

Health Professionals Making a Difference:
Fetal Alcohol Spectrum Disorder, Alcohol and
Substance Use in Pregnancy, and Breastfeeding

Westlink Satellite Series 2
Perth, Western Australia

1st August 2007

Dr Elizabeth Peardon

Fetal Alcohol Spectrum Disorder: services and interventions

Elizabeth Peadon

The Children's Hospital at Westmead

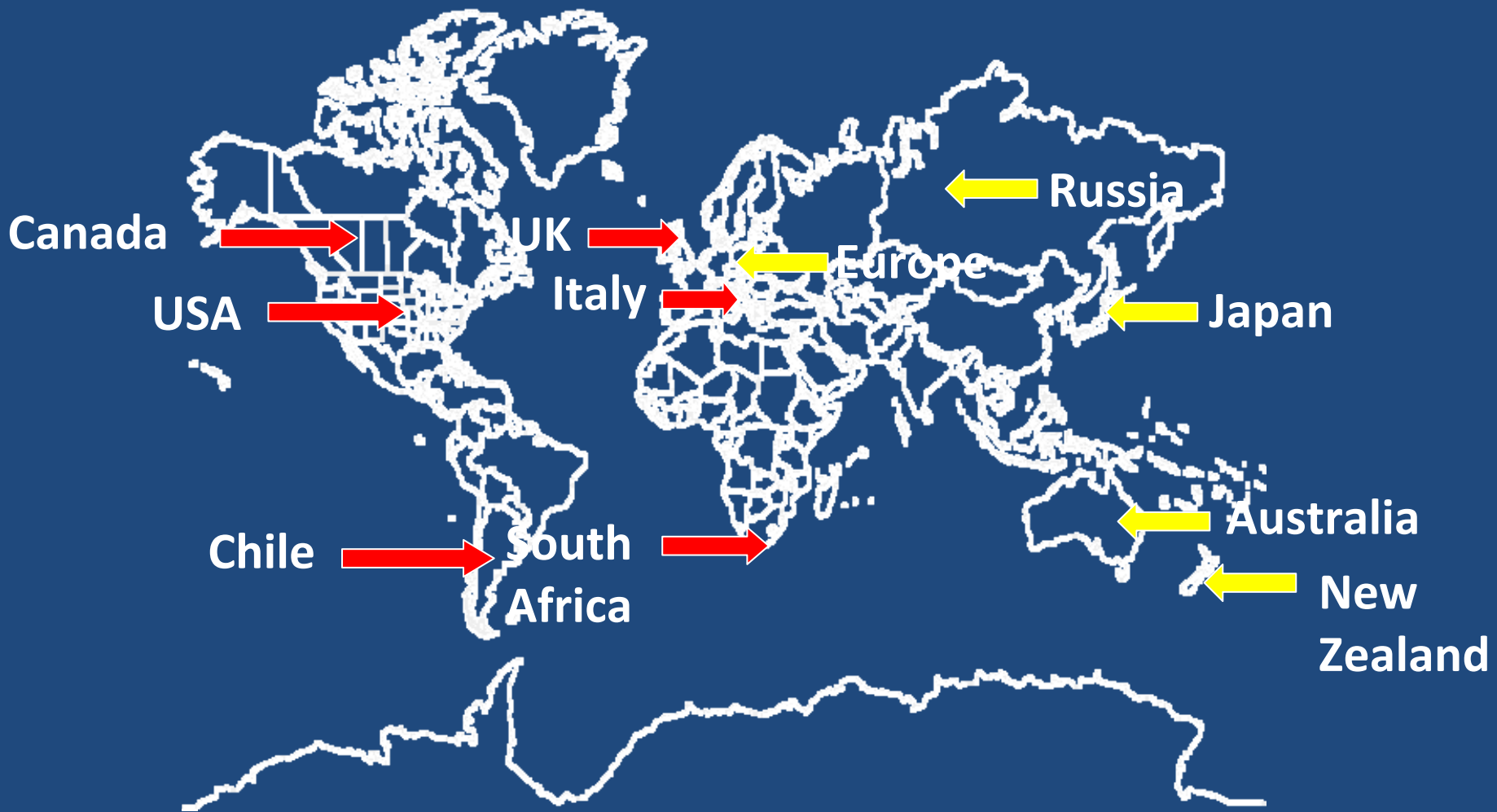
University of Sydney

Making a diagnosis

- Barriers¹
 - reluctance
 - lack of knowledge
 - does it make a difference?
- Benefits
 - understanding
 - intervention
 - reduces risk of developing secondary disabilities²
 - prevention of further alcohol exposed pregnancies

International survey of diagnostic services

- To investigate the international service provision for the diagnosis of FASD
- To inform the development of services in Australia where there are currently none available



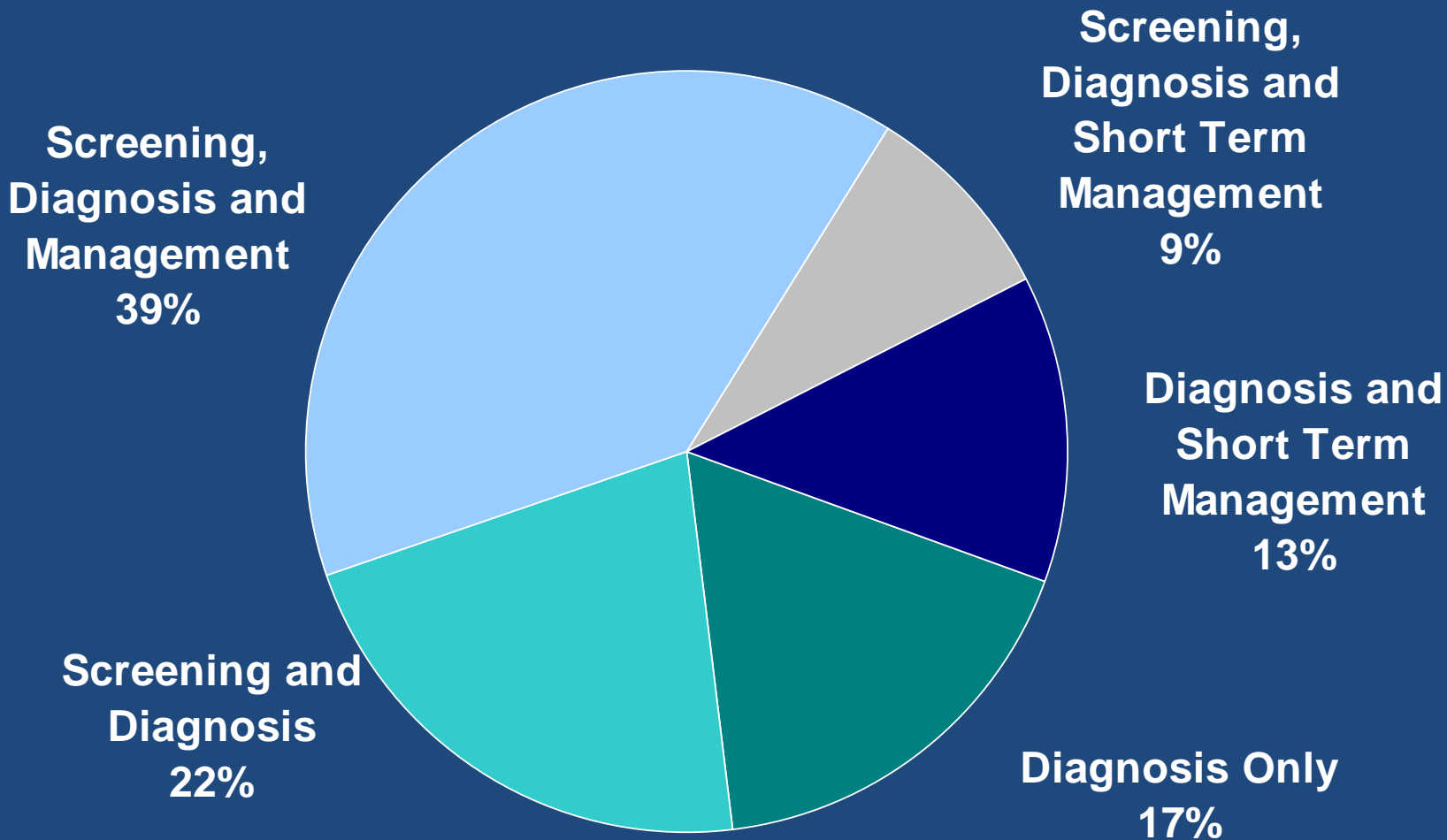
 Clinics

 No clinics

Clinic Details

- Clinic location:
 - Canada = 5
 - USA = 13
 - South Africa = 2
 - Italy = 1
 - Chile = 1
 - United Kingdom = 1
- 4 of 5 clinics outside North America funded by research grants, wholly or partially from USA
- UK clinic NHS (state) funded

Services offered by clinics



- Other Services:

Outreach Clinics (n=11), Case Conferencing (n=9), Home Visits (n=6), Telemedicine (n=1)

Clinic staff

- 22 clinics had a multidisciplinary diagnostic team:
 - doctors and psychologists most frequent
- 20 clinics had at least one staff member with specialist training in FASD diagnosis



Diagnostic process

- Routine assessment
 - Physical examination, facial photography, hearing and vision testing, MRI/CT
- Neurobehavioural assessment
 - Cognitive/developmental Testing
 - Motor/Visual-motor/Perception Tests
 - Neuropsychometric Testing
 - Behavioural Assessment
 - Adaptive Behaviour, Social Skills, Social Communication
 - Communication Assessment
 - Educational/Academic Testing
 - Sensory Function

Management

Type of Management	Number of Clinics n=14 (of a total 23)
Family Support Services	10
Counselling/Behaviour Management	6
Speech Therapy	5
Case Manager	5
Physiotherapy	4
Occupational Therapy	4
Child and Adolescent Mental Health	4
Clinic Specific Interventions	4
Drug and Alcohol Services	3
Other	3
Early Intervention Education Programmes	2
Family Therapy	2
Child Protection Services	0

Conclusions

- Clinic activity is concentrated in North America
 - Increasing interest worldwide
 - Importance of research funding from USA
- A multidisciplinary approach is seen as important
- A variety of diagnostic criteria are used, frequently in combination
 - difficulty of comparison
- Specialised staff training is an important component of the service

Recommendations

- Multidisciplinary team
- Training for team members
- Agreed diagnostic criteria
- Reaching scattered populations
- Need to link to support services

Interventions

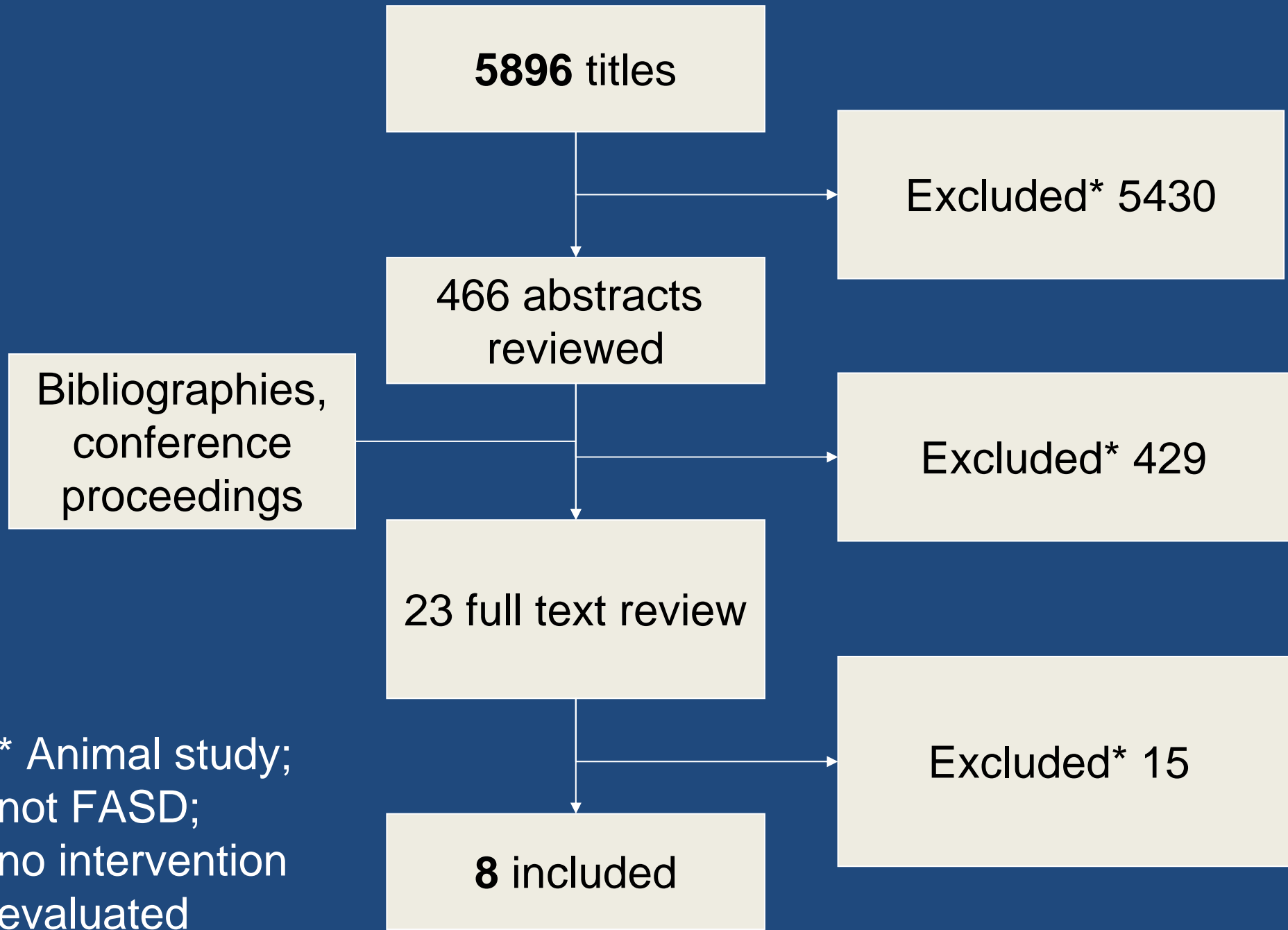
- Speech, occupational and physio-therapy as indicated
- Anecdotal reports that some interventions don't work
- Neurological dysfunction
 - executive function
 - attention and hyperactivity can be different to ADHD
 - social skills

Systematic review

- Study type
 - Systematic reviews
 - RCTs, quasi RCTs
 - Controlled trials
 - Pre- and post-measurement studies
- Any intervention for children < 18 years with a FASD diagnosis
- Eligibility for inclusion and study quality independently assessed by two reviewers

Interventions

- Early intervention programs
 - pharmacological
 - behavioural
 - speech therapy
 - occupational therapy
 - physiotherapy
 - psychosocial
 - Educational



Interventions used

- Pharmacological 2
 - 2 controlled trials
- Educational and learning strategies 3
 - 1 controlled trial
 - 2 pre and post assessments
- Social skills and social communication 2
 - 1 controlled trial
 - 1 pre and post assessment
- Behaviour management 1
 - 1 controlled trial
- Studies in progress 8

Pharmacological interventions

Oesterheld et al (1998)

Study design

- Double blind placebo controlled cross-over RCT
- 4 children aged 5 - 12 years with FAS or PFAS & ADHD

Intervention

- Methylphenidate; Vitamin C; lactose

Results

- Hyperactivity/ Impulsivity score improved on parent and teacher report
- No improvement in attention
- Side effects: 3 decreased appetite; 2 mild stomach aches, headaches

Snyder et al (1997)

Study design

- RCT
- 12 children 6 – 16 years with FAS and ADHD and positive response to stimulants

Intervention

- Usual stimulant; placebo capsule

Results

- Hyperactivity significantly improved on parent report
- No significant effects for attention or impulsivity.

Educational and learning strategies



Adnams et al in: Riley et al (2003)

Study design

- RCT 'pilot'
- 10 children with FAS South Africa

Intervention

- Cognitive Control Therapy (CCT)
- 1 hr per week for 10 school term months

Results

- Marked improvement in behaviour, not neuropsychological testing
- Qualitative change in cognitive functioning

Social skills and social communication



O'Connor et al (2006)

Study design

- Quasi- RCT (alternating allocation)
- 100 children aged 6 -12 years with prenatal alcohol exposure and social skills deficit

Intervention

- Social skills training (Parent-assisted child friendship training)
- 12 x 90 min. sessions over 12 weeks

Results

- Improved knowledge of appropriate social behaviour
- Parents reported improved social skills and fewer problem behaviours
- Teachers did not report improvement

Behaviour management

Vernescu (2007)

Study design

- RCT
- 20 Inuit children with FASD aged 6.8 – 11.9 years

Intervention

- Attention Process Training
- 12 individual 30 minute sessions over 3 weeks

Results

- Improved attention
- Improved non-verbal reasoning ability
- No improvement on measures of executive function

Studies in Progress



Studies in progress

Adnams et al: RCT

- Language and Literacy therapy, Cognitive Control Therapy and Parent Group Intervention

University of Oklahoma Health Services Center: RCT

- Parent Child Interaction Therapy (2001-2006)
- A study of the efficacy of atomoxetine in treating the inattention, impulsivity and hyperactivity in children with FAS or FAE (2007-)
- Open label study of the long term tolerability and safety of atomoxetine in children with FASD and ADD/ADHD (2007-)

Studies in progress

Marcus Institute: RCT (2001-2006):

- Behavioral Regulation Training as a readiness-for-learning strategy, and math skills for improving cognition

University of Washington: RCT (2001-2005):

- Behavioural consultation intervention for school-age children with FAS or ARND
- School-based social communication intervention provided directly to children with FAS/ARND

Children's Research Triangle: RCT (2002-2007)

- Neurocognitive habilitation, psychotherapy, family education and case management

Conclusions

- **Paucity of good quality studies**
 - Targeted to specific FAS-associated behaviours
- **Methodological weaknesses:**
 - inadequate study design
 - (retrospective, before-after)
 - very small sample sizes (1-100)
 - Method of randomisation, allocation concealment, blinding not described
 - Inconsistent diagnostic criteria
 - short term follow-up
- **Limited evidence** for specific interventions for children with FASD

Conclusions

- **RCT or quasi-RCT evidence of effect**
 - stimulant medication decreased hyperactivity and impulsivity, not attention (n=16)
 - Cognitive control therapy improved behaviour (n=10)
 - Social skills training improved social skills and behaviour at home not school (n=100)
 - Behaviour intervention improved attention (n=20)
- **The Future**
 - strengthen evidence base
 - 8 RCTs in progress or due to report soon