

## Exercise, Lifestyle and Psychological Status of a Large Cohort of Children with Congenital Heart Disease

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### Introduction:

Improved survival among children with congenital heart disease (CHD) has shifted focus to the long-term physical and psychological outcomes for these patients. There is evidence that children with CHD have lower levels of daily physical activity and a higher prevalence of obesity compared to their normal peers.

The benefits of an active lifestyle within the general population have been well described. They include better cardiovascular health, improved psychological, cognitive and social functioning and obesity prevention. This study aims to assess both physical and psychological functioning in children with CHD.

### Methods:

430 patients aged between 5-10 years old with CHD were identified on Heartsuite Database and invited to participate. Each patient recruited underwent assessment as detailed below:

#### *Biophysical assessments:*

- Weight, height, waist measurements
- Baseline heart rate, blood pressure, oxygen saturation
- Exercise stress test (EST) – Graded cycle ergometer protocol
- Actigraph accelerometer worn at home for 1 week

#### *Psychosocial assessments:*

- KIDSCREEN27: To assess health related quality of life (HRQoL)
- Strengths and Difficulties Questionnaire: To assess for behavioral problems
- Butler Self-image Profile was completed by children over 7 years old

### Results:

- 163 patients were recruited and underwent assessment, 100 were male (61.3%).
- The mean age was 8.4 years (range 5.3 – 11.5).
- 136 of the patients had major CHD\* (as defined by requiring catheter or surgical intervention).
- Patient subgroups: 18.4% acyanotic no intervention, 37.4% acyanotic repaired, 27.6% cyanotic corrected, 16.6% cyanotic palliated
- EST: EST duration mean 5.89mins (SD 2.02), METs mean 9.79 (SD 1.79), mean Maximal predicted HR 81% (SD 7.8)
  - The 'cyanotic palliated' subgroup had significantly lower EST duration, maximal HR and oxygen saturations at peak exercise compared with the other 3 subgroups
- Actigraph: Average time spent in MVPA (Moderate-Vigorous Physical Activity) 45mins (SD - 27.2), percentage time spent in MVPA 6.3% (SD 3.7)
- No significant difference was found in KIDSCREEN27 HRQoL measures between minor and major CHD groups.

(\*3 patients had not undergone intervention by the time of the baseline assessment but were scheduled for surgical repair were coded as 'major CHD')

Conclusions: Overall physical and psychological wellbeing is well preserved in the majority of children aged 5-11 years with CHD.