

Fetal Alcohol Spectrum Disorders– An Overview:

Understanding Childhood & Looking to the Future

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Today's objectives

- Understand important background issues & dilemmas about fetal alcohol spectrum disorders (FASD)
- Become aware of selected, current findings on neuropsychological & behavioral characteristics of preschool & school-aged children with FASD

Today's objectives

- Learn about current findings on behavioral outcomes in adulthood for individuals with FASD
- *Explore ways in which neuropsychologists working with children & adults may assist individuals potentially affected by prenatal alcohol exposure, & their caregivers*



Selected Projects from Two UW Research Units Provide Useful Data

- FAS Diagnostic & Prevention Network (FAS DPN)
 - Clinic & database
 - FAS MRI/S basic research study
 - “Families Moving Forward” intervention research project
- Fetal Alcohol & Drug Unit (FADU)
 - Secondary disabilities study
 - fMRI basic research study
 - FASD clinical follow-up studies
 - Longitudinal prospective “Seattle 500 Study”



Fetal Alcohol Syndrome Diagnostic & Prevention Network (FAS DPN)

- Statewide network of five FAS diagnostic & referral clinics, with core clinic at UW
- Uses standardized diagnostic code; generates recommendations
- Sees individuals from birth to adulthood
- Trainees can visit on Fridays, 8-5, at CHDD in the University of Washington; can obtain continuing education credit

(Call 685-1277 to schedule training or get referral information)

FASD: These neurodevelopmental disabilities are more common than you might think

- General Populations
 - Rates in US and elsewhere: 1.3-4.8/1000 (FAS only)
 - Seattle: 1/100 (FAS & ARND)
- High Risk Populations
 - Russia: 7.9/100 (FAS only)
 - South Africa: 4.6/100 (FAS only)
- Child Psychiatry:
 - 5/100 (FAS & ARND)
- Juvenile Justice:
 - 23/100 (FAS & ARND)

Data from:

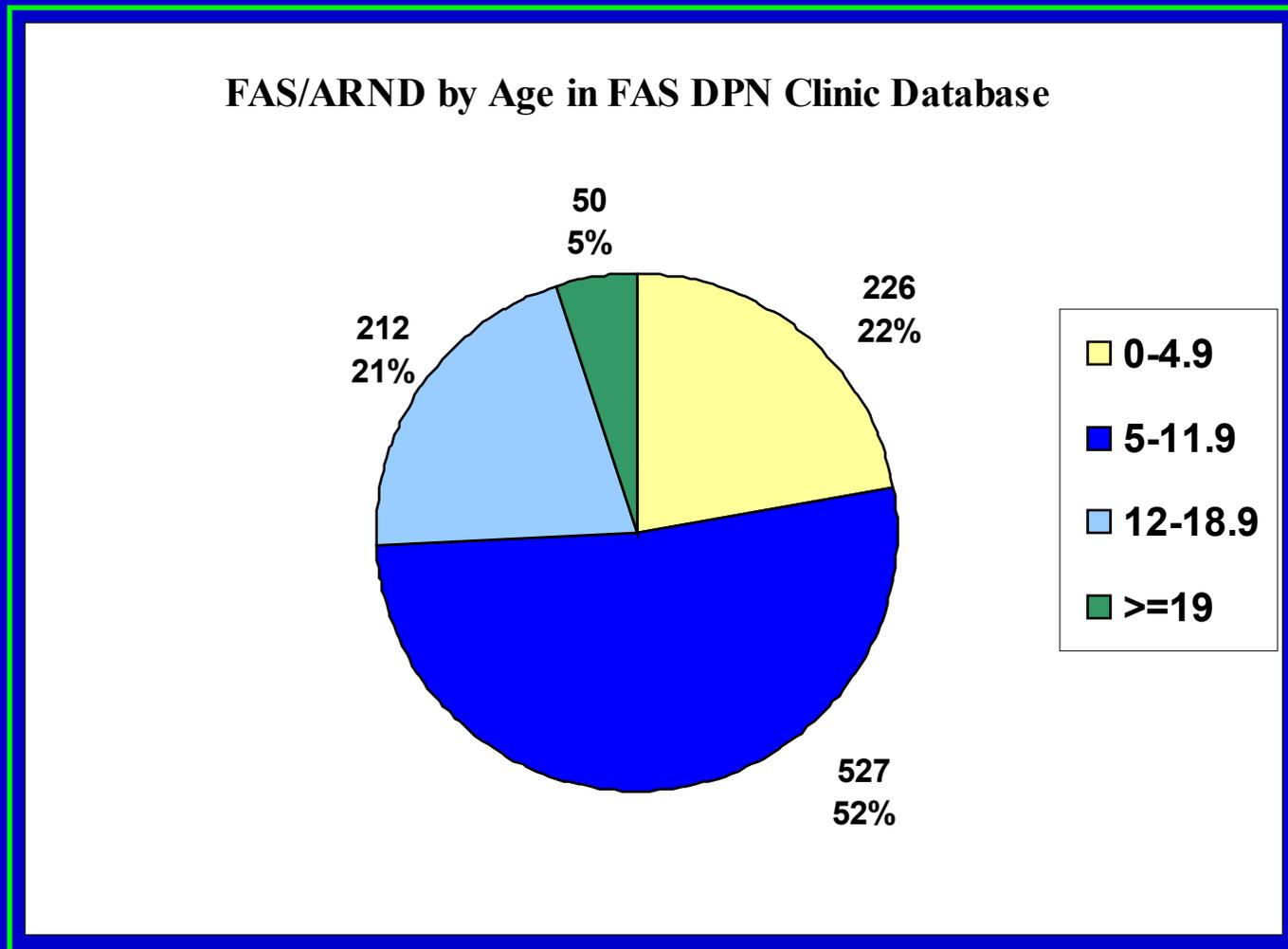
Sampson, et al., Teratology, 1997

Riley et al., ACER, 2003

May et al., Am J Public Health, 2000

Fast, Conry, Loock, 1999

Newly-identified individuals with FAS/ARND are of all ages



The majority seem to be of elementary school age.
But there are also many eligible for early intervention.
(... 13.8% are between birth and 3 years old.)
And of course, these children grow up & continue to need intervention.

[FAS DPN,
2003]

Dilemma #1: Diagnosis has been the topic of much debate

- Alcohol is a neurobehavioral teratogen
- Data from animal models & human studies (clinical, longitudinal prospective) tell a similar story about the effects of prenatal alcohol exposure
- *There are several diagnostic systems in use, with a clinical consensus slowly emerging... & a steady search for biomarkers & clear case definition*

Systematic Study of Alcohol as a Teratogen

Animal Studies

- ↑ activity, exploration, reactivity
- Decreased attention
- Inhibition deficits
- Impaired associative learning
- Impaired habituation
- Perseveration
- Feeding difficulties
- Altered gait
- Poor coordination
- Developmental delay
- Altered aud. evoked potentials
- Poor state regulation

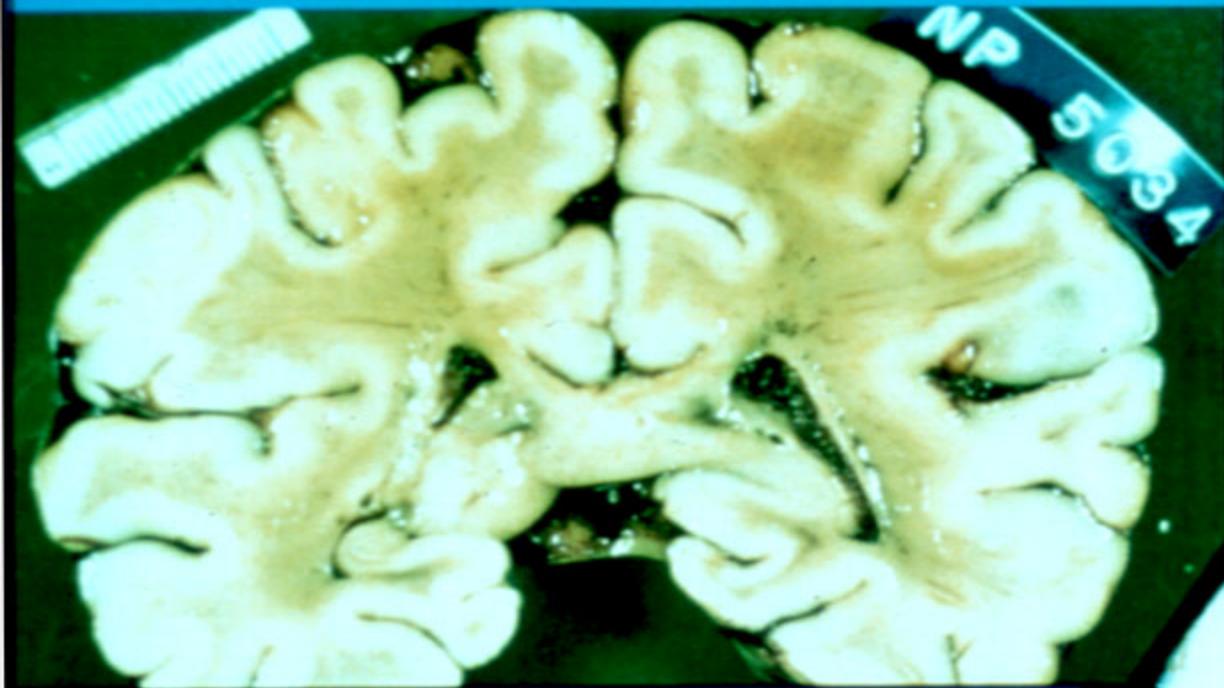
Human Studies

- Hyperactivity, reactivity, attention deficits, distractibility
- Lack of inhibition
- Mental retardation, learning diff.
- Reduced habituation
- Perseveration
- Feeding difficulties
- Gait abnormalities
- Poor fine/gross motor skills
- Dev. delay (motor, soc., lang.)
- Hearing abnormalities
- Poor state regulation

Dilemma #2: Just what is the impact of prenatal alcohol exposure on brain development, structure & function?

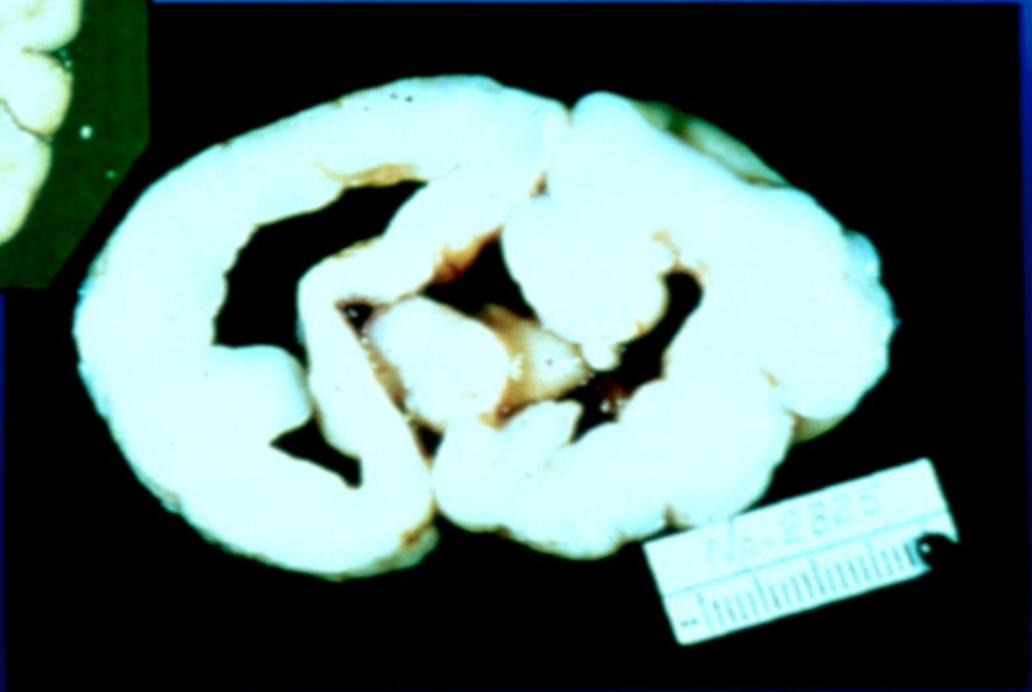
- Must examine:
 - Brain size, morphology, volumetric measurements of brain structures
 - Brain organization at the macroscopic and microscopic level
 - Brain function during effortful cognitive tasks using fMRI
 - Spectroscopy
- Animal model & human neuroimaging studies are needed
- *Neuropsychological studies are essential*

Coronal Sections of Brain



Normal

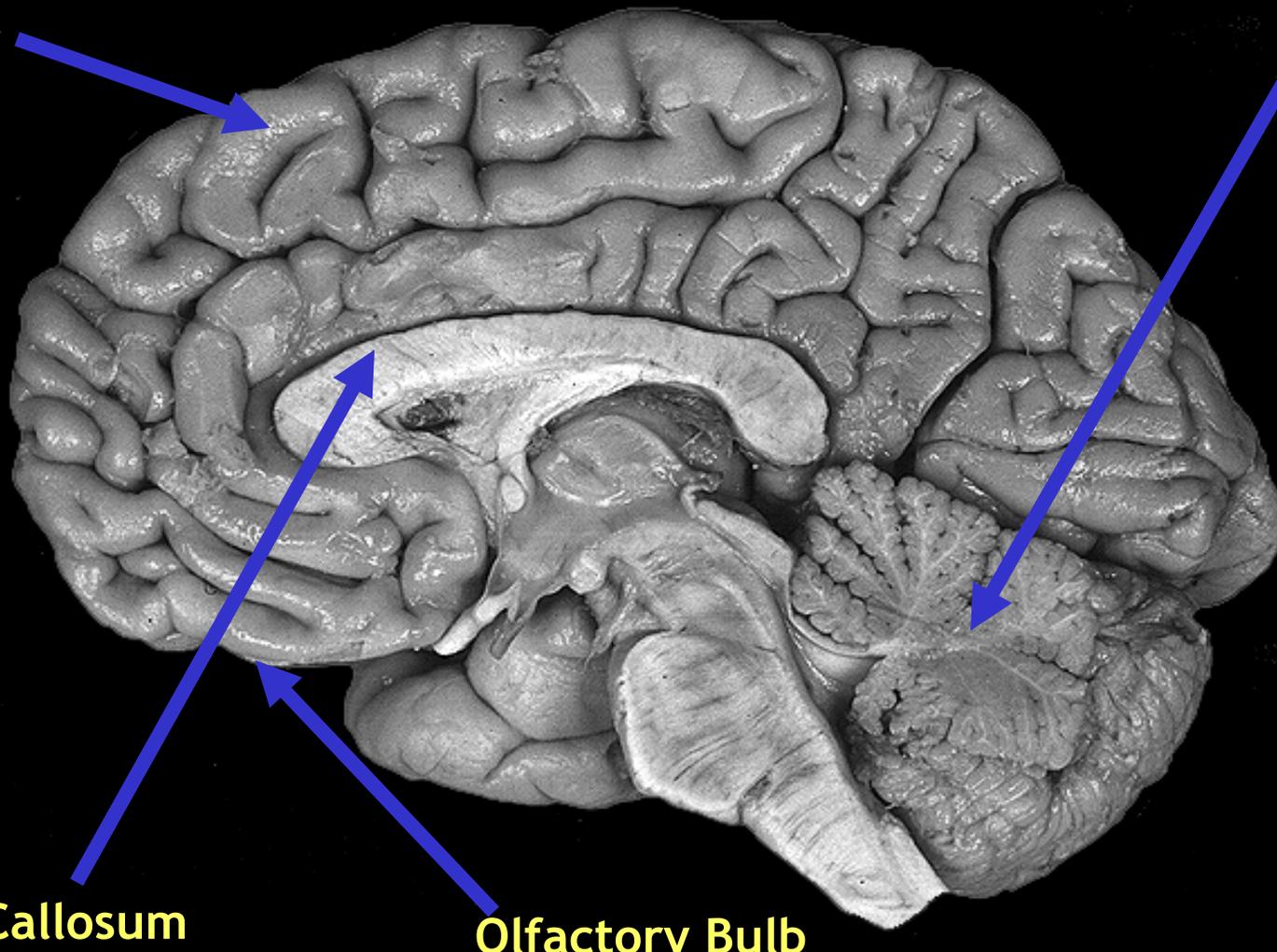
FAS



Brain Regions Affected by Prenatal Alcohol

Cerebral
Cortex

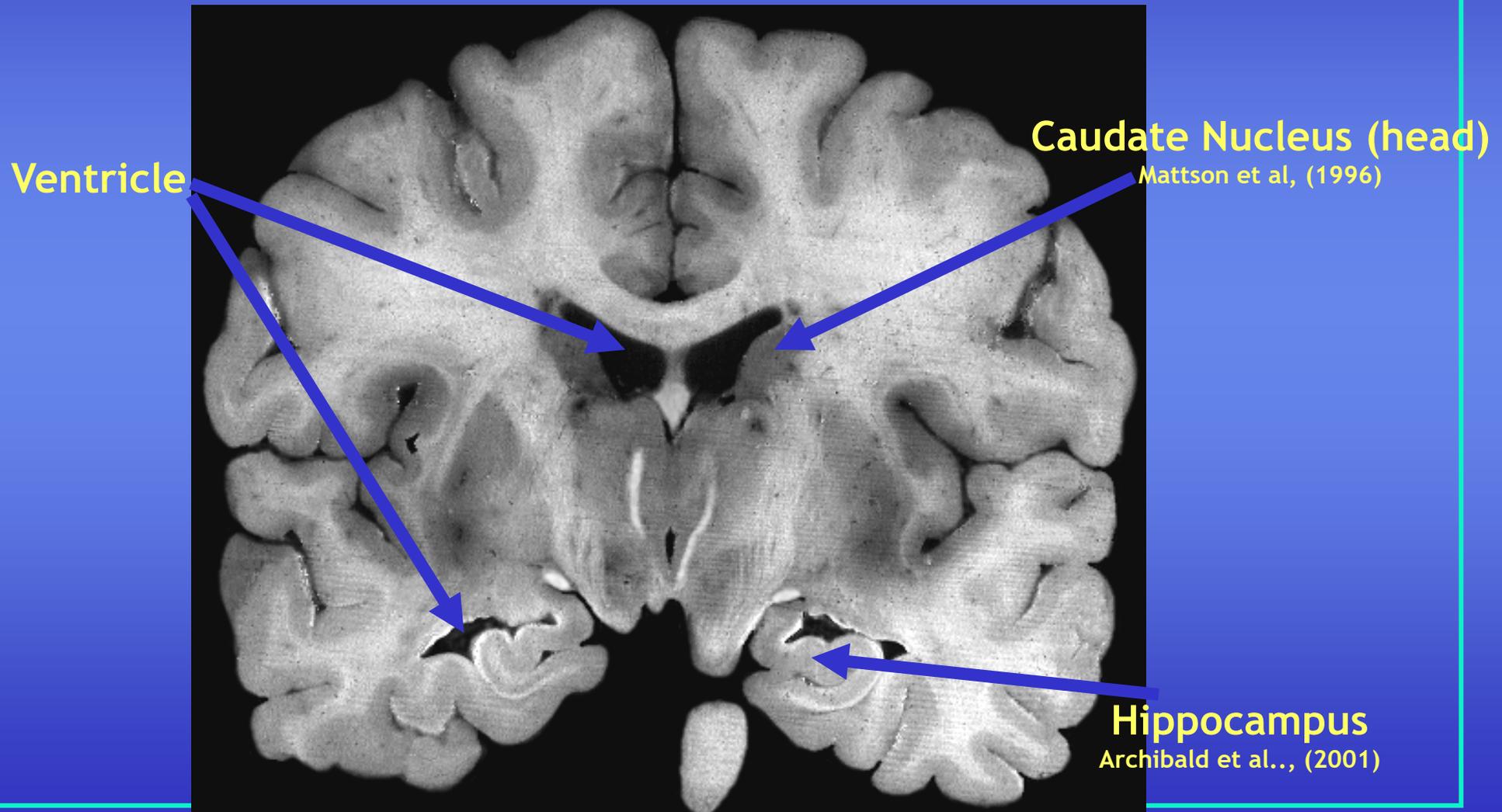
Cerebellum
Sowell et al, (1996)

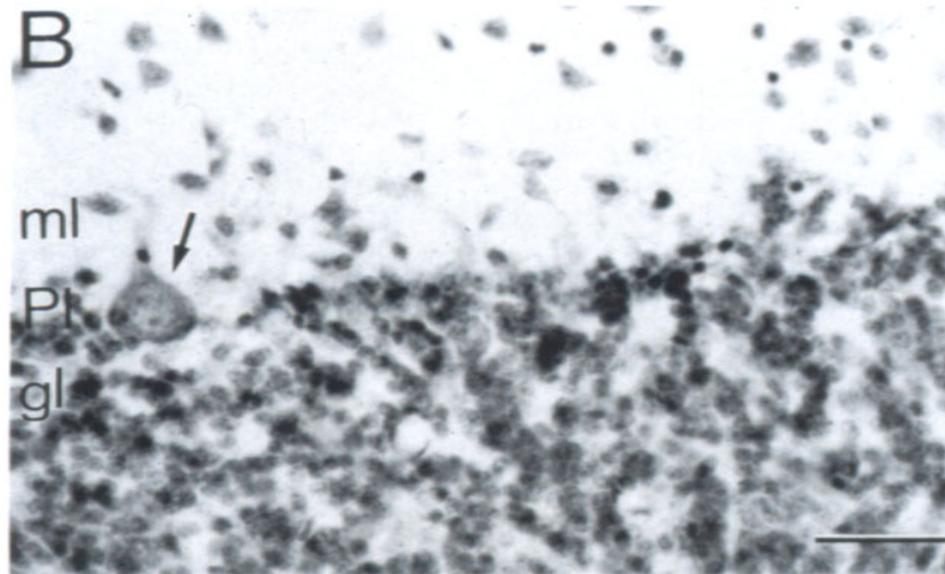
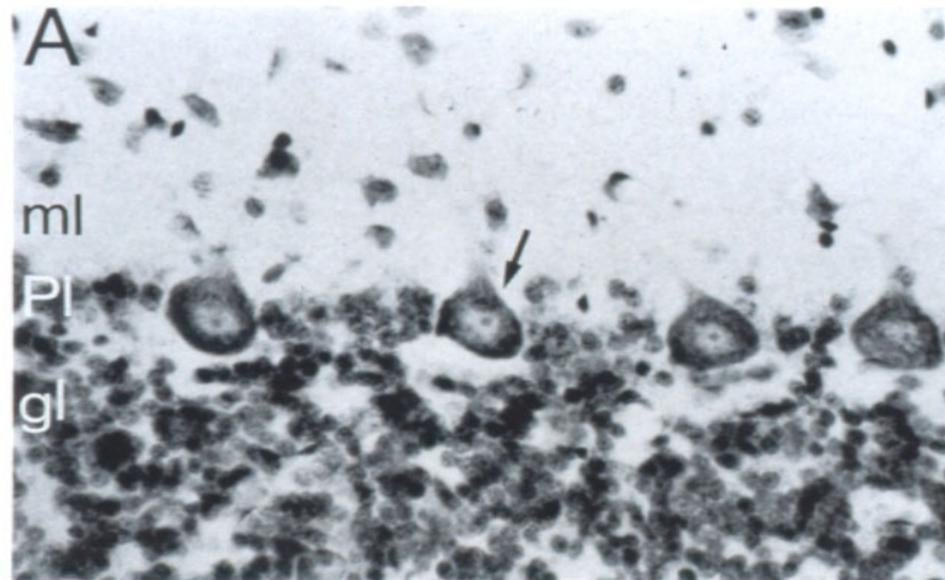


Corpus Callosum

Olfactory Bulb

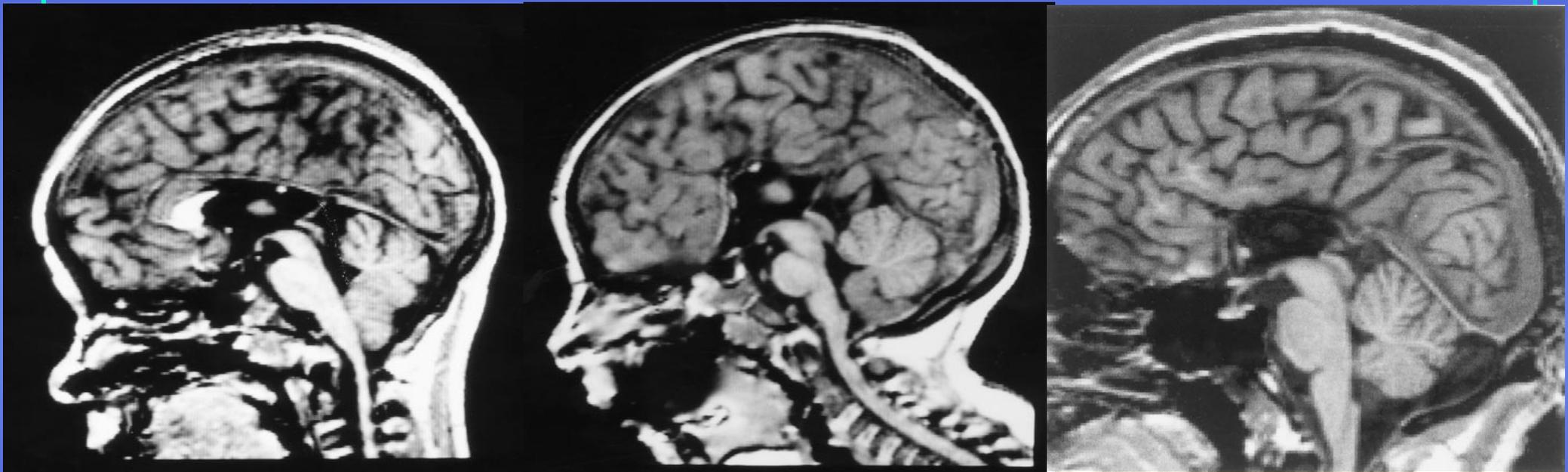
Brain Regions Affected by Prenatal Alcohol





Bonthius et. al., 1996. Purkinje cells in cerebellar cortex of 6-month old macaque. A. No alcohol in gestation. B. Weekly doses 3.3 g/kg of alcohol during gestation.

Aggenesis of the Corpus Callosum



Swayze II et al., (1997). *Pediatrics*. 99:232-240

...And morphometric studies have found excess variability in callosal shape
(see Bookstein, Sampson, Connor & Streissguth, 2002)

Resolving a Dilemma: Current Information about Alcohol-Induced Neurobehavioral Teratology

- Through multiple mechanisms, alcohol has a variety of effects (*e.g., in the developing brain, alcohol can affect cell division & proliferation, cell growth & differentiation, cell migration, & cell adhesion*)
- Brain size & morphology can be affected (*reduction or variability may occur*)
- Certain brain regions may be especially vulnerable to the effects of prenatal alcohol
- The brain may be differently organized or activated when affected by prenatal exposure to alcohol; brain function may be less efficient; neurochemistry may be altered
 - *Certainly, CNS function can be compromised, so careful neuropsychological assessment is often the key to understanding a child with FASD.*

Resolving a Dilemma: Current Information about Clinical Diagnosis & Case Definition

- A “spectrum disorder:”
FASD = FAS/ARND
 - Alcohol exposure
*(significant prenatal levels;
confirmed or strongly suspected)*
 - Growth retardation *(dropping out?)*
 - Facial phenotype *(complete in FAS only)*
 - CNS dysfunction
*(a significant pattern, occurring
in multiple domains of function;
defined now as either global
deficits or ≥ 3 domains)*
- A number of group studies have found similar deficits in alcohol-exposed children with & without the characteristic facial features... so now we think in terms of a range of alcohol effects or FASD.
- In the individual, CNS dysfunction appears highly variable, because of the way alcohol affects the developing brain.
- So... alcohol-affected individuals will have very different cognitive/learning profiles.

Resolving a Dilemma: Current Information about Clinical Diagnosis

- Alcohol effects should be considered among other etiologic factors in a biopsychosocial formulation.
- Different FASD diagnostic systems generate various labels; basic idea behind labeling is to create a way to take alcohol-related CNS dysfunction into account.
- Using DSM-IV, FASD can be placed on Axis III or Axis II, or prenatal exposures can be mentioned on Axis IV. There is now discussion of how to include FASD in DSM-V.

*What do we know about
lifespan development
in FASD?*

Energetic, highly verbal

Touching, cuddly, happy, friendly, spontaneous

Trusting, great sense of humor

Loving, loyal, determined, committed

Caring, kind, concerned

Sensitive, helpful, affectionate

Gentle, curious, creative, persistent

Willing, athletic, highly moral, fair

Involved, loves animals, enjoys gardening

Enjoys constructing, artistic, musical

Wonderful storytellers (at times!), nurturing

Rich fantasy life, strong sense of self

Protective Factors?

Prenatal Alcohol



Primary Disability



Brain Damage



Dysfunctional Behaviors



Secondary Disabilities



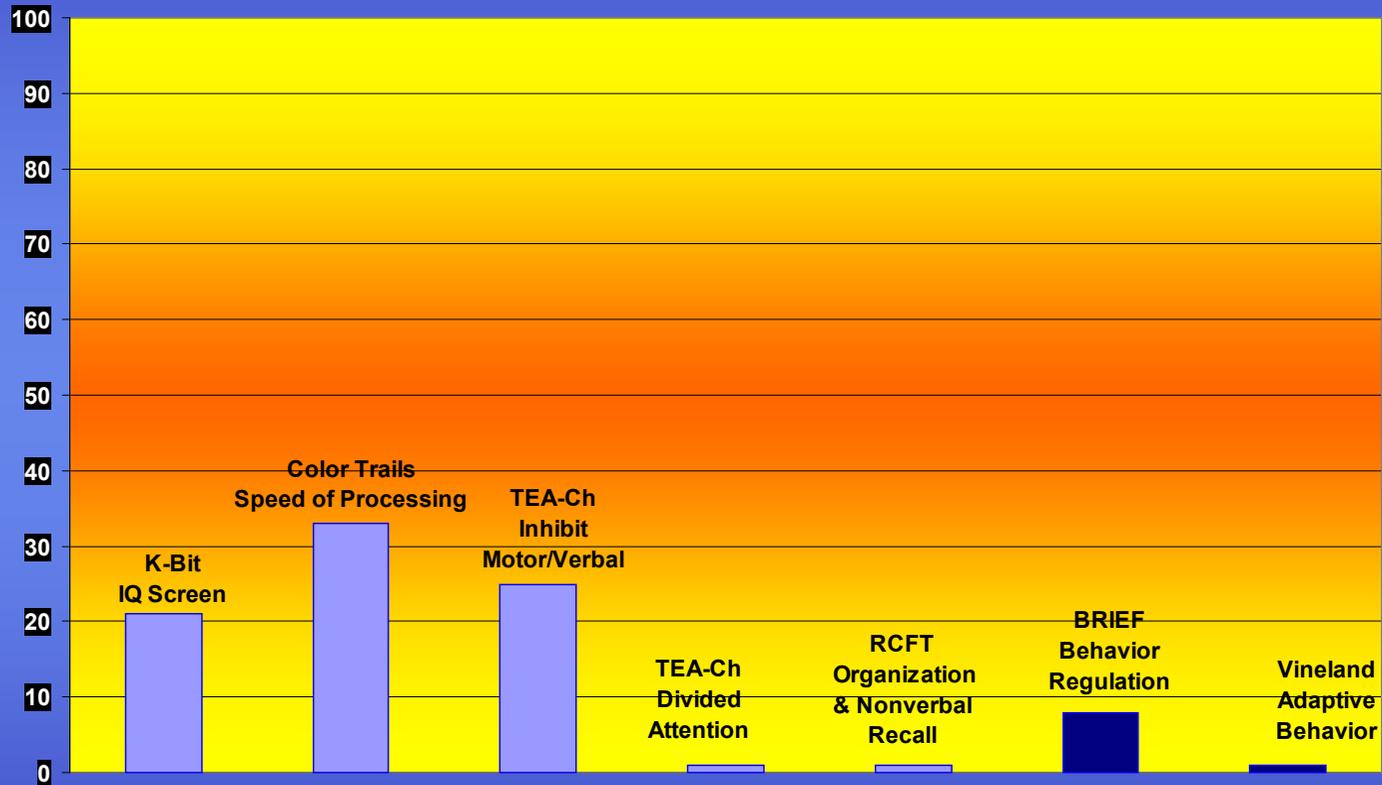
Trouble with the Law, School Disruption, Etc.

Diversity in “Primary Disabilities” in FASD

(Look for “significant” deficits across multiple domains)

- Compromised intellectual status (global deficits; uneven cognitive profile)
- Attentional deficits (especially in encoding & shifting attention, & more complex attentional skills)
- A wide range of individually variable executive function deficits
- Adaptive behavior deficits, including low functional level & difficulties with behavioral regulation (which may show a relative increase after age 8)
- Memory & learning compromise (inefficient or variable processing, slow rates of uptake, resistance to extinction of previously-learned responses)
- Visual-spatial deficits; achievement difficulties (especially in math)
- Difficulties with social communication & social cognition
- Sensory-motor integration/sensory processing differences

One Child's Profile from FMF Data



(Light blue=Child Testing)

(Blue=Caregiver Report)

Available data indicate that school-aged children with FASD show high rates of behavior problems

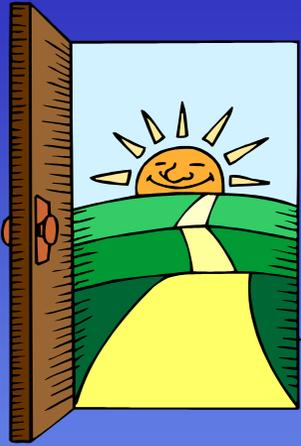
- There are behavioral commonalities in the alcohol-affected child population, with elevated rates of:
 - Attention deficits & high activity level
 - Aggression and (apparently) oppositional acts
 - Disorganized and dysregulated behavior
 - Social problems
- *In the early school years, interventions focused on decreasing these behavior problems may help improve the child's later life trajectory*

Available data indicate that adolescents/adults with FASD show high rates of “secondary disabilities”

- *Mental health problems/treatment (95%)*
 - Disrupted school experiences (61%)
 - Inappropriate sexual behavior (49%)
 - Trouble with the law/corrections (60%)
 - Alcohol & drug problems (35%)
 - Confinement (correctional; MH; d/a) (35%; 23%; 15%)

→ *But these are from a clinical sample that likely received limited/inappropriate intervention!*

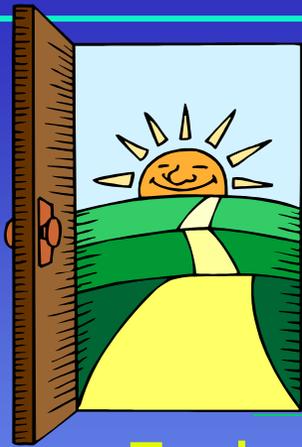
[See Streissguth et al., in Developmental & Behavioral Pediatrics, 25(4), 2004]



Developmental disabilities literature suggests that for each person made vulnerable by fetal alcohol exposure, intervention should:

- Limit stressors
- Enhance protective factors

What protective factors have been identified in research so far?



Major “protective factors” against later secondary disabilities for individuals with FAS/ARND

- Early diagnosis of the child
- A caregiving environment (in middle childhood):
 - *That is nurturant, stable, appropriately structured & stimulating, & geared to the child’s developmental needs*
- Not living with parents who abuse substances
- Being safe from violence
- Appropriate social services

(See Streissguth et al., in Developmental & Behavioral Pediatrics, 25(4), 2004)

Dilemma #3: Current data offer only a beginning picture of lifespan development in FASD

- Human samples are usually drawn from clinical databases from patients seeking help, & most data are cross-sectional
- The longitudinal prospective “Seattle 500 Study” (*birth to 21+ so far*) offers a view of the effects of moderate prenatal alcohol exposure after covariate adjustment
- Other longitudinal studies are beginning to teach us about developmental processes that involve the effects of prenatal alcohol exposure

*Let's examine
young adulthood data
from the longitudinal
prospective study
on the effects of
moderate drinking
during pregnancy...*

21-Year Neurocognitive Exam & Interview

Outcomes most salient for a composite score describing prenatal alcohol:

Arithmetic..... Poorer

Non-Verbal Intelligence..... Poorer

Reading Comprehension..... Poorer

Auditory Attention..... Poorer

Spatial-Visual Function Poorer

IQ..... Lower

- Aspects of cognitive/learning performance most “salient” for alcohol exposure appear related (but are not identical) at different points in development.
- The alcohol-outcome relationship:
 - Is significant across the lifespan
 - Is generally dose-dependent
 - Is without clear thresholds
 - Holds up after covariate adjustment
- The neurobehavioral effects are:
 - Stronger than physical effects of alcohol exposure
 - Not mediated by birth weight

25-Year Mental Health Findings

- Using longitudinal prospective group data, SCID-1 (N=401) & SCID-2 (N=400) interviews were performed at age 25
- Comparison of the top 10% alcohol-exposed individuals vs the lower 90% showed:
 - Risk ratio: 7.4 for paranoid
 - Risk ratio: 4.9 for passive aggressive
 - Risk ratio: 3.2 for antisocial
- Even when risk ratios were computed for samples restricted to middle/upper SES, subjects born to non-smoking mothers, or non-marijuana-using mothers, prenatal alcohol exposure still at least doubles the risks for mixed personality disorders
- *Prenatal alcohol exposure also produced risk ratios above 2 for other mental health symptoms, including many Axis I disorders detected by the SCID-1*

*What can we learn
from longitudinal
studies focusing on
the developmental
process?*

Longitudinal Studies of the Emergence of Internalizing Problems in Children Born Moderately to Heavily Alcohol-Exposed

- Lower-risk sample:

- 44 mostly white, middle class, married birth mothers & their children, moderate to heavy drinkers (but not defined at that time as high-risk drinkers)
- At age 1: More heavily drinking women had infants who showed higher levels of negative affect in interaction, the women interacted in ways less responsive & developmentally stimulating, & their children had higher levels of insecure attachment
- At age 5-6: Children born more heavily exposed had higher rates of self-reported depression (19% clinically significant; 1% in normative samples)
- So: There is a complex interaction between prenatal & postnatal risk factors, but findings could NOT be explained by current maternal drinking practices

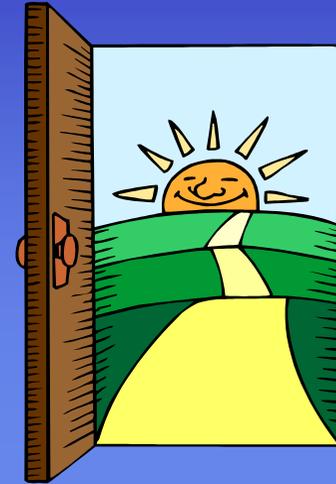
- Higher-risk sample:

- 42 mostly African American, mostly single birth mothers & their children divided into abstinent-to-light & moderate-to-heavy drinking groups
- In infancy: Significant association between attachment security & gestational drinking (80% insecure in moderate-to-heavy group vs 36%)
- At age 5-6: Children born more heavily exposed had higher rates of self-reported depression (40% clinically significant)
- So: Prenatal alcohol exposure seemed to predispose children to show more negative affect in their mother's presence, & these mothers were less emotionally connected to their children. Quality of mother-child relationship can mediate the impact of prenatal exposure on security of attachment.

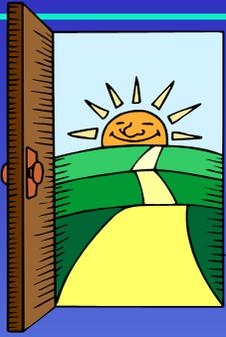
*Let's examine
data from a clinical
sample of children
with FASD & families
highly likely to seek
mental health services...*

Families Moving Forward

A tailored intervention for families raising school-aged children with FASD and behavior problems



*The FMF research project offers helpful data...
from a group of 52 families in need of clinical services...
seen in an initial test of intervention efficacy...*



FAS DPN Families Moving Forward Project Team

Intervention Research Director & Developer: Heather Carmichael Olson, Ph.D.

Principal Investigator: Susan Astley, Ph.D., Epidemiologist & FAS DPN Director.

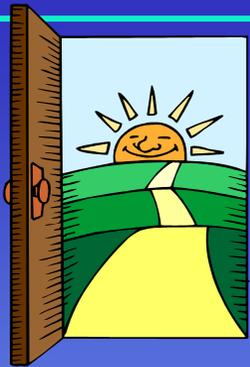
FMF Intervention Team: Allison Brooks, Ph.D., Kathleen Lehman, Ph.D., Julie Quamma, Ph.D., Minu Ranna, MSW.

FMF Consultants: Truman Coggins, Ph.D., Carol Davis Ph.D., Julie Gelo (family advocate), Beth Gendler, M.S.W, Tracy Jirikowic, Ph.D., Julia Murray, M.D., David Rosengren, Ph.D.

FMF Research Team: Rachel Montague, B.A., Research Assistants & Students, Jill Crank, B.A., Christy Kimpo, Ph.D., Paul Kraegel, MSW, Anika Trancik, M.A., Mary Kratz, M.A., Donna O'Connor, M.A. FAS DPN Staff: Heather Wicklein Sanchez, Kristen Daniels, Joshua Hunter).

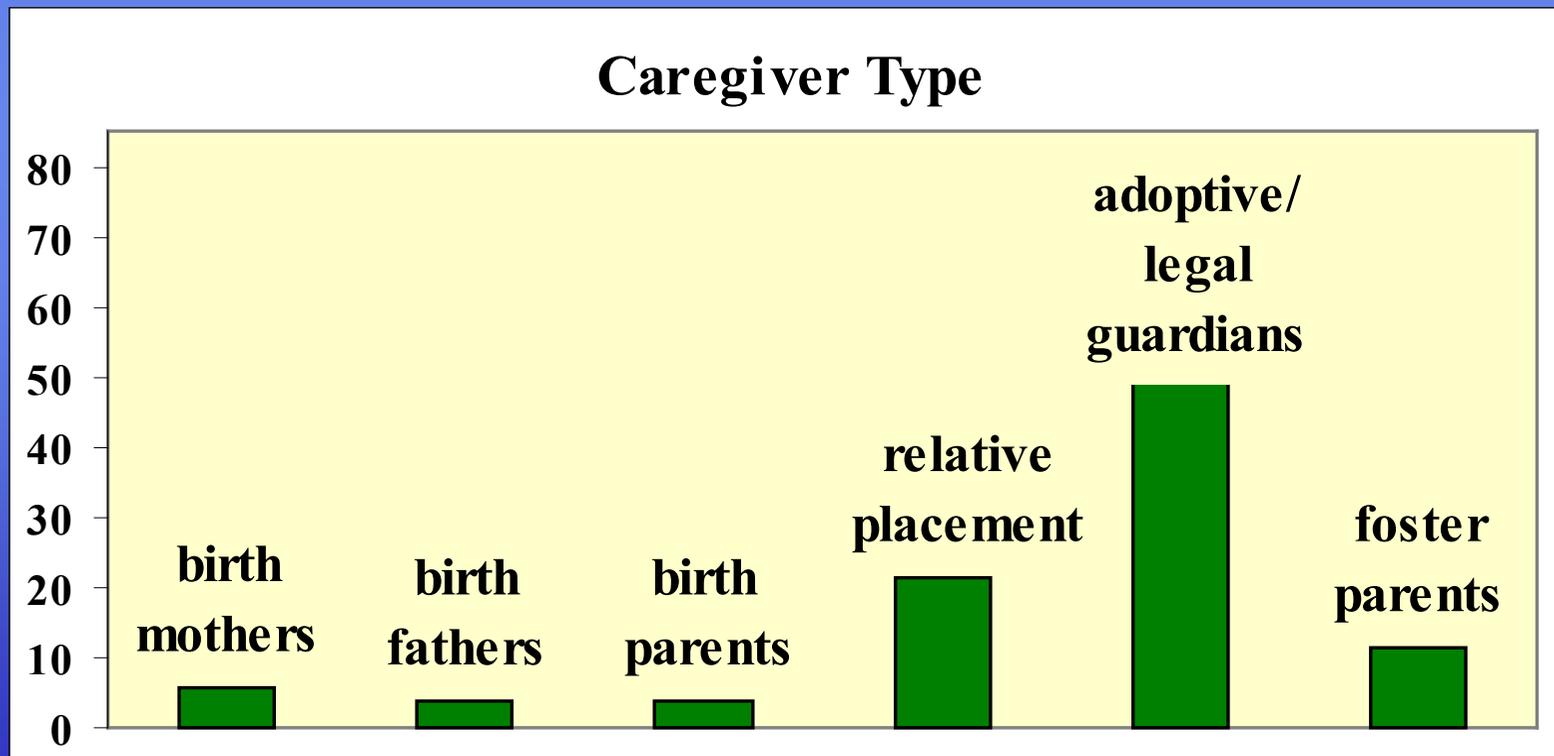
Community Advisory Board: Shelley Leavitt, Ph.D. (Institute on Family Development), Vicky McKinney (FAS Family Resource Institute), Gene McConnachie, Ph.D. (Division of Developmental Disabilities), Pearl Wollin, MSW (UW School of Social Work).

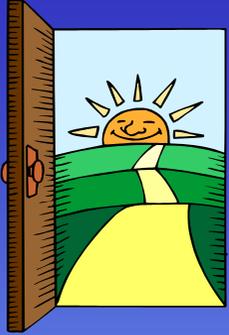
Funding: Centers on Disease Control and Prevention



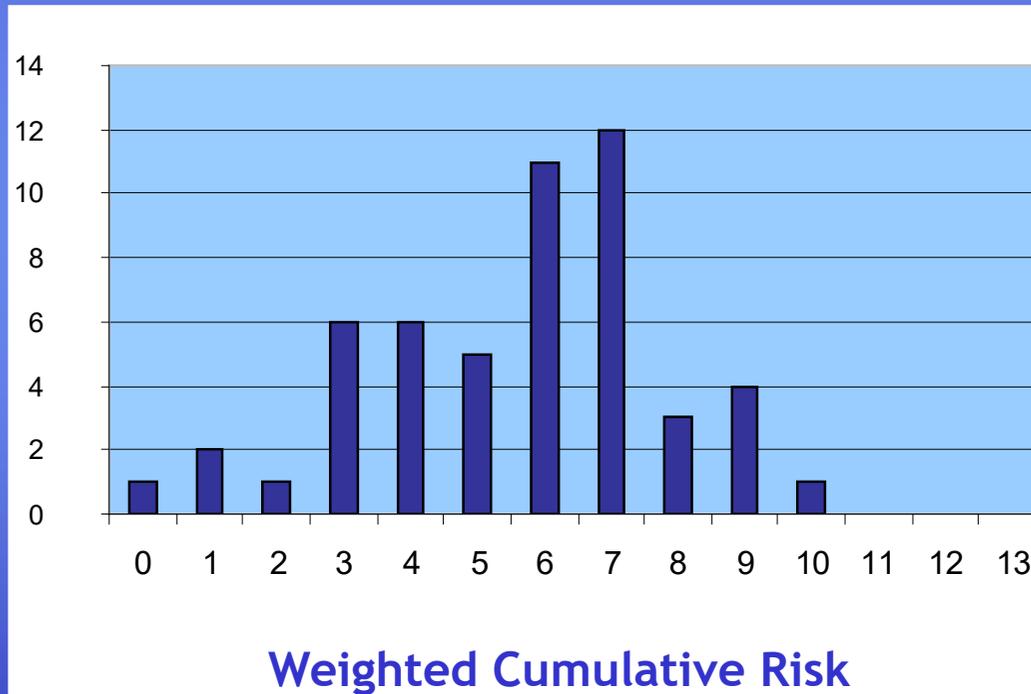
FMF Data on Family Diversity

Income: Range: \$10,000-\$350,000





FMF Data on Child Postnatal Environmental Risk



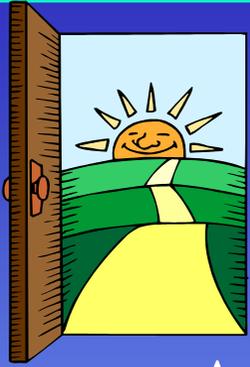
Weighted Cumulative Risk

Cumulative risk includes:

- Family composition (1 vs. 2 parent)
- Total # of children in home
- Number of stresses (parent separation, living in home with substance abuse)
- Family income risk level
- Caregiver education level
- Number of placement changes
- Presence of major traumas
- Presence of abuse and/or neglect

**Range is from 0-13*

[2004 data from Families Moving Forward Project (N=52)]



FMF Child Behavior Problems

Age at baseline:

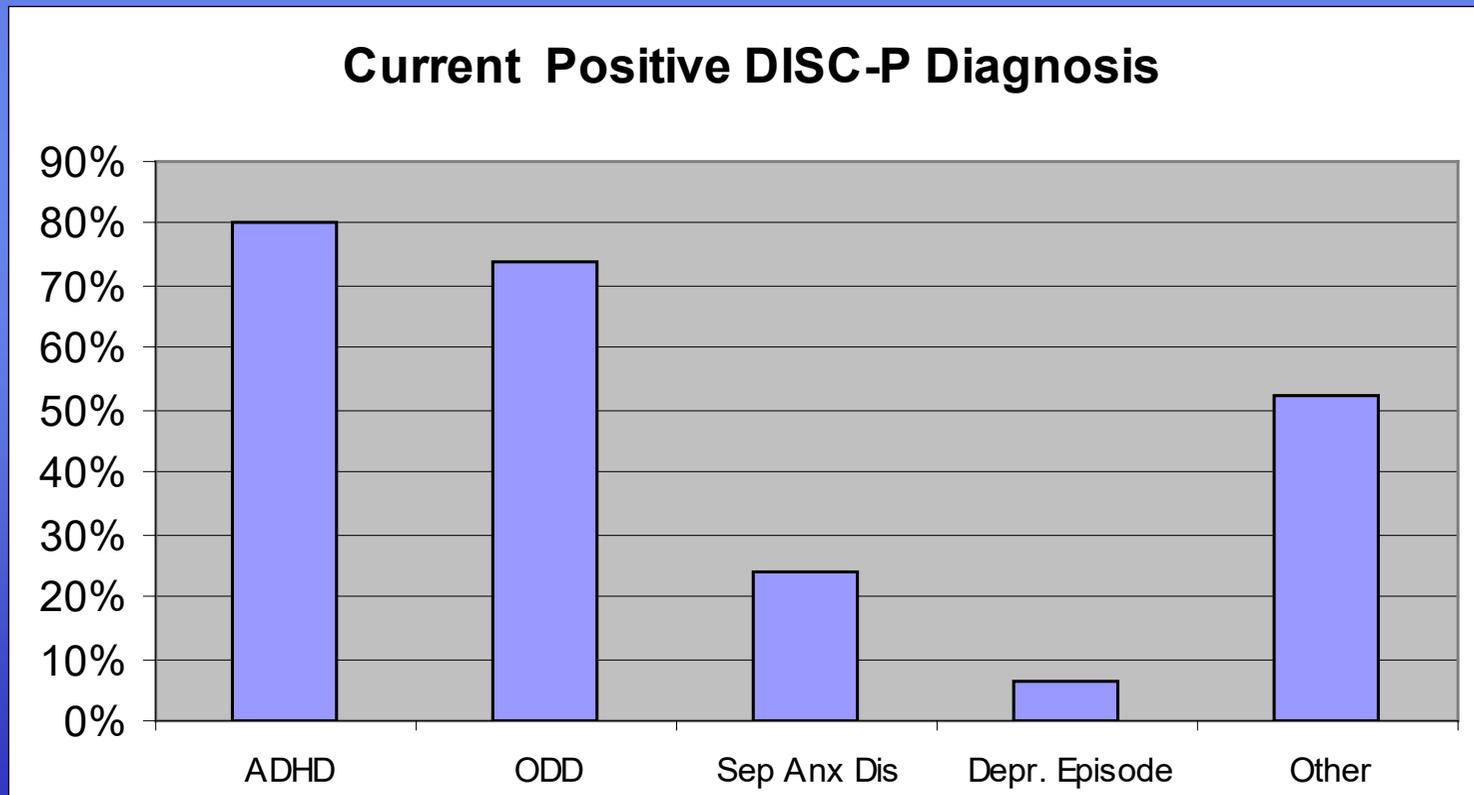
Sample mean = 8.54, SD = 2.03, Range = 5-11 yrs

Project Diagnosis: 25% FAS; 75% ARND

CBCL Subscale (N=52)	Mean T	SD
Externalizing	69.92	6.24
Internalizing	64.94	8.93
Aggression	70.85	8.34
Attention Problems	71.50	8.72
Social Problems (N=44)	68.64	8.96



Children with FASD & behavior problems were given these psychiatric (& other) diagnoses & labels



Families
Moving
Forward
data,
[N=46]



FMF data show families often report important needs that aren't being met.

...What do they tell us?

- Intervention should include:
 - *Help from the schools (IEP, classroom modification & accommodations, OT/SLP services, social skills coaching)*
 - *Extended time with a professional who can explain child learning & behavior, & offer useful behavioral strategies*
 - *Time to process issues such as “looking forward,” self-care, respite, & what linkages are needed*
 - *Linkage to resources such as medication management*
 - *Parent-to-parent support*

An important assumption for the childhood years...

Interventions taking into account “primary disabilities,” & aimed at enhancing the child’s adaptive function (& supporting caregivers), may help maintain developmental progress.....

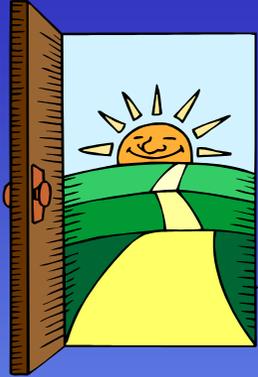
...& reduce later “secondary disabilities.”

FMF Child Cognitive & Adaptive Function, & “Everyday Memory”

Measure	Mean	Range	SD	N
K-BIT (IQ Estimate)	94.27	75 - 130	12.48	48
Vineland ABC (Adaptive)	66.00	42- 93	11.19	51
Rivermead Behavioral Memory Test (N = 52)	42.3% “normal” 36.5% borderline/poor memory 21.2% impaired (moderately/severely)			

FMF Child Attention & Executive Function

Measures	Mean Age SS	Range Age SS	SD Age SS	N
TEA-Ch Walk/Don't Walk <i>Sustained Attention/Response Inhibition</i>	5.97 [3.3-6.7 %ile]	1 - 14	3.47	40
TEA-Ch Opposite Worlds <i>Attentional Control/Switching</i>	6.49 [6.7-12.2 %ile]	1 - 15	3.17	43
TEA-Ch Sky Search DT <i>Sustained/Divided Attention</i>	4.84 [1.5-3.3 %ile]	1 - 17	4.10	38
BRIEF GEC (Parent Report) <i>Global Executive Functioning</i>	T=74.48 [95.5 %ile]	54 - 90	7.66	52



FMF Caregiver Stress

Data show 92% of parents report clinical levels of child-related stress
(& some have high stress in various domains!)

PSI Domain	Mean (%ile)	Range (%ile)
Parent-related	55.69	6-99
Child-related	93.90	39-99
Life Stress	50.38	1-97
Total Stress	81.33	14-99

Intervention in the early years

- Early diagnosis & intervention
- Understand the child's deficits & functional level— Reframe!

- Early stable, safe home placement
- Good quality caregiver-child interactions
- Good supervision & structure
- Caregiver support & respite!
- No substance abuse in the household

- Accommodations
- Careful support for development of attention, memory, social language, & adaptive function
- Good home-school partnership

Intervention in childhood & adolescence

- *Continue everything that was important in the early years, especially knowing the child's functional level—Reframe!*
- Obtain additional diagnoses, but be sure to see the WHOLE picture
- Neuropsychological/functional assessment & specialized behavioral consultation
- Have firm rules about substance use
- Plan leisure time & extracurricular activities as carefully as everything else
- Adapt the school curriculum, & include a focus on emotional well-being
- Predictable classroom routines, seamless inclusion, supportive MDT

*A point before we start
discussing the risk of
secondary disabilities:*

*It is likely that secondary
disabilities can be
lessened with appropriate
intervention & advocacy...*

Secondary Disabilities Research Study (N=415)

... Secondary disabilities are the consequences of primary disabilities, including mental health problems, disrupted school experiences, trouble with the law, alcohol & drug problems, being homeless, problems with parenting, & so on...

- Patients with FAS (n=155) or “FAE” (ARND) (n=260)
- Age range 6 to 51 years
- Life history interview (LHI) administered to parent or caregiver

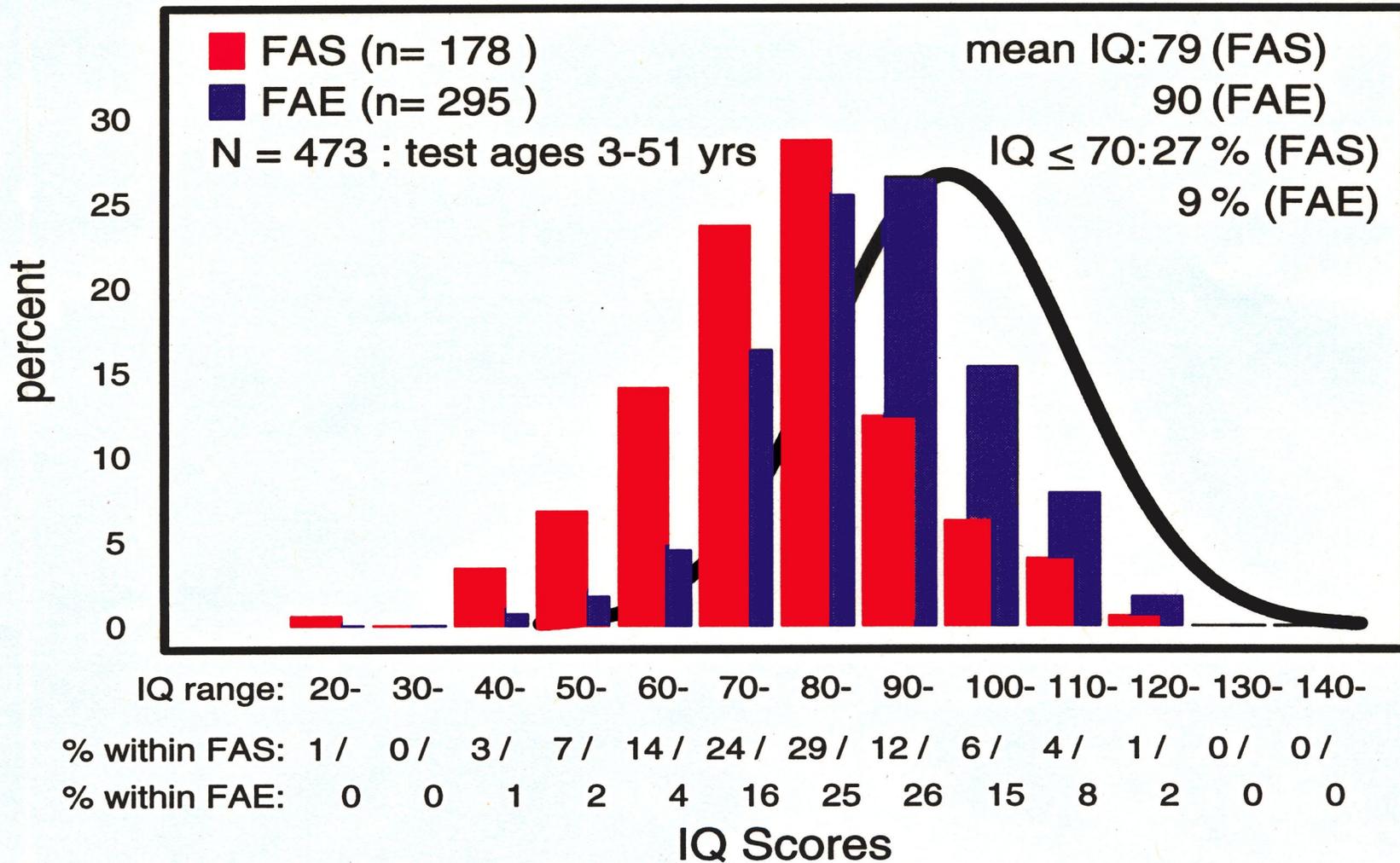
Issues: Pioneering study, but no comparison group;
Individuals in study perhaps did not receive appropriate intervention
Diagnostic systems still being formulated;
Cohort not necessarily representative of larger population;
Relatively large percentage of Native American & white

Experiences of Individuals with FASD 12 Years & Older

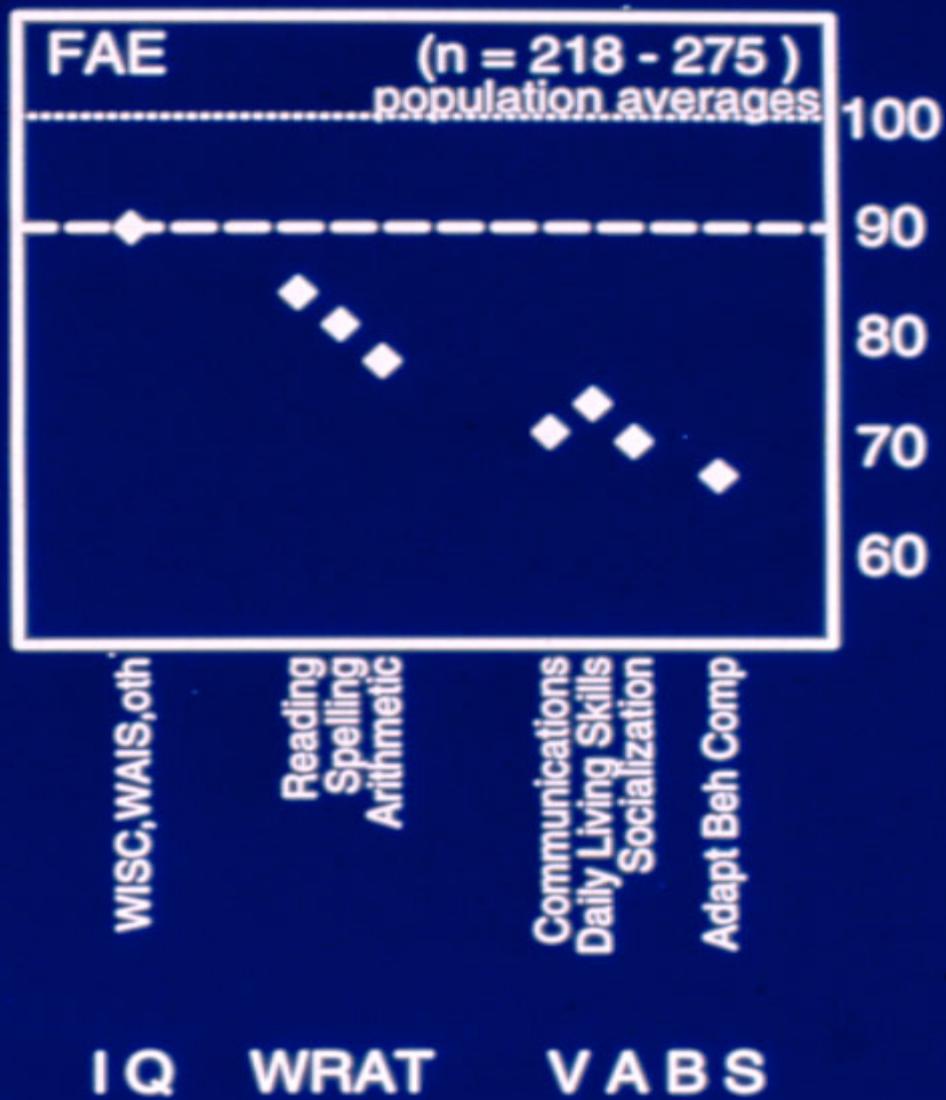
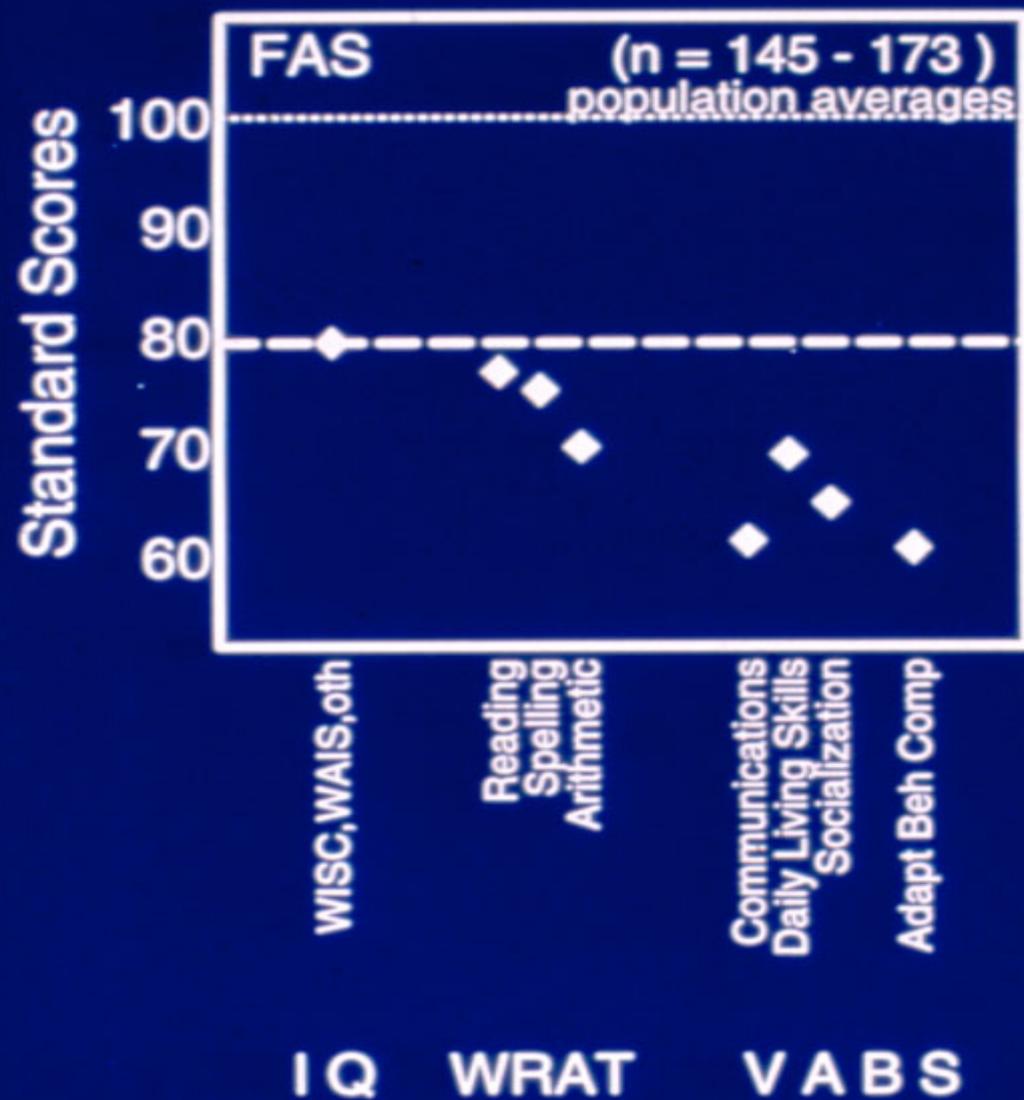
- 72% experienced violence against self (physical or sexual abuse, &/or domestic violence)
 - 50% lived at least 30% of life with a person with an alcohol problem
 - 38% lived less than 2.8 years per household
-
- 44% applied for & denied DDD
 - 28% applied for & denied SSI
 - 12% diagnosed before 6 years old

[See Streissguth et al., in CDC Final Report, 1996)]

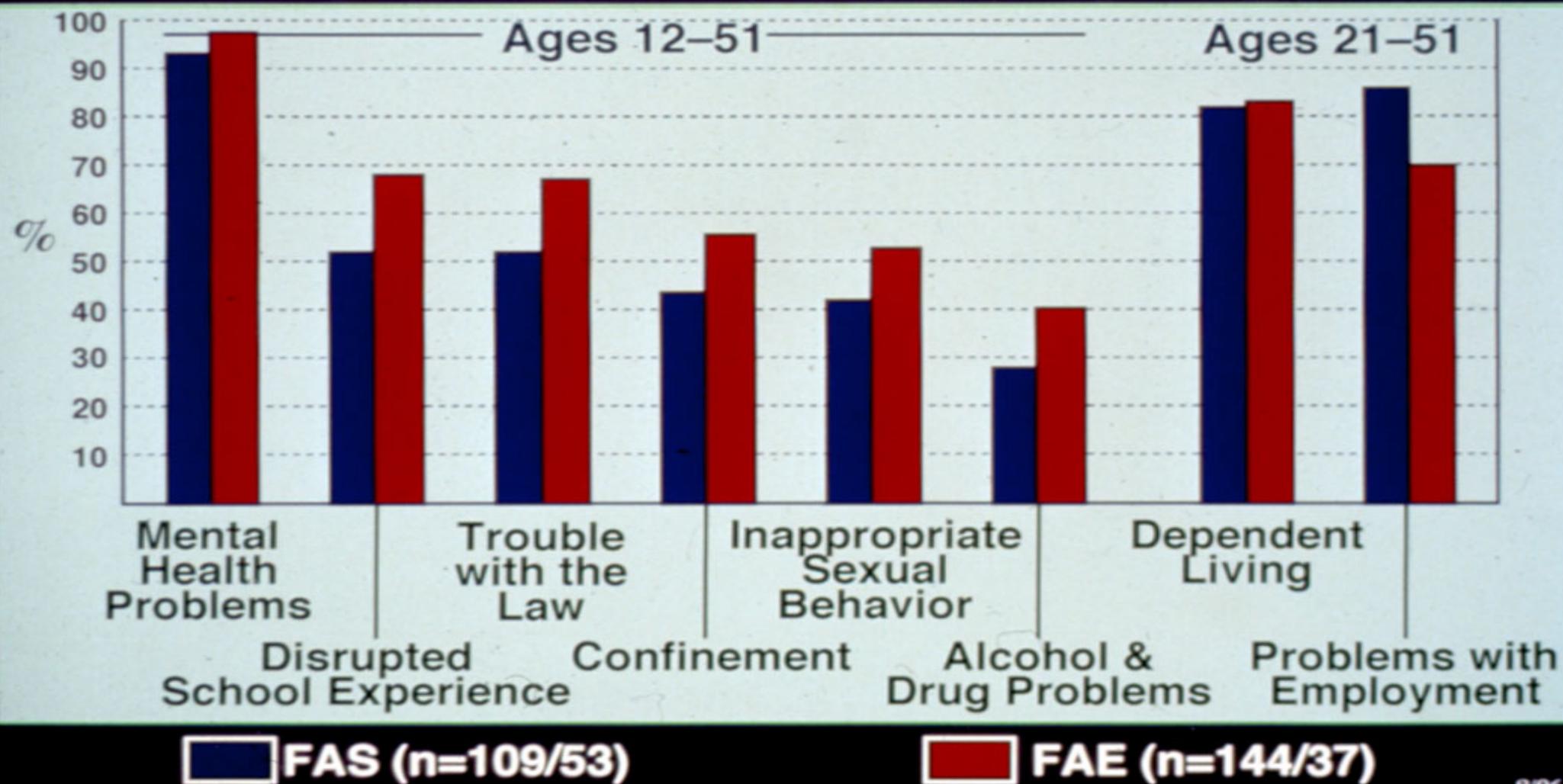
IQ distributions in the Primary Disabilities Sample: FAS and FAE



IQ, WRAT, VABS: FAS and FAE

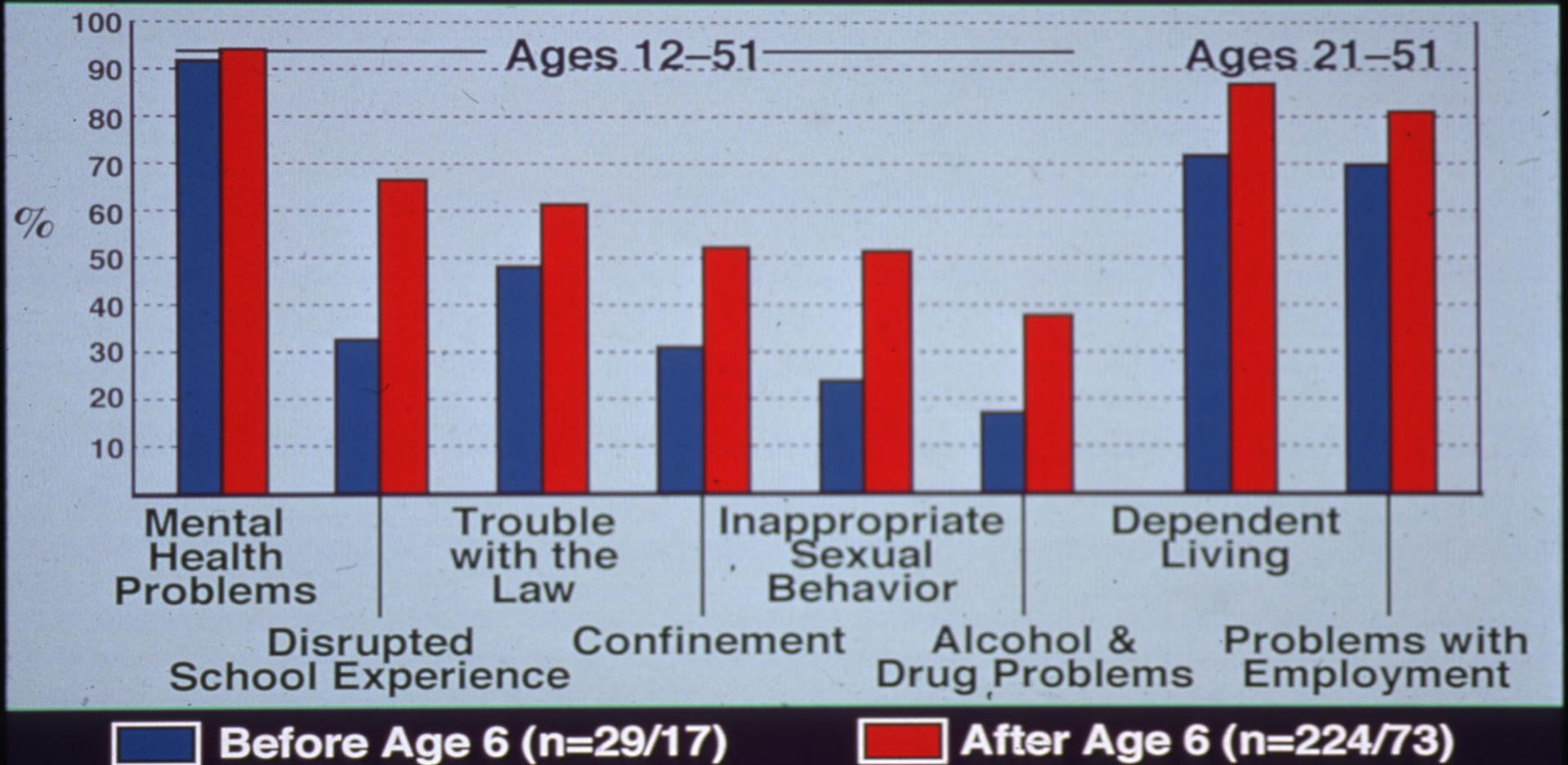


HISTORY OF SECONDARY DISABILITIES Among Clients ≥ 12 Years Old By Diagnosis



HISTORY OF SECONDARY DISABILITIES

Adolescents & Adults x Age at Diagnosis



Lifespan Prevalence of Secondary Disabilities & Sequelae FAS/FAE ages 12–51 yrs (n=253)

Disrupted School Experience 61%

Suspended 48%

Dropped Out 30%

Expelled 25%

Those with disrupted school experiences were more likely to show other secondary disabilities.

Lifespan Prevalence of Secondary Disabilities & Sequelae FAS/FAE ages 12–51 yrs (n=253)

Trouble with the Law

60%

Arrested

44%

Charged

41%

Convicted

30%

*Trouble with the law was more likely for those with higher IQ:
“Normal” (>85) (85%); Borderline (55%); Intellectually Impaired (48%)*

Only 7 of 90 adults with FASD
were able to live independently
and without major employment
problems

First Signs of Mental Health Problems

6 – 51 Year Olds (n=402)



MALADAPTIVE BEHAVIORS (VABS) ADOLESCENTS & ADULTS WITH FAS/FAE

CDC Study: N = 206

Poor Concentration & Attention	84%
Impulsivity	82
Stubborn or Sullen	68
Social Withdrawal	59
Lies, Cheats, Steals	59
Negative or Defiant	55
Periods of High Anxiety	52
Shows Lack of Consideration	51
Dependency	49
Cries or Laughs Too Easily	45
Poor Eye Contact	45
Overly Active	42
Teasing / Bullying Behavior	41

Significant Levels of Maladaptive Behaviors: 81%

Mental Health Problems in Adults with FASD

- Famy, Streissguth, & Unis (1998)
[N=23; 11 with FAS & 12 with ARND]
 - Used the SCID-1 & SCID-II
 - 92% Axis I disorders
 - Most common: Alcohol/drug dependence (60%), depression (44%), psychotic disorders (40%)
 - 48% Axis II disorders
 - Most common: Avoidant (29%), antisocial (19%), dependent (14%) personality disorders

Suicidal Behavior in Adolescents & Young Adults with FASD

- Huggins, O'Malley, Connor, Barr, & Streissguth (in press)
[Two samples with FASD: (1) Research sample (N=11), ages 18-29;
(2) Clinical sample under psychiatric care (N=7), ages 14-30]
 - Used two self-report questionnaires assessing lifetime history of parasuicidal & suicide attempts
 - 54% in the Research sample reported at least 1 suicide attempt (18% severe; 27% moderate; 9% low-risk)
 - 100% in the Clinical sample reported at least 1 suicide attempt (57% severe; 43% moderate-risk)
 - Authors' conclusions:
 - There is risk regardless of current psychiatric care
 - Neuropsychological compromise likely contributes to suicidal behavior
 - Clinicians evaluating teens or young adults who are suicidal should routinely assess prenatal alcohol exposure
 - Clinicians treating patients with FASD should carefully assess & monitor suicidal ideation & changes in environmental & social supports

*How can neuropsychologists
working with adolescents
& adults assist individuals
potentially affected by
prenatal alcohol exposure,
& their caregivers?*

Steps to Take

- Acquire specialized knowledge about FASD
- Ask about prenatal alcohol exposure, & find those who are exposed in your caseload
- Refer for diagnosis
- Assist families or patients with the referral process
- *(especially birth families)*

- Provide neuropsychological/functional assessment
- Conduct observation of school or work performance
- Access psychiatric & mental health assessment (including suicidal ideation)
- Identify an advocate for the patient
- Work in any way you can towards multimodal intervention

Multimodal intervention in adolescence & young adulthood

- Caregiver support & collaboration
- Caregiver education
- Behavioral consultation with caregivers informed by neuropsychological/functional assessment (including observation of school or work performance)
- Targeted school, job, or correctional consultation on “accommodations” & structure
- Mental health assistance (coaching, roleplay, calming)
- Protection from violence
- Supervised living & work arrangements
- Direct teaching of functional life skills &, if needed, parenting assistance
- Linkage to community services & assistance with advocacy
 - Referral for medication evaluation when needed
 - Respite care for caregivers
 - Social services assistance
 - Supervised leisure time activities

Helpful Ideas

- Trying to train or teach a neurologically compromised individual is difficult, and can lead to burn out.
- If teaching is to be done, it must be carried out intensively, through coaching and practicing, in the context of everyday living.
- Management techniques that focus mostly on consequences, & assume that the affected individual has intact information-processing, may not work as expected.
- Seeing the problem behavior as the “thing to be changed,” rather than as a signal of a need to adapt the environment, may not work well.

adapted from Diane Malbin, 1999

Helpful Ideas

- With individuals who are neurologically compromised, traditional therapies may not work well
 - *Consequence-based parent training*
 - *Insight-oriented or cognitive therapies*
 - *Group therapy*
 - *Brief intervention*
- “Redesigning” environments, using accommodations, to promote adaptive behavior & compensate for the affected individual’s deficits, is a more promising approach

Useful Approaches

- Help individuals with FASD set realistic expectations
 - *Coaching*
 - *Assisted planning*
- Help individuals with FASD maintain emotional control & manage the behavioral manifestations of their CNS compromise
 - *Valuing & seeking help*
 - *Relaxation & cool-off techniques*
 - *Accommodations*

Adapted from Streissguth, 1997

*“Don’t tell me what I can’t do.
Help me find a way to do it!”*

Jan Lutke, 1997
