Controlled Substances and Drugs of Abuse

by Fiona Geiser, Ph.D., CPhT

Fiona Geiser’s 35-year career as a pharmaceutical chemist includes employment at Dupont, Chiral Technologies, and Johnson Matthey Pharmaceuticals. As a group leader at Johnson Matthey, she was responsible for chemical analysis and manufacturing support of controlled substances. She is recipient of the 2001 Chromatography Forum of Delaware Valley Award for her invention of the chiral manufacturing process for escitalopram antidepressant. She obtained her Ph.D. in Organic Chemistry from the University of Cincinnati. She is currently a freelance medical writer as well as an adjunct instructor in Allied Health and Nursing at Delaware County Community College.

Fiona Geiser, Ph.D., CPhT
1054 Wilson Avenue
Glen Mills, PA  19342

Tel 610-358-2950

geiserfamily@msn.com
LEARNING OBJECTIVES

At the conclusion of this CE program you should be able to:

1. summarize the history of the 1970 Controlled Substances Act (CSA)
2. define the drug classes of opioids, stimulants, CNS depressants
3. give examples for the five CSA drug schedules
4. explain the purpose of abuse-resistant drug delivery systems
5. describe requirements for a Controlled Substance Inventory (CSI)

The United States Controlled Substances Act (CSA)

The United States is a party to international treaties that establish control and traffic over narcotics (opiates), coca leaf, cocaine, cannabis, stimulants, depressants, and hallucinogens. In compliance with the treaties, the Comprehensive Drug Abuse Prevention and Control Act of 1970 was created as a closed system of registration and distribution for those authorized to handle controlled substances. Individuals and firms are required to maintain accurate inventories and security of all transactions involving controlled substances. In June 2007, there were >1 million registered physicians, and nearly 65,000 registered retail pharmacies. Of the 12,000 wholesale registrants, manufacturers comprised 512. Manufacturers in particular must comply with stringent precautions that include video-monitoring of facilities, routine employee inspections, employee drug testing, and annual quota limitations. The Controlled Substance Act was amended by the Comprehensive Crime Control Act of 1984 and the Anti-Drug Abuse Act of 1986. These acts provide the emergency scheduling authority for substances not currently controlled and for controlled-substance analogues. The Combat Methamphetamine Epidemic Act of 2005 furthermore required the control of chemical products containing ephedrine, pseudoephedrine, or phenylpropanolamine, chemicals that are used in the illicit synthesis of methamphetamine.

Stimulants

All controlled substances either have abuse potential or they are immediate precursors to substances with abuse potential, usually through the central nervous system (brain and spinal cord). In addition to abuse potential, controlled substances are capable of producing either physical or psychological dependence. Figure 1 illustrates neuron-imaging studies conducted by Nora Volkow, M.D., Director of the National Institute of Drug Abuse. Dr. Volkow found that chronic abuse of stimulants, such as cocaine and methamphetamine, depleted brain neurons and brain functioning. Chronic abuse is different from legitimate medical treatment. Abuse is usually associated with binge use in which large doses of stimulants are consumed over a short period of time. Stimulants, such as amphetamine and methylphenidate, are legitimately prescribed to treat attention deficit hyperactivity disorder (ADHD). Paradoxically, patients with ADHD are calmed down by stimulants, whereas others become very hyperactive. Improper stimulant use can result in psychotic episodes, such as visual and auditory hallucinations, as well as increased heart rate.
Abuse-Resistant Drug Delivery Systems

Since youths are particularly vulnerable to drug abuse, controlled substances are frequently formulated as abuse-resistant drug delivery systems. Medications that only need to be administered once a day minimize the chance that students would be carrying medications. Furthermore, controlled-release formulations are designed so that pills cannot be crushed for the purposes of smoking, intranasal inhalation, or intravenous injection. In 2005, the FDA issued a directive requiring that drug products should be developed using a Risk Minimization Action Plan (RiskMAP). In response to the directive, sophisticated formulations and physical tests were developed to make it as difficult as possible to extract the active controlled substance for the purposes of nonmedical diversion. Concerta (methylphenidate HCl) Extended-Release tablets contain an immediate-release overcoat (22% of the total dose). The remainder 78% of the total dose is contained within the “osmotic core” which allows slow drug release in the body. The osmotic delivery system includes polymers (polyethylene oxide) that quickly form viscous gel-like material when exposed to humid air or small volumes of water. The gel-like material is ineffective for the purposes of intranasal inhalation. Crush tests are used to evaluate abuse potential. Even after crushing with a hammer, controlled-release Concerta does not form a fine powder because of the granulated, polyethylene oxide-methylphenidate physical complex that maintains a slow, extended release of the active drug. Similarly, extraction of methylphenidate from tablets can require as long as 24 hours, significantly reducing diversion for the purposes of intravenous injection (Figure 2).

Opioids

Opioids are a class of pain medications that include morphine and codeine that are extracted directly from the opium poppy plant. Codeine produces weaker analgesic and antitussive effects as well as milder adverse effects than morphine. Compared to other opioid analgesics, codeine is more effective when given orally and is less likely to lead to abuse. Codeine is often given with acetaminophen for additive analgesic effects. Codeine is metabolized to morphine, which is responsible for its analgesic effects, although 10% of the population are unable to adequately metabolize codeine. Semi-synthetic opioids include oxycodone and hydrocodone that are synthesized from thebaine, a natural constituent of the poppy plant. Synthetic opioid analgesics include highly-potent fentanyl and sufentanil that are used primarily in hospitals. OxyContin is a slow-release form of oxycodone approved by the FDA in 1995. OxyContin is associated with drug-store thefts because chewing or crushing the pills released all of the oxycodone at once. The 160 mg dosage of OxyContin is of particular concern because it is at least 25 times stronger than the normal analgesic dosage. In May 2007, the FDA Office of Criminal Investigation (OCI) reported that it had uncovered an extensive, long-term scheme by The Purdue Frederick Co., Inc., that involved making false representations to health-care providers about the difficulty of extracting oxycodone from OxyContin tablets and claims that it was less addictive than immediate-release opiates. The legal judgment resulted in $600 million in fines and guilty pleas by former executive employees. Meperidine (Demerol) is a synthetic drug with pharmacologic action similar to morphine. Meperidine exhibits a neurotoxic metabolite (normeperidine) that accumulates with chronic use, large doses, or with renal failure. The use of meperidine has declined since accumulation of normeperidine metabolite produces CNS stimulation, seizures, and tremors that are irreversible with opioid antagonist drugs.
CNS Depressants (Sedatives-Hypnotics)

Sedatives-hypnotics are widely prescribed worldwide for the treatment of anxiety and sleep disorders. An effective sedative (anxiolytic) agent reduces anxiety and exerts a calming effect with minimal CNS depression. Hypnotic effects occur at larger dosages with more CNS depression. The use of sedative-hypnotic barbiturates, such as phenobarbital, has declined because high doses may lead to a state of anesthesia and even respiratory depression (coma and death). Benzodiazepines, such as diazepam and alprazolam, have replaced barbiturates because of improved safety at higher dosages. Benzodiazepines are metabolized by the liver, forming active metabolites that can lead to long half-lives. Drugs with long half-lives are eliminated slowly enough to achieve gradual withdrawal with fewer physical symptoms. Sedative-hypnotics interact with other CNS depressants leading to additive effects. Although such interactions may have a therapeutic usefulness in anesthesia practice, unanticipated interactions can lead to serious respiratory depression. Additive effects are predicted when benzodiazepines are used with alcoholic beverages and opioid analgesics. For example, OxyContin dosage should be reduced by about 50% when OxyContin is prescribed to patients also receiving sedative-hypnotics.

Drug Abuse

Dependence is not always associated with drug abuse since it can occur with many classes of drugs. If morphine is used at short intervals, the dose has to be progressively increased over several days to maintain analgesic effects. This effect is known as tolerance. It may become a serious problem because of side effects, such as respiratory depression, that do not show tolerance. Chronic exposure to addictive drugs is known to result in adaptive changes to the brain. Adaptive changes are apparent once drug exposure is terminated in which a state of withdrawal occurs in varying degrees. Withdrawal from opioids is particularly strong in humans usually resulting in intense dysphoria, or a feeling of anxiety, unpleasantness or discomfort. While dependence invariably occurs with chronic exposure, only a fraction of the patients desire the drug after withdrawal. Benzodiazepines may be abused for their euphoriant effects, but most often abuse occurs with concomitant use with other drugs (eg, to reduce anxiety during withdrawal from opioids).

Addiction is compulsive, relapsing drug use despite negative consequences, often triggered by cravings that occur in response to “cues.” Even after withdrawal and prolonged drug-free periods, addicted individuals are at high risk of relapse due to stress, re-exposure to the drug of abuse, or even a context (cue) that recalls prior drug use. Cravings may recur due to people, places, and paraphernalia. The transition from dependence to addiction is determined by a combination of genetics and environment. Some drugs of abuse do not lead to addiction, such as ketamine, a dissociative anesthetic, that produces feelings of separation of mind and body. Chronic exposure to the dissociative anesthetic PCP (phencyclidine) may lead to psychosis, resembling schizophrenia that may persist after drug exposure. PCP is often used in animal studies to evaluate the antipsychotic potential of drugs.
Controlled Substance Schedules

Most opioids are classified as Schedule II substances, unless they are combined with analgesics such as acetaminophen or aspirin, in which case they are classified as Schedule III substances. Table 1 is a summary of the CSA schedules. Stimulants are typically classified as Schedule II substances, whereas most benzodiazepines are classified as Schedule IV substances. Lisdexamfetamine dimesylate (Vyvanse) is a drug approved by the FDA in February 2007 for the treatment of ADHD. Although Vyvanse is therapeutically inactive, it is classified as a schedule II controlled substance because it is metabolized in the body to the controlled stimulant d-amphetamine. In an abuse liability study, Vynase was administered intravenously to individuals with a history of drug abuse in order to determine “drug liking, amphetamine, and stimulant effects.” Although Vyvanse produced positive responses greater than placebo, the “drug liking” responses were less than those produced by an equivalent dose (20 mg) of intravenous, immediate-release d-amphetamine.

Marijuana is nationally classified as Schedule I with no currently accepted medical use. Dronabinol (Figure 3) is a formulation of the active component in marijuana (d-9-THC) for use as an appetite stimulant particularly for cancer patients. Since smoking is not a suitable drug delivery system, a formulation of synthetic d-9-THC was developed in the 1980’s. The gel-cap formulation of dronabinol consists of d-9-THC dissolved in sesame oil. Not only is d-9-THC difficult to extract from sesame oil, but exposure to air quickly decomposes d-9-THC to its inactive degradants. Although dronabinol was originally classified as Schedule II, it was changed to Schedule III because of low reports of abuse or diversion.

Retail pharmacies are not permitted to purchase or store any Schedule I substances. As shown in Table 2, Schedule II substances are regulated more stringently than Schedule III-V substances, although specific requirement vary between states. Pharmacies are required to verify the validity of prescription for controlled substances by checking the prescriber’s DEA number. Characteristics of forged prescriptions include:

- prescriptions look “too good” with legible handwriting
- prescriptions do not comply with acceptable abbreviations
- prescriptions written in different color inks or in different handwriting
- prescriptions appear to be photocopied or contain erasure marks

Schedule II drugs may be purchased by the use of DEA Form 222 which is a triplicate form. The pharmacy keeps the third copy, which must contain a notation of the number of commercial containers received and the date of receipt. Pharmacist must send copies 1 and 2 of the triplicate form to the supplier, who then forwards copy 2 to the DEA. In April 2005, the DEA issued a final rule providing an optional electronic equivalent to DEA FORM 222. To be valid, the purchaser must sign an electronic order for a Schedule II controlled substance with a digital signature issued to the purchaser by the DEA. Unique to this type of electronic order is that a purchaser may include controlled substances that are not in Schedule II as well as noncontrolled substances.
The Code of Federal Regulations (CFR) requires that a DEA registrant take an initial inventory of all controlled substances when issued a DEA registration. The Controlled Substance Inventory (CSI) is a complete and accurate list of all stocks and forms of controlled substances in the possession of the registrant as determined by an actual physical count. All inventories are maintained at the registered location in a readily retrievable manner for at least two years. Records and inventories of Schedule II controlled substances must be maintained separately from all other records of the registrant. Records and inventories of Schedules III, IV, and V controlled substances must be maintained either separately from all other records or in such a form that the information is readily retrievable from ordinary business records. The registrant is required to take a biennial inventory every two years.

**Treatment of Pain**

The DEA issued a policy statement on dispensing controlled substances for the treatment of pain in September 2006. The document emphasized that the under-treatment of pain is recognized as a serious public health problem due, in part, to the misunderstanding of addiction and dependence. Pharmacists dispensing controlled substances for pain control should note that the treatment of pain with controlled substances is unquestionably a legitimate medical purpose. The overwhelming majority of physicians who prescribe controlled substances do so in a legitimate manner. Reports indicate that fewer than 1 of every 10,000 physicians (<0.01%) in the United States lose their controlled substance registrations based on improper prescribing. The most common way in which controlled substance prescriptions are diverted may be through friends and family. For example, a person with a lawful and medical need for some amount of a controlled substance uses only a portion of the prescribed amount. Then a family member complains of pain, and the former patient shares excess medication. For a family member addicted to controlled prescription drugs, the mere availability of unused controlled substance prescriptions in the house may prove to be an irresistible temptation.

Duragesic (Figure 4) is a transdermal formulation of fentanyl used to treat chronic pain in which the active drug is deposited in the skin and slowly absorbed systemically. Although the skin patches have a slow onset of action (12 to 24 hours), the effect lasts 3 days. When the patch is removed, the drug continues to be absorbed from the skin deposits for at least 24 hours. Patients and family members should be cautioned to remove patches using gloves to avoid exposure to residual fentanyl. If the Duragesic system is cut or damaged, controlled drug delivery will not be possible, which can lead to the rapid release and absorption of a potentially fatal dose of fentanyl. Tramadol (Ultram) is an oral, synthetic, centrally active analgesic for the treatment of moderate to severe pain. It is chemically unrelated to opioids and is not currently a nationally controlled drug although some states are currently in the process of classifying tramadol as a controlled drug.

The older adult population is another group at risk for prescription drug abuse. Although persons 65 years of age and above comprise only 13% of the population, they account for about one-third of all medications prescribed in the United States. Older adults also use over the counter medicines and dietary supplements which might have adverse health consequences due to drug interactions. Pharmacists can play a key role in preventing prescription drug abuse by providing clear information on how to take medications appropriately and by describing possible side effects and drug interactions (Table 3). Patients should be advised about never using another person’s prescription, as well as safely securing and/or disposing unused medications. Moreover, pharmacists and pharmacy technicians are the first line of defense in recognizing prescription drug abuse by monitoring prescriptions for falsification or alterations.
References


Suggested Web Activities:


Fig. 1. PET (positron emission tomography) images show that the drug abuser suffered neuron loss (yellow region) as a result of abusing methamphetamine. Source: N.D. Volkow, M.D.³
CONCERTA (methylphenidate HCl) Extended Release Tablets
(McNeil Pediatrics)

Prescription Only; Controlled Schedule II; Pregnancy Category C caution in nursing women

CLASSIFICATION: ADHD treatments; Stimulants

INDICATIONS AND USAGE: Attention-deficit hyperactivity disorder in patients aged ≥6 years.

AVAILABILITY: Extended-release tablets: 18mg, 27mg, 36mg, 54mg

ROUTE AND DOSAGE: Start dosage of 18mg/day; Max 54mg/day (children 6-12 years) and Max 72mg/day (children 13-17 years). Administer by mouth. in morning with liquid. Do not chew, divide, or crush.

STORAGE CONDITIONS: Store at room temperature (59° F -86° F). Do not store in hot, damp, or humid places.

REFERENCES

Fig. 2. CONCERTA extended release tablets for treatment of ADHD.
**MARINOL (dronabinol) Capsules (Unimed)**

**Prescription Only; Controlled Schedule III; Pregnancy Category C**

**CLASSIFICATION:** Antiemetic to treat appetite loss

**INDICATIONS AND USAGE:** Anorexia associated with weight loss in patients with AIDS; and nausea and vomiting associated with cancer chemotherapy in patients who have failed to respond adequately to conventional antiemetic treatments

**AVAILABILITY:** 2.5mg, 5mg, 10mg capsules (gelcaps)

**ROUTE AND DOSAGE:** Adult (appetite stimulant) PO 2.5 mg b.i.d., before lunch and dinner. Significant CNS symptoms in antiemetic studies followed oral doses of 0.4 mg/kg (28 mg/70 kg). The estimated lethal human dose of intravenous dronabinol is 30 mg/kg (2100 mg/70 kg).

**STORAGE CONDITIONS:** Capsules should be packaged in a well-closed container and stored in a cool environment between 8 deg C and 15 deg C (46 deg F and 59 deg F) and alternatively could be stored in a refrigerator. Protect from freezing.

**REFERENCES**


Fig. 3. Dronabinol antiemetic to treat appetite loss contains the active ingredient of marijuana (delta-9-tetrahydrocannabinol).
DURAGESIC (fentanyl) TRANSDERMAL Ortho-McNEIL
Prescription Only; Controlled Schedule II; Pregnancy Category C
CLASSIFICATION: Chronic pain
INDICATIONS AND USAGE: For the management of persistent, moderate to severe chronic pain requiring around-the-clock opioid administration and that cannot be managed by other means such as nonsteroidal analgesics or opioid combination products.
AVAILABILITY Patch size (fentanyl content; dose): 5cm² (1.25mg, 12.5mcg/hr); 10cm² (2.5mg, 25mcg/hr); 20cm² (5mg, 50mcg/hr); 30cm² (7.5mg, 75mcg/hr); 40cm² (10mg, 100mcg/hr).
ROUTE AND DOSAGE: Initial dose is 25 mcg/h patch q3d for patients not already on opioids. See package insert for conversions for patients already on opioids.
CAUTION: If the DURAGESIC system is cut or damaged, controlled drug delivery will not be possible, which can lead to the rapid release and absorption of a potentially fatal dose of fentanyl.
STORAGE CONDITIONS: Do not store above 77°F. Apply immediately after removal from individually sealed package. Do not use if seal is broken. Do not cut or damage.

Fig. 4. DURAGESIC (fentanyl) transdermal patch for chronic pain.
Table 1. Drug Schedules for the 1970 Federal Controlled Substances Act

<table>
<thead>
<tr>
<th>Schedule</th>
<th>Criteria</th>
<th>Examples of Substances</th>
</tr>
</thead>
<tbody>
<tr>
<td>I</td>
<td>High potential for abuse</td>
<td>heroin, marijuana, LSD</td>
</tr>
<tr>
<td></td>
<td>No currently accepted medical use</td>
<td>phencyclidine (PCP)</td>
</tr>
<tr>
<td></td>
<td>May be used for research</td>
<td></td>
</tr>
<tr>
<td>II</td>
<td>High potential for abuse</td>
<td>morphine, codeine, oxycodone,</td>
</tr>
<tr>
<td></td>
<td>Currently accepted for medical use</td>
<td>methylphenidate, amphetamine,</td>
</tr>
<tr>
<td></td>
<td></td>
<td>methamphetamine, cocaine</td>
</tr>
<tr>
<td></td>
<td></td>
<td>lisdexamfetamine, fentanyl</td>
</tr>
<tr>
<td>III</td>
<td>Less abuse potential than Schedule II</td>
<td>opioids with acetaminophen,</td>
</tr>
<tr>
<td></td>
<td>Currently accepted for medical use</td>
<td>dronabinol, anabolic steroids</td>
</tr>
<tr>
<td></td>
<td></td>
<td>ketamine</td>
</tr>
<tr>
<td>IV</td>
<td>Less abuse potential than Schedule III</td>
<td>alprazolam, diazepam,</td>
</tr>
<tr>
<td></td>
<td>Currently accepted for medical use</td>
<td>phenobarbital</td>
</tr>
<tr>
<td>V</td>
<td>Limited abuse potential than Schedule IV</td>
<td>antitussives with codeine</td>
</tr>
<tr>
<td></td>
<td>Currently accepted for medical use</td>
<td></td>
</tr>
</tbody>
</table>
Table 2. Requirement for handling of controlled substances

**Summary of Controlled Substances Act Requirements**

<table>
<thead>
<tr>
<th></th>
<th>Schedule II</th>
<th>Schedule III &amp; IV</th>
<th>Schedule V</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Registration</strong></td>
<td>Required</td>
<td>Required</td>
<td>Required</td>
</tr>
<tr>
<td><strong>Receiving Records</strong></td>
<td>Order Forms (DEA Form-222)</td>
<td>Invoices, Readily Retrievable</td>
<td>Invoices, Readily Retrievable</td>
</tr>
<tr>
<td><strong>Prescriptions</strong></td>
<td>Written Prescription (See exceptions*)</td>
<td>Written, Oral, or Fax</td>
<td>Written, Oral, Fax, or Over The Counter**</td>
</tr>
<tr>
<td><strong>Refills</strong></td>
<td>No</td>
<td>No more than 5 within 6 months</td>
<td>As authorized when prescription is issued</td>
</tr>
<tr>
<td><strong>Distribution Between Registrants</strong></td>
<td>Order Forms (DEA Form-222)</td>
<td>Invoices</td>
<td>Invoices</td>
</tr>
<tr>
<td><strong>Security</strong></td>
<td>Locked Cabinet or Other Secure Storage</td>
<td>Locked Cabinet or Other Secure Storage</td>
<td>Locked Cabinet or Other Secure Storage</td>
</tr>
<tr>
<td><strong>Theft or Significant Loss</strong></td>
<td>Report and complete DEA Form 106</td>
<td>Report and complete DEA Form 106</td>
<td>Report and complete DEA Form 106</td>
</tr>
</tbody>
</table>

Note: **All records** must be maintained for 2 years, unless a state requires a longer period.

* **Emergency prescriptions** require a signed follow-up prescription.

**Exceptions:** A facsimile prescription serves as the original prescription when issued to residents of Long Term Care Facilities, Hospice patients, or compounded IV narcotic medications.
### Table 3 Medical Effects of Controlled Substances.
Source: N.D Volkow, M.D. ¹²

<table>
<thead>
<tr>
<th>Stimulants</th>
<th>Opioids</th>
<th>CNS Depressants</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Examples</strong>&lt;br&gt;Dextroamphetamine CII&lt;br&gt;Methylphenidate CII</td>
<td><strong>Examples</strong>&lt;br&gt;Morphine CII&lt;br&gt;Codeine CII</td>
<td><strong>Examples</strong>&lt;br&gt;Diazepam CIV&lt;br&gt;Alprazolam CIV</td>
</tr>
<tr>
<td><strong>Prescribed for</strong>&lt;br&gt;Narcolepsy&lt;br&gt;ADHD&lt;br&gt;Unresponsive Depression</td>
<td><strong>Prescribed for</strong>&lt;br&gt;Postsurgical pain relief&lt;br&gt;Acute or chronic pain&lt;br&gt;Cough and diarrhea</td>
<td><strong>Prescribed for</strong>&lt;br&gt;Anxiety&lt;br&gt;Tension&lt;br&gt;Panic attacks</td>
</tr>
<tr>
<td><strong>In the body</strong>&lt;br&gt;Enhance brain activity causing an increase in alertness, attention, energy</td>
<td><strong>In the body</strong>&lt;br&gt;Block the perception of pain</td>
<td><strong>In the body</strong>&lt;br&gt;Produce calming effect</td>
</tr>
<tr>
<td><strong>Short-term effects</strong>&lt;br&gt;Elevated blood pressure&lt;br&gt;Elevated heart rate&lt;br&gt;Increased respiration&lt;br&gt;Suppressed appetite</td>
<td><strong>Short-term effects</strong>&lt;br&gt;Alleviate pain&lt;br&gt;Drowsiness&lt;br&gt;Constipation&lt;br&gt;Depressed respiration</td>
<td><strong>Short-term effects</strong>&lt;br&gt;Sleepy (uncoordinated effect) for first few days. Effects diminish as the body becomes tolerant</td>
</tr>
<tr>
<td><strong>Long-term effects</strong>&lt;br&gt;Potential of dependence/addiction</td>
<td><strong>Long-term effects</strong>&lt;br&gt;Potential of dependence/addiction</td>
<td><strong>Long-term effects</strong>&lt;br&gt;Potential of dependence/addiction</td>
</tr>
<tr>
<td><strong>Negative effects</strong>&lt;br&gt;High body temperature or irregular heartbeat after taking high doses. Cardiovascular failure</td>
<td><strong>Negative effects</strong>&lt;br&gt;Severe respiratory depression or death following a single large dose</td>
<td><strong>Negative effects</strong>&lt;br&gt;Seizures following rebound in brain activity after reducing or discontinuing use</td>
</tr>
<tr>
<td><strong>Not to be used with</strong>&lt;br&gt;OTC decongestants&lt;br&gt;Antidepressants unless under physician’s care&lt;br&gt;Some asthma medications</td>
<td><strong>Not to be used with</strong>&lt;br&gt;Alcohol&lt;br&gt;Antihistamines&lt;br&gt;Barbiturates&lt;br&gt;Benzodiazepines&lt;br&gt;General anesthetics</td>
<td><strong>Not to be used with</strong>&lt;br&gt;Alcohol&lt;br&gt;Prescription opioid medications&lt;br&gt;Some OTC cold/allergy medications</td>
</tr>
</tbody>
</table>
Questions on Controlled Substances and Drugs of Abuse

1. This act classifies drugs that can be easily abused and restricts their distribution.
   A. 1990 Omnibus Budget Reconciliation ACT
   B. 1938 Food, Drug, and Cosmetic Act
   C. 1970 Poison Prevention Packaging Act
   D. 1970 Controlled Substance Act

2. Which of the following agencies is primarily charged with enforcing laws and regulations related to the abuse of controlled substances?
   A. Food and Drug Administration
   B. Drug Enforcement Administration
   C. National Institute of Drug Abuse
   D. Center for Disease Control

3. Amphetamines, morphine, and cocaine are included on this schedule.
   A. Schedule I Drugs
   B. Schedule II Drugs
   C. Schedule III Drugs
   D. Schedule IV Drugs

4. Controlled substance approved for treating attention deficit hyperactivity disorder (ADHD)
   A. Fentanyl
   B. Cocaine
   C. Methylphenidate
   D. None of the above

5. Schedule III controlled substance containing tetrahydrcannabinol (THC)
   A. Dronabinol
   B. Testosterone
   C. Ketamine
   D. None of the above

6. Controlled substances with no accepted medical use in the United States
   A. Schedule I drugs
   B. Schedule II Drugs
   C. Schedule III Drugs
   D. Schedule IV Drugs
7. Federal requirements for Schedule IV are more stringent than for Schedule II?
   A. True
   B. False

8. The DEA Number is required on prescriptions for
   A. Medical devices
   B. Legend drugs
   C. Controlled substances
   D. OTCs

9. Federal law requires that all Schedule II controlled substances are
   A. Kept with other drugs
   B. Stored in a locked compartment
   C. Kept separate from other drugs
   D. Both B and C

10. A progressive decrease in the effectiveness of a drug is
    A. Obesity
    B. Tolerance
    C. Euphoria
    D. Dependence

11. Methamphetamine is a central nervous system
    A. Depressant
    B. Stimulant

12. Benzodiazepines are central nervous system
    A. Depressants
    B. Stimulants

13. The Controlled Substance Inventory is
    A. Required by all DEA registrants
    B. A list of all controlled substances in possession by a DEA registrant
    C. Must be updated every two years
    D. All of the above
14. **Pharmacies are required to verify the validity of prescriptions for controlled substances by checking the prescriber's DEA number.**
   A. True
   B. False

15. **DEA Form 222 (written or electronic) is required to order Schedule II controlled substances**
   A. True
   B. False

16. **Vyvanse (lisdexamfetamine dimesylate) is not a controlled substance?**
   A. True
   B. False

17. **The active opioid in Duragesic transdermal patch is:**
   A. Morphine
   B. Codeine
   C. Fentanyl
   D. None of the above

18. **Concerta extended release tablets is used to treat**
   A. Epilepsy
   B. Pain
   C. Attention Deficit Hyperactivity Disorder
   D. None of the above.

19. **If the DURAGESIC system is cut or damaged, controlled drug delivery will not be possible, which can lead to the rapid release and absorption of a potentially fatal dose?**
   A. True
   B. False

20. **Falsification or alterations to prescriptions include:**
   A. Prescriptions look “too good” with legible handwriting
   B. Prescriptions do not comply with acceptable abbreviations
   C. Prescriptions appear to be photocopied or contain erasure marks
   D. All of the above