



MEDTOX[®] Journal

**Public Safety Substance Abuse
Newsletter**

August 2009

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**Community Corrections Drug
Abuse Recognition (DAR)
Training Programs May Soon
Come to Your Community**

The MEDTOX Drug Abuse Recognition (DAR) training system will hit the road this fall and may be coming to your hometown. Our DAR training staff will travel to a number of different states and to hold the community corrections version of Drug Abuse Recognition: Rapid Eye Technique training courses. For a nominal registration fee, students will receive instruction from renowned MEDTOX master

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If you have suggestions, questions or articles you would like to see featured in future issues please contact Lisa Mize at:
lmize@medtox.com

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DAR instructors.

Following conclusion of the course, students will be able to conduct a DAR Rapid Eye examination. Students will also receive customized instruction in the very latest drug use trends affecting their states and communities. Students will also learn of contemporary treatment methods for substance abuse disorders and addiction. The latest trends in the use of treatment drugs such as buprenorphine and naltrexone will be fully explained. Students will receive the latest edition of the DAR Training Handbook. Students must complete a written exam at the conclusion of the course, a DAR: Rapid Eye Technique course certificate will be presented to graduates.

Students will be granted access to the DAR Hotline and other special services designed to assist and empower them when they return to the workplace.

Who should attend? Probation, parole and drug treatment professionals are strongly encouraged to enroll in this course. Front line public safety officers are also urged to attend this course, patrol officers, detectives and special enforcement officers will find that DAR training significantly expands their capabilities for identifying and dealing with persons under the influence, those who drive drunk & drugged and those who deal or transport drugs. The tools imparted and learned as part of this curriculum will be put to use the second a student departs the classroom.

Contact your MEDTOX sales representative for more information. DAR is approved for continuing education in many states. A MEDTOX sales representative can

[Substance Abuse Newsletter](#)

What is the DAR Hotline?

MEDTOX provides special advanced training programs to its clients under the auspices of the Drug Abuse Recognition (DAR) program. The MEDTOX DAR team includes one of the program's founders as well as several of its original faculty. DAR has grown at MEDTOX and now includes a dozen cutting edge seminars that address the complex issues associated with identifying, treating and rehabilitating people with substance abuse disorders. The cornerstone to the program is the Standard DAR, a two-day certification program where students are trained, evaluated and certified in the use of the DAR 7-Step exam. Other courses in the DAR program expand upon or buttress aspects of instruction in the core program.



Once certified, DAR program graduates are granted access to the DAR Hotline. The Hotline is a telephone and Internet based system that links authorized users with a master DAR instructor and drug expert or with a physician who is in active practice in the field of addiction medicine. Most DAR instructors are experienced retired and in-service drug enforcement officers and/or drug recognition experts (DRE). Each DAR instructor has specialized expertise in unique aspects of drug abuse; Hotline callers are often matched to the DAR instructor whose background matches the needs of a caller. Rounding out the Hotline panel are a pharmacist, a pharmacologist and a physician's assistant who specializes in the practice of pain management. The Hotline receives myriad types of calls and requests for assistance. Hotline staff provides advice and assistance on matters relating to drug addiction, drug identification, addiction medicine treatment, drug testing and drug pharmacology.

The Hotline operates round the clock, 365 days a year. Once the Hotline is activated, MEDTOX guarantees a response in less than 15 minutes. There are two Hotline personnel on duty at all times. The Online Hotline is staffed from 6 a.m. to 11:00 p.m. Online hotline activations will be responded to sometime within a 24-hour period following first receipt of a message.

assist you with your continuing education credit questions.

Questions about the DAR Rapid Eye curriculum can be obtained by emailing us at DARSProgram@mac.com.

Drug Preview September 2009 Issue:

Next month, an expose of propofol (diprivan), the drug at the heart of the Michael Jackson case. Newsletter experts will take the drug on and assess whether or not propofol poses a risk as a drug of abuse on the street.

MEDTOX Newsletter Commentary Brief: Melendez v. Diaz

Melendez-Diaz v. Massachusetts: U.S. Supreme Court Decision Seeds Confusion with Crime and Forensic Laboratories

On June 25, 2009, the U.S. Supreme Court rendered a decision in the case of Melendez-Diaz v. Massachusetts. In a 5-4 vote, the court significantly changed the manner in which laboratory produced forensic evidence can be used in a criminal trial. Before this decision, scientific evidence collected from work done in labs could be introduced without having to produce each of the scientists who may have contributed to the work. The decision means that all instrument operators, technicians and supervisors who are involved in scientific analysis of suspicious substances (liquid or solid) can ostensibly be called to court and be "confronted" about their official actions and reports. This decision casts aside decades of tradition in the interpretation of the hearsay rule. There is now an unknown set of new standards for introduction of scientific evidence. The decision confers a new right of confrontation to criminal defendants, the right to confront a scientific analyst. Towards understanding the impact of this case, reading the dissent sheds great light on the problems with the decision. The following is text of Justice Anthony Kennedy's published dissent in this case:



"Consider how many people play a role in a routine test for the presence of illegal drugs. One person prepares a sample of the drug, places it in a testing machine, and retrieves the machine's printout-often, a graph showing the frequencies of radiation absorbed by the sample or the masses of the sample's molecular fragments. See 2 P. Giannelli & E. Imwinkelried, Scientific Evidence §23.03 (4th ed. 2007) (describing common

methods of identifying drugs, including infrared spectrophotometry, nuclear magnetic resonance, gas chromatography, and mass spectrometry). A second person interprets the graph the machine prints out-perhaps by comparing that printout with published, standardized graphs of known drugs. Ibid. Meanwhile, a third person-perhaps an independent contractor-has calibrated the machine and, having done so, has certified that the machine is in good working order. Finally, a fourth person-perhaps the laboratory's director-certifies that his subordinates followed established procedures."

"It is not at all evident which of these four persons is the analyst to be confronted under the rule the Court announces today. If all are witnesses who must appear for in-court confrontation, then the Court has, for all practical purposes, forbidden the use of scientific tests in criminal trials. As discussed further below, requiring even one of these individuals to testify threatens to disrupt if not end many prosecutions where guilt is clear but a newly found formalism now holds sway. See Part I-C, infra."

Possibly making matters worse is the confusion this ruling may cause on the interpretation of Federal

Rule of Evidence 902. This rule deals with the admissibility of official records from a company or from an agency custodian of records. Depending on how this case is interpreted by lower courts, it could be that further jurisprudence could be dispatched; it might be that Melendez-Diaz requires all records keepers to testify should an official report be required as a piece of evidence in a trial. The burden of such a requirement could be staggering, especially for smaller public organizations. At a time when public safety agencies are scrambling to meet budget challenges of a recession, the extra costs associated with sending platoons of analysts to testify in court could be very painful.

For generations, criminal defendants have been able to call government scientific witnesses for cross-examination connected to their participation and roles in scientific analysis. Laboratory personnel have always been available to testify in cases where forensic analysis is a subject of scrutiny. Identifying and serving a laboratory scientist to appear in a criminal proceeding is easy. It has never been a difficult thing to do.

At the heart of this matter is the legal dynamic imposed by the U.S. Constitution's confrontation clause and the Supreme Court's reliance on it as logic in compelling all scientific witnesses onto the courtroom. The confrontation clause is based on the field leveling legal value of having prosecution witnesses come to court and undergo face-to-face cross-examination by a defendant. But this case does nothing to identify or determine which scientist participating in a forensic process is the one who should be subpoenaed to court. Since the possibility for small error exists with the participation of each involved scientist, then arguably every involved scientist must appear in court for direct and cross-examination. This development eclipses and ignores the roll of certifying scientists who oversee and interpret raw forensic laboratory work; these professionals are responsible for rendering a final scientific decision based on the results of a battery of technical analysis. The certifying scientists don't know why a final report is being used; they don't know who is or isn't a defendant, a plaintiff or a victim. Science is science, in and of itself, it doesn't have an agenda. The Melendez-Diaz case seems to have assigned laboratory analysts a new sort of legal status, as that of a "witness." Traditionally, a witness has been defined as someone who has knowledge of an event that gives him or her personal insight to some aspect of a defendant's guilt.

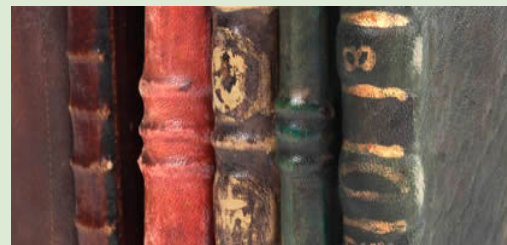
The technical work and scientific reports of laboratory analysts differs substantially from the traditional legal definitions of what is the content of witness testimony. First, traditional witnesses are testifying from memory about an event in their past. Laboratory analysts are testifying about a near contemporaneous event, their actions are significantly removed in space and time from the events that frame a criminal act(s). Second, a forensic analyst does not observe the crime that has been charged. Rarely does a forensic analyst know the identity of a defendant; laboratory samples are impersonally tagged with numbers for their identification. An analyst is plainly not a conventional witness. Third, the analyst has not been subjected to questioning or interrogation about the offense. An analyst is reporting results of scientific analysis; the reporting is determined and structured by scientific protocol. Final scientific reports are rendered independent of a defendant's identity and status. Interviewing and interrogating scientists about what they remember about a scientific procedure produces nothing of legal value. What is of value is the data, the interpretation of the data and the final reporting. In modern forensic science, the final interpretation and reporting of testing data is the responsibility of the certifying scientist.

Melendez-Diaz is now case law, a legal precedent of sorts. Interpretations of this decision will play out in state and federal courts. It's certain that new burdens will be placed on forensic laboratories and how they manage the subpoenas they receive for court. The effects of this case on reference laboratories working for county, state and federal law enforcement agencies is unclear, but it is likely that some expanded courtroom demand for laboratory analyst "witnesses" will occur well into the future.

MEDTOX is carefully monitoring this situation and will report on subsequent legal decisions and interpretations that impact our customers and readers. The MEDTOX Newsletter encourages any reader who has a report or comment about the effects of the Melendez-Diaz decision to email us that information at darsprogram@mac.com. The Newsletter will report noteworthy incidents to our readers in future editions.

HOPE Study Validates Power of Random Drug Testing in Probation and Diversion Programs

In a recession, public safety budgets get squeezed. Discretionary expenditures are whittled and many vital community safety projects are eliminated; probation agencies always take a hit during tough economic times. Probation agency random drug testing is a program that is frequently targeted for rollback. For



probationers who have substance abuse histories and court ordered testing conditions, random drug testing is believed to be a vital component in maintaining sobriety and compliant behavior. Critical to the process is how probation agencies and courts respond to positive or missed drug tests. Intuitively, professional community corrections officials believe that swift action must follow a missed test or "hot" sample. Only recently though has anyone closely looked at the associations between detection of probationer drug use and the time it takes for a court to impose sanctions. HOPE, A recently concluded study (Hawaii's Opportunity Probation with Enforcement) explored these relationships and the impacts on offender compliance with conditions of probation. The results of this study are clear: offender compliance with requirements of probation agreements is dependent on his or her understanding that illicit drug use will be detected and that there will be swift action by the court in response to it.

Dr. Mark Kleiman, a professor of public policy and director of the UCLA Drug Policy Analysis Program, undertook the study. HOPE was co-authored by Pepperdine University Assistant Professor Dr. Angela Hawken [1]. These researchers undertook a study of Hawaiian criminal offenders who were on probation for possession of drugs or for minor property crimes that stemmed from drug abuse. In this study, offenders were required to comply with drug testing requirements or face short stints in a county jail. Each successive violation incrementally added to the length of a jail stay. Treatment for a substance use disorder was required of those who violated their conditions of probation; treatment was available for all other probationers but was not required. Officials compared the group receiving swift sanctions for positive drug tests to a control group that experienced traditional slower and uncertain action.

Results of the HOPE study found that probationers who were randomized into the "sanctions" group had a 91% reduction in the number of positive urine tests; the study group had far fewer incidents of arrest or other violations of probation. Investigators and researchers believe that the significant difference between the two groups is attributable to a couple of factors. First, sanctions for positive drug tests were swift and certain. Offenders quickly understood that illicit drug use would be definitely detected; it was not possible to scam the system and fly below the radar. Secondly, offenders also understood that there was certainty in the court's response to their behavior. There would be definite repercussions for violations and that they would escalate in severity each time that a probation contract was broken.

Researchers noted that "relatively modest" sanctions were sufficient to bring about compliance. The threat of long jail stays or revocation of probation was unnecessary to bring about compliant behavior. Rather, it was the fact that detection of drug use was certain and that official action was quick that motivated cooperation with terms and conditions. This discovery, of course, is not an epiphany. The offenders in these populations exhibit shared tendencies and behaviors: poor impulse control, chalking their lives up to luck and to the actions of others, and not taking responsibility for their actions. Maybe of most concern is that they cannot delay gratification and put much greater value on the consequences of immediate acts as opposed to even slightly delayed ones.

Considering the personal characteristics and tendencies of drug abusing probationers, the HOPE Study illustrates the theory that accurate and consistent drug testing is a powerful lever in bringing about offender compliance with terms of probation. But detection of drug use must be responded to in a timely and reliable way. As the HOPE researchers noted, harsh punishment was not necessary to bring about compliance with terms and conditions. Just plain old accountability and punishment gave this program real credibility.

[1] Cole TB. Mexican Drug Violence Intertwines with U.S. Demand for Illegal Drugs. J Amer Med Assn. 2009 302:5; 482-483.

DAR Hotline Call: What is a PDMP?

Recently, the DAR Hotline received a call from a customer who wanted to know if anyone on the staff knew what a "PDMP" was. The customer said that she'd had a telephone encounter with a person who claimed to be an agent of her state's PDMP program. The customer asked a coworker about PDMP, and the coworker responded that the initials stood for some sort of dairy farmer cooperative that was politically active in their state. Actually, PDMP are the initials for "prescription drug monitoring program." PDMPs are government-sponsored organizations that synthesize controlled substance dispensing records and make the data available to approved physicians, pharmacists and specialized law enforcement agencies.



Prescription drug fraud is at epidemic levels. Abuse of prescription drugs by teenagers is growing.

Drugs like Vicodin, Oxycontin and Soma are as easy to find on the street as marijuana. PDMPs are designed to track the dispensing activities of pharmacies for controlled, scheduled narcotics and dangerous drugs; in most PDMPs data input is the responsibility of the pharmacy that fills the prescription. Most of these programs track the prescribing of controlled substances regulated in federal schedules II through V. In addition to narcotics like hydrocodone and oxycodone, PDMPs also track prescriptions written for less onerous drugs such as Valium, Xanax, Suboxone and Ultram.

PDMPs are important processes for minimizing prescription fraud and abuse. Prescription drug addicts often engage in elaborate ruses to obtain narcotics needed to feed an addiction. It is not uncommon to find a Vicodin (hydrocodone) addict who has a daily dependency for 100 mg or more of the drug. Vicodin and hydrocodone tablets max out at 10 mg per tablet. A 100 mg a day habit would require the addict to create and guarantee a supply of 10 tablets; a 200 mg addict would need double that amount. Now think of what a 30-day inventory is for someone with this addiction. If addicts come up short on the daily quota for the drug that they are dependent upon, a quick descent into withdrawal will begin.

Withdrawal is a powerful motivator to go out and find, buy or scam more drugs. As time goes by for a hydrocodone addict, tolerance levels to the drug go up as does the demand for more and more hydrocodone tablets. Many addicts meet their needs by engaging in "doctor shopping." Addicted "patients" will visit a host of physicians, emergency rooms and clinics and claim contrived conditions that they know will pave the way for a physician to prescribe the drug that they're addicted to or dependent upon. These "patients" come to know the healthcare system quite well, and they know how to spin their condition and manipulate healthcare professionals into giving them what they want. Often, doctor shopping activities create huge networks of pharmacies, physicians, dentists and others who unbeknownst to one another are writing and filling prescriptions for the same patient for the same claimed condition. PDMPs are a means for physicians and other approved users to get real time information about a patient's controlled substance prescription habits. Sometimes PDMP information leads to a criminal fraud investigation, but more often, it leads to appropriate medical and mental health intervention of the addict. It's not uncommon that legitimate and appropriate prescription drug use by a sick patient leads to drug addiction and/or drug dependency. These types of situations can sometimes escalate into doctor shopping and prescription fraud too.

The Bureau of Justice Assistance often seeds PDMPs. When they are up and running, they come within the province and management of a state department of justice. At present, there are 26 states with functioning PDMPs that are actively taking drug dispensing information in and reporting it back out to authorized users. There are a variety of different ways to determine if your state is operating a PDMP. The easiest way to determine if your state is operating a PDMP is to type your state's name followed by PDMP into a web search engine.

(MEDTOX provides ProtectMD specialized training to its ToxAssure pain management and addiction medicine customers. The ProtectMD training curriculum includes seminars that are approved for a range of CME credits. The ProtectMD courses include instruction on prevention of prescription fraud and on the medical-legal issues in the practice of pain management. Contact a MEDTOX ToxAssure representative for more information on this special training program.)

Clarification of the Effects of Heavy Drinking on College Students

Drinking, heavy drinking seems to be a right of passage for American college students. Heavy drinkers and binge drinkers on college campuses are at greater risk for all sorts of accidents and injuries that are directly related to the amounts of alcohol they consume. Cases of alcohol poisoning frequently make the news these days, in rare cases student alcohol overdoses results in student death. Apart from the obvious health consequences associated with heavy drinking, what are the impacts of alcohol consumption on academic performance? Until recently, the connections between the two were unclear.



A recently published study from the Rutgers's sponsored Journal on Alcohol and Drug Studies elucidated the connections between student alcohol consumption and academic accomplishment.^[1] Suspicions about the disruptive impact of alcohol consumption on student sleeping have been at the heart of fears that alcohol abuse undercuts academic achievement in school. The study in question included structured interviews of 236 college students who were attending a New England area liberal arts college. The interviews included the gathering of student data such as grade point averages, average hours and schedules for nightly sleep, amounts of alcohol consumed and in some cases, reviews of high school SAT scores. The results of the survey were not all that surprising and seem to confirm suspicions on the deleterious effects of alcohol consumption on classroom performance.

With the use of statistical regressive analysis, alcohol use clearly predicted lower GPAs amongst students. Alcohol use effected student sleeping habits; students who drank claimed that they could not get enough sleep. Of the surveyed, 85% reported consumption of alcohol; men on average drank more than women did. Most drinking took place on weekends. The more a student drank, the later his/her sleeping schedule; drinkers got to bed later than they ordinarily did when not drinking. There were significant differences between mid-week and weekend bedtimes.

Student alcohol consumption can lead to impulsive and risky behaviors; sometimes habits of college drinking can lead to alcoholism. The study suggests that alcohol consumption by high school students probably leads to similar or maybe worse effects. Programs designed to educate college students and reign in alcohol abuse are warranted; outreach and education should be expanded to include high school and junior high school parents and students as well.

(MEDTOX's school-based Drug Abuse Recognition (DAR) program addresses the issues associated with student alcohol abuse. Readers who wish more information on the DAR for Schools program can obtain assistance by emailing us at DARSProgram@mac.com.)

[1] Singleton RA, Wolfson AR. Alcohol consumption, sleep and academic performance among college students. J Stud Alcohol & Drugs 2009 May; 70:355

Interpreting Drug Test Results: Separating Fact from Fiction

Metabolic Marker for Abuse of Heroin: 6-Monacetylmorphine

The MEDTOX DARS Hotline receives frequent calls for information about the relevance of positive 6-monacetylmorphine (also known as 6-acetylmorphine and 6-MAM) drug tests as it relates to the use of heroin and other opioids. For ease of communication, we'll use 6-MAM nomenclature here; fewer syllables and numbers are always better in chemistry. 6-MAM is a metabolite of heroin. When heroin enters the bloodstream, enzymes go into action to break the drug down and eliminate it from the circulatory system. Byproducts from this chemical process are called metabolites; they are the creations of a metabolic process. The real chemical bottom line is that 6-MAM doesn't exist anywhere other than in the blood and the urine (and in some other biological products too) of people who've ingested heroin. No other opiate has a metabolic pathway that leads to the creation of 6-MAM. Most Hotline callers are doing so to verify that Vicodin use will prompt a final confirmed drug test result that has detected 6-MAM. Many heroin users who have positive 6-MAM drug tests explain the results away by producing or alluding to a prescription for Vicodin (hydrocodone) and/or sometimes a script for Tylenol with Codeine. Ingestion of these two narcotic pain relievers will not produce or lead to the detection of 6-MAM; there's no alibi for the presence of 6-MAM in urine or in blood other than heroin use.



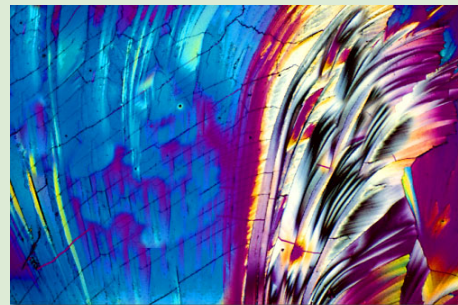
Heroin is a morphine molecule that's been chemically beefed up, a sort of super-morphine or morphine on steroids that is generically referred to as diacetylmorphine. Heroin's potency and relatively long half-life are due to its supercharged morphine characteristics. After entering the bloodstream and undergoing a first pass enzymatic attack, heroin becomes partially disassembled. The first metabolic phase reduces heroin from its initiating state of **di**acetylmorphine into **mono**acetylmorphine. Try for a moment to visualize heroin as a morphine molecule with two big protruding ears (the "di-acetyl") part attached to it. Metabolic activity cleaves the first ear away and reduces the di-acetyl form to one that now only has one ear on it; this iteration of the original heroin molecule is the by-product in question here, **mono**acetylmorphine (6-MAM). The number six is chemistry-speak, nomenclature that denotes the relative position of the remaining ear on the whole of the morphine molecule; the numerology is important only to pharmacologists, chemists and criminalists. The breakdown and elimination of heroin doesn't stop at 6-MAM, it continues on with additional reduction. On the next pass through the system, further degradation "chops" the remaining ear off of the morphine molecule. When this next step occurs, the monoacetylmorphine has reached a final reduction end state as morphine. The end of the line does produce several slightly different morphine molecules, but it's that morphine that is the terminus for any given dose of heroin.

In some urinalysis reports, especially those cases where the drug involved is injected or smoked tar heroin, small amounts of codeine may be reported in the final GC/MS confirmation. It's believed that codeine is an impurity that creeps in during the latter phases of heroin synthesis. Codeine is an opiate and can be considered a chemical sibling to morphine. Much less powerful than morphine, a dose of codeine undergoes several transformations once it enters the bloodstream. One of the changes to

codeine results in the creation of morphine. People taking codeine will produce final drug test results that will be positive for morphine and codeine. It's believed that codeine's analgesic powers stem from its partial conversion to morphine. In its natural state, codeine by itself is not a great pain reliever. Someone who is taking codeine will not produce a final GC/MS confirmation for 6-MAM.

Name That Drug: A New Age Drug, a New Wave of Abuse?

The title of this essay conveys an important clue as to the identity of this month's mystery drug. It's a relative newcomer, a drug that was only recently added to the substance abuse "street drug" watch lists. This month's drug is a prescription medication, a controlled substance under federal schedule IV. Patients can obtain prescriptions in writing or by having a physician call it in to a local pharmacy. This drug's official systematic chemical name is N, N,6-Trimethyl-2- (4-methylphenyl)-imidazo (1,2-a) pyridine-3-acetamide. This drug is prescribed and sold worldwide; over 12 billion doses of this drug have been distributed to patients. The drug comes in a number of different formulas; some are designed for instant release into the bloodstream, while others have been altered for controlled or continual release.



This drug and others like it came to market with some hype and excitement. This substance was the first of a class of credible alternatives to the use of the benzodiazepine class of drugs. This latter family of drugs includes well-known sedatives like Valium (diazepam), Xanax (alprazolam) and Ativan (lorazepam). The benzodiazepines are very effective drugs when properly used; these drugs fulfill very necessary roles as sedatives and hypnotics. Xanax and Ativan are well-known anxiolytics that are very effective in the management of anxiety disorders; Valium is a very effective muscle relaxant. The benzodiazepines are also used in the role as sleep aids or sleep inducers. Drugs such as Restoril, Halcion and Dalmane are examples of benzodiazepine hypnotic sleep aids. As effective as these drugs are, they have well-known histories as drugs of abuse. Originally developed as safer alternatives to the use of barbiturates, (secobarbital etc.) the benzodiazepines turned out to have their own issues as addictive and abused drugs. It is to this backdrop that this month's drug emerged into the sedative-hypnotic drug marketplace. As pharmaceutical research progressed into the 1980s, a new type of sedative-hypnotic drug was created. This new line of drugs was best characterized by calling them what they were not-they were nonbenzodiazepine-nonbarbiturate. This month's drug is arguably the most widely prescribed drug of that class.

A receptors in the brain; these chemical nerve centers are responsible for slowing and reducing central excitatory chemical messages. By slowing down the excitatory amino acid messages, the body can quickly slow down, relax and fall asleep. The GABAA receptor complexes are mostly clustered in the brain. This means that the actions of this drug are mostly confined to the central nervous system; peripheral effects are rare. Comparatively, the benzodiazepines have broader, more widespread impacts; they bind with several types of GABA receptor types located both in and outside of the brain. This distinction partially explains why this month's drug is relatively ineffective as a skeletal muscle relaxant while Valium and Ativan are highly effective. The selective receptor site action of this drug was an attractive pharmacologic feature when it was brought to market. This

month's drug, unlike many other drugs of the sedative-hypnotic class, is fast acting; the drug is quickly absorbed and swiftly bound to targeted receptors. One of the frustrating features of this drug though is that its hypnotic effects are relatively short-lived. The half-life of this drug is barely 3 hours, that's not too impressive for a drug that is essentially a "sleeping pill." Time-release formats of the drug have helped it overcome the fact that it is quickly eliminated from the blood stream.

Knowing that this month's drug is a sleep aid or sleeping pill is a vital clue. This information helps distill the drug's identity down to a group of new age sleeping medications, medications that have come to dominate the world market.

Other drugs with similar properties and pharmacologic features include the prescription medications Sonata and Lunesta. This month's drug is the more popular and most often prescribed drug of this class. Despite the appeal of this drug as a substance that poses less addiction potential than the benzodiazepines, there have been nonetheless alarming reports of its abuse; patients addicted to this drug are now appearing at drug treatment centers across America. Adding to the growing concerns about the abuse of this drug are vexing reports that legitimate and appropriate use of it can lead to bouts of somnambulism, sleepwalking essentially. It seems that some people have predispositions for these effects when they take sleep aids. Many cases have now been documented where prescription users of the drug were later found sleepwalking, sleep eating and in some cases, even sleep driving. Complicating these sorts of events is the fact that anterograde amnesia frequently occurs with the use of the drug. These developments prompted the FDA to require drug manufacturers to publish more stern warnings about the possibility for side effects like somnambulism. In law enforcement circles, suspected cases of drugged or drunk driving have been complicated by later claims of sleepwalking and sleep driving. Adding to the intrigue caused by this drug's bizarre side effects is a growing body of evidence that this drug may be an effective therapy in the treatment and management of schizophrenia. Investigation continues into the role that this drug may play in the treatment of a variety of psychological disorders.

This month's mystery drug continues to grow in popularity as a drug of abuse on the street. Especially within the club and rave scene, the drug has a cult following. It goes by a variety of street names: zombie, A+ and mash. Because the drug is a sleeping aid, the most common direct effect of the drug is sleep. This can be a problem for a recreational user who'd like to stay awake while high. To avoid falling asleep, the drug is used in small doses. For instance, an ordinary nighttime dose of 10 mg will be cut in half or in a quarter and then taken. At that concentration, the effects of this drug are "zombie-like." Tolerance to the effects of the drug does occur over time; it does not appear that physical dependency occurs. A recreational abuser of this drug will present like someone who has had too much alcohol to drink, but without the odor of it. For DAR & DRE trained readers, the symptoms associated with the use of this drug will be consistent with drugs of the depressant class. Symptoms include:

- Slurred speech
- Droopy eyelids
- Nystagmus and non-convergence
- Poor balance, staggered, wobbly gait
- Poor hand-eye coordination

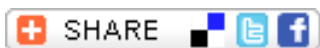
- Nodding off

In the club scene and with young adults, this drug is sometimes combined with hyper-caffeinated beverages to create a "speed-ball" (antagonistic) effect; sometimes hyper-caffeinated beverages are spiked with alcohol. When mixed with alcohol, the combined depressant and sedative effects are synergistic; the stupefying effects of the drug combination are much more than their additive sum. Caffeine does not reduce the drug's central sedative effects but it may keep the user awake longer.

Of great concern is the fact that this month's drug has become a regular feature of adolescent, high school "cabinet parties." These affairs involve raiding of the family medicine cabinet by teenagers who then bring the loot to a party spot where friends and acquaintances pick through stash in search of drugs like Vicodin, Valium and Soma.

The identity of this month's drug? *Ambien (zolpidem)*

Readers who'd like more information about this drug, somnambulism and other related phenomenon can obtain assistance by contacting the MEDTOX Drug Abuse Recognition (DAR) at darsprogram@mac.com. The DAR Program features experts who have broad experience with medical-legal issues associated with drugged driving and later claims of somnambulism.



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