake decreased with the severity of the heart defect ($r = -.410$; $p < .001$). However, there were no differences in oxygen uptake at the ventilatory threshold (CHD: 20.6 ml/min/kg vs. controls: 21.5 ml/min/kg; $p = .675$).

Conclusions: Nowadays, children with CHD are not limited in their submaximal exercise performance. However, there is still a reduction in peak oxygen uptake