PREP for Boards
Substance Abuse

Jeremy Jones, DO
Oklahoma State University
Center for Health Sciences
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1. PREP 2008 Question 133

• A 15-year-old high school baseball player presents for his annual sports physical.
• He acknowledges using chewing tobacco, “because all the other guys do it and the pros do it.”
The BEST response to this teenager is that
A. “Chewing tobacco may cause halitosis...”
B. “Your risk for adenocarcinoma of the mouth and tongue is increased...”
C. “Your risk of lung cancer is less than with cigarettes...”
D. “Possession of tobacco in any form is illegal at your age...”
E. “I am going to tell your parents and coach about your tobacco use...”
F. “I recommend you become a Skoal® man...”
• Smokeless tobacco counseling
  – There is NO evidence that a tobacco cessation program employing “scare tactics” is effective in young people.
  – There is evidence that providing facts regarding risk-taking behavior “may be helpful.”
    • Smokeless tobacco may cause diminished performance in exercise and sports
    • Nicotine addiction from smokeless tobacco presents with similar symptoms
• Smokeless tobacco counseling
  – Lung cancer is less likely with smokeless tobacco than cigarettes
    • Oropharyngeal cancer is the major concern
  – Discussion of the illegality of tobacco possession is unlikely to stop his use, and most teens already are aware of this fact.
  – Disclosing his tobacco use to his parents and coach violates confidentiality.
2. PREP 2008 Question 175

- A 16-year-old boy is brought to the ER for a seizure after returning home from being out with his friends.
- His mother reports that he was agitated and aggressive when he first arrived home 45 minutes ago.
- He then became unresponsive and developed generalized extremity shaking for 5 minutes.
2., 2

- His friends reported that he “smoked weed,” but denied any other drug or substance use.
- In the ER, he is diaphoretic and difficult to arouse, with pupils mid-sized, equal, and sluggishly reactive.
- Vitals include HR 140 bpm, RR 30 rpm, and BP 135/95 mm Hg.
- Nystagmus is noted.
The MOST likely explanation for his symptoms is that

A. Seizures are a common adverse effect of marijuana use
B. The marijuana was adulterated with phencyclidine
C. The patient has acute alcohol toxicity
D. The patient is exhibiting symptoms associated with Jimson weed exposure
E. The patient was inhaling gasoline in addition to smoking marijuana
Marijuana exposure and typical symptoms

- Somnolence and mild euphoria
- Short-term memory impairment
- Decreased motor coordination and muscle strength
- Lethargy
- Slurred speech
- Ataxia
- Agitation
- Panic reactions
- May lower the seizure threshold in patients with an underlying seizure disorder, but generally does NOT cause seizures
2., 5

- Phencyclidine exposure and typical symptoms
  - Agitation
  - Aggressive behavior
  - Hypertension
  - Tachycardia
  - Seizures
  - Nystagmus

- Alcohol toxicity
  - Somnolence
  - Respiratory depression
  - Bradycardia
  - Hypotension
  - Seizures could occur in withdrawal states or those who develop hypoglycemia, but is rare in the healthy teenager
Jimson weed (*Datura stramonium*) contains high concentrations of anticholinergic alkaloids.

- The flowers are trumpet-shaped and white to purple.
- The leaves are large and have irregular teeth similar to oak leaves.
• Jimson weed ingestion
  – Bizarre behavior
  – Tachycardia
  – Hypertension
  – Dry and flushed skin
  – Widely dilated pupils
  – Seizures may result

• Inhalant exposure
  – Symptoms resolve within 30 to 45 minutes
  – Dizziness
  – Excitation
  – Lethargy
  – Hallucinations
  – Ataxia
  – Seizures that may occur are due to acute hypoxia
3. PREP 2008 Question 213

• A 16-year-old girl is brought to the ER with vomiting, abdominal cramping, and diarrhea over the past day.

• She complains of both hot and cold flashes, muscle aches, and difficulty sleeping.

• She was in a drug rehabilitation program 2 years ago, but “I don’t do that now...”
• Vital signs reveal T 101.3 °F, HR 120 bpm, RR 24 rpm, BP 145/90 mm Hg
• She is alert but anxious, and she has a slight tremor and dilated pupils.
• Lungs are clear, abdominal examination is normal, and only tachycardia is noted on cardiovascular examination.
3., 3

- The MOST likely diagnosis is
  A. Acute intoxication with a barbiturate
  B. Acute intoxication with amphetamines
  C. Withdrawal from alcohol
  D. Withdrawal from chronic marijuana use
  E. Withdrawal from heroin
3., 4

• Heroin withdrawal
  – Anxiety
  – Slight tremor
  – Dilated pupils
  – Fever
  – Tachycardia
  – Hypertension
  – Tachypnea

• Barbiturate toxicity
  – Respiratory depression
  – Hypotension
  – Delirium
  – Psychosis
• Marijuana toxicity
  – Impaired concentration
  – Auditory and visual enhancement
  – Mood fluctuations
  – Depersonalization
  – Hallucinations

• Marijuana withdrawal from chronic use
  – Irritability
  – Sleep disturbances
  – Tremor
  – Nystagmus
  – Anorexia
  – Nausea, vomiting, or diarrhea
• Mild alcohol withdrawal
  – Headache
  – Mild tremulousness
  – Nausea
  – Vomiting

• Severe alcohol withdrawal
  – Dilated pupils
  – Tremulousness
  – Seizures
  – Tachycardia and hypertension
  – Nausea and vomiting
  – Hallucinations
  – Anxiety and agitation
4. PREP 2009 Question 152

- A 16-year-old male admits to smoking a pack of cigarettes daily in his well child check.
- He plans to become a vocal music major in college and is concerned that smoking may affect his voice.
- He is uncertain if he wants to stop smoking at this time.
What is the MOST appropriate response?

A. “COPD is the first pulmonary problem to arise in cigarette smokers…”

B. “Cigarettes contain few other toxic chemicals aside from nicotine…”

C. “Erectile dysfunction is NOT associated with cigarette smoking…”

D. “Initial symptoms of nicotine dependence occur in some teens after only a few cigarettes…”

E. “lung cancer is the only cancer associated with cigarette smoking…”

F. “Are you trying out for America’s Got Talent? Then, quit…”
4., 3

- Tobacco abuse counseling
  - Ask, Advise, Assess, Assist, and Arrange
  - Cancers include lung, esophageal, gastric, colorectal, bladder, renal, prostate, and cervical
  - Low-birthweight infants in pregnancy
  - COPD, but not before small airway disease presents
  - Cigarettes contain thousands of chemicals aside from nicotine
5. PREP 2009 Question 233

• A 16-year-old boy presents to the ER with an acute change in mental status.
• According to his parents, he was previously healthy and has suffered no recent trauma.
• He is somnolent, has pinpoint pupils and mild hypotension, and demonstrated shallow breathing.
The test that is MOST likely to help determine the cause of his altered level of consciousness is

A. Brainstem auditory evoked response
B. Chest radiography
C. Electroencephalography
D. Serum amino acid measurement
E. Urine toxicology screen
6. PREP 2010 Question 176

- A 6-year-old boy with ADHD is found by his mother holding an empty bottle of methylphenidate.
- He tells her that he took “all of his medicine,” which she believes was ten 10-mg tablets.
- In the ER, the boy is agitated and screaming that there are “bugs on him.”
6., 2

- Vital signs reveal HR 180 bpm, RR 28 rpm, and BP 140/95 mm Hg.
- His pupils are 6 mm and briskly reactive.
- No other findings on physical examination are of note.
6., 3

- EKG is obtained and reveals sinus tachycardia.
- His toxicology screen is positive for amphetamines.
- You administer activated charcoal and place him in a quiet room, but he continues to be inconsolable.
6., 4

• The next MOST appropriate step is to administer
  A. Adenosine
  B. Haloperidol
  C. Labetalol
  D. Lorazepam
  E. Naloxone
6., 5

- Acute amphetamine overdose
  - Tachycardia
  - Hypertension
  - Agitation
  - Formication!
    - The sensation of insects crawling on or under the skin
  - Mydriasis

- Other symptoms
  - Nausea
  - Vomiting or diarrhea
  - Palpitations
  - Diaphoresis
  - Hyperthermia
  - Seizures
Acute amphetamine overdose management

- Stabilization of vitals
  - Sedation with benzodiazepines obviates the need for further treatment
- Relief of symptoms
  - Cool aggressively if there is hyperthermia
  - Treat seizures with benzodiazepines
- Decontamination
  - Oral activated charcoal prior to sedation
7. PREP 2010 Question 209

• A 19-year-old male is a sophomore in college.
• He presents to you with a two week history of an intermittent “burning feeling” in the epigastric region.
• He was nauseated and vomited this morning.
• It was last evening’s dinner, along with a few “dark specks.”
He now complains of a headache, epigastric discomfort, and a feeling of fullness.

His grades have declined recently and has received mostly “C’s” this year.

He attended a party last night and admits to “having a few beers.”

On exam, he is alert and well hydrated.
• Abdominal examination reveals epigastric tenderness without rebound.
• Rectal examination produces a small amount of brown stool that is positive for occult blood.
• A hematocrit in your office is 42%.
7., 4

• The MOST important next step is to
  A. Obtain serum Helicobacter pylori antibodies
  B. Prescribe lansoprazole 60 mg bid for 6 weeks
  C. Prescribe sucralfate 1 g four times a day for 1 month
  D. Recommend that he stop drinking alcohol
  E. Refer for immediate upper gastrointestinal endoscopy
7., 5

• Alcoholic gastritis
  – Ethanol is a gastric mucosal toxin
    • Cause erosive lesions and frank hemorrhage
    • Gastric lesions disappear rapidly following abstinence from alcohol intake
  – Chronic abuse may develop atrophic gastritis and esophageal cancer
  – Standard acid-blocking therapy may also be prescribed
7., 6

• The maximum dose for lansoprazole is 30 mg bid, although once daily is usually adequate.
• Sucralfate may be used acutely, but is more commonly an adjuvant.
• Helicobacter pylori serum antibodies
  – Many healthy individuals are colonized.
    • Overall prevalence is 35% to 45%
    • A positive antibody titer only indicates bacterial colonization, not a relationship towards infection
A 14-year-old boy is brought to the emergency department by friends after becoming confused and disoriented while they were "hanging out."

On physical examination, he is sleepy but easily arousable, his heart rate is 60 beats/min, respiratory rate is 18 breaths/min, and blood pressure is 120/60 mm Hg.

His pupils are 4 mm and sluggishly reactive to 2 mm.

No other findings on his physical examination are notable.

One hour after arrival at the emergency department, he is awake and alert and has normal vital signs.
8. PREP 2010 Item 240, 2

• Of the following, the MOST likely cause for this adolescent’s altered mental status is:
  A. Cerebral contusion
  B. Encephalitis
  C. Gasoline inhalation
  D. Jimson weed ingestion
  E. Lysergic acid diethylamide (LSD) ingestion
8., 3

• Acute inhalant exposure
  – Transient euphoria, THEN
  – Lethargy, lightheadedness, sluggish pupillary responses, and bradycardia
  – Confusion and delirium occur at high doses.
  – Symptoms resolve in 15 to 30 minutes as a single use

• Chronic use can cause fatal dysrhythmias, psychosis, dementia, peripheral neuropathy, bone marrow suppression, and a “glue-sniffer’s rash.”
9. PREP 2011 Question 48

• A 16-year-old boy is brought to the ER by friends because he started screaming uncontrollably at a party.

• He is agitated, talking to himself, and appears to be hallucinating.

• Vital signs reveal T 38.1 °C, HR 135 bpm, RR 28 rpm, and BP 140/92 mm Hg.

• Even in a quiet room, his agitation continues.
9., 2

• The MOST appropriate next step is to
  A. Administer activated charcoal
  B. Administer labetalol
  C. Administer lorazepam
  D. Begin external cooling
  E. Place the patient in physical restraints
10. PREP 2011 Question 64

• A 16-year-old presents to the ER with headache, dizziness, and chest pain.
• He is agitated and has occasional tic-like movements.
• Vital signs reveal T 37.5 °C, HR 120 bpm, RR 20 rpm, BP 130/86 mm Hg.
• His pupils are mildly dilated and briskly reactive.
10., 2

• The MOST likely explanation for this boy’s symptoms is abuse of
  A. Alcohol
  B. Cocaine
  C. Dextromorphan
  D. LSD
  E. Marijuana
### Item C64A. Phases of Severe Cocaine Toxicity

<table>
<thead>
<tr>
<th>Phase</th>
<th>Clinical Features</th>
</tr>
</thead>
<tbody>
<tr>
<td>Phase 1-Early</td>
<td>Central nervous system (CNS)/behavioral: Mydriasis, headache, tics, tremors, euphoria, agitations, restlessness, emotional lability</td>
</tr>
<tr>
<td></td>
<td>Cardiovascular: Increased or decreased pulse</td>
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<tr>
<td></td>
<td>Respiratory: Increased rate</td>
</tr>
<tr>
<td>Phase 2-Advanced</td>
<td>CNS/behavioral: Seizures, hyperreflexia</td>
</tr>
<tr>
<td></td>
<td>Cardiovascular: Hypertension, tachycardia</td>
</tr>
<tr>
<td></td>
<td>Respiratory: Irregular</td>
</tr>
<tr>
<td>Phase 3-Premorbid</td>
<td>CNS: Coma, flaccid paralysis</td>
</tr>
<tr>
<td></td>
<td>Cardiovascular: Arrest</td>
</tr>
<tr>
<td></td>
<td>Respiratory: Respiratory failure</td>
</tr>
</tbody>
</table>
### Item C64B. Signs and Symptoms of Chronic Cocaine Use

<table>
<thead>
<tr>
<th>System</th>
<th>Intravenous</th>
<th>Intranasal</th>
<th>Smoked</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pulmonary</td>
<td>Pneumothorax</td>
<td></td>
<td>Pneumothorax, hypersensitivity pneumonitis</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>(“crack lung”)</td>
</tr>
<tr>
<td>Ear/Nose/Throat</td>
<td>Nasal septum perforation, chronic</td>
<td></td>
<td>Airway burns, atrophic oral mucosa</td>
</tr>
<tr>
<td></td>
<td>rhinorrhea</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Skin</td>
<td>Needle tracks</td>
<td></td>
<td>Thermal burns to face, fingers, thumbs</td>
</tr>
</tbody>
</table>
11. PREP 2011 Item 136

• A 17-year-old boy asks you for help with quitting cigarette use. He started smoking at age 14 years and now smokes between four and six cigarettes a day.

• He was able to quit for 2 months in the past year but resumed smoking after an argument with his girlfriend.

• Of the following, the medical literature indicates that MOST youth:
  A. Can quit smoking on their own
  B. Do not wish to quit smoking
  C. Double their cessation rates with counseling
  D. Find scare tactics very effective
  E. Increase their cessation rates with medication use
12. PREP 2011 Item 152

• An 18-year-old boy, who has a past medical history of poor school performance, behavior problems, and one episode of visual hallucinations, is brought to the emergency department because of incoherent speech and agitation.

• On physical examination, you note that the adolescent is staring into space and has occasional garbled speech.
• His heart rate is 125 beats/min, temperature is 37.0°C, and blood pressure is 125/82 mm Hg. His pupils are 5 mm bilaterally.
• His skin is flushed and sweaty, he has no needle track marks, and his abdomen is slightly distended.
• His reflexes are hyperactive, but there are no focal neurologic findings.
• The rest of his examination findings are unremarkable.
12., 3

- Of the following, the MOST likely cause of this boy’s findings is:
  A. Anticholinergic intoxication
  B. Depression with psychotic features
  C. Early-onset schizophrenia
  D. Marijuana use
  E. Phencyclidine (PCP) use
• Phencyclidine use symptoms
  – Blank staring
  – Incoherent speech
  – Tachycardia
  – Sweating
  – Muscle rigidity
  – Higher doses of PCP may cause nystagmus, hallucinations, seizures, coma, and death.
13. PREP 2011 Question 168

• A 17-year-old is in for his well child check.
• He says he is fine and has no concerns today.
• His mother has concerns.
• Lots of concerns.
• The mother states that he has had a few nosebleeds and a chronically runny nose over the past year.
• His appetite is decreased, with a weight loss.
• He had vague complaints of chest pain and some shortness of breath a few months ago but not lately.
• She also notes that he has not been doing well at school.
• His physical examination is normal.
• With permission, you obtain a UDS, which is negative, but you still suspect drug abuse.
13., 3

• The findings for this boy MOST likely are due to repeated use of
  A. Cocaine
  B. Dextromorphan
  C. Heroin
  D. Marijuana
  E. Tobacco
14. PREP 2011 Question 184

• The parents of a 15-year-old boy bring him to see you because he has been more irritable and aggressive lately.

• He has no prior history of depression and has maintained a good academic record.

• You saw him recently for concerns about slow growth, acne, and gynecomastia and noted that he was being bullied at school.
14., 2

- He is at Sexual Maturity Rating (SMR) 5 of pubertal development.
- His urine drug screen yields negative results.
• The MOST likely cause of this adolescent’s findings is

A. Anabolic-androgenic steroid use
B. Attention-deficit/hyperactivity disorder
C. Intermittent marijuana use
D. Klinefelter syndrome
E. New-onset major depression
Anabolic-androgenic steroids (AAS) abuse in males
- Acne
- Gynecomastia
- Reduced sperm count
- Testicular atrophy
- Male pattern baldness
- Continued use reduces final height

Symptoms in females
- Masculinization
- Oligo- or amenorrhea
- Deepening of the voice
- Decreased body fat
- Loss of scalp hair
- Increased body hair
- Decreased breast size
- Clitoromegaly
14., 5

• AAS long-term use
  – Peliosis hepatis
  – Liver and kidney tumors

• AAS abuse and psychological changes
  – Irritability and aggression (‘roid rage)
  – Euphoria and sexual arousal
  – Mood swings
  – Forgetfulness and confusion
• Gynecomastia and drug abuse
  – Gynecomastia is a common physiologic finding at SMR 2 and resolves thereafter.
  – Breast tissue greater than 2 cm in diameter at SMR 5 should prompt consideration of non-physiologic causes.
14., 7

- Gynecomastia
  - Gynecomastia may occur with marijuana use and Klinefelter syndrome
    - Marijuana use would also have slow reflex times
    - Marijuana would have academic performance deteriorate with chronic use
    - Klinefelter syndrome is the most common cause of testicular failure.
    - Klinefelter syndrome would also present with low testosterone concentrations and learning disabilities
15. PREP 2012 Question 76

• An 18-year-old college student with a history of ADHD presents to your office as a new patient.
• She requests a renewal prescription for her methylphenidate.
• You note her current supply, according to the empty bottle that she hands you, should be refilled in 2 weeks.
• She fills out a release of information form for her prior physician, but that person cannot be reached today.

• When you ask why she takes this medication, she replies, “It helps me pay attention.”

• When you ask why the bottle is empty, she states, “The pills spilled in the sink.”
15., 3

• The MOST appropriate next step is to
  A. Ask for a urine sample to perform a urine drug screen
  B. Ask her to return in 1 to 2 weeks to give you adequate time to contact the previous prescribing physician
  C. Complete a brief medical history and write a prescription for a 1-month supply
  D. Complete an inventory to assess risk for alcohol and recreational drug use and write the requested prescription for 1 month
  E. Have her complete a Vanderbilt Diagnostic Rating Scale form
• Medication diversion
  – When prompted, answers to questions about the medication are limited and vague
  – Some medications are more difficult to assess diversion than others.
  – Be educated about potential drug diversion
    • Establish individual office policies and procedures that address such concerns
    • When to provide a replacement for “lost” medications.
16. PREP 2012 Question 142

- You are seeing a 17-year-old boy in your office for suture removal following a laceration to the left index finger.
- He reports that he cut himself while operating a meat slicer at a local deli, where he has worked since dropping out of school.
- You have not seen him in the office for 2 years.
• He has a past history of ADHD, which you briefly treated with methylphenidate.

• In addition to the healing, sutured 2-cm finger laceration, you observe tachycardia and injected conjunctivae bilaterally.

• The boy appears nervous and has difficulty recalling details of the accident at work.
• You obtain a psychosocial history that includes family functioning, drug history, sexual history, peer interaction, and mood and anxiety assessment.

• Upon further questioning, he admits to daily marijuana use for more than 2 years.
16., 4

• The MOST appropriate next step is to
  A. Advise him to stop use and follow up in 1 month
  B. Arrange urine drug testing
  C. Notify his parents of his marijuana use
  D. Obtain a more detailed substance abuse history
  E. Resume methylphenidate therapy
16., 5

• Detailed drug history
  – Life history of use of each substance
  – The frequency of use
  – The context of use
  – Details regarding the effects upon the patient’s life
  – Decide the degree of substance use
    • Experimental, problematic, abuse, or dependence
• Experimental drug use
  – Occasional use without drug-seeking behavior

• Problematic drug use
  – Substance use that has resulted in social, financial, psychological, physical, or legal problems
16., 7

• Substance abuse – any one of the following:
  – Recurrent failure to meet important responsibilities
  – Recurrent use in situations when such use is likely to be physically dangerous
  – Recurrent legal problems arising from drug use
  – Continued use despite knowledge of problems caused by or aggravated by use
16., 8

- Substance dependence – three or more of the following:
  - Tolerance
  - Withdrawal
  - Using more for longer periods than intended
  - Desire to or unsuccessful efforts to cut down
  - Considerable time spent in obtaining the substance or using or recovering from its effects
  - Important social, work, or recreational activities given up because of use
  - Continued use despite knowledge of problems caused by or aggravated by use
17. PREP 2012 Question 251

• The parents of a 15-year-old boy would like your help in sending their son to a drug rehabilitation facility.
• He disagrees and feels he can stop use of illicit drugs on his own.
• He reportedly started smoking and drinking at age 12 years.
• His mother recently found drug paraphernalia in his room, prompting the visit.
• He tells her his friend asked him to hold these items for him but they are not his.
• In deciding a plan, you review risk factors.
This boy’s prognosis is MOST influenced by:

A. Age at which substance abuse began
B. Duration of substance use
C. His current age
D. Peer substance use
E. Types of substance used
Drug abuse in adolescents

- The younger the age on onset, the higher the incidence of future abuse and dependence.
- Adolescents who begin use later and use substances for a shorter period of time are more likely to be able to stop.
- The route of administration leads to a substance being more addicting and, thus, harder to give up.
18. PREP 2012 Question 267

- You are seeing a 17-year-old boy whose mother is concerned.
- “He is not eating as well as before and appears to be losing weight.”
- He is upset about being brought in...
- “I am just stressed about my tests, and I’m not sleepin’ as well.”
- “It’s just how I roll, bro...”
18., 2

- Vital signs reveal BP 130/95 mm Hg, HR 95 bpm, and body mass index 19.7.
- He appears restless and has cold and sweaty palms.
- He has mildly dilated pupils, very active bowel sounds, and hyperactive reflexes.
18., 3

• The MOST likely cause for this boy’s weight loss is
  A. Anxiety disorder
  B. Eating disorder
  C. Hyperthyroidism
  D. Sleep disorder
  E. Stimulant abuse
  F. That’s just how he rolls, bro...
• Adrenergic toxidrome (amphetamines or cocaine)
  – Decreased sleep and appetite
  – Restlessness
  – Increased blood pressure and heart rate
  – Dilated pupils
  – Increased reflexes

• Other symptoms
  – Headaches, dizziness
  – Dysphoria, tremors
  – N/V/D, loss of libido

• Chronic use
  – Malnutrition
  – Hostility, paranoia

• Large doses
  – Stroke, vomiting, seizure
19. PREP 2013 Question 142

• A 16-year-old boy is in the ER after briefly losing consciousness.
• The parents state their son and his friends were in the basement “listening to music” when his friends called them to see their son because he had “fainted.”
• He was found confused and sluggishly responsive.
• His friends “had no explanation” for his symptoms, but deny seizure-like activity or head injury.
• In the ER, he is awake, alert, and answers questions appropriately.
• Vital signs are HR 80 bpm, RR 18 rpm, and BP 120/60.
• His pupils are 4 mm and reactive to 2 mm.
• There is an erythematous rash around his mouth and nose.
• Everything else on physical examination is normal.
• An EKG reveals normal sinus rhythm.
• His blood glucose is 140, and his urine drug screen is negative.
19., 3

• The MOST appropriate next step is to
  A. Obtain an electroencephalogram (EEG)
  B. Obtain computed tomography of the brain
  C. Recommend substance abuse counseling
  D. Refer him to a cardiologist
  E. Refer him to a neurologist
• Acute inhalant exposure
  – Volatile hydrocarbons (gasoline, glue, lighter fluid) and nitrite compounds
  – Inhalants produce euphoria, followed by short-lived sedative symptoms (lethargy, lightheadedness, sluggish pupillary responses, and bradycardia).
  – At high doses, confusion and delirium may occur.
  – One-time use will resolve symptoms in 15 to 30 minutes.
  – Chronic use has been associated with fatal dysrhythmias, psychosis, dementia, peripheral neuropathy, and bone marrow suppression.
  – May cause a perioral dermatitis (“glue-sniffers rash”)
A 16-year-old boy is in the ER because he had a seizure after returning home from a party with his friends.

He was agitated and aggressive when he first got home 45 minutes ago.

Then, he was unresponsive and developed generalized extremity shaking for 5 minutes.

He has a history of marijuana abuse, but his friends report that he “only smoked a cigar.”

Vital signs are HR 140 bpm, RR 30 rpm, and BP 135/95.
20., 2

• He is difficult to arouse, and his pupils are midsized, equal, and sluggishly reactive with notable nystagmus.

• The MOST likely explanation for his symptoms is
  A. Concussion
  B. Epilepsy
  C. Inhalant abuse
  D. Nicotine toxicity
  E. Phencyclidine exposure
20., 3

- Phencyclidine exposure
  - Hallmark symptoms include tachycardia, hypertension, agitation, seizures, and nystagmus.
- Inhalant exposure
  - Symptoms are generally related to CNS stimulation or depression
  - Dizziness, excitation, lethargy, hallucinations, and ataxia
- Nicotine toxicity
  - Characterized by muscarinic effects like those seen in organophosphate poisoning, such as salivation, lacrimation, diarrhea, wheezing, bradycardia
  - Would also see nicotinic effects (weakness, paralysis, muscle fasciculation)
Resources

PREP for Boards
American Academy of Pediatrics