Developmental coordination disorder in children with Rolandoic epilepsy and their siblings
Stuart D. W. Smith, Anna B. Smith and Deb K. Pal

Introduction
- Cognitive problems in Rolandoic epilepsy (RE) may involve speech, language and literacy (Pal et al., 2010, Smith et al., 2015, Vega et al., 2015).
- These problems are prevalent within families of children with RE and may represent an endophenotype.
- New evidence suggests motor problems or developmental coordination disorder (DCD) may also be present in children with RE (Brindley et al., 2016, Kirby et al 2017).
- It is unknown whether DCD is detectable in siblings of children with RE.

Methods
- Age: 7-17, IQ>80
- RE N=18, Sibs N=9 and Con N=17
- % male: RE 66, Sibs 22 and Con 58
- Chi-squared testing
- MANOVA analysis of subscores: Control during movement, fine motor and coordination.

Goals
1. Using the DCDQ’07 to detect DCD symptoms in children with RE, their siblings and controls.
2. Identify the key problems in motor abilities from subscores.

Overall scores
- DCD
  - RE: 8
  - Siblings: 1
  - Controls: 2
- No DCD
  - RE: 10
  - Siblings: 8
  - Controls: 15

- Forty-four percent of children with RE had an indication of DCD.
- This was larger than the controls (χ²=4.58, p=.032) and siblings (χ²=3, p=.08).

Subscores
MANOVA analysis of subsection scores was not significant (F=1.8, df=6, 80, p=.109).
However, post hoc, Bonferroni testing between RE and controls was significant for fine motor control (p=.01) and coordination (p=.04).

Key problems
- Coordination
- Fine motor
- Control during movement

Conclusions
- There is a high prevalence for the indication of DCD in children with RE compared to controls.
- There appears to be an apparent association with coordination and fine motor skills.
- Indication of DCDQ was less prevalent in siblings.
- Further investigation is needed to see if DCD is related to the RE seizure disorder rather than a component of the endophenotype.