



# FAS/FASD:

## Screening, Diagnosis, and Treatment

**Ann M. Miller, PHD, LPC, NCC**  
**Hilton Garden Inn – Manhattan, KS**  
**June 6, 2014**



FAS

- **Screening**
- Diagnosis
- Treatment



## Why Screen?

- Alcohol use during pregnancy is one of the leading preventable causes of birth defects and developmental disabilities in the United States
- Even low levels of alcohol during pregnancy can have negative developmental consequences
- Screening is recommended by the US Preventive Services Task Force and the CDC



# Who Should We Screen?

- All women of child-bearing age
- Pregnant women
- Nursing mothers
- Children with suspected FAS or FASD



# Why Screen Women of Child-Bearing Age?

- Women who drink prior to pregnancy more likely to drink during pregnancy
- 53% of non-pregnant women drink, 12% binge drink
- Women may not volunteer information on alcohol intake
- Half of childbearing age women do not use birth control
- Many women do not realize they are pregnant until after the 4th – 6th week of gestation



# Why Screen Pregnant Women?

- 12% of women continue to drink while pregnant despite efforts to educate on its dangers
- Alcohol use during pregnancy, even at low intake levels, has been associated with significant negative consequences, including FASD



# Why Screen Nursing Mothers?

- Infants consume less milk when mothers consume alcohol before breastfeeding
- Exposure to alcohol in mother's milk results in infant motor development delay
- Exposure to alcohol in mother's milk is shown to interrupt an infant's sleep/wake pattern
- Early alcohol exposure may increase a child's risk of addiction to alcohol



## What is a Drink?

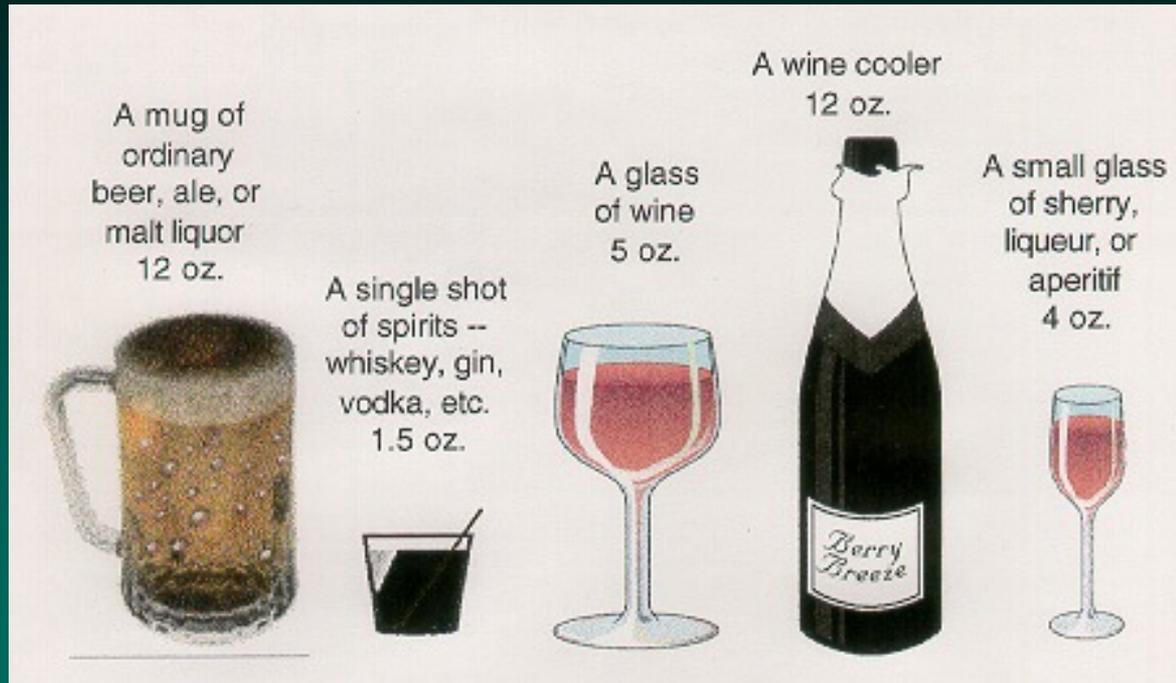
- Before screening, women should be taught what constitutes a typical drink
- A standard drink is defined as:
  - one 12-ounce bottle of beer
  - one 5-ounce glass of wine
  - 1.5 ounces of distilled spirits/liquor



# What is a 'Drink' ?

2-4

## Standard Drink





# Alcohol Consumption Among Women

- Frequent Drinker = less than 7 drinks per week
- Binge Drinker = 3 or more drinks in one sitting



# Recommended Alcohol Screening Instruments

- Best instruments should be:
  - Brief
  - Easy to administer and score
  - Reliable/accurate in target population
- To be effective they must be:
  - Used routinely with EVERY patient
  - With pregnant patients, must be administered multiple times



# Recommended Alcohol Screening Instruments

Women	TWEAK, T-ACE
Pregnant Women	TWEAK, T-ACE
Adolescents	CRAFFT



# TWEAK

1. How many drinks does it take to feel effects of alcohol? ***[Tolerance]*** ( 3 or more drinks = 2 points)
2. Have friends/relatives *Worried* about your drinking in the past year? ***[Worried]*** (yes = 2 points)
3. Ever drank first thing in the morning? ***[Eye-opener]*** (yes = 1 point)
4. Ever drank but can't remember what you said or did? ***[Amnesia]*** (yes = 1 point)
5. Ever feel the need to cut down on your drinking? ***[K(C)ut down]*** (yes = 1 point)



## T-ACE

1. Does it take more than it used to for you to get high? **[Tolerance]** (yes = 2 points)
2. Have you become **Angry** or **Annoyed** when others express concern about your use? (yes = 1 point)
3. Have you tried to **Cut down** or quit? (yes = 1 point)
4. Have you ever had a drink first thing in the morning? **[Eye opener]** (yes = 1 point)



# CRAFFT

1. Have you ever ridden in a **Car** driven by someone (including yourself) who was high or had been using alcohol or drugs? (Yes = 1 point)
2. Do you ever use alcohol or drugs to **Relax**, feel better about yourself, or fit in? (Yes = 1 point)
3. Do you ever use alcohol or drugs while you are by yourself (**Alone**)? (Yes = 1 point)
4. Do you ever **Forget** things you did while using alcohol or drugs? (Yes = 1 point)
5. Do your **Family or Friends** ever tell you that you should cut down on your drinking or drug use? (Yes = 1 point)
6. Have you ever gotten into **Trouble** while you were using alcohol or drugs? (Yes = 1 point)



# Whitner vs. State of SC

In 1997 Cornelia Whitner was sentenced to 8 years in prison for criminal child endangerment

- Baby tests + for cocaine metabolites at birth
- South Carolina recognizes a viable fetus as a “person”.



Whitner's sister and 2<sup>nd</sup> son



# Limitations of Coercive and Punitive Approaches

- Law Enforcement Measures
  - Wisconsin – pregnant women whose habitual drinking exposes a fetus to substantial risks of physical harm are taken into custody for involuntary inpatient alcohol treatment
  - South Dakota – pregnant alcohol and drug users can be committed to treatment centers for up to nine months
- Legal Decisions
  - Whitner vs. State of South Carolina (1997) – only state that permits criminal prosecution of women for endangerment of fetus



# FAS Screening with Children

- Morphological examination
  - Height
  - Weight
  - Head circumference
  - Palpebral fissure measurement
  - Philtrum assessment



# FAS Screening with Children

- Cognitive
- Adaptive/Functional
- Language
- Motor
  - Gross
  - Fine
- Social Skills
- Emotional Development
- Academic Achievements
- Most will be on an IEP
- Choosing the proper type of testing is best performed by a developmental physician, pediatric clinical psychologist or neuropsychologist



# FAS Screening with Children

- When in doubt, suspicious, or screen positive, consult:
  - Dysmorphologist or clinical geneticist
  - Neuropsychologist
  - Developmental pediatrician
- Diagnosis best made by a dysmorphologist or clinical geneticist with experience in FASD



# Considerations for Initiating Referrals

- Confirmed heavy prenatal alcohol exposure
- In the following instances, with or without maternal alcohol exposure confirmation:
  - Any report of concern by a parent or caregiver
  - When all three facial features are present
  - When one or more facial features are present along with growth deficits in height and/or weight



FAS

- **Diagnosis**
- Screening
- Treatment



# FAS Diagnostic Criteria

- Fetal Alcohol Syndrome is a **clinical** diagnosis
- CDC criteria (2004) are used as they are based upon the most current data and the definitions put forth in the FAS Guidelines for Referral and Diagnosis report.



# FAS Diagnostic Criteria

- Clear diagnostic criteria can help health care providers identify children
- With diagnosis, children can get the care and services they need
- Early identification can help prevent secondary disabilities

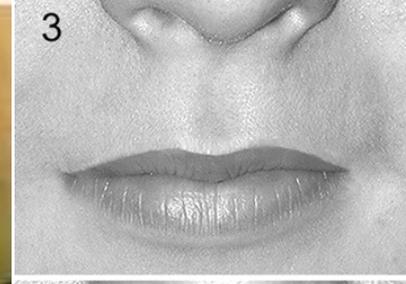
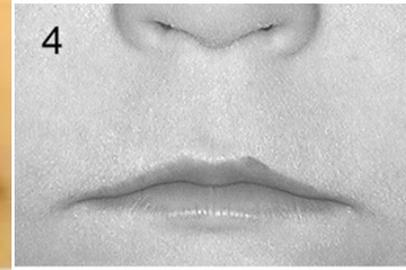
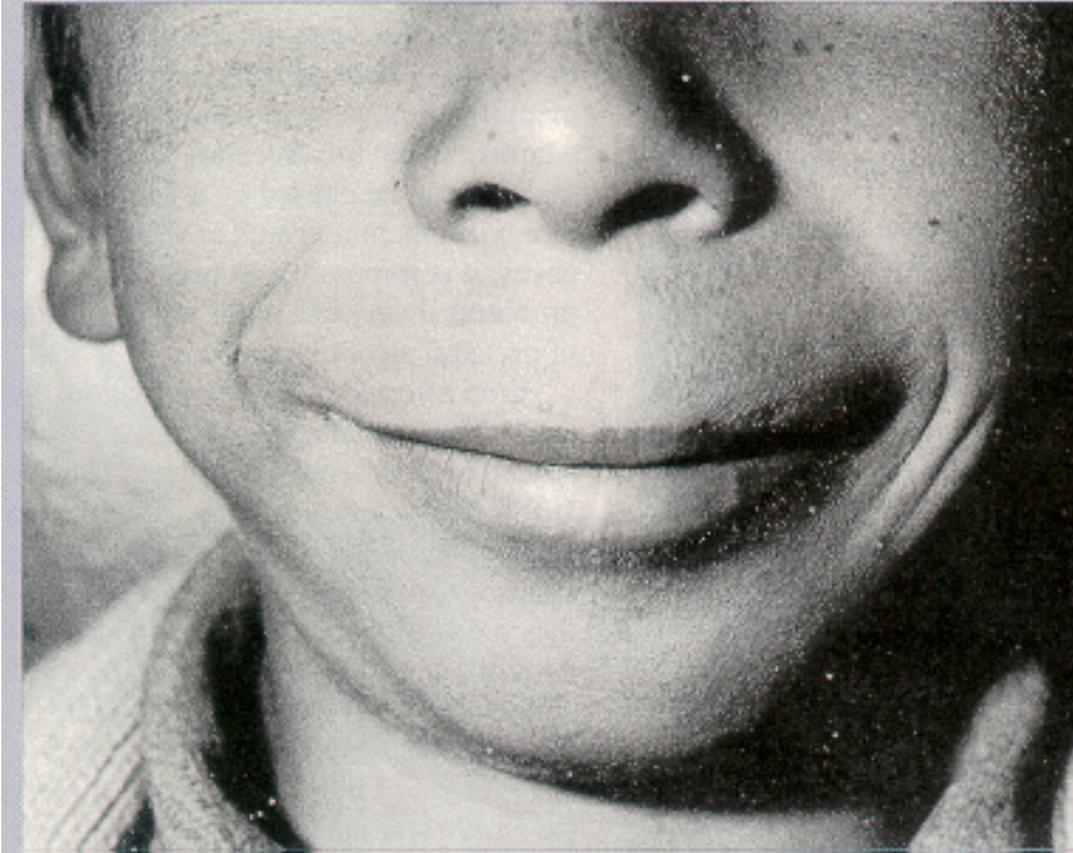


# FAS Diagnostic Criteria

- Documentation of all 3 facial abnormalities
  - Smooth philtrum
    - Lip philtrum guide 4 or 5
  - Thin vermilion (upper lip)
    - Lip philtrum guide 4 or 5
  - Small palpebral fissures
    - $\leq 10^{\text{th}}$  percentile
- Documentation of growth deficits
- Documentation of CNS or neurobehavioral disorders



# Philtrum and Vermillion





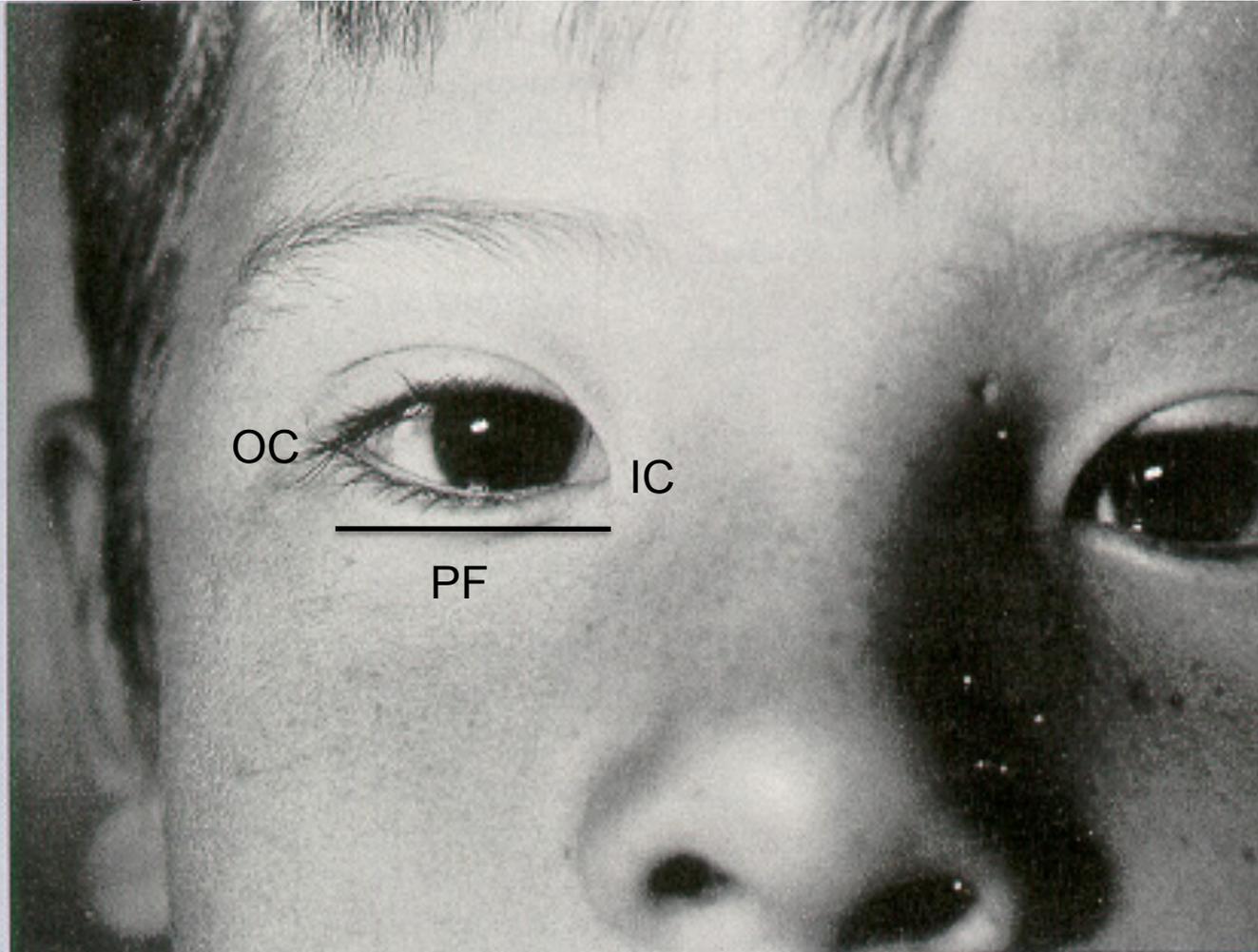
# Philtrum and Vermillion Demonstration

- Lips gently closed
- No smile
- Examiner's eyes in line with the patient's
- Match to ethnic photos



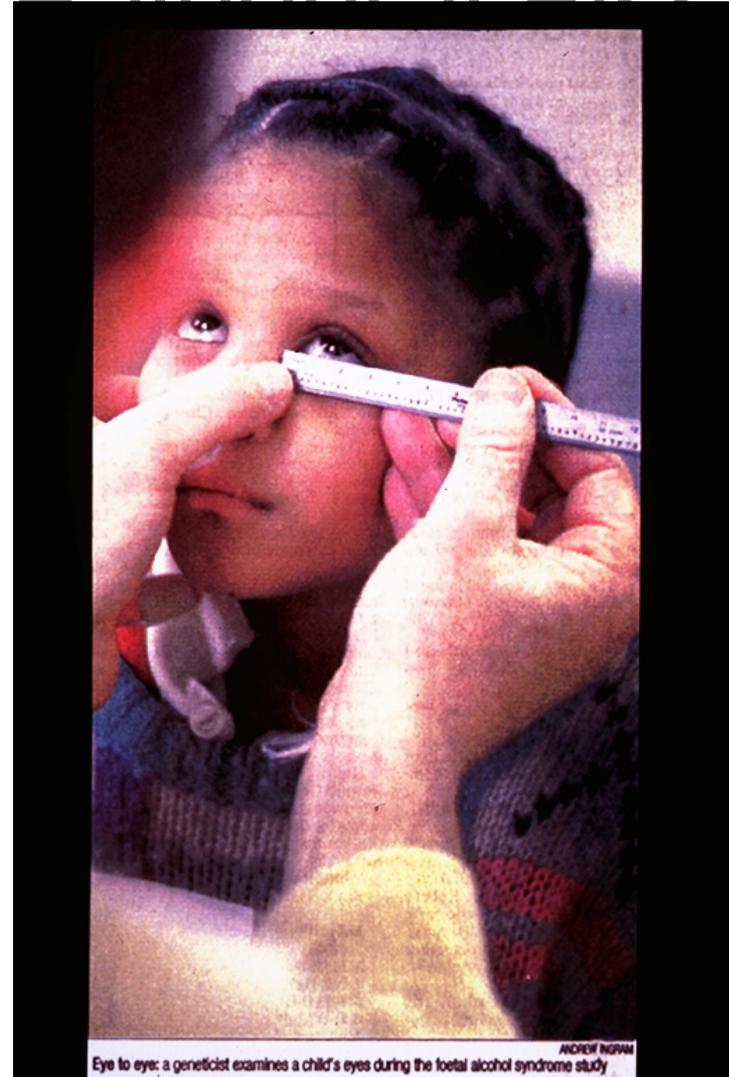


# Palpebral Fissures





# Measuring Palpebral Fissures



Andrew Ingram  
Eye to eye: a geneticist examines a child's eyes during the foetal alcohol syndrome study

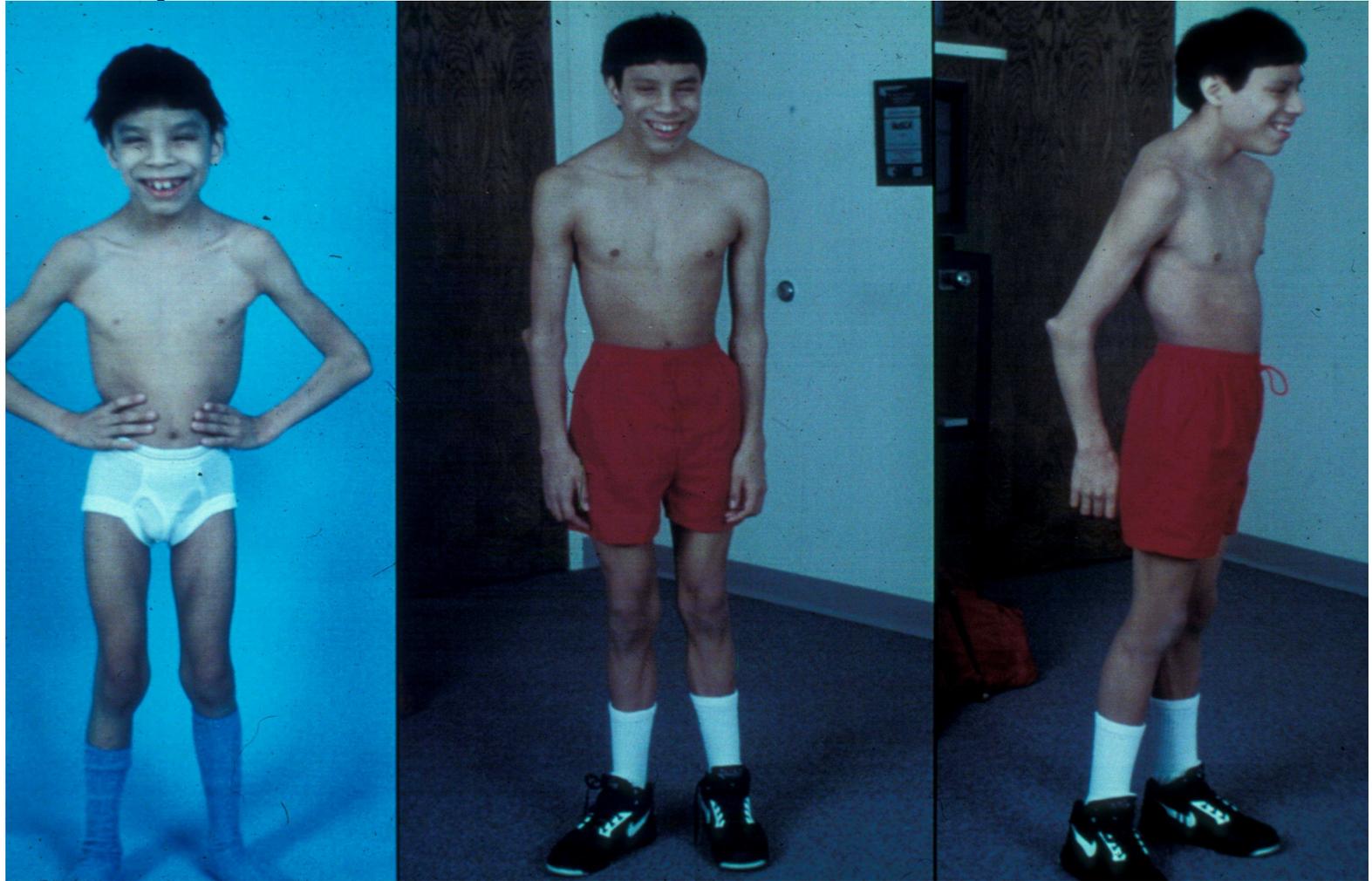


# FAS Diagnostic Criteria

- Documentation of growth abnormalities
  - Prenatal or postnatal weight and/or height  $\leq 10^{\text{th}}$  percentile
  - Adjusted for age, gender, gestational age, race, and ethnicity



# Growth in FAS - Males





# Growth in FAS - Females



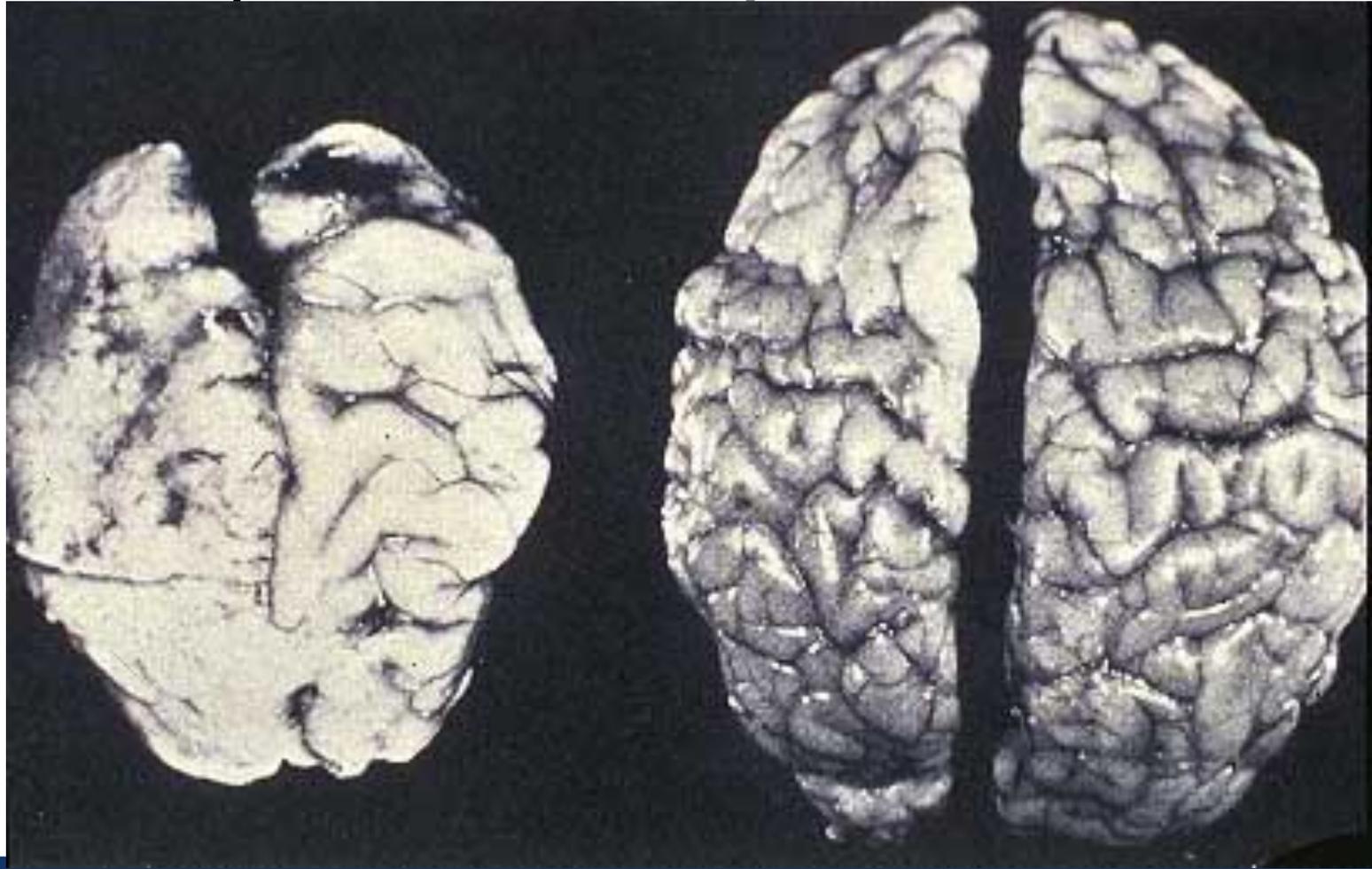


# FAS Diagnostic Criteria

- Documentation of Central Nervous System or Neurobehavioral Disorders
  - Structural
  - Neurological
  - Functional



# Brain Damage From *In Utero* Alcohol Exposure





# Head Circumference





# FAS Diagnostic Criteria

- Structural Disorders
  - Head circumference (OFC)  $\leq$  10<sup>th</sup> percentile
  - Brain abnormalities observed via
    - Imaging
    - Seizures
    - Impaired motor skills



# FAS Diagnostic Criteria

- Neurological Disorders
  - Seizures not due to postnatal insult
  - Impaired motor skills
  - Sensorineural hearing loss
  - Memory loss
  - Poor hand-eye coordination



# FAS Diagnostic Criteria

- Functional Disorders

- Below average scores on standardized instrument or clinical impression of functional deficit in one of the following domains:

- General Cognitive Deficits
- Executive Functions
- Motor Functions
- Social Skills
- Attention Deficit/Hyperactivity
- Mental Health Problems
- Other



# FAS Diagnostic Criteria

- 70% of children diagnosed with FAS will also be diagnosed with ADD/ADHD.



FAS

- Diagnosis
- Screening
- **Treatment**



# FAS/FASD – Role of Health Providers

- Primary care provider
  - Manage routine issues related to health care and FAS including
    - Behavior
    - Pharmacotherapy
    - Preventive medicine/anticipatory guidance
  - Educate/refer mother to prevent recurrence



# FAS/FASD – Role of Health Providers

- Dysmorphologist
  - Aid in diagnosis, differential diagnosis
  - Monitoring of issues related to FAS
- Developmental pediatrician
  - Evaluate over time the developmental needs of the individual



# FAS/FASD – Role of Health Providers

- **Psychologist**
  - Neurodevelopmental testing on individual
  - Family counseling regarding diagnosis
- **Social Worker**
  - Helping family to deal with stress of disorder
  - Access to services



# FAS/FASD – Role of Health Providers

- **Therapists**
  - Maximize potential through early and persistent intervention
  - Use of adaptive techniques to overcome disability
- **Patient/family advocates**
  - Provide respite opportunities for family
  - Ensure that proper referrals are made for family and child within the resources of their community
  - Provide long-term foresight and planning



# Pharmacotherapy – Neuropsychiatric Issues

- Attention problems
- Depression and mood swings
- Sleep
- Aggression and impulse control

**\*\*People with FAS or FASD are 5 times more likely to attempt suicide.\*\***



# Attention Deficit Hyperactivity Disorder (ADHD)-Related Behavioral Problems

- Dextroamphetamine (Dexedrine)
  - 2.5-5 mg/day (max 40 mg/day)
- Mixture of dextroamphetamine and levoamphetamine salts (Adderall)
  - 2.5-5 mg/day (max 40 mg/day)
- Methylphenidate (Ritalin, Concerta)
  - Ritalin immediate release ,5-20 mg BID (max 72 mg/day),10-60 mg/day adults
  - Concerta extended release, 18 mg/day (max 54 mg/day) children and adults



# Attention Deficit Hyperactivity Disorder (ADHD)-Related Behavioral Problems

- Adderall (hyperactivity) and Strattera (concentration) together have been beneficial for some children diagnosed with FAS and ADHD.



# ADHD-Related Behavioral Problems

- Pilot study (2000):
  - 22% positive clinical response to methylphenidate
  - 79% positive clinical response to dextroamphetamine
- These medications have differing effects on cerebral metabolism.

O' Malley KD, Koplin B, Dohner VA. *Canadian Journal of Psychiatry*  
– *Revue Canadienne de Psychiatrie* 45(1):90-1, 2000.



# ADHD-Related Behavioral Problems

- Atomoxetine (Strattera)
  - 0.5 mg/kg/day in children (max 1.4 mg/kg/day)
  - 40 mg/day in adults (max 100 mg/day)
  - ? Lower side effects than stimulants
  - Anecdotally beneficial when combined with extended release Concerta.



# Pharmacotherapy - Depression & Mood Swings

## SSRIs

- Fluoxetine (Prozac)
  - Children 5-10 mg/day (max 20 mg/day)
  - Adults 20-80 mg/day (max 80 mg/day)
- Sertraline (Zoloft)
  - Children 25-200 mg/day
  - Adults 50 – 200 mg/day
- Paroxetine (Paxil)
  - Children 10 mg/day
  - Adults 20-50 mg/day



# Pharmacotherapy - Depression & Mood Swings

- Zoloft is the only antidepressant approved by the FDA for children.



# Pharmacotherapy - Depression & Mood Swings

## SSRIs

- Fluoxetine (Luvox)
  - Children 25-200 mg/day
  - Adults 50-300 mg/day
- Citalopram (Celexa)
  - Children – no established dosages
  - Adults 20-40 mg/day (max 60 mg/day)
- Bupropion (Wellbutrin)
  - Children – no established dosages
  - Adults 100-450 mg/day



# Pharmacotherapy - Sleep

- Melatonin – Natural & Not Addictive
  - Children 0.5-10 mg qHs
  - Adults 3-30 mg qHs
- Lorazepam (Ativan)
  - Children 0.5 mg qHs
  - Adults 2-4 mg qHs
- Zolpidem (Ambien)
  - Children—no established dosages
  - Adults 5-10 mg qHs
- Trazodone (Desyrel)
  - Children—no established dosages for sleep
  - Adults 50 mg qHs



# Pharmacotherapy – Neuropsychiatric Issues

- All of these medications may have significant side effects
- Patients must be monitored closely by a prescribing physician
- Must be aware of continually changing FDA public health medication advisories



# Fetal Alcohol Spectrum Disorders

We see what we look for....

and

we look for what we know!

Thank you for your time and  
attention!