Alcohol
High Yield Topics

- Highly covered on the exam given prevalence
- Alcohol withdrawal syndrome
- CIWA
- Detox protocols
- Medical comorbidities of intoxication and withdrawal
- Fetal alcohol syndrome
- Genetics
- Medications for alcohol dependence – Naltrexone, Disulfiram, Campral
High Yield Topics

- Rate of excretion (units BAL per hour)
- Withdrawal symptoms (compared with those of other drugs)
- Treatment of withdrawal seizures, delirium tremens
How many milliliters of alcohol are there in a 1 Liter bottle of 151 proof rum?

A. 250 ml
B. 500 ml
C. 750 ml
D. 1000 ml
Answer 1

- Answer is C = 750 ml

- 151 proof = 75% alcohol
- 1000ml x 0.75 = 750 ml
Question 2

A young man who doesn’t drink often has a few drinks at a party then blows a 0.10 g/dL BAC on his friend’s breathalyzer. What will his BAC be in two hours?

A. 0.09 g/dL
B. 0.07 g/dL
C. 0.04 g/dL
D. 0.02 g/dL
Answer 2

- Answer is B. 0.07 g/dL

- Alcohol metabolism exhibits zero order kinetics
- 80% of adult population metabolizes alcohol at 0.015 g/dL/hr
- 0.10 g/dL – 2 hr(0.015 g/dL/hr) = 0.07 g/dL
Extrapolating the decrease in blood alcohol concentration
Ethanol binds to the $N$-methyl-$D$-aspartate (NMDA) subtype of glutamate receptor. What is its mechanism of action?

A. It is an NMDA receptor partial agonist.
B. It is an NMDA receptor agonist.
C. It is an NMDA receptor antagonist.
D. It is an NMDA receptor inverse agonist.
E. It has no intrinsic activity at the NMDA receptor.
The correct response is C.

Alcohol is a potent inhibitor of the NMDA receptor.
<table>
<thead>
<tr>
<th>Drug</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>Opiates</td>
<td>Agonist at $\mu$, $\delta$ and $\kappa$ opioid receptors $a$</td>
</tr>
<tr>
<td>Cocaine</td>
<td>Indirect agonist at dopamine receptors by inhibiting dopamine transporters $b$</td>
</tr>
<tr>
<td>Amphetamine</td>
<td>Indirect agonist at dopamine receptors by stimulating dopamine release</td>
</tr>
<tr>
<td>Ethanol</td>
<td>Facilitates GABA$_A$ receptor function and inhibits NMDA glutamate receptor function</td>
</tr>
<tr>
<td>Nicotine</td>
<td>Agonist at nicotinic acetylcholine receptors</td>
</tr>
<tr>
<td>Cannabinoids</td>
<td>Agonist at CB$_1$ and CB$_2$ cannabinoid receptors $e$</td>
</tr>
<tr>
<td>Phencyclidine</td>
<td>Antagonist at NMDA glutamate receptor channels</td>
</tr>
<tr>
<td>Hallucinogens</td>
<td>Partial agonist at 5HT$_{2A}$ serotonin receptors</td>
</tr>
<tr>
<td>Inhalants</td>
<td>Unknown</td>
</tr>
</tbody>
</table>
Studies investigating the risk factors for alcoholism have demonstrated all of the following except:
A. A four-fold increased risk for close relatives.
B. Higher risk in identical compared with fraternal twins.
C. Certain genetic polymorphisms in alcohol-metabolizing enzymes.
D. Higher risk in persons with a duplication on the short arm of chromosome 10.
E. Higher risk in persons with other psychiatric disorders.
The correct response is option D.

Increased risk in close relatives, monozygotic versus dizygotic twins, certain enzymatic polymorphisms, and some psychiatric disorders have been demonstrated to increase risk for alcohol dependence.
Recent research concerning the effect of ethanol on \( N \)-methyl-D-aspartate (NMDA) receptors suggests a role for memantine to treat...

A. Alcohol intoxication.
B. Alcohol consumption.
C. Alcohol stimulation.
D. Alcohol seizures.
E. Alcohol sedation.
NMDA receptors may be up-regulated during ethanol withdrawal. In the amygdala, chronic ethanol treatment produces an increase in NMDA-stimulated currents, possibly indicating that NMDA receptor up-regulation is related to enhanced sensitivity of the NMDA receptor systems. Treatment with NMDA receptor antagonists such as memantine reduces ethanol withdrawal seizures, suggesting a role for the NMDA receptor in the onset of withdrawal symptoms.
Which of the following statements concerning alcohol metabolism is true?

A. Peak levels of ethanol are attained approximately 1 hour after ingestion of an alcoholic drink.
B. Ethanol is metabolized in one step using the enzyme alcohol dehydrogenase.
C. When compared with most pharmacological agents, the potency of ethanol is extremely high.
D. The legal limit for driving is now frequently set at blood levels for ethanol of 17 mmol/L.
E. Only large doses of ethanol can substantially reduce glucose metabolism in the brain.
The legal limit for driving is now frequently set at blood levels of 17 mmol/L (0.08 mg/dL). Ethanol levels greater than 100 mmol/L may produce coma and death. Peak levels of ethanol are attained approximately 30 minutes after ingestion of an alcoholic drink. Although the ethanol from a single drink is readily metabolized in two steps, involving the enzymes alcohol dehydrogenase and aldehyde dehydrogenase, this process follows zero-order kinetics. Accordingly, there is a decrease in the percentage of ethanol metabolized per given unit of time, as the dose of this agent is increased.

When compared with most pharmacological agents, the potency of ethanol is extremely low, with its effects becoming apparent only in the millimolar range. Most drugs, in contrast, are active at micromolar or even nanomolar concentrations. The legal limit for driving is now frequently set at blood levels of 17 mmol/L (0.08 mg/dL). Ethanol levels greater than 100 mmol/L may produce coma and death. Recent evidence indicates that even small doses of ethanol (0.25–0.5 g/kg) can substantially reduce glucose metabolism in the brain without producing detectable alterations in cognitive performance.
Changes in neurochemical levels following chronic drug exposure are called within-system neuroadaptations. Which of the following is a neuroadaptation seen in response to drug use?

A. Increase in nucleus accumbens dopaminergic transmission with drug withdrawal.
B. Increase in nucleus accumbens serotonergic transmission with drug withdrawal.
C. Decreased sensitivity of the opioid receptor transduction mechanism in the nucleus accumbens during opioid withdrawal.
D. Decreased GABAergic transmission during alcohol withdrawal.
E. Decreased N-methyl-D-aspartate (NMDA) glutamatergic transmission during alcohol withdrawal.
Changes at the neurochemical level that reflect changes in the neurotransmitter system implicated in acute drug reward are called *within-system neuroadaptations* to chronic drug exposure. These neuroadaptations include decreases in dopaminergic and serotonergic transmission in the nucleus accumbens during drug withdrawal as measured by in vivo microdialysis, increased sensitivity of opioid receptor transduction mechanisms in the nucleus accumbens during opioid withdrawal, and decreased GABAergic and increased NMDA glutamatergic transmission during alcohol withdrawal.
High Yield Neurobiology

- Highly tested given that this is Non-controversial and essentially does not change
- Know the mechanisms of actions of all drugs of abuse and pharmacology (half life)
- Know which receptors drugs of abuse act on
All of the following biological markers have been shown to confer a protective effect against the development of alcoholism except

A. A region of chromosome 4 near the alcohol dehydrogenase ADH3 locus.
B. High-activity isoforms of ADH2.
C. High-activity isoforms of ADH3.
D. Low-activity isoforms of acetaldehyde dehydrogenase ALDH2.
E. High-activity isoforms of acetaldehyde dehydrogenase ALDH2.
The correct response is option E.

- Low, not high, activity levels of isoforms of acetaldehyde dehydrogenase ALDH2 prevent against developing alcohol dependence. The enzymes in options A-D lead to the net accumulation of acetaldehyde, which causes an unpleasant sensitization syndrome that decreases the risk of alcohol dependence. Biological markers in options B, C, and D are found in East Asians.
Which of the following statements concerning the reinforcing effects of cocaine or methamphetamine in laboratory animals is *false*?

A. The reinforcing efficacy of cocaine is correlated with its affinity at serotonin or norepinephrine, but not dopamine, transporters.
B. The amount of cocaine self-administered is positively correlated with extracellular dopamine levels in the nucleus accumbens of rats or monkeys.
C. Fluctuations in extracellular dopamine in the nucleus accumbens predict response for cocaine.
D. Dopamine D1 or D2 antagonists or a neurochemical depletion of dopamine decreases the reinforcing effects of cocaine and methamphetamine.
E. The binding affinity of stimulants at the dopamine transporter is correlated with their potency at maintaining self-administration.
The Answer is A

- The reinforcing efficacy of cocaine is correlated with its affinity at dopamine, but not serotonin or norepinephrine, transporters. The remaining answers are all true of the role of dopamine in stimulant reinforcement.
Which of the following statements concerning the neurobiological mechanisms for cocaine or methamphetamine is true?

A. Cocaine decreases dopamine reuptake and promotes dopamine release via the dopamine transporter.
B. Methamphetamine binds to the dopamine transporters and inhibits the reuptake of synaptic dopamine.
C. Cocaine metabolism is relatively slow, with effects lasting several hours longer than the effects of methamphetamine.
D. Methamphetamine is rapidly metabolized.
E. For both cocaine and methamphetamine, routes of administration that result in abrupt increases in extracellular dopamine are most reinforcing.
**Answer is C**

**Explanation**
For both cocaine and methamphetamine, routes of administration that result in abrupt increases in extracellular dopamine are most reinforcing. This is why smoking methamphetamine ("ice") or cocaine ("crack") has greater abuse liability than snorted or oral cocaine routes of administration. Cocaine binds to the dopamine transporter and inhibits the reuptake of synaptic dopamine. Reuptake is the primary mechanism by which dopamine is inactivated. By blocking reuptake, cocaine administration results in dose-dependent increases in extracellular levels of dopamine.

Methamphetamine has a more complex mechanism of action, both decreasing dopamine reuptake and promoting dopamine release via the dopamine transporter. Another important difference between methamphetamine and cocaine is their duration of action: cocaine is rapidly metabolized, whereas methamphetamine metabolism is relatively slow, with effects lasting several hours longer than cocaine. Given these differences, medications that show promise in treating dependence for one stimulant may not be effective for the other.
Table 10.4 Neuropharmacologic Actions of Selected Stimulants

<table>
<thead>
<tr>
<th></th>
<th>Catecholamines</th>
<th>Serotonin</th>
<th>MAO Inhibition</th>
<th>Na Channel Blockade</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Reuptake Blockade</td>
<td>Presynaptic Release</td>
<td>Reuptake Blockade</td>
<td>Presynaptic Release</td>
</tr>
<tr>
<td>Amphetamine</td>
<td>++</td>
<td>+++</td>
<td>+</td>
<td>+</td>
</tr>
<tr>
<td>Cocaine</td>
<td>+++</td>
<td>+</td>
<td>+++</td>
<td>+</td>
</tr>
<tr>
<td>Ephedrine</td>
<td>+</td>
<td>++</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Mazindol</td>
<td>+++</td>
<td>0</td>
<td>+</td>
<td>0</td>
</tr>
<tr>
<td>Methamphetamine</td>
<td>++</td>
<td>+++</td>
<td>+</td>
<td>+++</td>
</tr>
<tr>
<td>Methylphenidate</td>
<td>+++</td>
<td>0</td>
<td>+</td>
<td>0</td>
</tr>
<tr>
<td>Phentermine</td>
<td>+</td>
<td>++</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

Notes:
- MAO: Monoamine Oxidase
- Na channel blockade: Sodium channel blockage
Selected neural areas in the brain are important in the loss of control or compulsive use of stimulant drugs. Which of the following brain structures is important in impulse control?

A. Amygdala.
B. Ventral pallidum.
C. Hippocampus.
D. Prefrontal cortex.
E. Orbitofrontal cortex.
Answer is D

- **Explanation**
  Prefrontal cortex and cingulated gyrus are involved in impulse control. Neural areas involved in the loss of control and compulsive use of stimulant drugs also include those involved in reward (nucleus accumbens, ventral pallidum), motivation (orbitofrontal cortex), and memory (amygdala, hippocampus).
One problem in classifyng hallucinogens has been a sufficiently rigorous, specific, and inclusive definition of these chemically heterogeneous substances. An early set of criteria was produced by Hollister (1968). Which of the following is not characteristic of hallucinogens, according to these criteria?

A. The effects of the substance on mood, thought, and perception are predominant, relative to the effects on other mental and physiological functions.
B. Intellectual and memory impairment are minimal.
C. Stupor/narcosis and excessive stimulation are not an integral effect.
D. Autonomic nervous system side effects are neither disabling nor severely disconcerting.
E. Once exposed to the hallucinogen, the subject reliably develops drug cravings.
Once exposed to hallucinogens, addictive craving should be minimal. Hollister (1968) wrote that "one can scarcely get any agreement upon the term used to describe this class of drugs" and defined hallucinogenic/psychotomimetic agents on the basis of their overall pharmacological effects:

In proportion to other effects—changes in thought, perception, and mood should predominate.

Intellectual or memory impairment should be minimal at dosages that produce the effects listed above.

Stupor, narcosis, or excessive stimulation should not be an integral effect.

Autonomic nervous system side-effects should be neither disabling nor severely disconcerting.

Addictive craving should be minimal.
According to the definition of *classical hallucinogen*, which serotonin receptor is the target of drug binding?

A. 5-HT1A.
B. 5-HT1B.
C. 5-HT1C.
D. 5-HT2A.
E. 5-HT3.
Answer is D

- The best functional definition of *classical hallucinogen* is an agent that meets the Hollister (1968) criteria and that binds at serotonin type 2 (5-HT2) receptors.

- Three populations of 5-HT2 receptors (5-HT2A, 5-HT2B, and 5-HT2C) have been identified since the 5-HT2 hypothesis was originally proposed. Although classical hallucinogens typically bind at all three subpopulations, work from several laboratories indicates that classical hallucinogens act primarily via a 5-HT2A receptor agonist mechanism. Hence, it might be more appropriate to refer to the classical hallucinogens as those agents that specifically activate brain 5-HT2A serotonin receptors.
Match the following:

A. Caffeine
B. Ketamine
C. Buprenorphine
D. Flumazenil

1. NMDA antagonist
2. Adenosine antagonist
3. Benzodiazepine antagonist
4. Opioid partial agonist
- **A. Caffeine**  Adenosine antagonist
- **B. Ketamine**  NMDA antagonist
- **C. Buprenorphine**  Opioid partial agonist
- **D. Flumazenil**  Benzodiazepine antagonist
The two brain regions most often identified as mediating pleasurable, positively reinforcing properties of drugs are the

A. Ventral tegmental area and the amygdala.
B. Ventral tegmental area and the nucleus accumbens.
C. Hippocampus and the nucleus accumbens.
D. Hippocampus and the periaqueductal gray matter.
E. Periaqueductal gray matter and the amygdala.
The correct response is option B.

- The nucleus accumbens, along with the dopaminergic neurons in the ventral tegmental area, are the two most widely identified regions found in studies of the circuitry of pleasure and reward.
Linkage studies of alcohol dependence by investigators in the Collaborative Studies on the Genetics of Alcoholism (COGA) and in the intramural program of the National Institute on Alcohol Abuse and Alcoholism (NIAAA) have yielded logarithm of odd scores for several chromosomal locations that influence the risk of alcohol dependence. Both groups reported that loci influencing the risk for alcohol dependence map close to an alcohol dehydrogenase gene cluster on the long arm of which chromosome?

- B. Chromosome 6.
- C. Chromosome 12.
- D. Chromosome 15.
- E. Chromosome 16.
**Answer is A**

- **Explanation**
  Genome scan linkage mapping projects have identified promising chromosomal locations for alcohol dependence susceptibility loci, which in some cases have led to discovery of disease-influencing loci. Linkage studies of alcohol dependence by COGA investigators (Foroud et al. 2000; Reich et al. 1998) and studies as part of the intramural program of the NIAAA (Long et al. 1998) both revealed that loci influencing risk for alcohol dependence map close to an alcohol dehydrogenase (ADH) gene cluster on the long arm of chromosome 4. *(Studies of alcohol dependence, p. 19)*
Familial and genetic factors are important for the development of alcohol dependence, as established by twin, family, and adoption studies. The largest twin studies have yielded heritability estimates in which range?

- **A.** 10%–20%.
- **B.** 20%–30%.
- **C.** 30%–40%.
- **D.** 40%–50%.
- **E.** 50%–60%.
Familial, and specifically genetic, factors are important for the development of alcohol dependence, as established by twin, family, and adoption studies. The largest twin studies have yielded heritability estimates in the range of 50%–60%, so that half or more of the risk for alcohol dependence is genetic (e.g., Kendler et al. 1992, 1997; Prescott and Kendler 1999). (Heritability of Alcohol Dependence, p. 18)
Substance abuse among adolescents differs from that in adults. Which class of drugs showed an increase in abuse by U.S. adolescents from 1992 to 1997?

A. Alcohol.
B. Marijuana.
C. Cocaine.
D. Hallucinogens.
E. Prescription opiates.
The correct answer is E

- **Explanation**
  Substance use among American youth rose to alarming rates between 1992 and 1997. Since then it has decreased significantly for alcohol, tobacco, and all drug classes but prescription opiates, the use of which continues to increase. *(Adolescent Substance Abuse: Introduction, p. 525)*
Various psychological factors are associated with problematic substance abuse in adolescents. Which of the following characteristics is not associated with an increased risk of adolescent substance abuse?

- A. High levels of behavioral activity.
- B. Reduced attention span.
- C. High impulsivity.
- D. Lack of emotional reactivity (i.e., "blunting").
- E. Irritability.
Lack of emotional reactivity is not associated with increased risk of adolescent substance abuse. High levels of behavioral activity have been noted in youth at high risk for substance abuse as well as in those with a substance use disorder. High levels of behavioral activity also correlate with disorder severity. Other temperamental trait deviations found in youth at high risk include reduced attention span; high impulsivity; negative affect states, such as irritability; and emotional reactivity. *(Pathological Behavior, p. 526)*
Which of the following statements regarding specific psychiatric illnesses and comorbid substance abuse is true?

A. When comorbid with substance abuse, conduct disorder usually follows substance abuse.
B. Rates of conduct disorder in adolescent substance abusers are between 30% and 50%.
C. Mood disorders, particularly depression, frequently precede adolescent drug abuse.
D. Depressive disorders are reported in 10%–25% of adolescent substance abusers.
E. Social phobia and panic disorder usually follow the onset of substance abuse in adolescents.
A number of psychiatric disorders are commonly associated with substance use disorders in youth. Mood disorders, especially depression, frequently precede substance use and substance use disorders in adolescents. Conduct disorder is commonly associated with adolescent substance use disorders, and if it occurs it usually precedes the substance use disorder. Rates of conduct disorder range from 50% to 80% in adolescent patients with substance use disorders. Attention-deficit/hyperactivity disorder (ADHD) is frequently observed in substance-abusing youth; such an association is likely due to the high level of comorbidity between conduct disorder and ADHD as well as to a direct causation. The prevalence of depressive disorders ranges from 24% occurrence among adolescents to more than 50%. The order of appearance of anxiety and substance use disorders is variable, depending on the specific anxiety disorder. Social phobia usually precedes substance abuse, whereas panic and generalized anxiety disorder more often follow the onset of substance use disorders. (Psychiatric Comorbidity, p. 527)
In addition to character and psychological traits within the patient, external/social factors are associated with adolescent substance abuse. Which of the following is not associated with adolescent substance abuse?

- A. Excessively rigid and punitive laws and regulatory policies.
- B. Stressful life events.
- C. Lack of parental support.
- D. Absence of "normative" peers.
- E. Perception of high drug availability.
Rigid and punitive laws and regulatory policies do not contribute to adolescent substance abuse. Contextual or environmental factors that are most common include stressful life events, lack of support from parents, absence of normative peers, perception of high availability of drugs, social norms that facilitate drug use, and relaxed laws and regulatory policies. (Initiation, Maintenance, and Transitions of Substance Use, p. 526)
According to Kandel's gateway theory of adolescent drug use, drug use often follows a stereotypical escalation among various substances of abuse. Which substance is usually the first abused substance in this cascade?

- A. Illicit drug other than marijuana.
- B. Marijuana.
- C. Hard liquor.
- D. Cigarettes.
- E. Beer or wine.
Kandel (1982), the initial proponent of the gateway theory, argued that there are at least four distinct developmental stages of drug use: 1) beer or wine consumption, 2) cigarette smoking or hard liquor consumption, 3) marijuana use, and 4) other illicit drug use. (Initiation, Maintenance, and Transitions of Substance Use, p. 526)
The clinical management of adolescent substance abuse typically includes a multifactorial approach. Among the following interventions, which is associated with some risk of iatrogenic effects such as increased substance abuse and legal and behavioral problems, and thus must be used with some caution?

- A. Group therapy.
- B. Family therapy.
- C. Behavioral therapy.
- D. Cognitive-behavioral therapy.
- E. Twelve-step models.
Although group therapy is widely used and presumed effective in practice, some scholars have raised the concern that group therapy for adolescents with substance use disorders and with a range of antisocial behaviors has the potential for causing iatrogenic effects not only for those with high behavior deviancy but also for those with low deviancy (a contagion effect). Studies of psychosocial treatment strategies that have shown promise in reducing substance use disorders among adolescents include family therapies such as multisystemic therapy, behavioral therapy, cognitive-behavioral therapy, and the Minnesota Model.
Since the survey began in 1975, cigarettes have consistently been the abusable substance most frequently used on a daily basis by high school students.
Rimonabant is a….

- A. CB1 cannabinoid antagonist
- B. CB2 cannabinoid antagonist
- C. CB1 cannabinoid agonist
- D. CB2 cannabinoid agonist
Rimonabant is a CB1 cannabinoid antagonist, also known as SR141716A
Cannabinoid based pharmacologics have been studied following conditions except...

- A. Glaucoma
- B. Nausea
- C. Analgesia
- D. Seizures
- E. Depression
- F. All of the above
Answer is F.

- Cannabinoid pharmacologics have been studied all of these.
Illicit Drug Use During Pregnancy
Question 1

An expectant mother with all of the following EXCEPT should alert an astute clinician to the increased likelihood of perinatal drug abuse or addiction?

A. family history of substance abuse
B. frequent encounters with law enforcement agencies
C. substance use, abuse, or addiction by the current significant other
D. history of sexually transmitted disease
Question 2

A history of addiction is not a reason to withhold adequate pain management with opioid analgesics. Which method is generally a superior management option for acute pain during delivery for an addicted pregnant women?

A. Regional anesthesia with bupivacaine
B. Pentazocine
C. Butorphanol
D. Methadone
E. Naloxone
Question 3

Preterm labor is the most common complication of addiction and substance use during pregnancy. Which class of drugs of abuse have the highest rate for preterm labor?

A. Opiate
B. Stimulants
C. Sedative-hypnotics
D. Hallucinogens
Question 4

Infants who have neurobehavioral deficiencies such as cognitive differences, motor delays, language delays and fine-motor problems are more likely to have been perinatally intoxicated with which of the following psychoactive drug?

A. benzodiazepine
B. cocaine
C. heroin
D. methamphetamine
Comprehensive treatment programs for SUPW are successful when factors unique to this population are specifically addressed; barriers to treatment include all of the following EXCEPT?

A. universal treatment programs for pregnant woman  
B. transportation problems  
C. lack of childcare  
D. poverty
In 2004, the Centers for Disease Control and Prevention codified diagnostic criteria for the most severe manifestations of fetal alcohol spectrum disorders, called *fetal alcohol syndrome*. This syndrome includes all of the following dysmorphic features in the newborn except:

A. Hyperplastic maxilla
B. Small philtrum.
C. Thin vermilion border
D. Micrognathia
E. Small palpebral fissures

*Courtesy of psychiatry online*
Several studies have been published regarding the use of buprenorphine in opiate-dependent pregnant women. Which of the following signs or symptoms has been reported in the babies born of mothers treated with buprenorphine?

A. Low birth weights
B. Low Apgar scores
C. Transient lower limb hypotonia
D. Abstinence symptoms
E. Excessive sedation

*Courtesy of psychiatry online*
Question 8

There are approximately 15,000 children in the United States who have contracted HIV. What percentage contracted the virus from their mothers during pregnancy or birth?

A. 10%
B. 30%
C. 50%
D. 70%
E. 90%

Courtesy of psychiatry online
Key Points

- Awareness of RISK FACTORS and appropriate SCREENING at routine office visits helps identify substance-using pregnant woman (SUPW).

- Early RECOGNITION of SUPW helps prevent adverse effects associated with drug abuse both to fetus and mother.

- EDUCATING the SUPW helps to prevent pregnancy complications and relapse.

- Polysubstance abuse is the norm rather than the exception, so determination of specific perinatal effects of individual drugs is difficult.

- Universal signs and symptoms of drug intoxication and/or withdrawal include:
  - autonomic instability
  - CNS irritability
  - feeding difficulties

- Duration of intoxication and onset of withdrawal depends on:
  - time of last drug exposure
  - combo of drug
  - metabolism/excretion of drug exposure

- Women treated on methadone/buprenorphine for opioid/heroin addiction have better obstetrical outcomes than women not treated.
Key Points

- Fetal Alcohol Spectrum disorders (FASD) range from subtle to severe and are permanently disabling.
  - DYSMORPHOLOGY (classic: small philtrum, thin vermillion border, small palpebral fissure)
  - GROWTH deficits (height or weight)
  - CNS abnormalities (structural, neuro or functional)

- More women consume alcohol during pregnancy than they do all illicit drugs combined---important to counsel and recognize on alcohol use during pregnancy

- Cigarette SMOKE is harmful to the fetus

- Nicotine Replacement Therapy (NRT)
  - helps reduce amount smoked during pregnancy, which improves birth outcomes
  - NRT does NOT produce fetal complications

- Sexually transmitted diseases (STDs) are inextricably linked to illicit drug use—suspected h/o addiction in mother warrants infant/mother screening for STDs