

# International Neuropsychological Study of FASD and Educational Intervention: Two Studies

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# Study One

Basic neuropsychological studies of children in:

1. South Africa
2. Northern Plains of the United States

# South African Neuropsychological Study

- Co-principal investigator Colleen Adnams, M.D., (University of Cape Town).
- Funded 2003 – 2006 by NIAAA.
- ***Goal is to explore the optimal battery of tests to best define FAS psychological and behavioral characteristics.***

# Specific Aims

- To administer a neurobehavioral core test battery to previously identified children with FAS in: South Africa and Northern Plains Indian Reservations.
- To test a specific statistical model of neuropsychological functioning (the radex model) in children with prenatal alcohol exposure.

# Sample Sizes

- South Africa:
  - 100 children with FAS or Partial FAS.
  - 100 age- and sex-matched controls with minimal to no prenatal EtOH exposure.
- Plains:
  - 50 children with FAS or Partial FAS.
  - 50 age- and sex-matched controls with minimal or no prenatal EtOH exposure.

# Progress – South Africa

- Ethics/IRB approvals obtained from UCT and UNM; children identified and enrolled.
- Subcontracts finalized with the University of Cape Town and the University of Stellenbosch.
- All test administration protocols in place in S.A.
- All training for protocols completed; videotapes for reliability assessment being completed.
- Afrikaans-speaking testers:
  - Bernice Castle, M.A., Program Manager.
  - Sean September, M.A., Psychometrist.

# Progress - Plains

- Children identified for completing the study in three reservations.
- Testing of subjects and controls will be completed in one, one week trip each month for eight months throughout 2005.
- Testing done by: Alfredo Aragon, Ph.D. and Wendy Kalberg, both supported by Dr. Kodituwakku.

# Explanation of the Radex Model

- Children with FASD have increasing problems with/failures in performing complex intelligence/mental tasks involving multiple paradigms and rules.
- Executive Functioning is generally deficient in children with FASD.
- A universal/cross cultural phenomenon with alcohol exposure.
- We are looking for the battery that will best test this hypothesis/model and the collaboration of the CIFASD scholars represents the best battery to test now.



# Implications for the Future

- A more perfect battery of neuropsychological tests will help greatly in better defining more levels of FASD.
- We have made substantial progress in better defining FAS and Partial FAS as proposed by the IOM committee on FAS.
- Defining ARND with any precision will follow from a good neuropsychological battery.

# Study Two

Educational Interventions  
for FASD children in South  
Africa

# South African Educational Study Progress

- Also funded by NIAAA: U01 AA 014786.
- ***Goal is to explore the best educational techniques/interventions for maximizing the learning of FAS children.***
- UNM Co-PIs: Wendy Kalberg, and P.W. Kodituwakku.
- 60 children with FAS are already enrolled in one of three interventions:
  - 20 in speech and language enhancement.
  - 20 in cognitive-behavioral therapy (CBT).
  - 20 in parental education intervention.

# South African Educational Study Progress (2)

- All baseline psychological testing completed prior to interventions.
- 18 month interventions.
- Post testing for change between groups and with controls in the same environments.
- Co-investigators/collaborators:
  - Pharyn Sorour, Ph.D., Univ. of Cape Town.
  - Petra Engelbrecht, Ph.D., Univ. of Stellenbosch.
  - Rubin Adams, B.A, Paarl School District.

# Future Promise and Collaboration

- This one of the few educational trials ever undertaken on educational techniques for enhancing the learning and functioning of children with FASD.
- The only well evaluated, case control trial of multiple and novel methods, especially:
  - In the classroom.
  - The speech and language portion.
  - Parental intervention.

# Future Promise and Collaboration

- Interventions found to be efficacious in S.A. classrooms can be applied and studied in other cultures/settings.
- The educational interventions being employed are informed by research: neuropsychological and basic science.
- The findings in the classroom interventions will inform future research in neuroscience.