

# Control groups in paediatric epilepsy research: do first-degree cousins show familial effects?

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# Control Groups in Epilepsy Research

- Behavioural, cognitive and imaging research in epilepsy has used various control groups
  - Siblings/other family members, persons with other chronic illnesses, population-based controls
- Methodological strengths and weaknesses are associated with each of the above groups

# Control Groups in Epilepsy Research

- Participants were children (age 8 -18) with epilepsy with at least one first-degree cousin control in the study (n=37) and all enrolled cousin controls (n=100).
- Participants underwent neuropsychological assessment, brain imaging (cortical, subcortical, cerebellar volumes), and the parent-completed Child Behaviour Checklist (CBCL).
- Data (42 outcome measures) from cousin controls were regressed on the corresponding epilepsy cognitive, behavioural, and imaging measures in a linear mixed model and case-control correlations were examined.

# Control Groups in Epilepsy Research

- Of the 42 uncorrected correlations involving cognitive, behavioural, and neuroimaging measures, only 2 were significant ( $p < 0.05$ ).
- The median correlation was 0.06. With correction for multiple comparisons, no correlations were significant.
- Given the lack of association, first-degree cousins appear to be unbiased controls for cognitive, behavioural, and neuroimaging research in paediatric epilepsy.