

Fetal Alcohol Spectrum Disorders: Everything has Changed



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WHAT IS PAE?

- ▶ Common
- ▶ Affects mother and children
- ▶ Increases mortality
- ▶ Index of addition severity
- ▶ Treatable
- ▶ Huge barrier to behavior change



How We Do It - - - - -> *Exposure Assessment*

Exposure - - - - -> *When was your last drink?*

Risk Stratification - - - - ->

<i>Before</i>	<i>Pregnancy</i>	
	<i>Pre-awareness</i>	<i>Post-awareness</i>
<i>Unexposed</i>	<i>Exposed</i>	<i>Exposed and High Risk</i>

Dosimetry - - - - ->

Charting PAE During Pregnancy

On average, how many days per week did you drink during pregnancy? _____ (a)

On an average drinking day, during pregnancy, how many drinks did you have? _____ (b)

How many days per month did you have 4 or more drinks during pregnancy? _____ (c)

What is the most you had to drink on any one day during pregnancy? _____ (d)

What is a drink? Alcohol % _____ Drink Volume _____

Drinking and Smoking During Pregnancy: *10 Beers and 10 Cigarettes a Day*

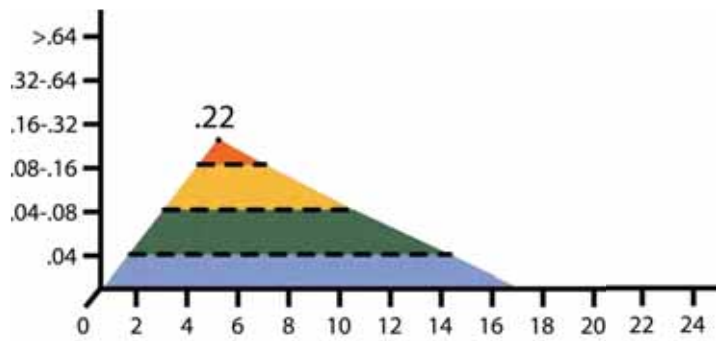


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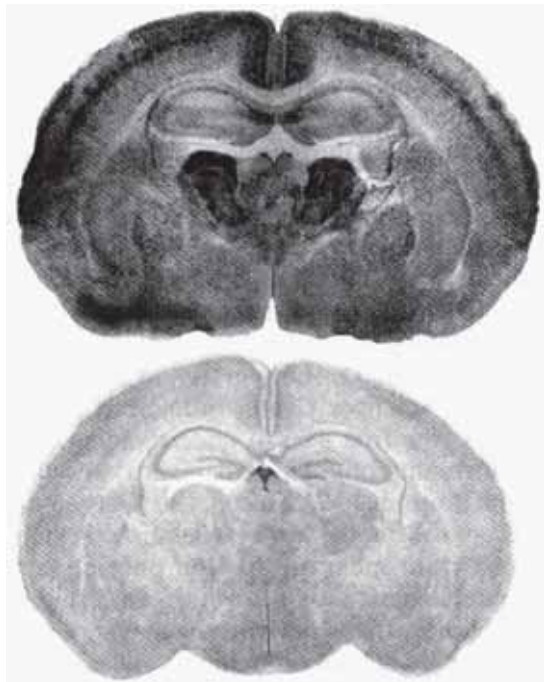
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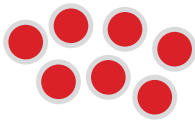




Cummulative Exposure

Dosimetry	4 Beers	8 Beers
Days Exposed	80	80
# Standard Drinks (14 Grams)	320	640
Binge Days	80	80
Hours Exposed	680	1350
Total Grams Ethanol	4480	8950
Total Grams Ethanol entering Fetal Compartment	520	1040

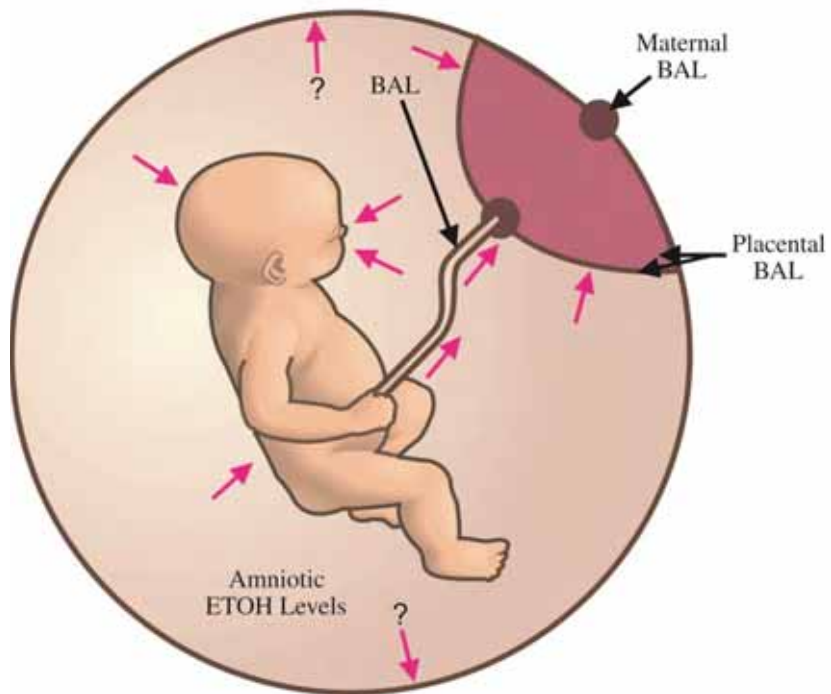


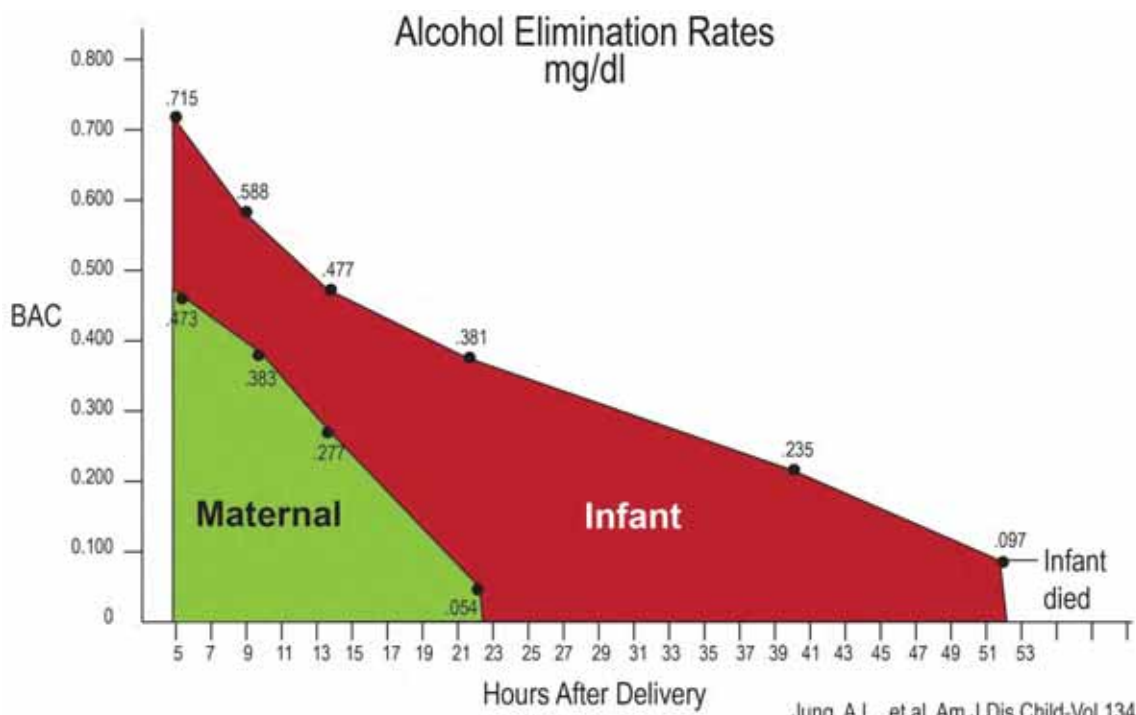


Oocytes



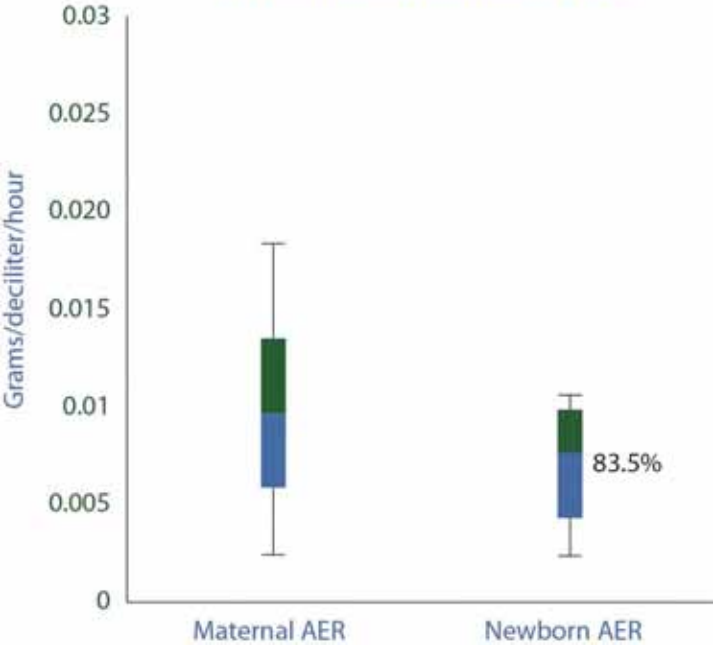
Fetal Exposure





Jung, A.L., et al, Am J Dis Child-Vol 134,
April 1980, 134:419-420.

Alcohol Elimination Rates (AER) in Ten Mother - Newborn Pairs



FASD: What About The Men

Prenatal Alcohol Exposure

Increased risk of impotence 8%¹

Lack of sexual desire increased 31% to 58%²

Double the risk of erectile dysfunction³

Decreased sperm (volume, motility, and abnormal sperm)^{4,5}

Increase in risk of miscarriage 2–5 times⁶

Women drink with partner over 75% of the time⁷

Drinking is initiated by man over 40% of the time⁷

Increased risk of fetal death⁸

Decreased birth weight⁹

Late start of prenatal care¹⁰

Fewer prenatal visits¹⁰

Increased fetal deaths⁶

1. Lemere et al 1973 Am J Psychiat 130: 212–213; 2. Whalley et al 1978: Acta Psychiat Scand 58: 281–298; 3. Jensen SB 1984: Acta Psychiat Scand 69: 543–549; 4. Gumus et al 1998: Int Urol Nephrol: 30 755–759; 5. Muthusami et al 2005: Fertility and Sterility 84: 918–924; 6. Henriksen et al 2004: Am J Epidemiol: 160 661; 7. McBride et al 2012: Global Health Promotion 19: 102–114; 8. Muthusami et al 2005: Fertility and Sterility 84: 918–924; 9. Little et al 1987: Teratology 36: 59–65; 10. Burd et al 2003: Neurotoxicology and Teratology: 25(6) 681–688;



PAE Forecast		
Prenatal	Labor and Delivery	Postnatal
<ul style="list-style-type: none">• Smoking• Drug use• Late and infrequent prenatal care• Depression• Inadequate nutrition	<ul style="list-style-type: none">• Stillbirth• Prematurity• Birth defects• Hospitalizations	<ul style="list-style-type: none">• Neglect• Abuse• Birth defects• Poor nutrition• Smoking• Prenatal substance abuse• Violence• Depression• SIDS

FASD Prevalence

- ▶ 1% of live births
- ▶ 20 % recurrence risk
- ▶ More severe in younger sibs
- ▶ 5% ever diagnosed
- ▶ Increasing rates of neuropsychiatric disorders

WHAT IS FASD?

- ▶ Brain damage
- ▶ Impairments
- ▶ Long term
- ▶ Familial
- ▶ Generational
- ▶ Mortality risk marker
- ▶ Undiagnosed
- ▶ Diagnosis and treatment matter
- ▶ Course is modifiable

A Philosophy

*We can envision few things more certainly
beyond one's control than the drinking habits
of a parent prior to one's birth" Dilbeck v.
State 643 So 2d 1027 Fla 1994 (1994)*

See Alcohol, Think Impairment



FASD FACTS

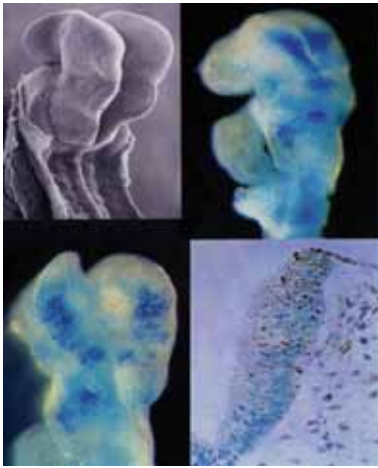
- IT'S Really Common
- MOST CASES ARE UNDIAGNOSED (95 + %)
- IT'S Familial and Generational
- Diagnosis makes a Difference
- IT'S PREVENTABLE
- Treatment Matters



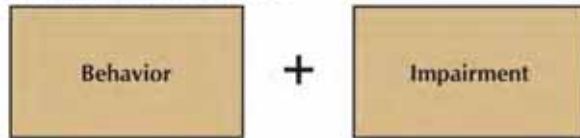
Incarceration Risk For FASD

- ▶ In Canada youth 12–18 years of age with FASD have a 19 fold increase risk of incarceration.

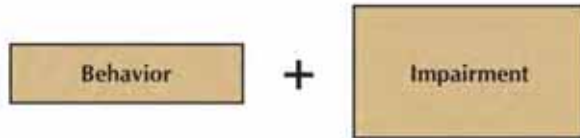
Popova L., Am J Epidemiol ,2012



3) FASD: What we First See



A Better View



Inconsistent Performance



Behavior often persists over the lifespan

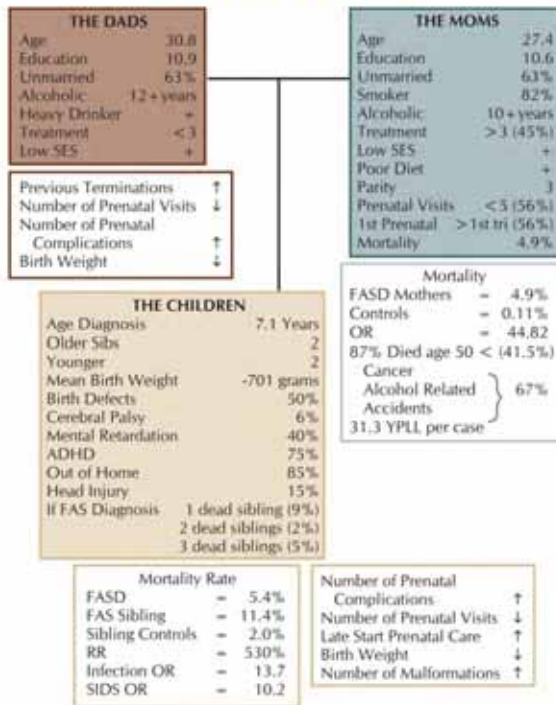
Same Behavior Different Age

Age	Behavior
2	Irritable, impulsive, difficult, requires lots of attention
4	Poorly organized, can't finish, easily distracted, forgets
6	Loses and forgets, comprehension deficits, social deficits
8	Can't finish, loses stuff, needs help every day, avoidant/aggressive
12	School problems, doesn't get stuff home or back to school, social deficits, extra help-helps
14	Late, social deficits, school problems, cognitive delays, behavior problems, does best at home, school problems often severe
20	Can't get things finished, avoidant, anxious, easily overwhelmed, memory is poor, why doesn't he/she change, poor choices
24	Late or missing meetings, easily overwhelmed, avoidant, social choices are poor, nods in agreement but doesn't understand, can't finish (treatment, parenting classes after 20+ years who/what needs to change?)

Manifestations of FASD



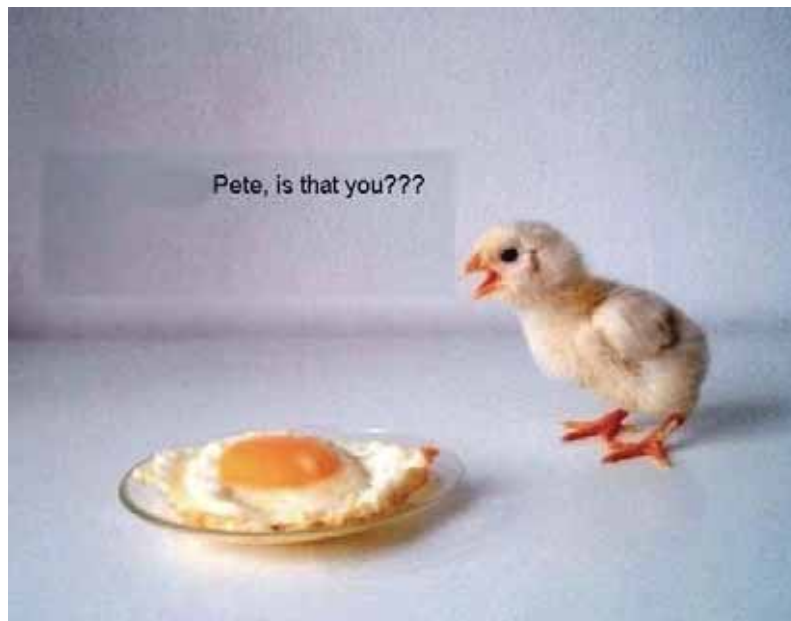
The FASD Family



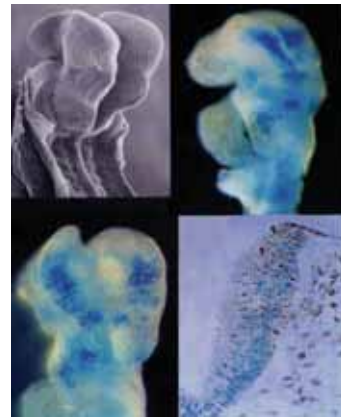
Early events have downstream developmental consequences

- ▶ Environment strongly influences outcome

Brothers Separated at Birth



FASD Mothers



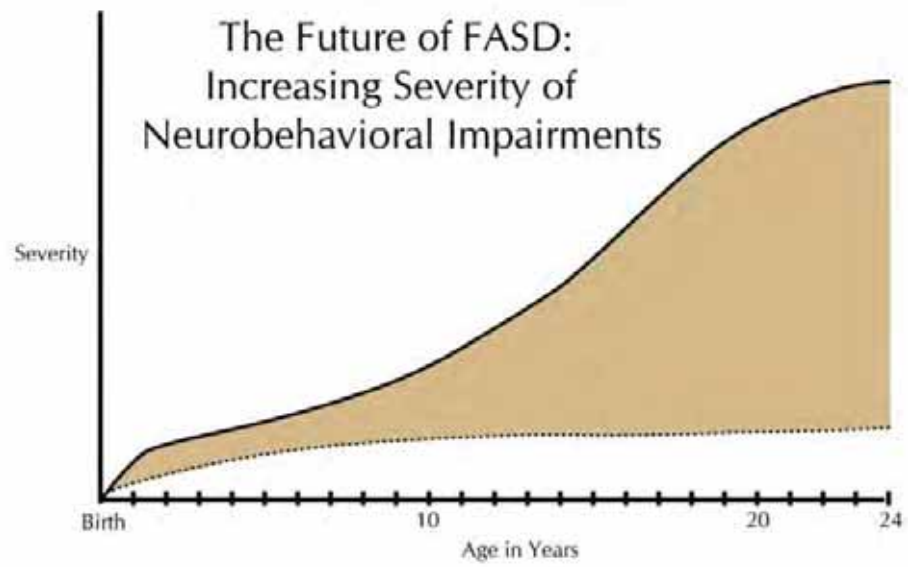
Alcohol = Impairment



Risk Factors Ahead

- | | |
|--------|------------------|
| Exit 1 | Abuse/Neglect |
| Exit 2 | Foster Care |
| Exit 3 | Impairments |
| Exit 4 | Legal Problems |
| Exit 5 | Substance Abuse |
| Exit 6 | Dependent Living |

FASD Forecast



2) Basic Cognitive Skills in Adolescents and Adults with FASD

<u>Characteristics</u>	<u>Grade Level</u>
Reading	5.0
Reading comprehension	4.5
Oral Comprehension	5.0
<u>Percent Affected</u>	
Memory	80%
Attention (ADHD)	75%
Executive Function	
Impairments	80%

MATERNAL IMPAIRMENT CHECKLIST

Name _____ Date _____ Date of Birth _____

LEARNING/EDUCATION			
Doesn't listen well			
Disorganized			
Loses important things			
Can't plan ahead			
Impulsive			
Below average IQ			
Reading deficits			
Low math skills			
Was in special education			
Repeated a grade in school			
Quit school			
History of ADHD			
MENTAL HEALTH			
Depression			
Anxious			
Argues frequently			
Bad temper			
Easily overwhelmed			
Can't complete anger management			
Can't complete parenting class			
Does not have medications			
Avoids difficult situations			
Can't get up in morning			
Won't go to bed on time			
Motivation is impaired			
FAMILY HISTORY			
Prenatal alcohol/drug exposure			
Was in foster care			
More than 5 foster homes			
Abused			
SUBSTANCE ABUSE			
Current alcohol use			
Current drug use			
Same problems over 5 year period			
Substance abuse treatment 2 or more times			
Date of last drink			
SAFETY CONCERNS			
Lives with partner who is unsafe around children			
Limited parenting skills			
Can't operate household			
Doesn't clean			
Can't cook			
Abusive relationship			
Lives with drug/alcohol users			
In jail/prison			
On probation			
RESOURCES			
No home			
Low/no income			
Transportation problems			
Few/no capable friends			
No family help			
Won't accept help family			



Behavior often persists over the lifespan

Same Behavior Different Age

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Manifestations of FASD

Behaviors

Ignores
Interrupts
Blurts Out

Plays Dumb
Changes Story
Avoidance
Changes Facts

Fills in Pauses
Agreeable
Lies

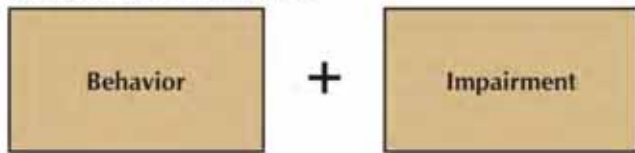
Impairments

ADHD
Inattentive
Impulsive
Fidgety

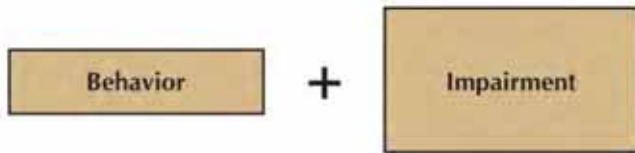
Learning Disorders
Comprehension Deficits
• Listening
• Reading
Listening and Reading
• Memory Impairments

Anxiety

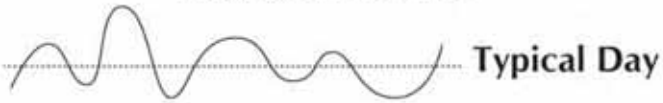
3) FASD: What we First See



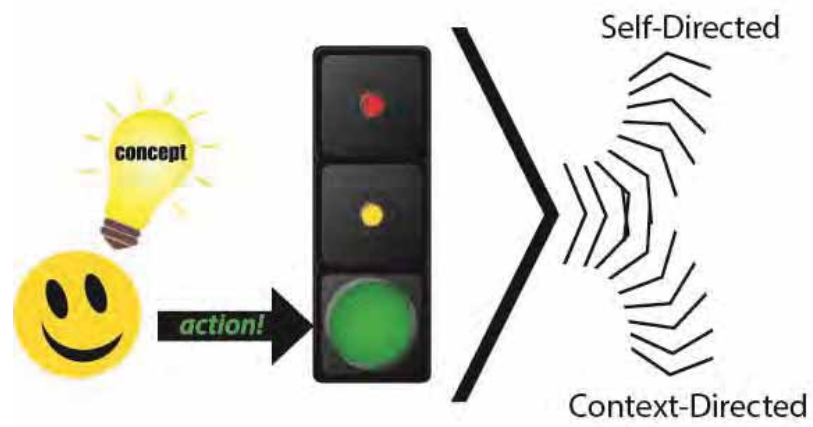
A Better View



Inconsistent Performance



Intention Editor



Adolescents

- ▶ Think:
 - Impairment
 - Substance Abuse
 - **Monitor for this**
 - **Track Peers**
 - **Treat First Time and Every Time – It's a grave threat**
 - **Modify Treatment**
 - Where will they live and work
 - Environment is key
 - Do Not Lose Hope

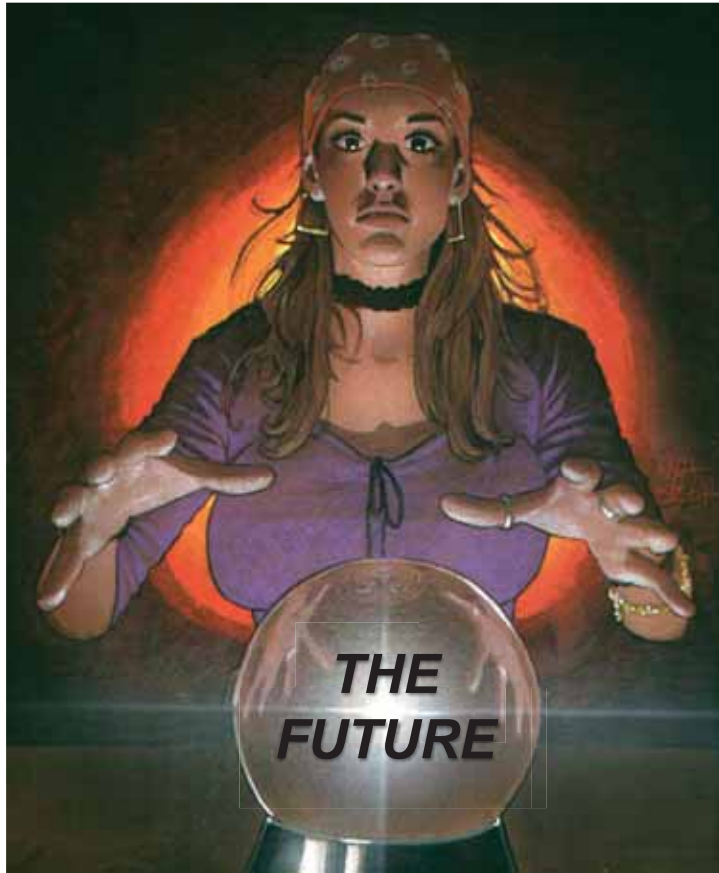
What to do?

- ▶ Think FASD (Family History)
- ▶ Go slow (Longer Treatment Episodes)
- ▶ What do they recall? (Memory)
- ▶ Pictures (It's Concrete)
- ▶ Wishing and anger won't help
- ▶ Reading and Comprehension (Listening)
- ▶ ANXIETY makes it worse (Group Work)

Why Such Poor Outcomes?

- ▶ 3 GENERATIONS OF EXPOSURE
- ▶ ANTICIPATION (Generational and Familial)
- ▶ BRAIN DAMAGE
- ▶ INCREASED COMORBIDITY
- ▶ LATE IDENTIFICATION
- ▶ IMPAIRMENT NOT BEHAVIOR
- ▶ FAILURE TO CONTINUE SERVICES





Powered Alcohol Products



- Powered or crystalline form
- 50% by weight, 10% by volume