Physical activity pattern in children with congenital heart disease compared to healthy controls: When methodological improvements matter

Pia Skovdahl, PhD student
Congenital heart disease (CHD)

8-10 of 1000

>97% expected to reach adulthood

Risk of additional disease

“New” patient group

PA for health

Physical limitations in cardiovascular system
Restrictions from caregivers
Lower self-efficacy

What do we know about PA in CHD?

“Tendency of showing same level CHD and healthy + severity !?!”

...However...conflicting results and major variations and limitations in AC methodology
How to measure PA objectively?
How to measure PA objectively?
Measuring PA using AC
Measuring PA using AC

Filter
Non-wear time
Placement
Measurement days
VO2 net or MET?
Statistics
Cut-points
Inclusion criteria
Epoch

PA RESULT
Totally dependent on settings!
Pilot: PA in youngsters with VAS

- Valvular aortic stenosis – CHD-group 2, large spread

- 46 treated VAS-patients 6–18 years, 44 controls (matched: age, gender, geography)
  - Axivity AX3, 7-day at hip (>10h/day, >4 valid days(>3week/>1weeked), non-wear 60m 0 (<2 min exception))
  - 10 Hz, 8g
  - 3 sec epoch

ActiGraph (AG) & Frequency Extended Method (FEM)

Crude PA & Spectrum
Results VAS children vs. Controls, AG and FEM
Results VAS adolescents vs. Controls, AG and FEM
Individuals in each group with data across PA spectrum
“Physical activity, motivation and quality in life in Swedish children and adolescents with congenital heart disease”

Collaboration study:
CHP at GU + university hospitals in Gothenburg, Lund & Stockholm

CHD severity groups 1-3, 6-18 years + age, gender and location matched healthy controls, n=60/gr.
What do we measure towards?

Objective measure transferable to subjectively based recommendations?

MVPA captures movement pattern of children?
- Of CHD children?
- Look at patterns!

What's the point?
Make the most of the method to enable correct PA support for CHD children.

Promote and prioritize interdisciplinary collaborations
Center for Health and Performance (CHP)
pia.skovdahl@gu.se