

# **Research in Children: why we must rise to the challenge.**

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# B.Med Sci. Project

Bioelectrical Impedance (BI) as a measure of:

- nutritional status
- body composition
- a prognostic marker

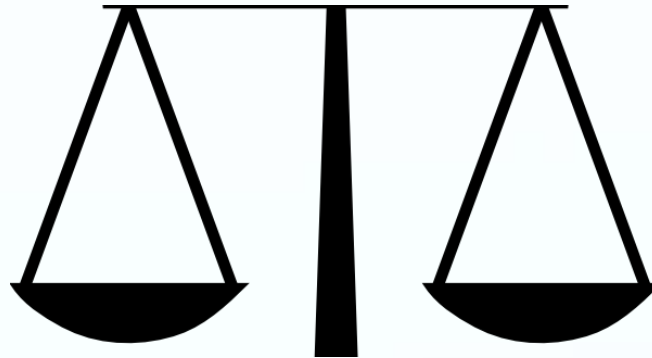
in children undergoing cardiac surgery for  
Congenital Heart Disease (CHD)



# Systematic Literature review

- What I found
  - No normative data in children
  - Multi-centre studies were lacking
- What I learnt
  - We cannot extrapolate data from adults
  - Clinicians need to work together collaboratively to obtain robust evidence

# Ethical Approval



Protection of individual children participating in research

Long term benefit to children in the future to have their care assured by research

- What I learnt  
Ethical approval is complex and may take longer than anticipated

# Recruiting patients

- What I found
  - We can be reluctant to invite children to participate in research
  - Parents are often keen 'to help others'
- What I learnt
  - It is everyone's responsibility facilitate research

# Practical aspects

- What I found
  - Often a conflict between research and clinical priorities
  - Often not possible to follow the research protocol as intended



- What I learnt
  - Undertaking research in children requires patience and resourcefulness
  - Need to be sure results obtained are valid

# Clinical practice



UNWELL CHILD Traffic Light			
	Low Risk	Intermediate	High Risk
Colour	Normal	Pallor ( <i>reported by parent</i> )	Pale/mottled/ashen/blue
Activity	Alert, smiling, awake or wakes up easily. Not crying/crying loudly.	Not responding normally, no smile. Drowsy. Reduced activity.	No response to social cues. Appears ill. Not waking. Weak, high pitched or non stop cry.
Resp		Nasal flaring. Age 6-12m: RR >50 Age >12m: RR >40 O <sub>2</sub> Sats ≤95% Crackles in chest.	Grunting RR >60 Moderate or severe chest indrawing
CV	Normal skin and eyes Moist mucous membranes Normal fontanelle	Age <12m: HR >160 Age 12-24m: HR >150 Age 2-5y: HR >140 CRT >3 seconds Dry mucous membranes Poor feeding Reduced urine	Reduced skin turgor
Other		Age 3-6m T ≥39°C Fever more than 5 days Rigors Swelling of a limb or joint Non weight bearing limb	Age <3 T ≥38°C Non-blanching rash Bulging fontanelle Neck stiffness Status epilepticus Focal neurological signs Focal seizures.



# Conclusions

- Research involving children can be challenging!
- We cannot extrapolate data from adults.
- There is a need for research to be undertaken in children
- It is important for all of those involved in the care of children to understand, and to facilitate, research
- High quality research provides the strong evidence base needed to provide optimal care