

No alcohol during pregnancy is the safest choice.



Take Action for Healthier Moms & Babies

Massachusetts ranks among the top 5 states in terms of the proportion of women aged 18–44 who drink alcohol.¹ The most recent data indicates that 64.1% of women of childbearing age reported they'd used alcohol in the last month. Almost 1 in 5 had engaged in binge drinking.

According to the American Congress of Obstetricians and Gynecologists (ACOG), **no amount of alcohol is safe in pregnancy.** Because many pregnancies are unplanned, and because critical aspects of fetal development occur before women know they are pregnant, health care providers can help avoid the devastating effects of Fetal Alcohol Spectrum Disorders (FASD) through direct communication with all

women of child-bearing age. This means that medical providers in all specialties who work with women have an opportunity to make a difference, by doing the following:

- Encourage all patients of childbearing age to avoid alcohol at any time they could become pregnant.
- Reinforce that using reliable birth control and condoms is a priority for all those who use alcohol, especially during times when they could become pregnant.
- Help women who want to become pregnant to create a plan to stay alcohol-free, before they try to conceive.

¹ Centers for Disease Control and Prevention [CDC]. State-Specific Alcohol Consumption Rates for 2010. www.cdc.gov/ncbddd/fasd/monitor_table.html. Accessed January 31, 2014.





Alcohol & Pregnancy: The Facts

Massachusetts babies are at high risk.

- Most Massachusetts mothers (61.5%) report drinking in the three months before becoming pregnant.² And over a quarter (26.7%) of mothers report binge drinking in the three months prior to becoming pregnant.³
- Media reports, friends, family and others may not have all of the factual information. But the science is clear: The safest choice is to abstain from drinking alcohol throughout the entire pregnancy.

Alcohol is a teratogen that inflicts serious, lifelong harm to a fetus.

- Alcohol readily crosses the placenta and may cause neurobehavioral effects quite early in pregnancy.
- Alcohol use during pregnancy is the most common cause of preventable intellectual disabilities.

² Massachusetts Department of Public Health [MDPH]. (2013). *Massachusetts Pregnancy Risk Assessment Monitoring System (PRAMS) 2009/2010 Surveillance Report*, p. 89.

³ MDPH, p. 89.

- Babies impacted by alcohol suffer from a range of serious, lifelong problems from Fetal Alcohol Spectrum Disorder, which can include physical abnormalities, mental impairments and behavioral issues.⁴ Many of these problems may not be noticed until children enter school, or later. Even at lower levels of alcohol use, children still may have problems with focusing, memory and organization.^{5,6}
- About 50% of women report their pregnancy was unintended.⁷ Since most women of childbearing age drink alcohol, many inadvertently drink early in pregnancy.
- **Thus, according to ACOG, the Centers for Disease Control and Prevention (CDC) and the Massachusetts Department of Public Health (MDPH), the healthiest advice for women of child-bearing age is: “do not drink alcohol” when pregnancy may be possible.**

⁴ American College of Obstetricians and Gynecologists. (2006). *Drinking and Reproductive Health: A Fetal Alcohol Spectrum Disorders Prevention Tool Kit*, p. 4.

⁵ Kearney, M.H., Murphy, S., Rosenbaum, M. (1994). *Mothering on crack cocaine: A grounded theory analysis*. *Soc Sci Med.*, 38, 351-361.

⁶ Lewis S.J., Zuccolo, L., Davey Smith, G., Macleod, J., Rodriguez, S., Draper, E.S., Barrow, M., Alati, R., Sayal, K., Ring, S., Golding, J., Gray, R. (2012). *Fetal Alcohol Exposure and IQ at Age 8: Evidence from a Population-Based Birth-Cohort Study*. *PLoS ONE*, 7(11):e49407.

⁷ American College of Obstetricians and Gynecologists. p. 9.

Health care providers should screen and discuss alcohol with all patients who could become pregnant.

- Because many women have unintended pregnancies or may not be aware they are pregnant for several weeks, intervention with **all** women of childbearing age will help prevent alcohol-exposed pregnancies.
- In one multicenter project, nearly 70% of women reduced their risk of an alcohol-exposed pregnancy within six months after brief interventions.⁸
- The U.S. Preventive Services Task Force (USPSTF) recommends that all providers screen all patients for alcohol use. Click on one of these tools **T-ACE**, **CRAFFT** (for younger women) or find other screening tools on the web.

Women Welcome Information about Alcohol

- At least two studies have shown that women who are pregnant welcome information on alcohol or other drugs.^{9,10}
- The more comfortable providers are with discussing alcohol use, the more likely women will be forthcoming with their alcohol use patterns.
- Motivational Interviewing (MI) is an evidence-based approach in which providers ask pros and cons of substance use, provide feedback, help establish a goal, and summarize the interaction. Visit <http://www.masbirt.org> for more details and information on training.

A Few Minutes Help Prevent a Lifetime of Health Issues

A short conversation with women who may be, or become, pregnant can help avoid a lifetime of challenges for unborn babies and their families. It's critical to talk with patients *before* they conceive. Providers can help prevent FASD by explicitly discouraging the use of any alcohol when women are at risk of pregnancy, or by encouraging effective contraception. As always, the developmental level of younger women will shape your approach.

Here are some examples of what you can say:

- *"No alcohol during pregnancy is the safest choice, I recommend you to stop before you start trying to become pregnant."*
- *"Your baby could be harmed by alcohol before you even realize you're pregnant. Alcohol can have harmful effects when your embryo is still small enough to fit inside of the zero on a penny's date."¹¹*
- *"No alcohol during pregnancy is the safest choice; if you drink, use condoms and effective protection."*



Discuss Alcohol with Women Who Are Already Pregnant

If a woman uses alcohol and then finds she is pregnant, it is never too late to stop. The screening results can put her use into perspective. A healthy lifestyle without alcohol for the rest of her pregnancy is essential.

⁸ Ingersoll K, Floyd L, Sobell M, Velasquez MM. Reducing the risk of alcohol-exposed pregnancies: a study of a motivational intervention in community settings. Project CHOICES Intervention Research Group. *Pediatrics* 2003; 111:1131-5.

⁹ Kearney M.H. et al.

¹⁰ Murphy, S., Rosenbaum, M. (1999). *Pregnant women on drugs: Combating stereotypes and stigma*. New Brunswick (NJ): Rutgers University Press.

¹¹ Collaborative Initiative on FASD [CIFASD]. (2012). *Fetal Alcohol Spectrum Disorders*, slide 8. <http://cifasd.org/>. Downloaded February 3, 2014. CIFASD Funded by National Institutes of Health/National Institute on Alcohol Abuse and Alcoholism.



You can say:

- ***“If you have been drinking alcohol, you can still benefit your child by stopping now.”***
- ***“Try a festive mocktail.”*** Having something fun to drink can make it easier to avoid alcohol in social situations. Websites offer mocktail recipes you can drink from a cocktail glass.
- ***“If you are having trouble stopping alcohol use, I can help you find the support you need.”*** Pregnant women are a priority for the Massachusetts Department of Public Health Bureau of Substance Abuse Services. Women who have trouble avoiding alcohol during pregnancy may need a referral to an outpatient or residential program. The Institute for Health and Recovery staffs the Central Access Line for pregnant women seeking treatment for substance use issues and those who serve them. Call **617-661-3991** or **866-705-2807/TTY 617-661-9051**. Professionals or patients can also call **(800) 327-5050/TTY (888) 448-8321** or visit <http://www.helpline-online.com> 7 days a week. Health plans can give you counseling referral information. In Massachusetts state-funded and private programs address alcohol and other drug issues.

Begin the Conversation. Get the Tools You Need.

For more information for patients on how alcohol and drugs affect birth, please download or order the following informative pamphlets from <http://mass.gov/maclearinghouse> at no charge:

- **When You’re Pregnant Your Baby Drinks What You Drink (English & Spanish)**
<http://massclearinghouse.ehs.state.ma.us/product/SA3501kit.html>
- **Would We Give Our Baby Alcohol? No Way. (English & Spanish)**
<http://massclearinghouse.ehs.state.ma.us/product/SA3503kit.html>
- **It’s the Same Risk for Every Pregnant Woman Everywhere (English & Spanish)**
<http://massclearinghouse.ehs.state.ma.us/product/SA3507kit.html>

To protect children from the well-documented danger of prenatal alcohol exposure, be clear and consistent with pregnant women *“No alcohol during pregnancy is the safest choice.”*

Thank you for your leadership in keeping Massachusetts women and babies healthier.

Maternal/Fetal/Neonatal Effects of Alcohol, Tobacco and Other Drugs

Possible Maternal/Fetal/Neonatal Effects of Alcohol and Other Drugs Commonly Used by Pregnant Women

All women should be screened for substance use (Screening, Brief Intervention, and Referral to Treatment) in medical and public health settings, and advised to abstain from prenatal alcohol, tobacco and other drug use. A woman who carries her fetus to term wants to have a healthy baby. Pregnant women who use substances encounter considerable stigma and often experience shame. If they are unable to stop using substances during pregnancy, they may have a substance use disorder and can benefit from a referral for a substance use assessment and treatment.

Poverty, poor nutrition, limited education, maternal age, maternal stress, limited access to prenatal care, lead exposure, violence, trauma, genetics, epigenetics and poly-drug use (including tobacco) can impact maternal/fetal/ neonatal health and child outcomes. Additionally, timing and dose of use can impact effects. As a result, the effects of prenatal drug exposure might be subtle and transient, or significant and life-long. Beyond alcohol, tobacco, and cocaine, limited research has been done on long-term outcomes. Poly-drug use also makes it challenging for researchers to identify outcomes due to one particular drug.

The benefits of the postnatal environment cannot be over-stated: early identification, intervention with the child and family, and a healthy home environment, can contribute to significantly improved outcomes and, in many cases, no deficits. Nonetheless, pregnant women, and those planning on pregnancy, are advised to abstain from alcohol, tobacco and other drug use.

Alcohol is a Uniquely Dangerous Teratogen

“Of all the substances of abuse (including cocaine, heroin, and marijuana), alcohol produces, by far, the most serious neurobehavioral effects in the fetus.”

—Institute of Medicine Report to Congress, 1996

	Alcohol	Tobacco	Opioids	Meth	Cocaine	Marijuana	PCP
Growth deficiency	X	X	X	X	X	X	X
Behavioral problems	X	X	X	X	X	X	X
Cognitive problems	X	X	X	X		X	X
Motor deficits	X	X		X			X
Developmental delays	X	X			X		
Facial anomalies	X	X					X
Physical defects	X	X		X	X		X

Wozniak, 2014

The U.S. Surgeon General recommends that pregnant women, and women who are considering becoming pregnant, abstain from alcohol. No safe levels of alcohol use during pregnancy have been found.

Drug Name (various forms)	Maternal Effects <i>(possible)</i>	Fetal Effects <i>(possible)</i>	Neonatal/Infant Effects <i>(possible)</i>	Long-term Effects <i>(possible)</i>
Detoxification from alcohol during pregnancy: Women who are dependent upon alcohol and want to undergo detoxification should do so in an inpatient/hospital setting, as medically indicated. The health and well-being of the mother and the fetus should be addressed equally.				
Alcohol/ethanol (Hard liquor, beer, wine, wine coolers, etc.)	Tolerance; intoxication; Central Nervous System (CNS) depression; withdrawal; risk for seizures; and damage to liver, heart, stomach, etc. Alcohol withdrawal may cause hypertension, tachycardia, and premature labor. Malnutrition	Abnormalities in growth and development; Central Nervous System disruption; and resultant brain damage. Constriction of blood flow to placenta hinders delivery of nutrients and oxygen Fetal Alcohol Spectrum Disorders	Neonates born to women who acknowledge regular prenatal alcohol use should be screened for Fetal Alcohol Syndrome (FAS): <ul style="list-style-type: none"> • Growth impairment, • Dysmorphic facial features • Central Nervous System abnormalities • Microcephaly • Low birth weight and short length • Small head circumference Irritability, restlessness, poor sleep and feeding, agitation, and increased risk of neonatal mortality. Alcohol consumption during lactation is associated with altered postnatal growth, sleep patterns, and psychomotor patterns of the infant.	Cognitive Consequences: <ul style="list-style-type: none"> • Impaired intellectual functioning and difficulty living 'up to' IQ. • Sensory Integration difficulties • Dysregulation of mood and behavior • Poor working memory • Impaired judgment • Impaired language reasoning & processing • Impaired Executive functioning • Impaired social adaptive functioning • Substance use disorders • Major Depression • Bipolar Disorder • Antisocial Personality Disorder • ADHD • Learning Disability • Sleep Disorder • Poor fit with societal expectations

Drug Name (various forms)	Maternal Effects <i>(possible)</i>	Fetal Effects <i>(possible)</i>	Neonatal/Infant Effects <i>(possible)</i>	Long-term Effects <i>(possible)</i>
Tobacco: Prenatal cessation of tobacco products reduces risk of pre-term birth and delivering small- for- gestation age neonates. At this time, no studies have been published on the effects of prenatal use of alternative tobacco delivery systems (liquids, e-cigarettes, lozenges, hand solvents, etc.). The combination of alcohol and tobacco use heightens the health risks to both mother and child.				
Cigarettes (nicotine and other compounds in smoke)	<p>CNS stimulation and respiratory damage</p> <p>Pregnancy complications due to nicotine use increase risk of maternal morbidity.</p> <p>Increased risk of ectopic pregnancy. Placental abruption, and increased risk of placenta previa.</p>	<p>Nicotine crosses the placenta. Amniotic fluid and fetal circulation have been found to have higher levels of nicotine than found in the mother’s own plasma and blood.</p> <p>Reduced fetal oxygen supply and heart defects.</p> <p>Impaired fetal growth.</p> <p>Risk for congenital birth defects such as cleft lip/palate, which causes feeding problems and may lead to ear infections, hearing problems, difficulty speaking, and dental problems.</p> <p>Urinary tract malformations</p> <p>Increased risk for fetal distress, fetal demise, Spontaneous abortion, premature labor and stillbirth.</p>	<p>Small for gestational age:</p> <ul style="list-style-type: none"> • Growth retardation • Smaller head circumference, which impacts brain size and functions. <p>Abnormal nursing</p> <p>Challenging temperaments</p> <p>Deficits in self-regulation</p> <p>Heightened developmental risk</p> <p>Sudden Infant Death syndrome (SIDS)</p> <p>Nicotine is found in breast milk.</p>	<p>Behavioral regulatory problems, externalizing problems, Oppositional Defiant Disorder, Conduct Disorder, Antisocial Personality Disorder, ADHD, and delinquency/ unlawful behavior.</p> <p>Increased risk of asthma</p> <p>Possible impairment of language development</p> <p>Possible lower IQ</p> <p>Exposure to secondhand smoke has been found to contribute to cancer, respiratory, and cardiovascular diseases, particularly to developing infants and children.</p>

Drug Name (various forms)	Maternal Effects <i>(possible)</i>	Fetal Effects <i>(possible)</i>	Neonatal/Infant Effects <i>(possible)</i>	Long-term Effects <i>(possible)</i>
<p>Marijuana: Marijuana contains many of the cancer-causing chemicals found in tobacco. Marijuana can be laced with embalming fluid, ketamine, cocaine, etc. The research is not unified on the impact on fetal/neonatal/child health and development. The high rate of poly-substance use also presents a challenge to researchers trying to determine the effects of marijuana alone. Additionally, much of the research was done in the 1980s/early 1990s when the THC levels in cannabis was lower than current levels. Dose levels impact effects.</p>				
<p>Marijuana/ Tetra-hydro- cannabinol (THC)</p>	<p>The effects of one joint on the respiratory system are similar, if not worse, than that of five tobacco cigarettes.</p> <p>CNS depression, but can act as a stimulant; toxic to respiratory system and immune system; Increased heart rate, hypotension</p> <p>Labor and delivery complications including prolonged or arrested deliveries, abnormal bleeding, meconium staining, etc.</p> <p>THC use may impair sperm production in males, but not at contraceptive levels. Cannabis use appears to be a risk factor for psychotic disorders because it interacts with a pre-existing vulnerability.</p>	<p>Shorter gestation, some congenital anomalies</p> <p>Frequent use may be associated with low birth weight</p> <p>Vasoconstriction that restricts fetal oxygen supply.</p>	<p>Neurological abnormalities resulting from CNS immaturity:</p> <ul style="list-style-type: none"> • Abnormal responses to light and visual stimuli • Tremulousness • High-pitched cry • Increased tremors and startles. <p>THC is more concentrated in a mother's milk than in her blood, resulting in THC exposure to the breastfeeding child. One study reports that an infant's motor development can be impaired from exposure, though further research is indicated.</p> <p>Postnatal maternal cannabis use may support existing deactivating and distancing strategies regarding attachment</p>	<p>Long-term effects might include increased childhood depression; initiation and frequency of marijuana use by age 14; memory deficits; increased hyper-activity, impulsivity, inattention symptoms, deficits in problem solving skills, and "acting out"</p>

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<p><u>Opioid Treatment during Pregnancy</u></p> <p>Pregnant women dependent upon opioids are recommended to use medication-assisted treatment (MAT) with Methadone or Buprenorphine, concomitant with counseling, rather than undergoing a medical detoxification. Methadone, for example, contributes to a 3-fold increase in treatment retention and 3-fold reduction in heroin use compared to detoxification. If detoxification is desired by a woman, avoid using antagonists such as naltrexone or naloxone as they contribute to fetal distress. In the case of an opioid overdose, however, antagonists should be used to save the life of the mother. The severity of NAS plateaus between maternal methadone doses of 40-60 mg/day; neonates born to women maintained on <50 mg/day were as likely as those born to women maintained on >50 mg/day to require treatment for NAS. Buprenorphine is a primary care office-based opioid therapy, and can be prescribed only by SAMHSA-approved physicians. Some women may benefit from the more structured, daily dosing of methadone than the monthly office visit for Buprenorphine. Studies support Buprenorphine for reduced duration and severity of NAS. Although manufacturers state that breastfeeding is not advised in mothers treated with these medications, the professional consensus is that any effects of these medications on the breastfed infant would be minimal, that the benefits of maternal/infant bonding would increase, and thus breastfeeding is not contraindicated.</p>				
<p>Heroin and opioid analgesic misuse (i.e. Percocet, Vicodin, OxyContin, Fentanyl)</p> <p>The effects of prenatal use of prescription opiates on fetal/neonatal/child health have not been identified.</p>	<p>Tolerance, CNS depression</p> <p>Risk for HIV/ AIDS and other infections with injection drug use</p> <p>Malnutrition</p> <p>Acute withdrawal and risk for spontaneous abortion or premature labor</p>	<p>Intrauterine growth retardation</p> <p>Risk of HIV/AIDS infection from mother</p> <p>Low birth weight</p> <p>Vasoconstriction that restricts fetal oxygen supply.</p>	<p>Neonatal Narcotic Withdrawal Syndrome (NAS) is dependent on a variety of factors, i.e. genetics, polydrug use, gestational age, etc.</p> <p>NAS symptoms may include:</p> <ul style="list-style-type: none"> • Hyperactivity • Irritability/ agitation • High-pitched cry • Increased neuromuscular tone • Tremors • Seizure risk • Poor feeding • Abnormal sleep • Ventilatory patterns <p>Infants prenatally exposed to MAT tend to have reduced symptoms compared to infants exposed to opiates throughout pregnancy.</p>	<p>A healthy postnatal environment, including the quality of caregiving, can have important effect on child well-being through adaptive functioning and early identification of problems.</p> <p>Children should be assessed for early motor delays, attentional problems, & compromised regulatory behaviors.</p> <p>Possible neurological deficits: decreased cognitive performance and disruptive behavior in older children.</p>

Drug Name (various forms)	Maternal Effects <i>(possible)</i>	Fetal Effects <i>(possible)</i>	Neonatal/Infant Effects <i>(possible)</i>	Long-term Effects <i>(possible)</i>
<p>Pregnant women with benzodiazepine dependence should undergo a gradual dose reduction, using long-acting benzodiazepines. Long-acting benzodiazepines should only be used for as short a time as is medically feasible in managing benzodiazepine withdrawal. Psychosocial interventions should be offered throughout the period of benzodiazepine withdrawal. Inpatient care should be considered in the withdrawal management of pregnant women with benzodiazepine dependence.</p>				
<p>Prescription sedative- hypnotics (including Benzodiazepams such as Valium, Xanax, Ativan, etc.)</p>	<p>Tolerance, CNS depression</p> <p>Respiratory depression</p> <p>Acute withdrawal with risk of premature labor</p>	<p>Drug accumulates in fetus at greater levels than in mother</p> <p>Fetal depression, abnormal heart rhythm or even death</p> <p>Low birth weight</p> <p>Increased risk for cleft lip or palate</p>	<p>Drug and metabolites may remain in newborn for days or weeks longer than in the mother.</p> <p>May result in jitteriness, attentional difficulties, lethargy, anemia, poor muscle tone, sucking difficulties, CNS depression,</p> <p>Withdrawal may occur</p> <p>Increased risk for hypoglycemia and respiratory problems</p>	<p>Long-term effects not known</p>

Drug Name (various forms)	Maternal Effects <i>(possible)</i>	Fetal Effects <i>(possible)</i>	Neonatal/Infant Effects <i>(possible)</i>	Long-term Effects <i>(possible)</i>
<p>Prenatal Detoxification from Amphetamines/Stimulants: Psychopharmacological medications are not indicated for withdrawal from these drugs during pregnancy. However, inpatient care might be helpful in the withdrawal management of pregnant women with stimulant dependence. The risks of providing short-term appropriate, non-teratogenic medications for short-term management of psychologically distressing symptoms in pregnancy are very low. Therefore, the potential benefits of this approach strongly outweigh the harms of providing psychopharmacological treatment of symptoms, if required, during psychostimulant withdrawal.</p>				
<p>Amphetamines/ Stimulants: Cocaine, crack cocaine</p>	<p>CNS and cardio-vascular stimulation:</p> <ul style="list-style-type: none"> • increased heart rate • increased blood pressure • vascular constriction <p>Pregnancy is associated with increased sensitivity to cocaine</p> <p>Pregnant women who use cocaine often use alcohol and tobacco</p> <p>Decreased blood flow to placenta</p> <p>Possible placental abruption and bleeding</p> <p>Premature labor</p> <p>Possible growth retardation and fetal hypoxia</p>	<p>Growth retardation; many children Experience catch-up growth and are normal weight by 6-12 months</p> <p>Risk for intrauterine stroke</p> <p>Vasoconstriction that restricts fetal oxygen supply.</p> <p>Possible genito-urinary abnormalities</p> <p>Necrotizing enterocolitis</p>	<p>Intoxication and/or withdrawal. Symptoms may include:</p> <ul style="list-style-type: none"> • irritability/ • agitation • increased tone • tremors • jitters • inconsolability • increased respiration <ul style="list-style-type: none"> • Inability to eat • Low birth weight • Limp tone • Prematurity <p>Possible risk for seizures, anemia</p> <p>Early cardiac abnormalities</p> <p>Slower drug excretion in newborn</p> <p>Abnormal sleep and respiratory patterns</p>	<p>Possible developmental delays and expressive language delays</p> <p>Possible long-term deficits in attention and learning, particularly math.</p> <p>Some observers note aggressive behavior, Oppositional Defiant Disorder, and hyperactivity.</p> <p>Visuospatial processing and arithmetic impairment, deficits in reasoning and abstract processing.</p> <p>Some studies suggest that the physical and social environments of children may have a more significant impact on development than maternal drug use alone.</p>

Drug Name (various forms)	Maternal Effects <i>(possible)</i>	Fetal Effects <i>(possible)</i>	Neonatal/Infant Effects <i>(possible)</i>	Long-term Effects <i>(possible)</i>
The misuse of prescription Amphetamines/Stimulants (Ritalin, Adderall, Dexedrine) may have similar effects as illicit drugs, depending on a wide range of factors, including dose and frequency of use.				
Amphetamines/ Stimulants: Methamphetamine, Ecstasy, MDMA	CNS and cardiovascular stimulation: <ul style="list-style-type: none"> • increased heart rate • increased blood pressure • vascular constriction Anorexia, weight loss, insomnia Decreased blood flow to placenta Impairments in daily memory, problem solving, impact on social/emotional intelligence Risk of HIV/AIDS with intravenous use Hyperthermia, sudden death	Possible growth retardation Vasoconstriction that restricts fetal oxygen supply.	Congenital malformations, including cardiovascular and musculoskeletal. <ul style="list-style-type: none"> • Inability to eat • Low birth weight • Limp tone • Prematurity Increased drowsiness and decreased arousal may be in response to maternal depression Excoriated Buttocks (Meth) Adequate studies lacking	Possible social and communicative problems at year 1. Possible aggressive behavior at 8 and learning problems at 14, with physical activity challenges. Adequate studies lacking.

Drug Name (various forms)	Maternal Effects <i>(possible)</i>	Fetal Effects <i>(possible)</i>	Neonatal/Infant Effects <i>(possible)</i>	Long-term Effects <i>(possible)</i>
<p>Untreated prenatal depression can pose risks to a mother’s ability to care for herself, her fetus and her child. While women with milder depressive symptoms are likely to be safely taken off of these medications, studies recommend that women with more severe depression and/or co-occurring conditions, such as suicidal attempts, substance use disorders, functional incapacitation, or weight loss, should continue medication under medical care. Depression itself can be a risk factor of preterm delivery and low birth weight. Note: This section does not include recommendations for Prenatal Medication for Mood Disorders, Major Depressive Disorder, etc. Women on such medications are recommended to discuss pregnancy with their doctor prior to conception.</p>				
<p>Antidepressants (Including SSRIs such as sertraline & fluoxetine and TCAs such as amitriptyline & trazodone.) The SSRI Paxil is not recommended.</p>	<p>Under medical care, antidepressants can be beneficial to pregnant women with more severe depression. Terminating anti-depressant for these more severely depressed women may result in relapse to depressive symptoms and reduced sense of self-efficacy, as well as increased difficulty bonding with the newborn and performing regular maternal activities, potentially negatively impacting child development and behavioral patterns.</p>	<p>Preterm delivery</p>	<p>Possible PNAS (Poor Neonatal Adaptation Syndrome)</p> <ul style="list-style-type: none"> ▪ Respiratory distress ▪ Cyanosis on feeding ▪ Jitteriness and irritability <p>Low birth weight</p> <p>Only 2 studies noted lower than expected ratings on the Bayley Scales of Infant Development, though this could be a result of uncontrolled confounders, such as maternal psychological disorders, post-natal environment, etc.</p>	<p>The majority of the few completed studies have shown normal developmental processes and normal internalizing/externalizing behaviors.</p> <p>Although the majority of studies have not found causality between SSRIs and Autism Spectrum Disorders, one study found that prenatal exposure to SSRIs may contribute to ASD susceptibility, particularly in boys.</p>

Therapeutic Handling for Substance-Exposed Newborns includes: Swaddling; Holding or Laying a baby in the “C-position;” Head to Toe Movement; Vertical Rocking; and Clapping baby’s bottom. Feeding should always be done in a low stimulus environment: no bright lights, music, noise or other distractions. The baby needs to be relaxed enough to suck. Further approaches can be introduced in small doses and on a schedule.

A Poem about "Denial"

Tread gently when you walk into my life
For around the body of my soul I have gathered
Fragile gossamer, to the floor, of little lies
Not to deceive you - but to protect me.

Do not pull at them to render my soul naked
For they hide truths I have not yet the strength to face
And when they are gone I may perish
In the cold realities of your judgment I may die.

But let me stand protected awhile
Talk to me in love and when I am secure in that
Those lies will fall away as un-needed peel
Revealing the fruit, the feast.

A Mother in Recovery

Personal Reflection:

A Motivational Interviewing Native American Meditation

Guide me to be a patient companion,
to listen with a heart as open as the sky.
Grant me vision to see through her eyes
and eager ears to hear her story.
Create a safe and open mesa on which we may walk together.
Make me a clear pool in which she may reflect.
Guide me to find in her beauty and wisdom,
that she might live in harmony:
healthy, loving, and strong.
Let me honor and respect her choosing of her own path,
and bless her to walk it freely.
May I know once again, that although we are different,
yet there is a peaceful place where we are one.

Miller, W.R. & Rollnick, S. (2013) *Motivational Interviewing: Helping People Change*.
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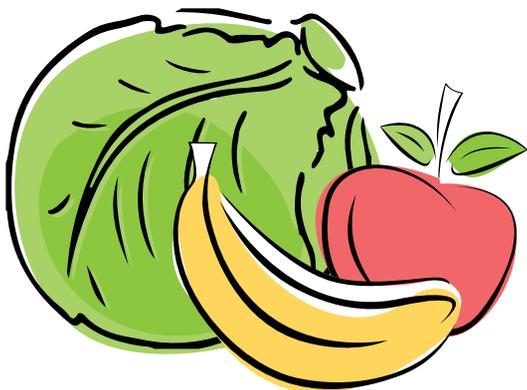
**Every woman
wants a healthy
baby...**

Nourish Yourself

- Eat fruits and vegetables for vitamins, minerals, and fiber.
- Ask your doctor about vitamins (folic acid, vitamin D and vitamin C), calcium and iron.
- Avoid foods high in sugar or fat, which are low in nutrients and may cause health problems.
- Too much caffeine (coffee, sodas) may hurt your baby's growth or cause miscarriage.
- Exercise every day, drink lots of water, and reduce stress as much as you can.

If you need help getting healthy foods contact the Women, Infants, and Children (WIC) program:

WIC
1-800-942-1007



Resources & Support

Having a baby is exciting, but it can also be stressful. Reach out for help and remember, you don't have to do this alone. Pregnancy can affect your stress, energy level, and mood. Get extra support, especially if you are feeling sad or overwhelmed. The Postpartum Support line can provide free and private information, support, and resources:

PSI
866-472-1897

The Department of Mental Health can help you find a counselor:

DMH
1-800-221-0053

If you have MassHEALTH, you can also call MBHP:

MBHP
1-800-495-0086



**A healthy baby
begins with a
healthy YOU!**





Text4Baby

For free health and safety tips, Text:

English
B-A-B-Y (2229)

Spanish
B-E-B-E (2323)

to 511411

Visit text4baby.org for more information.

There is No Safe Amount of Alcohol During Pregnancy

When you drink alcohol, your unborn child drinks alcohol. Alcohol use during pregnancy may cause your child to have learning and behavioral disabilities, as well as many physical problems. You can't undo the damage of drinking while pregnant, but as soon as you stop drinking the harm to your baby will stop.



Be honest about your substance use history and any medications you are taking to help you with pain management during delivery.

Develop a birth plan with the hospital you plan to use, including who you want at the delivery, how you will get there, and who will take care of your other children.

Being in treatment for a substance use disorder can send a strong message to DCF that you are serious about your recovery and about motherhood.

Breastfeeding is a cheap and healthy way to care for your baby. It is not recommended to smoke or drink alcohol while breastfeeding.

It is okay to breastfeed if you are on methadone or buprenorphine.

Benefits of stopping smoking in pregnancy

- You will reduce the risk of stillbirth and Sudden Infant Death Syndrome (SIDS)
- When you quit smoking, your baby's heart won't have to work so hard to get oxygen. As soon as you stop, you and your baby will breathe easier.
- Your baby will not be exposed to the many harmful chemicals in tobacco.
- Your baby will be less likely to develop asthma or other illnesses later in life

Quitting smoking is not easy, and you don't have to do it alone. For resources and support, call the Smoker's Helpline:

Smoker's Helpline
1-800-QUIT-NOW

For help finding treatment for a substance use disorder, call IHR:



Tel: 617-661-3991

Toll free: 1-866-705-2807

TDD: 617-661-9051

Pregnancy and Substance Use: Tips from an OB/GYN

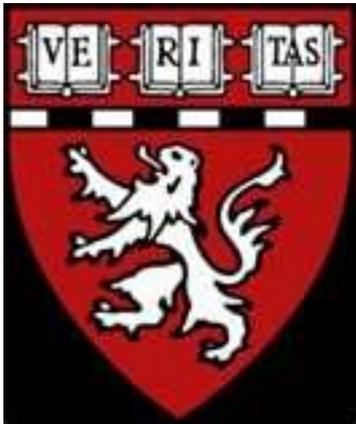
Erin E. Tracy, M.D., M.P.H.

Harvard Medical School

Vincent Obstetrics and Gynecology
Department

Massachusetts General Hospital

12 May 2015



I have no financial relationships with a commercial entity producing health-care related products or services

DISCLOSURE

I'm not a real expert. I just
play one on social media.

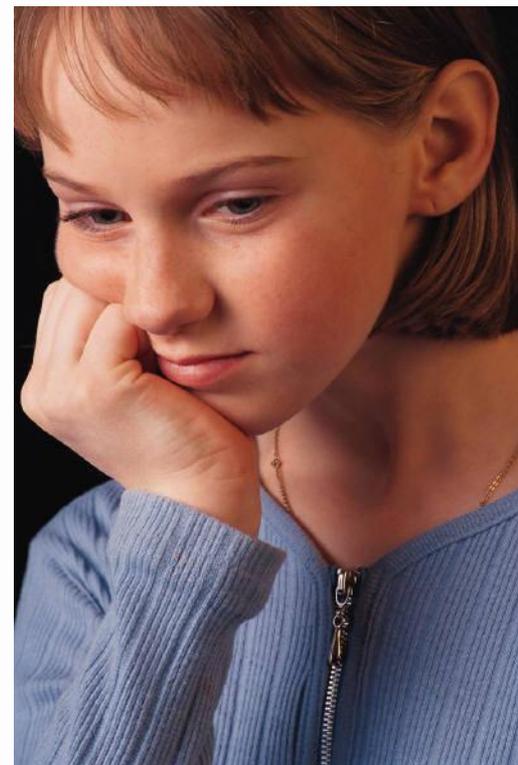


somee cards
user card

But.....



When you were young, did you dream of growing up to become addicted to alcohol or other drugs?





Engraving by
William Hogarth

Gin Lane

1750

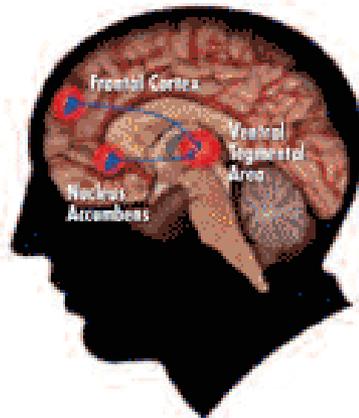


- Stigma, guilt & shame
 - Low social tolerance of addiction in women, judgmental attitudes & punitive approaches
 - Sexualized image - seen as promiscuous
 - Stereotype of bad, uncaring mother
 - Believe themselves to be failures in general, poor mothers not deserving of help
- Powerlessness, hopelessness, despair
- Lack of trust - fear of loss of children
- Anger & blame from caregivers

Addiction is a Brain Disease

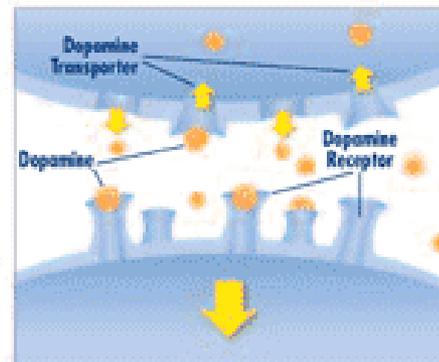
ALL DRUGS OF ABUSE TARGET THE BRAIN'S PLEASURE CENTER

Brain reward (dopamine) pathways



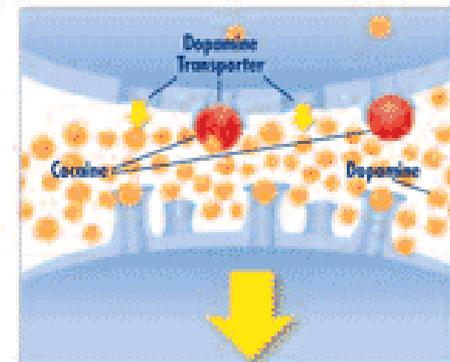
These brain circuits are important for natural rewards such as food, music, and art.

All drugs of abuse increase dopamine



FOOD

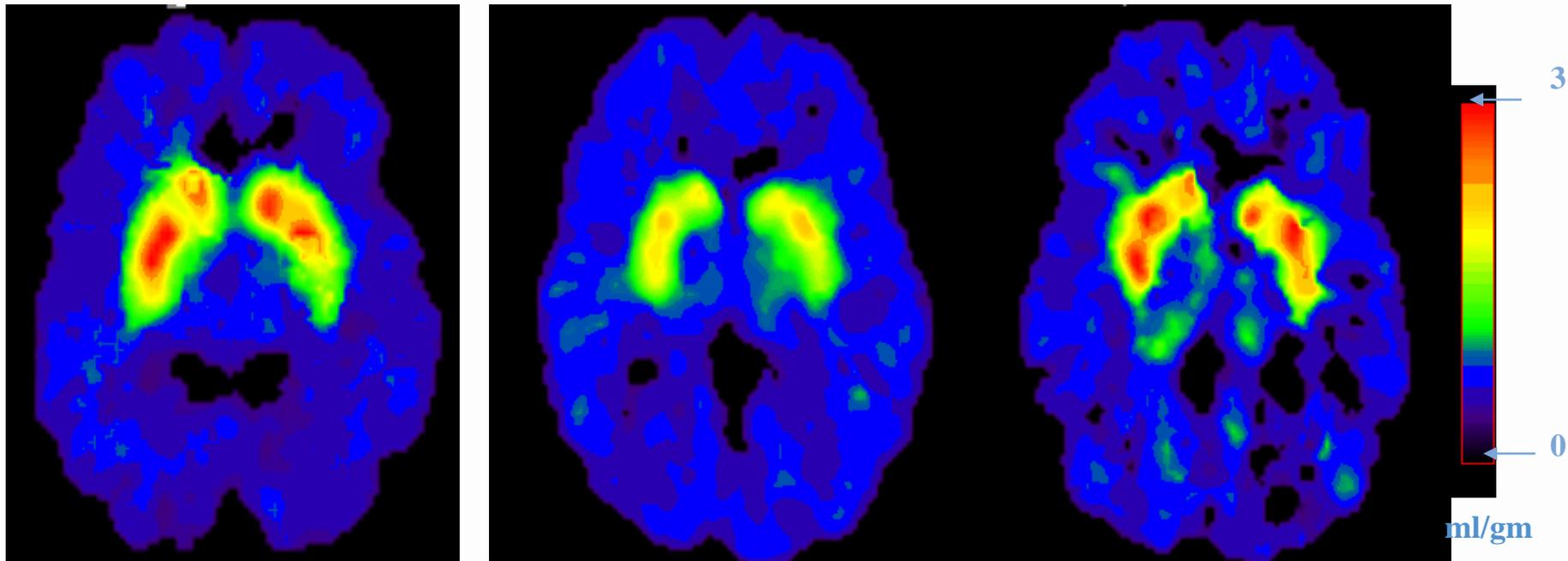
Typically, dopamine increases in response to natural rewards such as food. When cocaine is taken, dopamine increases are exaggerated, and communication is altered.



COCAINE

Addiction Can Be Treated

Partial Recovery of Brain Dopamine Transporters in Methamphetamine User



Normal Control

METH Abuser
(1 month detox)

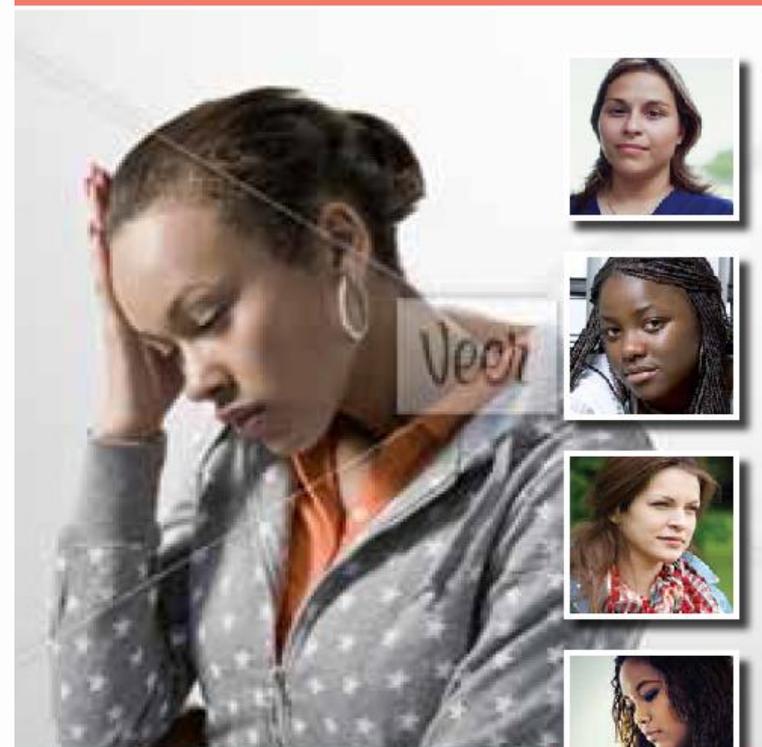
METH Abuser
(24 months detox)

Source: Volkow, ND et al., Journal of Neuroscience 21, 9414-9418, 2001.

Detox and Pregnancy



Detox and Pregnancy:
WHAT FAMILY AND FRIENDS
NEED TO KNOW



Detox and Pregnancy:
WHAT YOU NEED TO KNOW

Pregnant Women & Detox



Pregnant women and detox: the first 24 hours

What is detox? Detox is a place for you to get help to safely stop drinking or using drugs. Detox staff will help you get sober and ready for treatment.

How long will I be in detox? Every person is different. The time you need in detox depends on a lot of things, including:

- How sick you get
- What drugs you were using
- If you have other health or mental health problems

What will happen to me during detox?

- A doctor or nurse will give you a physical exam and ask you about your alcohol and drug use. Tell detox staff about all drugs you are taking. Taking certain medicines at the same time as some detox drugs can harm you and your baby.
- You will get medicine to help you feel better. Your body is used to taking drugs, and it feels sick without them. The sickness you feel is called withdrawal.
- Your doctor may give you medicines to protect you and your baby until the alcohol or drugs are out of your system.

You need to call your insurance provider right away and talk to them about other services they might be able to give you. The phone number to call is on the back of your insurance card. You may have two numbers to call: one for "behavioral" health and one for other health care. Call both numbers.

What if I don't have insurance for care during my pregnancy?

Find out about Healthy Start. This is a health insurance plan for pregnant women who meet certain income requirements. Call 1-888-665-9993 to find out if you can use the plan or 1-800-841-2900 to sign up.

Stay hopeful. You are taking the first step in getting healthy for you and your baby.



Pregnant women and detox: the first 24 hours

I just found out I'm pregnant. Many women find out they are pregnant when they come to detox. This is because all women take a pregnancy test when they start detox.

If you don't have a doctor for your pregnancy (called an obstetrician or OB), the detox staff may be able to help you find one.

You may not be sure if you want to continue with the pregnancy. This is a difficult choice to make. If you want to discuss your choices about the pregnancy, you can talk with a doctor or call Planned Parenthood at 1-800-258-4448.

Detox staff is here to help you.

Talk to them about how you are feeling and ask them questions. It is especially important to talk to them if you:

- Have children at home that need someone to take care of them
- Are being abused by a partner
- Are depressed or thinking about suicide (killing yourself)

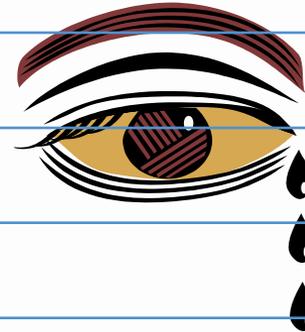
**Before you leave,
detox staff will help you plan
what to do next.**



XX0000 Item#

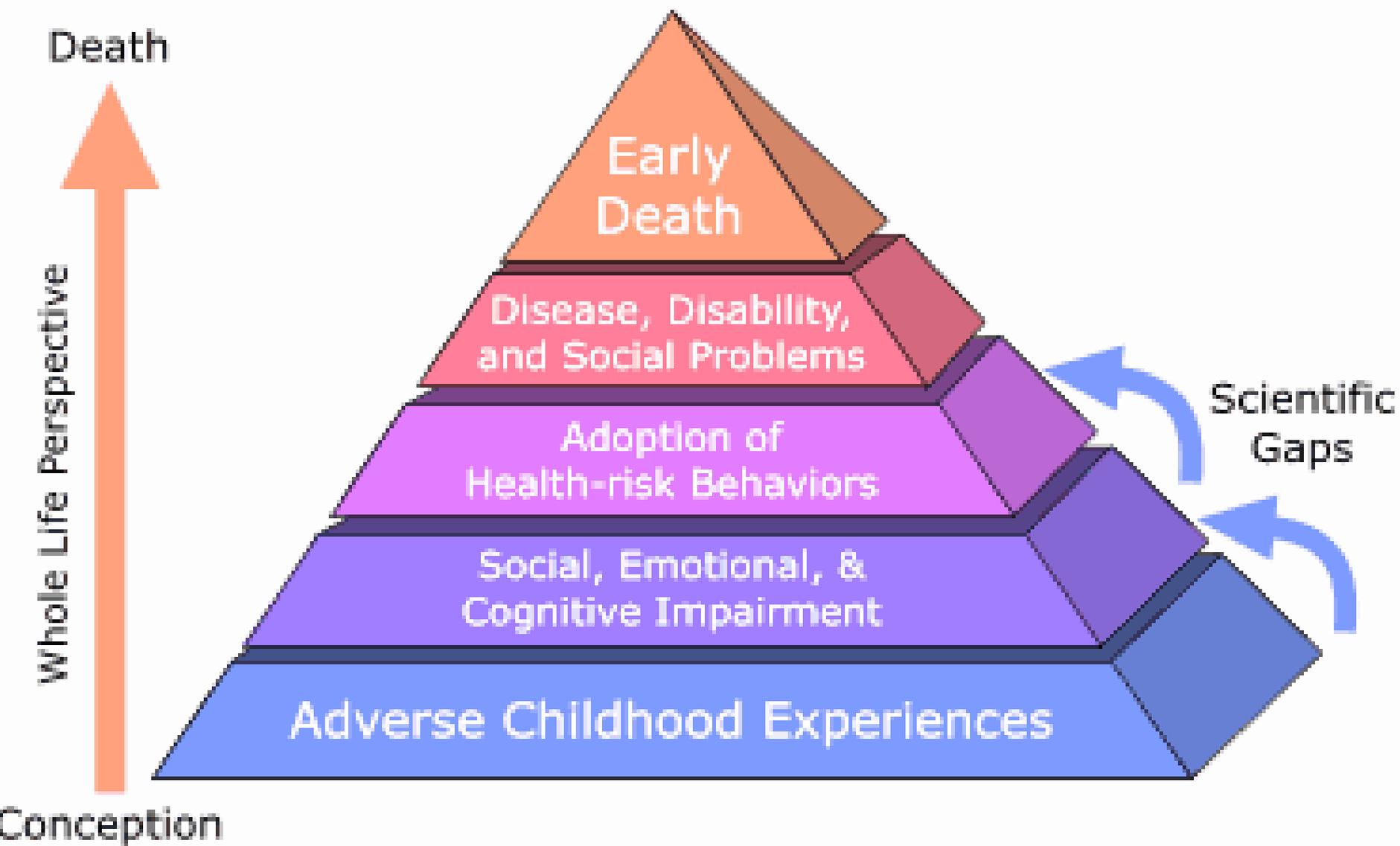
What is the role of childhood trauma in later substance misuse?

Recurrent & severe physical abuse	11%
Recurrent & severe emotional abuse	11%
Contact sexual abuse	22%
Growing up in a household with:	
Alcoholic or drug-user	25%
Member being imprisoned	3%
Mentally ill, chronically depressed, or institutionalized member	19%
The mother being treated violently	12%
Both biological parents NOT present	22%

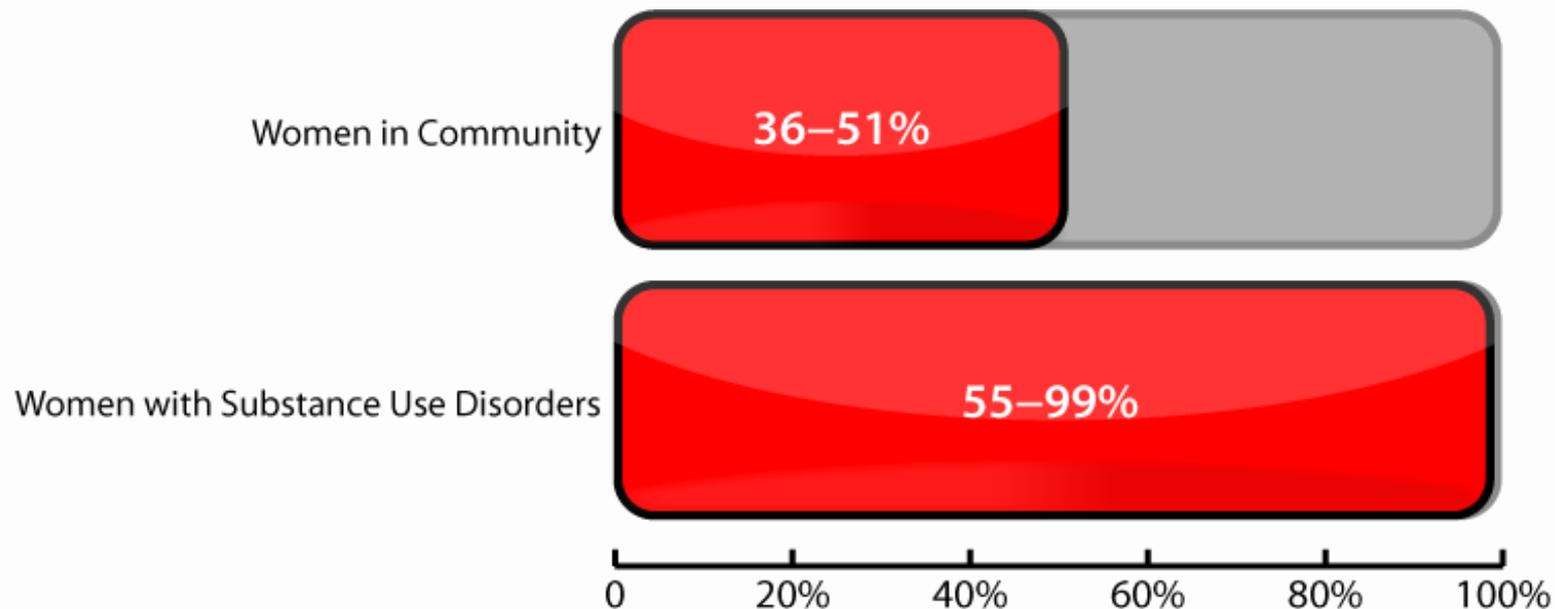


- Compared to persons with ACE score of 0, those with ACE score of 4 or more were:
 - 2x more likely to be smokers
 - 12x more likely to have attempted suicide
 - 2x more likely to be addicted to alcohol
 - 10x more likely to have injected street drugs

www.cestudy.org



Substance Use Disorders, Women, and Trauma



Najavits et al., 1997

Trauma-Informed Approaches

- Approach each person in a manner that would be safe and engaging to a trauma survivor
- Give person as much information and as many choices as possible to contribute to his/her feeling safe to reveal sensitive info
- Ask questions as if positive responses are usual and normal

Substance Use During Pregnancy.

- • and possible effects on children



Factors Affecting Substance Use Impact on Fetus/Neonate

- Poverty
- Poor Nutrition
- Limited Education
- Violence
- Trauma
- Lead Exposure
- Poly-substance Use
- Genetics/Epigenetics
- Limited Access to Prenatal Care
- Pollution
- Timing & Dose

if...



TOP DOCS 2012
THE BEST PHYSICIANS IN 57 SPECIALTIES

645
DOCTORS
INSIDE

Boston

WHAT, ME WORRY?
THE GROWING MEDICAL DEBATE OVER DRINKING WHILE PREGNANT

"I don't think a glass of wine makes me a bad mom."

Leah Callahan, photographed while 37 weeks pregnant >>

bostonmagazine.com \$4.99 U.S. 12 >
74851 97372 4



ABC Good Morning America

- **Can Pregnant Women Drink Alcohol in Moderation?**
 - Two Ob/Gyns (one had “never seen a case” FASD in 20 yrs)
 - Feb. 2, 2008





Belinda Carlisle

Autobiography:
***Lips Unsealed: A Memoir
Living***

**On others seeing her
drink while pregnant: “I
didn’t notice and I didn’t
pay attention. I only
noticed what I cared to
notice. I didn’t really pay
attention to what other
people said.”**

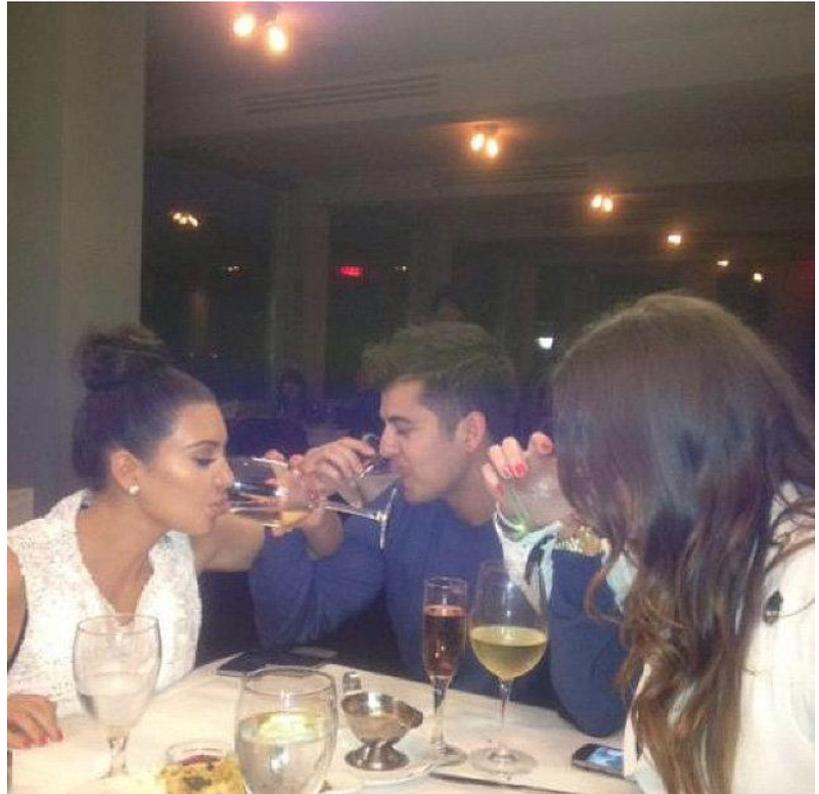
Kate Hudson:

Don't Cry (Or Wine) For Me,
Argentina



Kim Kardashian

comes under fire for
drinking during pregnancy,
says “pregnancy is hard”



<http://radaronline.com/exclusives/2011/04/photo-kate-hudson-dont-cry-or-whine-me-argentina/>

<http://uk.omg.yahoo.com/gossip/the-juice/pregnant-kim-kardashian-alcohol-twitter-photo-says-pregnancy-is-hard-075305789.html>

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LOOK
INSIDE

EXPECTING

BETTER

Why the Conventional
Pregnancy Wisdom
is Wrong—and
What You Really
Need to Know

EMILY OSTER

Associate Professor of Economics, University of Chicago

Copyright © 2013

The Wall Street Journal
*“Take Back Your
Pregnancy”* “Modern
pregnancy comes with a
long list of strict rules, but
does it have to? An
economist examines the
data and finds room for
choice amid the familiar
limits.”

August 9, 2013

“getting the numbers led
me to a more relaxed
place—a glass of wine
every now and then”

Light Drinking Said OK for Pregnant Women

Oct 6, 2010 03:00 AM ET



The results don't mean that alcohol is good for a developing fetus

<http://news.discovery.com/human/health/alcohol-drinking-pregnant-women.htm>



Title: “Light Drinking’ During Pregnancy is Not Harmful for Baby, Study Says”

- Deputy in Chief editor statement re: study: **“the safest option would be to abstain from drinking during pregnancy”** April 18, 2013

Read more: <http://newsfeed.time.com/2013/04/18/light-drinking-during-pregnancy-is-not-harmful-for-baby-study-says/#ixzz2RJxRHsXd>

But.....

- “Behold, thou shalt conceive, and bear a son; and now drink no wine nor strong drink...”



Judges 13:7

An infographic with a yellow background. On the left, there is a silhouette of a pregnant woman in green, standing in front of a group of lighter yellow silhouettes representing other people. The text '1 in 13' is written in large, bold, dark red font at the top. Below it, the text 'pregnant women reports alcohol use*' is written in a dark blue font. At the bottom, there is a small grey font text providing a definition and source.

1 in 13

pregnant women
reports alcohol use*

*Defined as at least one drink of any alcoholic beverage
in the past 30 days.

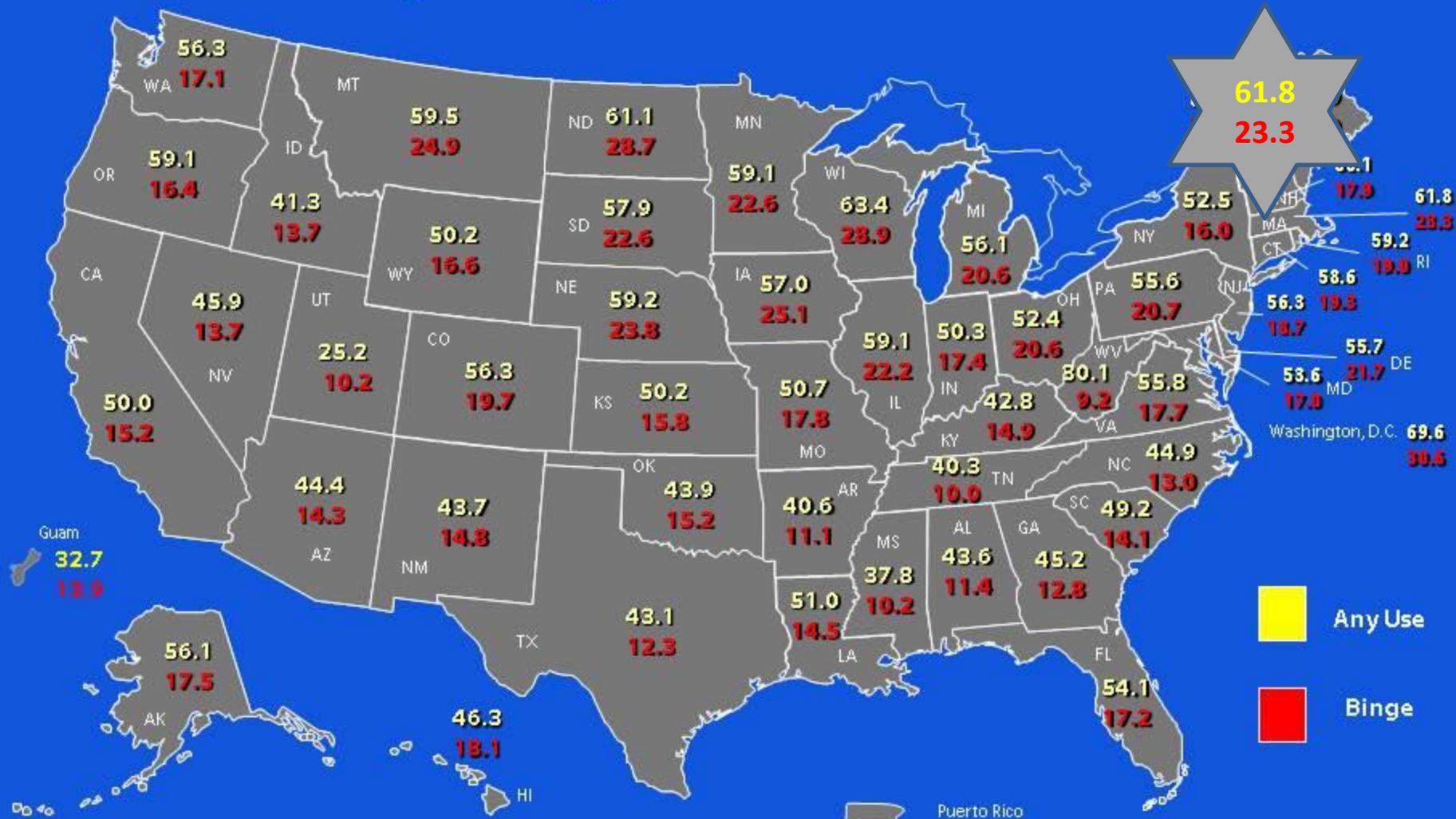
Source: CDC Behavioral Risk Factor Surveillance System
(BRFSS), United States, 2006–2010.

No Statistical difference

- Race
- Ethnicity
- Employed
 - Any use OR 1.6 (1.2-2.0)
 - Binge OR 2.4 (1.3-4.5)
- Not Married
 - Any use OR 1.8 (1.4-2.5)
 - Binge OR 3.1 (1.8-5.6)



State-Specific Weighted Prevalence Estimates of Alcohol Use (Percentage of Any Use*/Binge Drinking†) Among Women Aged 18 – 44 Years — BRFSS, 2012



*Any use: One or more drinks during the last 30 days
 †Binge: Four or more drinks on any one occasion during the last 30 days

Of all substances of abuse (including cocaine, heroin, and marijuana), **alcohol** produces by far the most serious neurobehavioral effects in the fetus.



Stratton, Institute of Medicine, 1996

Prenatal tobacco use can result in...

- Spontaneous abortion or ectopic pregnancy
- Low birth weight
- SIDS
- Reduced cognition
- Behavioral problems

- **Smoking more than a pack a day during pregnancy...**
 - Nearly doubles the risk of the child becoming addicted to tobacco if he or she starts smoking.
- **DOUBLE TROUBLE...**
 - Alcohol & Tobacco: >preterm labor, low birth rate, & growth restriction than either smoking *or* drinking

- On March 27, 2014, Governor Deval Patrick declared a public health emergency in Massachusetts in response to the growing Opiate epidemic.



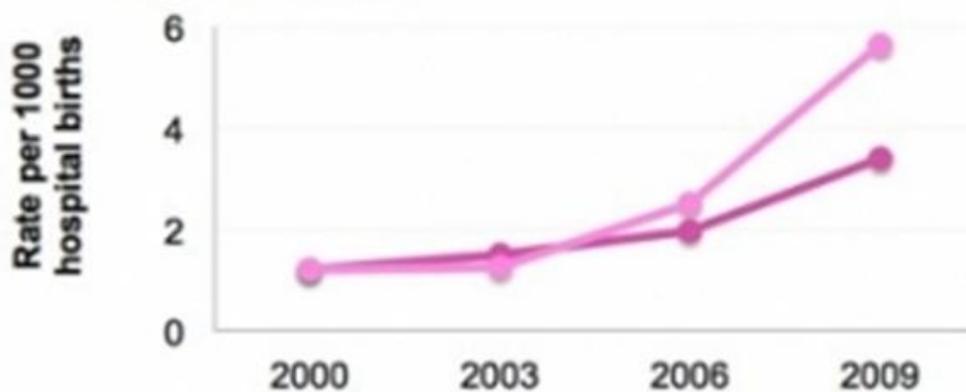
Every hour,
1 BABY
is born
suffering
from opiate
withdrawal.

Average length or cost of hospital stay



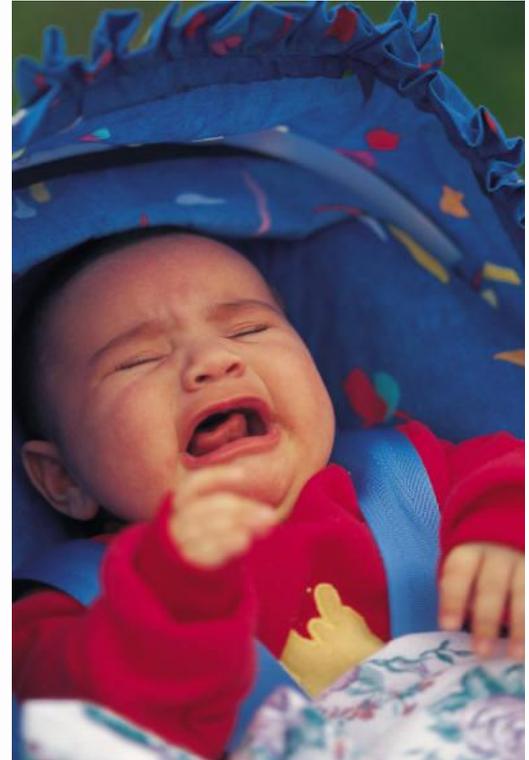
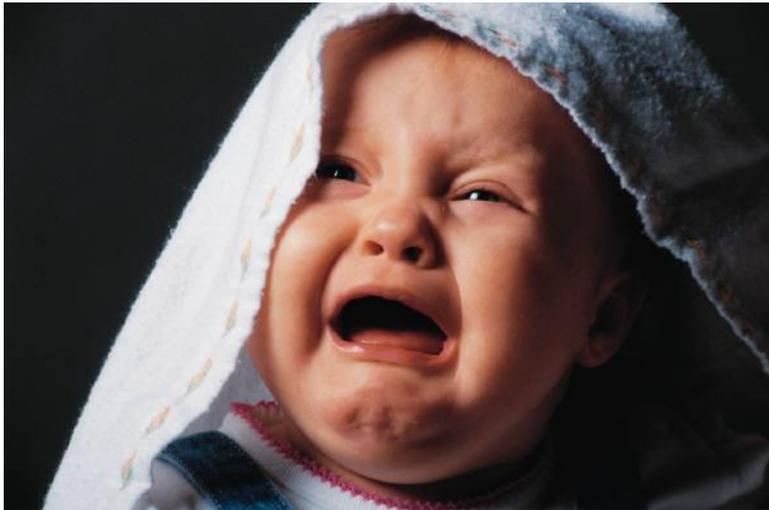
NAS and maternal opiate use on the rise

- Newborns suffering from opiate withdrawal
- Maternal opiate use



Source: Patrick et. al., JAMA 2012

Neonatal Abstinence Syndrome (NAS)





Mrs Winslow's Soothing Syrup (w/ Morphine)
Trading Card / Ad (1885-1890), Erowid.org Archive

- **Methadone:** Length of tx improves outcomes; appropriate for pregnant women
- **Buprenorphine/Suboxone/Subutex[®] :** (for opiates, oxycontin, vicodin use): Physician-assisted, research on pregnancy indicates positive results are possible

- Currently standard of care in US for pregnant women
- Improves prenatal care
- Reduces risk of exposure to HIV, Hep C, etc.
- Healthier lifestyle
- Reduces fetal exposure to repeated maternal opioid withdrawal
- **Contributes to a 3-fold increase in Tx retention**

Prenatal Exposure to Opioids MAY result in...

- Intrauterine Growth Restriction
- Low birth weight
- Neonatal Abstinence Syndrome
- Motor delays
- Attention problems
- Compromised regulatory behaviors
- Neurological deficits



...most of which can
be resolved in a
healthy postnatal
environment

- Compromised parenting has as great, if not greater, negative effects on child development than prenatal substance exposure Lester, Andreozzi, & Appiah, 2004; Messinger et al., 2004; AIA, 2008



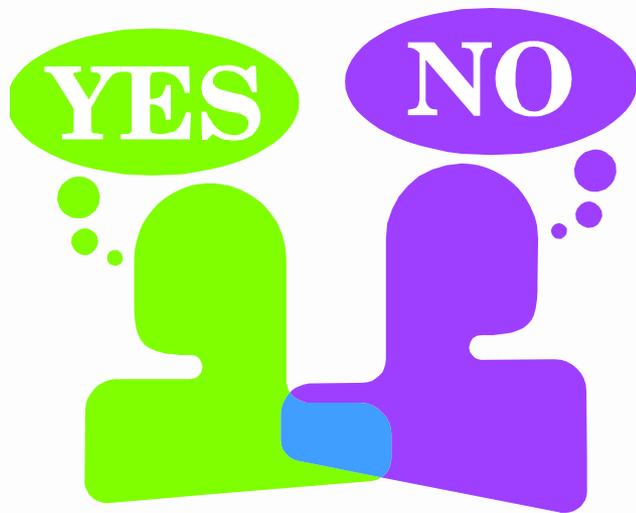
- Parenting services are critical for child outcomes. Since a range of factors can contribute to poor parenting and poor child outcomes, it is the quality of the parent-child relationship that mediates the effects of most other risk factors on child development Dawe, Harnett, et al., 2000

Marijuana



*"Sure, I fooled around with drugs when I was your age,
but that was to protest the war."*

Don't Get Your Hopes Up..



- Increased Childhood depression?
- Early onset MJ use at 14?
- Memory deficits?
- Increased Hyperactivity?
- Problem solving deficits?
- Acting out?

Marijuana and Parenting



Remember her?



What is a teratogen, you ask?

- Any substance, agent, or process that interferes with normal prenatal development, causing the formation of one or more developmental abnormalities in the fetus...**Among known teratogens are thalidomide, alcohol, and infections agents such as the rubella virus.**

Mosby's Medical Dictionary (2009), 8th ed., Elsevier



Fetal Alcohol Spectrum Disorders (FASD)

- Umbrella term describing range of effects that can occur to a child whose mother drank alcohol during pregnancy
 - Fetal Alcohol Syndrome (FAS)
 - Neurodevelopmental Disorder associated with Prenatal Alcohol Exposure (ND-PAE, DSM-5)
 - Partial FAS (pFAS)
 - *FASD > common than Autism and Down Syndrome*
 - *Organic effects are not reversible*
 - *Effects of FASD last a lifetime*
 - *People with an FASD can grow, improve and function well in life*

The Effects of Alcohol Consumption on a Developing Baby

Months 1, 2, & 3	Months 4, 5, & 6	Months 7, 8, & 9	Birth-18 months
			
<ul style="list-style-type: none"> The major organs develop (heart, lungs, kidneys, etc.) The basic structure of brain is laid down 	<ul style="list-style-type: none"> Body grows rapidly Movement increases 	<ul style="list-style-type: none"> The brain grows very rapidly and organizes itself so it can work properly The lungs mature 	<ul style="list-style-type: none"> The brain continues to grow rapidly as the baby learns new things every minute
Drinking alcohol during the first 3 months can result in problems such as heart defects and facial changes.	Drinking alcohol during the second 3 months can slow a baby's overall growth and change the way cells in the brain develop.	Drinking alcohol during the last 3 months can greatly reduce brain growth and hurt overall brain development.	A mother who drinks alcohol while breastfeeding will pass some of that alcohol along to her baby. Babies drink less milk when there is alcohol in it.
<u>Stopping</u> drinking during the first 3 months can help prevent organ damage and changes to the way the face looks.	<u>Stopping</u> drinking now can improve a baby's birth weight and growth and prevent the most severe effects on the brain.	<u>Stopping</u> drinking now can prevent the most severe effects on the brain (early in the 3 rd trimester) and prepare the mother to handle the challenges of raising a child.	<u>Stopping</u> now means that a baby will get the nutrition that he or she needs, and a mother can be a better parent, more prepared to deal with the ups and downs of raising children.

Areas of the Brain Affected by Prenatal Alcohol Exposure

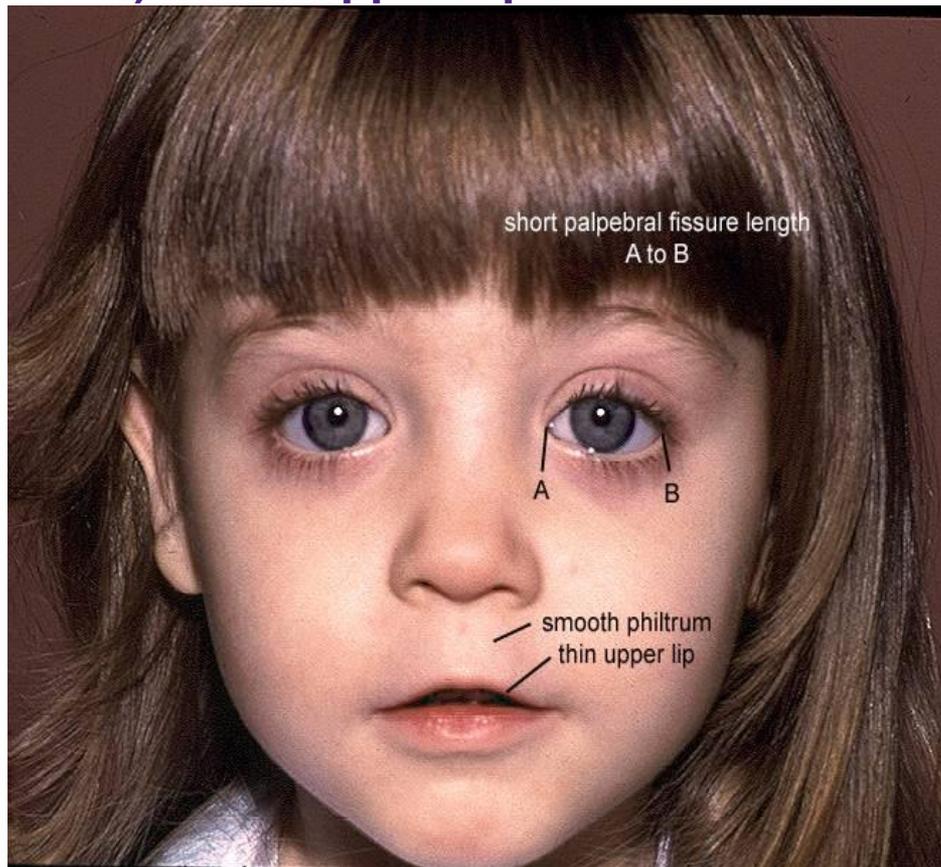
- **Cerebellum:** Coordination and movement
- **Frontal lobes:** Cognition and memory, ability to concentrate, judgment, inhibition
- **Corpus callosum:**
 - Diminished communication between the hemispheres
 - Correlation with impairment in verbal learning ability
- **Hippocampus:** Memory
- **Amygdala:** Impulse
- **Basal ganglia:** Initiation and direction of voluntary movement, agitation, loss of control of emotion

- Small head circumference; below 10th percentile
- Poor fine and gross motor coordination
- Range of cognitive disabilities including:
 - Learning disabilities
 - Intellectual disabilities
 - Speech and language deficits
 - Memory and processing problems
 - Attention problems

- Cardiac
- Embryonal tumors
- Immune system
- Auditory
- Ocular
- Renal
- Gastrointestinal
- Endocrine
- Muscular
- Cutaneous
- Genitalia

The Three FAS Facial Features

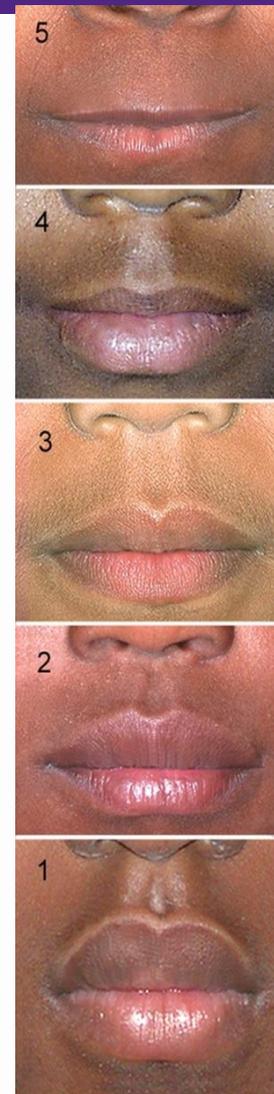
- 1) Short PFL ≤ -2 SD
- 2) Smooth Philtrum Rank 4 or 5
- 3) Thin Upper Lip Rank 4 or 5



FAS



Lip-Philtrum Guide 1



Lip-Philtrum Guide 2

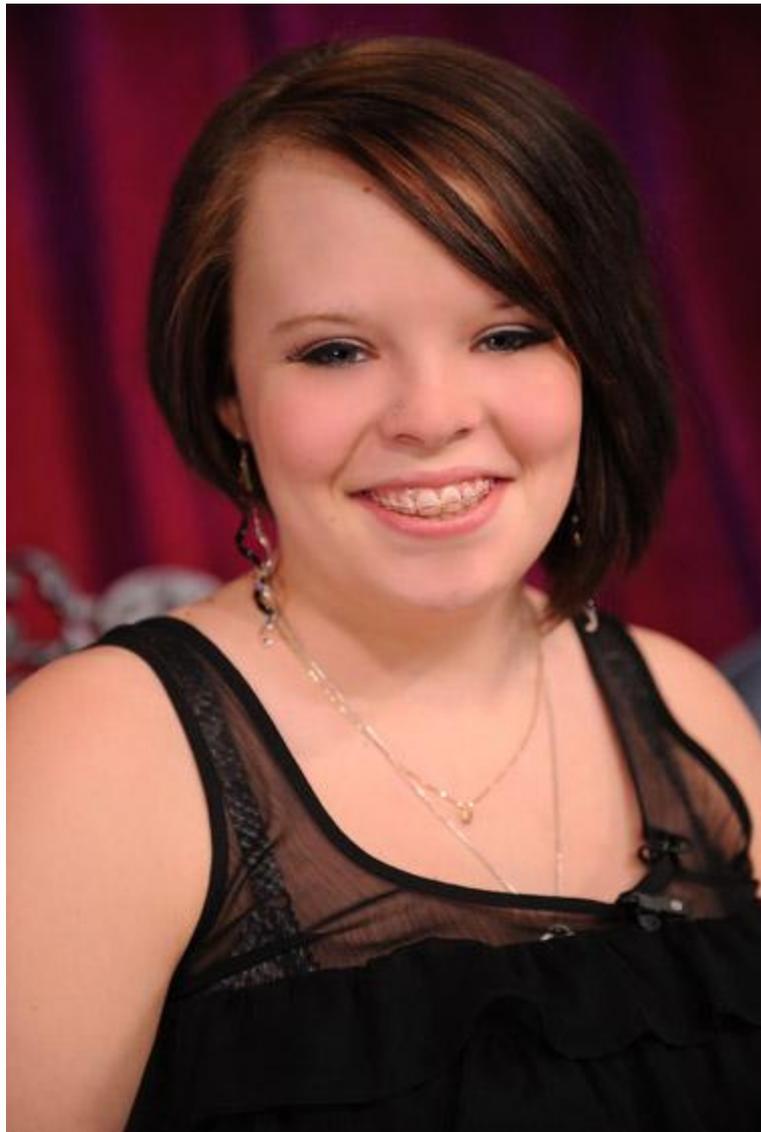
S. J. Astley, PhD FAS
DPN, Univ of
Washington 2008



FOETAL ALCOHOL SYNDROME



<http://www.bing.com/images/search?q=fetal+alcohol+syndrome+facial+features%2c+image&id=DC1B66D7AFCCF020EB801FB2E3FDE7CC99751F65&FORM=IQFRBA#view=detail&id=7BDDE189F646FE24996850C7E3A850C5C9CCCC49&selecte dIndex=27>



<http://www.bing.com/images/search?q=fetal+alcohol+syndrome+facial+features%2c+image&id=DC1B66D7AFCCF020EB801FB2E3FDE7CC99751F65&FORM=IQFRBA#view=detail&id=69C2C1815B8D3336BBDB23B50E778C7F4D4099B&selectedIndex=7>

Not everyone with an FAS-like face...



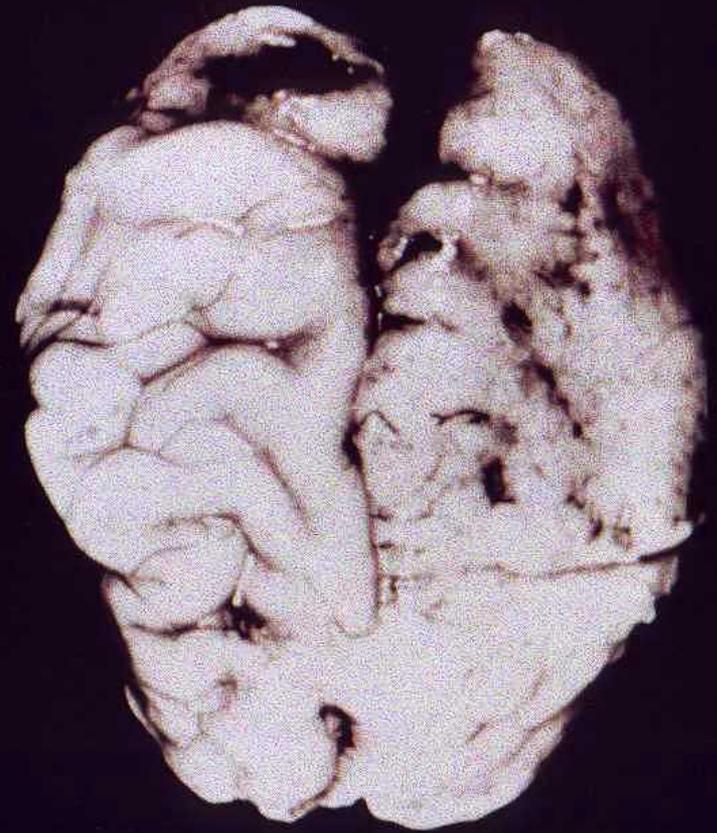
**Long flat
philtrum**

**Thin
vermilion**

Stoler, 2005



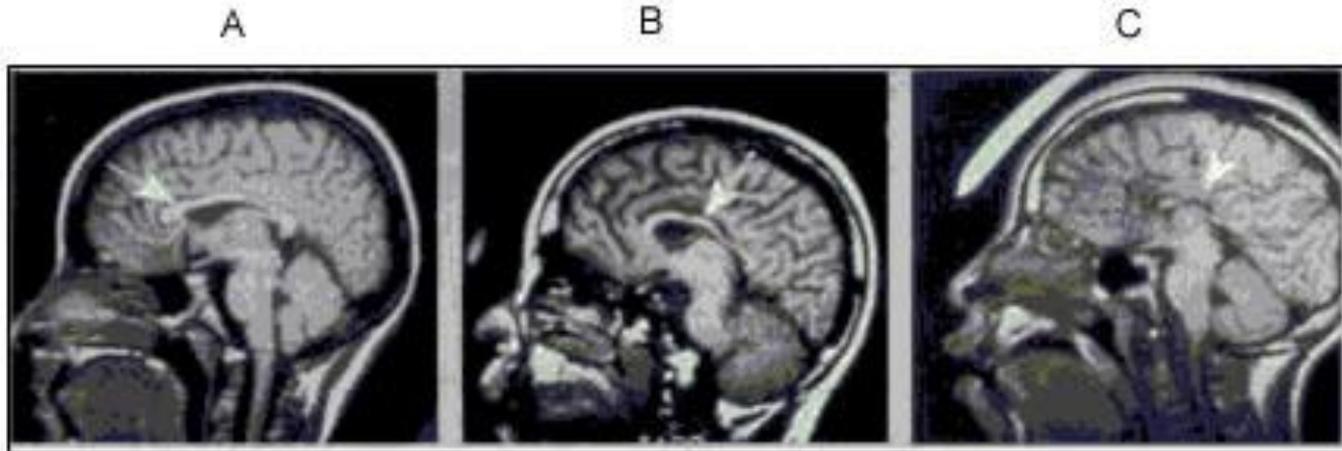
6-Week Old Baby
"Normal" brain



6-Week Old Baby
"Fetal Alcohol Syndrome" brain

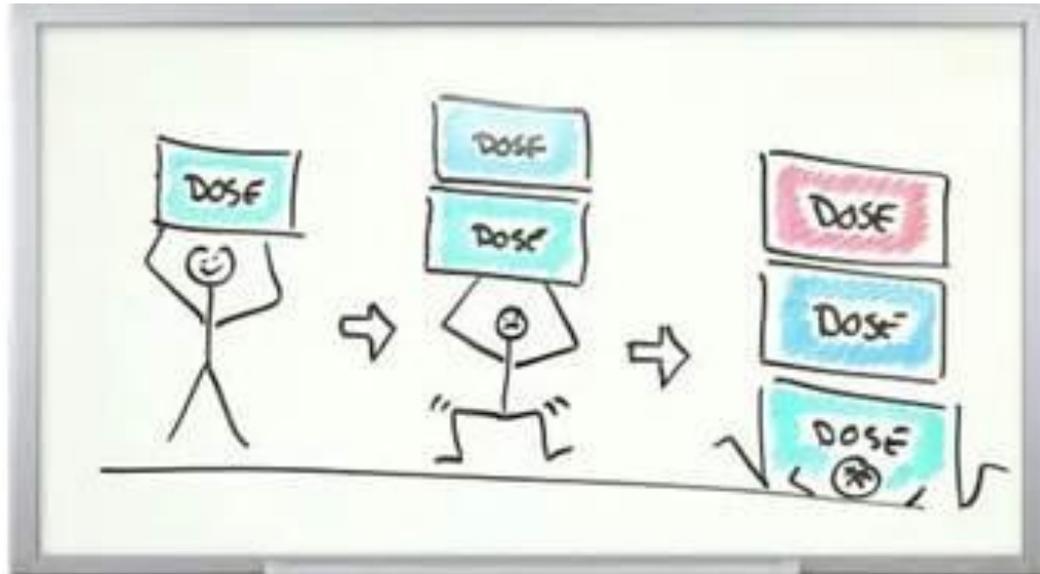
<http://www.faslink.org/fasmmain.htm>

Corpus Callosum



A. Magnetic resonance imaging showing the side view of a 14-year-old control subject with a normal corpus callosum; B. 12-year-old with FAS and a thin corpus callosum; C. 14-year-old with FAS and agenesis (absence due to abnormal development) of the corpus callosum.

No threshold dose

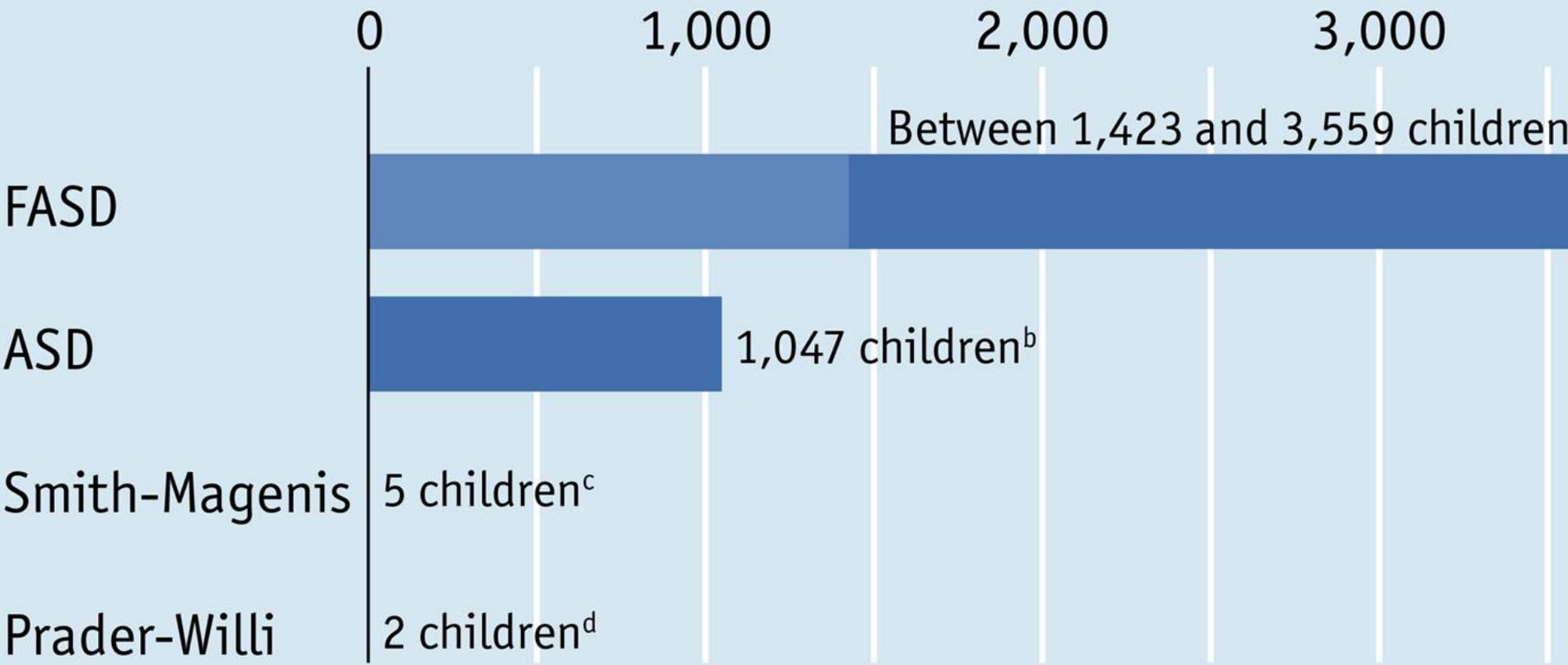


- Ernhart CB, *Amer J Obstet gynecol* 1987;156:33-9
 - 359 newborns
- 2012 CA study, n=992
 - 1978-2005
 - Feldman H et al. *Alcohol Clin Exp Res* 2012;36:670-6.

<http://www.bing.com/images/search?q=threshold+dose%2c+image&id=67DC38A43E4978FB9A574B61F428A9394731A13D&FORM=IQFRBA#view=detail&id=A31A469405C80CCDB1351FB3347ABEDEF7E459A9&selectedIndex=47>

Comparing ASD and FASD in Massachusetts

Mass. developmental disabilities per year, extrapolated from national averages



^a May, P.A., Baete, A., Russo, J., Elliott, A.J., Blankenship, J., Kalberg, W.O.,... Hoyme, H. (2014) Prevalence and characteristics of fetal alcohol spectrum disorders. *Pediatrics*, 134, 855-66.
^b Baio, J. (2010) Prevalence of autism spectrum disorder among children aged 8 years. *Morbidity and Mortality Weekly Report*, 63(2), 1-21.
^c US National Institutes of Health, National Library of Medicine. (2015) Smith-Magenis Syndrome. Retrieved from <http://ghr.nlm.nih.gov/condition/smith-magenis-syndrome>
^d US National Institutes of Health, National Library of Medicine. (2015) Prader-Willi Syndrome. Retrieved from <http://ghr.nlm.nih.gov/condition/smith-magenis-syndrome>

- **Common Overlap:**
 - Expressive and receptive language area
 - Qualitative impairments in social awareness, social cognition, social communication



O'Malley, K. & Rich, S. (2013). Clinical implications of a link between Fetal Alcohol Spectrum Disorders (FASD) and Autism or Asperger's Disorder - A neurodevelopmental frame for helping, understanding and management. *Recent Advances in Autism Spectrum Disorders, 1*, 451-477.

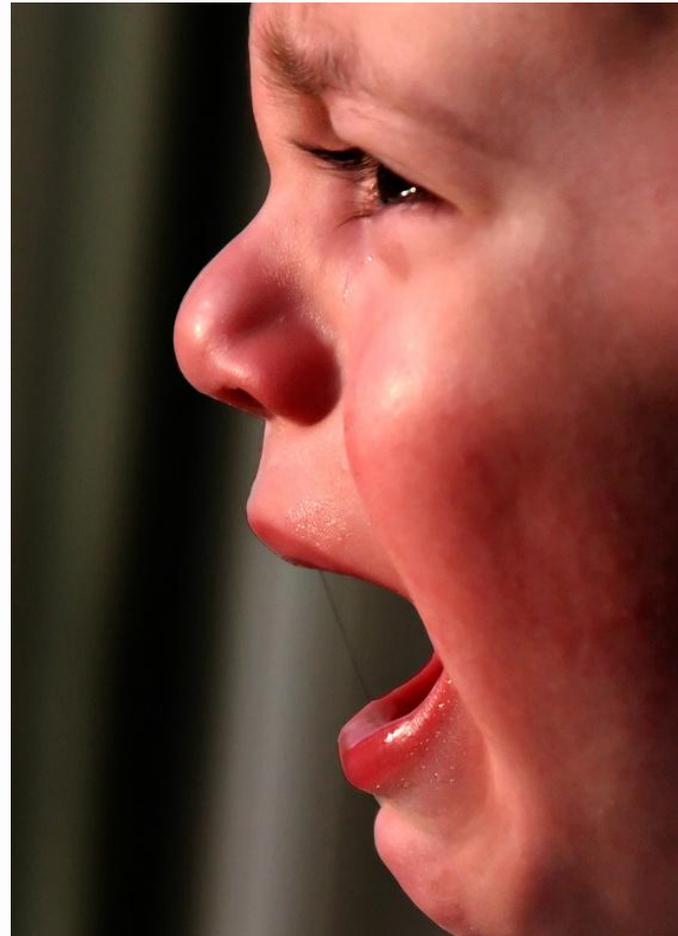
Prenatally-Exposed Infants

- Greater reactivity to stress
- Show poorer orientation & habituation
- Increased low arousal & higher irritability
- Slower reaction time & info processing
- Less mature motor behavior & increased activity
- Alterations in pain regulatory system
- Higher levels of negative affect and rates of insecure attachment
- Difficulties with sensory integration

Prenatally-Exposed Young Children

- Deficits in sustained attention, emotional reactivity, increased activity levels
- Irritability
- Depressive & anxious symptoms
- Aggressive behavior

Adapted from Paley, Oct. 22, 2010 presentation



- Though clearly at risk, SENs may not exhibit any or early developmental delays
- SENs that do not meet EI eligibility criteria should be re-screened every 4-6 months
- In some states, children are eligible for EI services based on substance-exposure alone
- SUD Family Residential Tx programs are a perfect match for EI and EIPP (pregnant/postpartum)

Strategies for Addressing FASD, Birth - Age 3

Sleeping	Eating	Touch/Sensory	Developmental Delays
 <ul style="list-style-type: none"> • Trouble falling asleep • Wakes after short periods • Does not develop a regular sleep/wake pattern 	 <ul style="list-style-type: none"> • Has trouble coordinating sucking and swallowing • Tires easily from feeding (falls asleep) • Pushes nipple or spoon out of mouth with tongue • Is easily distracted away from task of eating 	 <ul style="list-style-type: none"> • Stiffens, rather than softens when held • Bathing, brushing teeth or hair are difficult • Startles easily • Sniffs everything • Certain clothes, tags are irritating; child removes clothes 	 <ul style="list-style-type: none"> • Skills such as walking, talking are delayed • Physical skills may be clumsy • Language acquisition is slow • Needs to hear things over and over again
Strategies to Help	Strategies to Help	Strategies to Help	Strategies to Help
<ul style="list-style-type: none"> • Keep swaddled or use heavy bedclothes/sleeping bag • Don't pick up from crib right away when they wake • Put babies to sleep when drowsy, not asleep • Try a high protein snack before bed • Develop a bedtime routine 	<ul style="list-style-type: none"> • Adjust nipple opening on bottle • Feed smaller amounts more often • Try different nipples, spoons • Feed in a quiet, low light place, no talking • Seek sensory integration therapy 	<ul style="list-style-type: none"> • Wrap snugly in a towel or blanket before handling • Try different brushes • Break hair or tooth brushing into several short sessions • Try a shower for a toddler • Speak quietly before touching • Provide sensory experiences • Remove tags from clothing; turn socks inside out 	<ul style="list-style-type: none"> • Check with doctor to rule out physical problem • Encourage lots of physical activity • Use songs, book tapes, tape recorders etc. to increase language practice • Use pictures to reinforce language • Provide lots of play time with other children

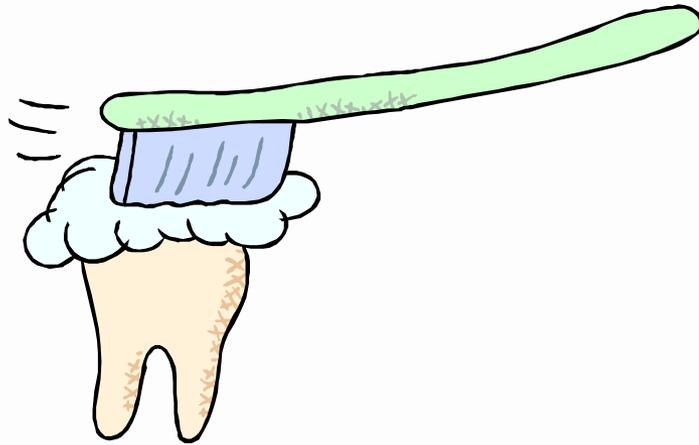
- Early language development may be delayed
- Often verbal but w/o a lot of content
- Verbal RECEPTIVE language is more impaired than verbal EXPRESSIVE language
 - Talk a good game, but not able to process what they hear
 - Will act on pieces of what they hear
 - This is often perceived as purposeful oppositional or uncooperative behavior

- Clean your room
- Take a shower
- Wait a minute
- You're shooting yourself in the foot
- Be quiet
- Don't drink and drive
- See your probation officer
- Follow the rules
- Call with any questions

Comparing ADHD, FASD & Oppositional Defiant Disorder

FASD	ADHD	Oppositional Defiant Disorder
Doesn't complete tasks	Doesn't complete tasks	Doesn't complete tasks
<ul style="list-style-type: none"> -may or may not take in info -cannot recall info when needed -cannot remember what to do 	<ul style="list-style-type: none"> -takes in info -can recall info when needed -get distracted 	<ul style="list-style-type: none"> -takes in info -can recall info when needed -choose not to do what they are told
Provide one direction at a time	Limit stimuli and provide cues	Provide positive sense of control, limits & consequences

What are the
steps/skills
need to brush
your teeth?



Brushing Your Teeth

- Recognizing importance of hygiene (social skills)
- Identifying objects need (visual association)
- Identifying objects (object recognition)
- Grasping toothbrush (fine motor, sensory)
- Squeeze toothpaste on brush in appropriate amount (strength, fine motor, proprioception)
- Turn on water (fine motor, sensory)
- Brush teeth (gross/fine motor, coordination, sensory)
- Rinse mouth (fine motor, sensory, visual)
- Wipe face (fine motor, coordination)
- Wipe face (gross/fine motor, coordination)

With a neurological deficit, it can be difficult to remember a sequence. (No automatism)

Joy Dell, OTD, OTR, Assoc Prof, Occupational Therapy, Creighton Univ. 2014



Difficulties with Compliance

- Difficulty doing things on their own
- Consistently get into difficult situations with others
- Wander away, ‘fade out,’ ‘space out’
- Need tremendous amount of one on one support
- Limited response to punishment

- Difficulty with math skills and abstract reasoning
- Difficulty with reading comprehension
- Problems following multiple directions or rules
- Attention deficits
- Difficulty organizing tasks and materials
- Sensitivity to sensory input:
 - Auditory processing
 - Poor impulse control

Social Situations

- Act ‘inappropriately’
- Do not filter what they are saying
- Say ‘rude’ things and interrupt frequently
- Have difficulty with sustained relationships
- May laugh at joke but take it seriously
- Naïve and gullible
- Easy marks for negative manipulation and abuse

- Fred is 7, foster placement, traumatic abuse
- Diagnosis: Failure to thrive, PTSD, ADD, Serious Emotional Disturbances, ODD, LD. IQ = 75.
- Described as: explosive, controlling, avoidant, resistant, easily frustrated, socially inappropriate



This isn't really Fred

Interventions for Fred

- Classroom aide
- Medications
- Individual therapy
- Verbal Warnings
- Behavioral class room placement
- Time outs
- Isolation

Yet Fred still had daily melt-downs, tantrums, and application of 4 pt restraint

Primary Characteristics of Fred's Disability

- **Dysmaturity:** functions at half of chrono age
- **Sensory processing:** easily overwhelmed, lights, noise
- **Language:** hears every third word
- **Memory:** can't store and retrieve
- **Executive functioning:** problems planning, implementing, abstract thinking

Fred: Trying Differently, Not Harder

Dx: Static Encephalopathy associated with Prenatal Alcohol Exposure

- Significant dysmaturity: 7 y.o., acts like 3 y.o.
 - **Adjust expectations** > punishment
- Memory problems
 - **Repeat, repeat, repeat**
- Slow auditory processing
 - **Slow down, fewer words, simple instructions**
- Rigidity and perseveration, poor transitions
 - **Fewer tasks, less frustration**
- Sensory integration dysfunction
 - **Breaks and movement** > sitting still

Fred's tantrums and 4 pt restraints ended within a week.

Seeing things differently

From Seeing		To Understanding
Won't	➡	Can't
Lazy	➡	Tries hard
Lies	➡	Fills in
Doesn't try	➡	Exhausted or can't start
Doesn't care	➡	Can't show feelings
Refuses to sit still	➡	Over-stimulated
Fussy, demanding	➡	Over-sensitive
Resisting	➡	Doesn't 'get' it

The incidence of an FASD in foster care populations is likely much higher

- One study found that over 80% of children and adolescents with an FASD were in foster or adoptive homes
- It is estimated that almost 70% of children in foster care are affected by prenatal alcohol exposure in varying degrees
- Children from substance-abusing households are > likely to spend longer periods of time in foster care than other children (11 months v. 5 months)

National Organization on Fetal Alcohol Syndrome

Missed and Mis-Diagnoses in Foster/Adoptive Children

- New study of 547 children referred for mental health assessment:
 - 156 children met FASD Dx criteria
 - 125 not previously Dx = Missed Dx of 80%
 - Of remaining 31, 6.4% Dx changed w/in FASD
- **86.5% of youth with an FASD had not been previously diagnosed, or missed diagnosed.**

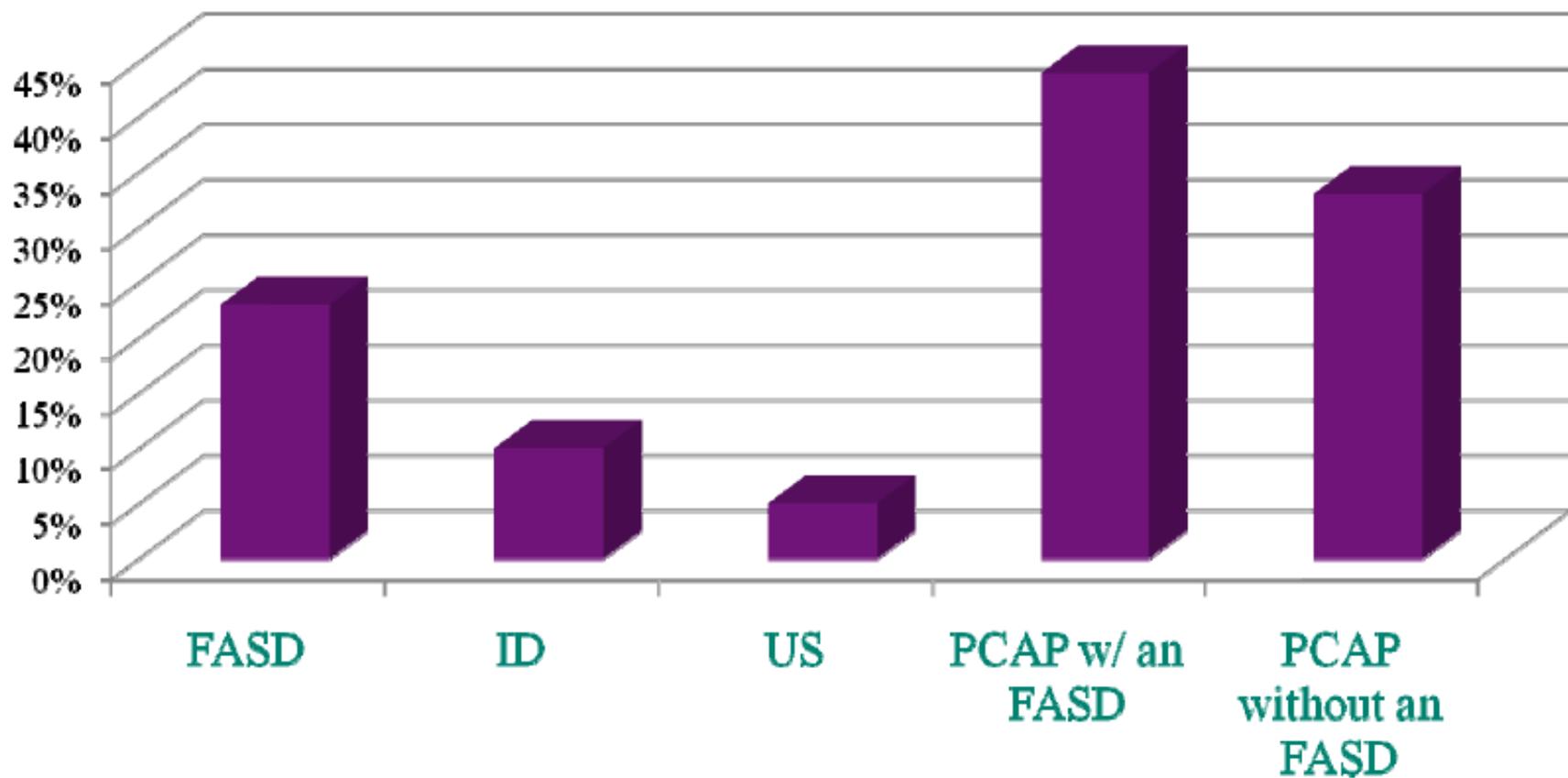
Chasnoff et al, 2015

- Lack of impulse control and trouble thinking of future consequences of current behavior
- Difficulty planning, connecting cause and effect, empathizing, taking responsibility, delaying gratification, or making good judgments
- Tendency toward explosive episodes
- Vulnerability to peer pressure (e.g., may commit a crime to please their friends)

Prevalence of FASD in Criminal Justice

- Adults and youth:
 - estimates that **35%** of individuals with an FASD have been in jail or prison at some point. They also estimate that **> 60%** of people with an FASD have been in trouble with the law. University of Washington
- Young offenders:
 - **23%** of youths dx with FAS remanded to forensic psychiatry assessment unit Fast et al, 1999
 - **24%** with FASD in Canadian forensic facility Burd et al, 2004
 - **27%** ‘at risk’ for FASD Munro et al, cited Conry et al, 2012

Adult Suicide Attempts: FASD, Intellectual Disabilities, U.S. Population, PCAP Mothers with and without an FASD



¹Streissguth, Barr, Kogan, and Bookstein, 1996. Understanding the Occurrence of Secondary Disabilities in Clients with FAS & FAE. Final Report to the CDC, p. 35. ²Attempt rate for adults with an Intellectual Disability in mixed clinical & community samples (Hardan and Sahl, 1999; Lunsy, 2004). ³U.S lifetime rate of suicide attempts (1990-1992 National Comorbidity Study; Kessler, Borges, and Walters, 1999).

Protective Factors

- Living in a stable and nurturing home > 72% of life, between 8-12 years; > 2.8 years
- **Diagnosis < 6 yrs. of age**
- No history of physical abuse
- Eligibility for special services
- FAS vs. other FASD conditions
- Living with an alcohol abuser <30% of life

Streissguth et al, 2004

SBIRT



Screening, Brief Intervention, Referral to Treatment - SBIRT

National initiative to detect and intervene with patients in healthcare/public health settings who use substances in a manner that may adversely effect their health

- **S**creening: Quickly and accurately identifies unhealthy substance use and risk
- **B**rief **I**ntervention: Raises awareness of risks and motivation towards behavioral change
- **R**eferral to **T**reatment: Access to specialty assessment and care

- Only 78% recommended abstinence
- Only 42% use validated screening tool
- Only 72% felt prepared to screen



We can do better.

Anderson B et al. *J Addiction Med* 2010;3:114-21.

www.bing.com/images/search?q=we+can+do+better%2c+image&id=EF54E71ACAF9AAE6E644B99D93D6A19E19641CF&FORM=IQFRBA#view=detail&id=BB4A9A38CCFF64A870A23E1B8F12C3FB5F8B90F7&selectedIndex=83

Ob/Gyn, FP, Pediatrician Survey

- 67% ask about EtOH in pregnancy
- 41% erroneously identified a 1-3 drink/ day threshold of risk

- 97% routinely screen
- Only 20% recommend abstinence
- 4% don't believe >8 drinks/ wk pose risk

Table 3. Barriers and Needs Affecting Assessment and Management of Patients' Alcohol Use During Pregnancy

	Obstetrician-gynecologists (%)
Barriers affecting alcohol use assessment in clinical practice*	
Time limitations	70
Patient sensitivity	65
Need for additional training to enhance ascertainment skills	65
Lack of referral sources	50
Confidentiality issues	32
Lack of financial reimbursement	26
Resources needed to improve alcohol use assessment in clinical practice*	
Information on thresholds for adverse reproductive outcomes	83
Referral sources for patients with alcohol problems	63
Training and consultation in assessment and counseling	44
Reimbursement by insurance and providers for screening and assessment	44

* Survey items listed under this category were asked as part of one whole question; respondents were allowed to select more than one answer.

For the best health of babies and mothers, we strongly recommend that women who are pregnant or planning to become pregnant do not use alcohol, illegal drugs, or tobacco during their pregnancy.

No alcohol during pregnancy is the safest choice.



Take Action for Healthier Moms & Babies

Massachusetts ranks among the top 5 states in terms of the proportion of women aged 18–44 who drink alcohol.¹ The most recent data indicates that 64.1% of women of childbearing age reported they'd used alcohol in the last month. Almost 1 in 5 had engaged in binge drinking.

According to the American Congress of Obstetricians and Gynecologists (ACOG), no amount of alcohol is safe in pregnancy. Because many pregnancies are unplanned, and because critical aspects of fetal development occur before women know they are pregnant, health care providers can help avoid the devastating effects of Fetal Alcohol Spectrum Disorders (FASD) through direct communication with all

women of child-bearing age. This means that medical providers in all specialties who work with women have an opportunity to make a difference, by doing the following:

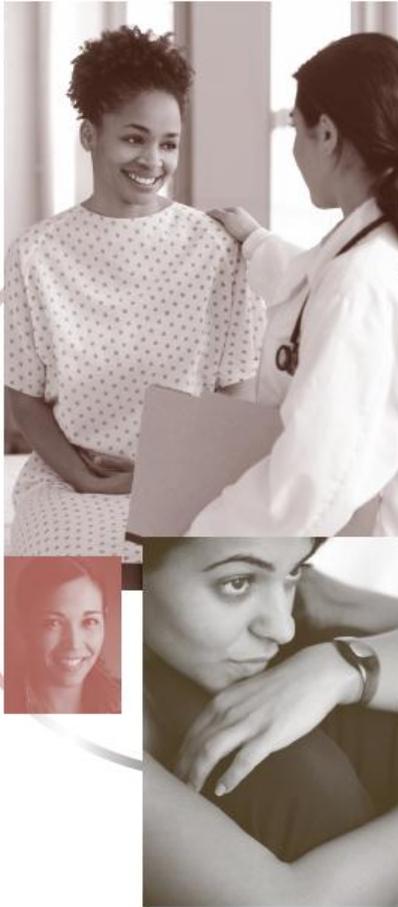
- Encourage all patients of childbearing age to avoid alcohol at any time they could become pregnant.
- Reinforce that using reliable birth control and condoms is a priority for all those who use alcohol, especially during times when they could become pregnant.
- Help women who want to become pregnant to create a plan to stay alcohol-free, before they try to conceive.

¹ Centers for Disease Control and Prevention [CDC]. State-Specific Alcohol Consumption Rates for 2010. www.cdc.gov/ncbddd/fasd/monitor_table.html. Accessed January 31, 2014.





Drinking and Reproductive Health



A Fetal Alcohol
Spectrum Disorders
Prevention Tool Kit

<http://www.acog.org/~media/Departments/Tobacco%20Alcohol%20and%20Substance%20Abuse/FASD%20Clinician%20Guide.pdf?dmc=1&ts=20130812T1008586863>



- ACOG CDC App
- Patient video
 - [www.acog.org/About ACOG/ACOG Districts/District II/FASD Patient Education Video](http://www.acog.org/About_ACOG/ACOG_Districts/District_II/FASD_Patient_Education_Video)
- CDC FASD page
 - www.cdc.gov/ncbddd/fasd/multimedia.html
- **FASD Center for Excellence**
 - <http://fasdcenter.samhsa.gov/>



<http://www.bing.com/images/search?q=femal+physician%2c+alcohol%2c+image&qpv t=femal+physician%2c+alcohol%2c+image&FORM=IGRE>

Birth Mothers Network- NOFAS Circle of Hope

- The NOFAS Circle of Hope is an organization created to support birth mothers of children with am FASD.

The Warrior Mom logo represents the fearlessness and courage of each of our members.

Our mentoring approach connects women that are struggling to reclaim their lives with other women that have been down similar paths. The COH believes in approaching FASD prevention with balance and an open heart.



Nofas.org

Inspirational/ Touching Reminder



Dr. Mary DeJoseph



Name tag of the woman in the red blazer.

Name tag of the woman in the blue top and scarf.

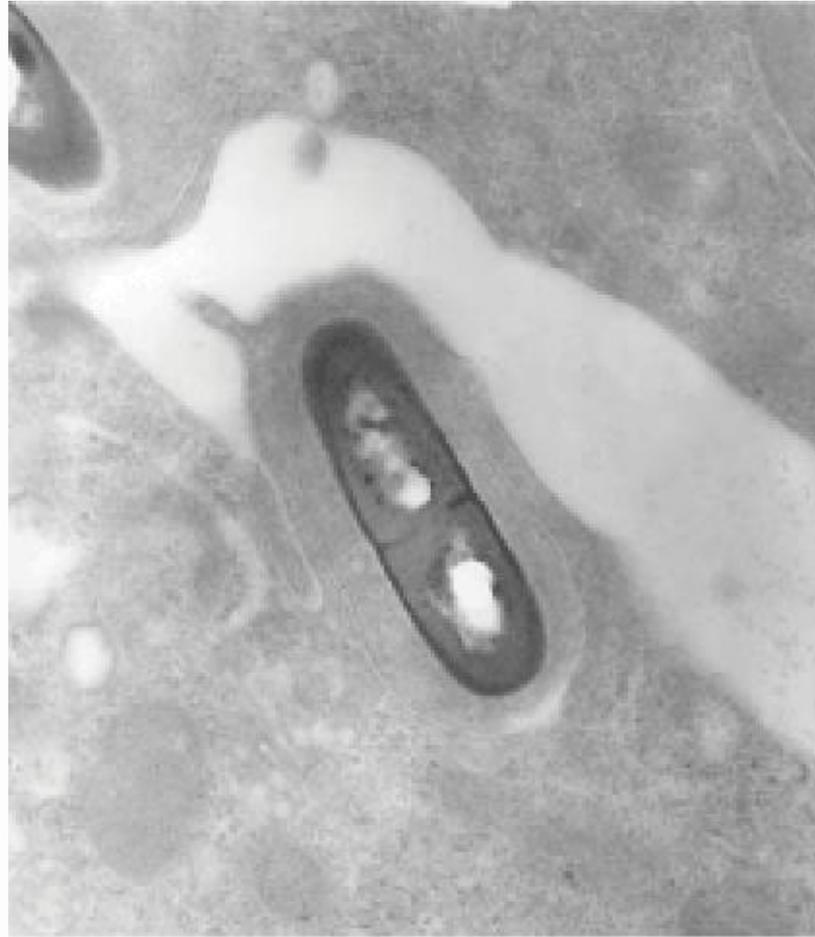
Name tag of the woman in the dark blazer.

Teratogens in Pregnancy

Teratogens	Congenital Malformations
Androgenic Agents Ethisterone Norethisterone Testosterone	Varying degrees of masculinization of female fetuses: ambiguous external genitalia caused by labial fusion and clitoral hypertrophy.
Drugs and Chemicals Alcohol	<i>Fetal alcohol syndrome</i> : intrauterine growth retardation (IUGR); mental retardation; microcephaly; ocular anomalies; joint abnormalities; short palpebral fissures.
Aminopterin	Wide range of skeletal defects; IUGR; malformations of the central nervous system, notably meroanencephaly (a large part of the brain is absent).
Busulfan	Stunted growth; skeletal abnormalities; corneal opacities; cleft palate; hypoplasia of various organs.
Phenytoin (Dilantin)	<i>Fetal hydantoin syndrome</i> : IUGR; microcephaly; mental retardation; ridged metopic suture; inner epicanthal folds; eyelid ptosis; broad depressed nasal bridge; phalangeal hypoplasia.
Lithium carbonate	Various malformations, usually involving the heart and great vessels.
Methotrexate	Multiple malformations, especially skeletal, involving the face, skull, limbs, and vertebral column.
Large doses of retinoic acid (vitamin A).	Facial abnormalities; neural tube defects, such as spina bifida cystica (see Fig. 18-14).
Tetracycline	Stained teeth; hypoplasia of enamel.
Trimethadione	Developmental delay; V-shaped eyebrows; low-set ears; cleft lip and/or palate.



Listeriosis in pregnancy: 12 per 100,000



<http://www.ncbi.nlm.nih.gov/pmc/articles/PMC2621056>

- SAMHSA FASD Center for Excellence: fasdcenter.samhsa.gov
- Centers for Disease Control and Prevention FAS Prevention Team: www.cdc.gov/ncbddd/fas
- National Institute on Alcohol Abuse and Alcoholism (NIAAA): www.niaaa.nih.gov/
- National Organization on Fetal Alcohol Syndrome (NOFAS): www.nofas.org

“Giving your unborn child a drink is just as ridiculous.”



Giving your unborn child a drink is just as ridiculous.

The U.S. Surgeon-General Advisory says
no amount of alcohol is safe during pregnancy.
Shave Off Zero Alcohol For Nine Months.
www.mofas.org



Giving your unborn child a drink is just as ridiculous.

The U.S. Surgeon-General Advisory says
no amount of alcohol is safe during pregnancy.
Shave Off Zero Alcohol For Nine Months.
www.mofas.org



Giving your unborn child a beer is just as ridiculous.

The U.S. Surgeon-General Advisory says
no amount of alcohol is safe during pregnancy.
Shave Off Zero Alcohol For Nine Months.
www.mofas.org



