



MEDTOX[®] Journal

Public Safety Substance Abuse Journal

June 2009

The Chemists Corner: The Truths About "False Positives" in Drug Testing: What is a False Positive and Does it Really Mean Anything?



A false positive drug test by name is a bit scary; there is nothing more unsettling than to be falsely accused of having done something bad that you didn't do. Nevertheless, a great deal of hysteria has been generated by uninformed so-called drug test "experts" who travel the Internet dispensing half-baked advice on how to prepare for a drug test of some sort. Because the Internet is a bazaar of sorts, it is rife with bad and misleading information purporting to be guidance for avoiding and/or claiming a false positive drug test result. This discussion needs to be very clear and concise or we'll just end up adding to the body of confusion that already exists. In its current context, a false positive drug test is an occasion where some innocent or legal substance (ingested or endogenous) triggers a drug test to report the presence of an illicit drug that

isn't in the sample being tested. In its most simple terms, a false positive is a case where a clean sample is falsely reported as containing a sought-for or banned substance. All sorts of scenarios can fit into a discussion of false positives. For those readers working the field of probation, drug court, and rehabilitative services, a claim of a false-positive drug test result is as common these days as a government bail out of a bank. Veteran donor-participants of drug testing programs are very fluent in the lingo of false positive (and of other alleged complications) drug tests. Experienced specimen donors know of all the latest claims that are zipping around the Internet and medical marijuana dispensaries. Most false-positive assertions and claims aren't by definition false-positive results at all.

It's crucial that there be clarity in understanding the processes involved in drug testing. The topic of false-positives relates to just one phase of the testing process; it is the stage of preliminary screening, the first pass if you will, where legitimate, false positive results do occur. For those readers using instant screening devices, you have probably seen first hand a case where a false-positive result was rendered. Nowadays, urinalysis screening is very precise and accurate, but there are well-documented situations where certain types of prescribed medications have reacted with proteins in a screening device to erroneously report that a drug of abuse is present in the sample. For instance, the antibiotic Bactrim (containing sulfamethoxazole and trimethoprim) has occasionally caused some people who've been prescribed that drug to falsely report as having benzodiazepines (Valium, Xanax, Ativan etc.) in their systems. Sustiva, an HIV drug-treatment has been associated with false-positive screening results for the presence of THC metabolites, the principal by-products

of marijuana use.

A false-positive screening result, because it is purporting to be positive, automatically triggers a confirmatory process that utilizes a different set of extremely precise scientific instruments to check out the initial result. In this follow-up investigation, specially trained scientists confirm or rebut the original screening result. The final testing results are reviewed by certifying scientists before a final report is released. In the case of a Bactrim prompted false positive screening result for instance, a final laboratory report achieved through utilization of gas chromatography and mass spectrometry (GC/MS) confirmation would yield a final report of NEGATIVE.

Confirmation testing procedures are quite different than those initial processes involved in a first-pass screen; different analytical methodologies distinguish screening systems from final extraction and identification in confirmations. Drug screening results are not confirmed with the application of another screen, if one were to do that, it's highly likely that the result will be duplicated.

Redundant screening analysis achieves little towards determination of a final, reliable and confirmed result; but the practice is rather common and only serves as a seed for confusion and distrust in a given system. In deference to the bottom line, redundant screening is a waste of money, time and resources.

For those readers who don't use instant screening devices, you don't see the false positive screening results that occur on high tech instruments in laboratories. False-positive screening results occur in the lab at rates that are similar to those experienced with instant devices. But like all samples purported to be positive in their screening analysis, final confirmatory processing sorts the conflicting chemistry out and yields a final report that communicates a flawless, final 100% reliable result.

Discussions of false positive drug tests sooner or later get around to anecdotes of people who generate opiate-positive drug tests following consumption of a poppy-seed bagel or hamburger bun. Indeed, most poppy seed preparations contain fruit that is dotted with remnant traces of opium. These very small amounts of opium are insufficient of causing any sort of clinical symptoms; a consumer certainly feels no sensations that would be considered evidence of opiate consumption. Nevertheless, the urine of some poppy seed aficionados will screen and confirm as positive for morphine; this phenomenon is well-documented and courts routinely take judicial notice of its existence. This innocent consumption of a legal foodstuff and resultant positive opiate test report is roundly referred to as a false positive result. In reality and for the record, the test result is 100% correct and is accurately reporting the presence of opiate in the urine; this result is not a false positive. The fact that an opiate tainted non-prohibited food product triggered a positive drug test does not render the result to be false. But this scenario is common. Many prescription drugs and preparations contain drugs and narcotics that are the subject of pre-employment and public safety drug tests. A testing report generates a sterile analysis of any given sample, it by nature cannot describe the manner by which a given drug was consumed or ingested. It is vital that detailed pre-screening questions identify the use of prescription medicines and over-the-counter drugs that a donor may be taking. This sort of information allows for an orderly and informed assessment of final test results and a determination of whether or not a banned substance was legally present. In the workplace and school-based environments, a specially trained medical doctor called a medical review officer (MRO) is assigned the task of evaluating confirmation data and will reconcile the use of prescription medications with a donor before releasing a final test result. In public safety testing programs a different body of expert evaluators will guide probation, parole, drug court and other public safety officials with the interpretation of confirmation test results.

Understanding the distinct roles and phases of drug testing is vital, great confusion can ensue when testing officials don't understand what distinguishes a first-pass drug screen from a final confirmation testing result. Drug screening instant devices are highly accurate, very affordable instruments that facilitate timely drug testing without the entanglements that lab based protocols can sometimes cause. Negative screening results from an instant device represent the end of the road, negative screens are not sent to the laboratory for confirmation of that result. But positive screening results are properly sealed, identified and processed for confirmation testing in the laboratory. Official action based on a testing result can be initiated after the rendering of a final confirmed result by appropriately appointed and trained scientists.

In our next edition of the Newsletter, the Chemist's Corner will investigate a phenomenon related to false-positives, false-negative

screening results.

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MEDTOX-DAR Newsletter Book Report: "Substance Abuse Treatment with Correctional Clients: Practical Implications for Institutional and Community Settings" written by Barbara Sims, PhD.



Once in awhile our DAR staff discovers a good book that speaks to professionals working in the field of drug treatment in correctional settings; we've found one of those books. In "Substance Abuse Treatment with Correctional Clients: Practical Implications for Institutional and Community Settings", a book written by Barbara Sims, readers are provided a non-technocrat overview of the critical issues involved with treatment of substance abusers who are within the jurisdiction of state and local corrections agencies. Dr. Sims, who is a faculty member at Penn State University-Harrisburg, has penned a primer that deals with core concepts associated with identifying, rehabilitating and managing probation and parole clients who present with substance abuse disorders. This book is not a textbook of neurobiology and psychology, rather it is a primer that helps a reader understand the daunting challenges and complexities involved with efforts that must be made in order to effect change with substance abusing "clients." In an economic environment where public drug treatment programs are being cut, it's important that community corrections personnel keep an eye on the ball of drug addiction and insure that the community gets most bang for the buck from their public funded drug rehabilitation services.

Corrections agencies, institutional and community-based, have been an end of the road, a dumping ground of sorts for repeat offenders who are unable to correct their substance abuse disorders. If the truths about the backgrounds of most prison & county inmates in America were made known, the public would come to realize that no matter the precise nature of an inmate's offense (felony or misdemeanor) that earned a prison sentence, there is some sort of underlying substance abuse complication that fueled the bad behaviors. This situation is complicated and stoked by the incidence of mental illness (dual diagnosis cases) that exists in inmate populations. The public frequently assumes that addicted prisoners and probationers receive treatment for their conditions while serving their time or living out their terms of probation supervision. Sometimes that does happen, an addict can and does receive adequate rehabilitative services. But in most cases, a lack of resources means that a needy inmate or probationer may or may not get services that are spotty and/or uncoordinated. This book addresses the overwhelming impact of drugs and drug abuse on the American corrections scene. It is evident that community corrections personnel needs to have a more sophisticated understanding of what substance abuse disorders are all about; Dr. Sims has endeavored to do that.

To best communicate the various concepts advanced in the successive chapters of the book, Sims has cobbled together an interesting group of contributing writers; 21 different contributors advance their observations and recommendations pertaining to topics and discussions where they're considered to be experts. The observations and theories put forth by the contributors are mostly evidence based and are up-to-date. Complicated and vexing topics such as mental illness and dual diagnosis disorders are dealt with in a clear and concise way. The book also addresses interesting ideas and suggestions that should be read by managers, policy makers and politicians who have responsibilities for the operation of county, state

What's the Depth of Your Knowledge? Name This Drug: The Fruit of WWII



This edition's drug of the month is a substance that plays an enormous role in the phenomenon

of American drug abuse. This drug is a front row member of a large genre of well-studied narcotic-analgesics; it has chemical characteristics that make it a useful substance in the treatment of people who are addicted and physically dependent on opiates or other narcotic-analgesics. For many years, the drug's formula sat in the bottom of a dusty file belonging to a cadre of German scientists. This team of researchers had conjured up the original formula for this drug in 1938. Scientists had been searching for a non-addictive analgesic that could be used to treat moderate to severe pain. World War II had already broken out, Germany was on the move. War is a bloody, murderous business. Wounded soldiers need powerful analgesics; at that time opiates (morphine etc.) were the go-to drugs for field surgeons.

Because of geo-politics leading up to the war, the German war machine knew that it would have very limited commerce with the parts of the world where opium grew. In anticipation of a total cut-off from opium producing countries, these German scientists were rushed back to the lab to continue their work on a synthetic pain reliever, a drug that would work like morphine, but one that could be conjured up from non-opium precursors.

There is quite a legend associated with this

and federal corrections programs.

This 257-page textbook and its 21 individual contributors are organized and portioned into four main sections. Part I, "Nature of the Problem" deals with the underlying concepts and theories that make up current substance abuse treatment programs. Indicators for program success and failure in institutional treatment are discussed here. Part II of the book deals with experiences and lessons of current and past prison substance abuse treatment programs. Historical analysis and discussions about the expectations of inmates is found in this section. Part III of the book deals with experiences of drug diversion programs and drug courts. Practical advice for starting a court-based treatment program is put forth. Suggestions for insuring accountability and treatment success are discussed by several writers in this section of the book. Part IV of the text deals with special treatment populations. Unique challenges posed by juvenile substance abuse problems are laid out in this part of the book; differences in treatment methods for boys and girls are discussed. The book wraps up with discussions of unique problems that may or may not have been experienced yet by a reader.

This book is a valuable read and a productive use of time for anyone who is working in the fields of probation, parole, institutions, drug court, social workers and drug treatment programs that accept patients from one of the forgoing sources.

Substance Abuse Treatment with Correctional Clients: Practical Implications for Institutional and Community Settings by Barbara Sims, PhD. Haworth Press, 2005. ISBN 0-7890-2127-7 (paperback), \$24.95

Chantix (varenicline): Does it Really Help Efforts to Stop Smoking?



The importance of smoking cessation for recovering addicts is now front and center and is being discussed at drug and alcohol rehabilitation centers across America. Chantix (varenicline), a new drug developed to help smokers quit now adds a new twist to these dialogs. Proven to be more effective than Zyban (bupropion)-the only other prescription medication approved for use in smoking cessation-Chantix works at specific nicotinic receptors in the brain as a partial agonist/activator to reduce nicotine craving; Chantix achieves this by binding to corresponding receptors in the brain that regulate the neurotransmitter acetylcholine. Chantix is taken by mouth, twice daily. Clinical trials and early analysis of Chantix's effects suggest that the drug effectively reduces the intense craving that smokers experience while quitting smoking¹.

Chantix outperformed Zyban-a reduced dose version of the well-known antidepressant Wellbutrin-and placebos in double blind clinical trials. Over a 9-52 week interval of smoking cessation, 23% of smokers using Chantix, 15% of Zyban's smokers, and 10% of the people taking a placebo stayed nicotine free. However the side effects for Chantix, namely nausea and insomnia, occurred in 8% more people taking Chantix than Zyban. Following the entry of Chantix to the market, reports of untoward side effects began to trickle in. The trickle turned into a steady flow of complaints. A study recently published in the Journal of General Internal Medicine

month's drug. Many stories have been told connecting this month's drug directly to Adolph Hitler. Among other claims, this month's drug is said to have been named after the Nazi leader, with the modern product name considered an alphabetical play on his name. This is not true. The drug's original name was nothing more than a connection of the French words for pain (dolor) and end (fin). It is also legend that the Nazi leader is said to have been a frequent abuser of this month's drug; although it is true that he was a poly-drug abuser of amphetamines and barbiturates, there is no credible evidence that he used this month's subject drug.

As a result of the frantic activity in the research laboratory, several chemical cousins to this month's drug were hatched. This particular chemical cousin is known by its product name of Darvon (Darvocet, Darvon 65, Darvon Compound and propoxyphene). Of all its sibling medications, this month's drug was found to be the most powerful analgesic of the bunch.

Like many other drugs that were synthesized in this era, this month's drug spurred little concern as a drug of abuse, certainly not a drug that could cause addiction and drug seeking behaviors. As decades have passed, this month's drug is known to be capable of creating a profound physical dependence; very unpleasant withdrawals can occur if administration is suddenly discontinued or if dosing is significantly reduced.

If you're thinking that this month's drug is Demerol right about now, you're close, but that's not it. Demerol (meperidine) is another chemical cousin that evolved out of the work done by the German chemists. You know how the story ends; Germany and all of its industrial and scientific know-how became

confirmed that nausea and other side effects are not uncommon for Chantix patients. But a concern that Chantix instigates or exacerbates depression in people with a history of it was not born out by the data reported in the Journal article. It appears that mood swings in patients who are taking Chantix are attributable to the irritations of quitting smoking.

Smoking is a potent delivery system for any sort of drug; active ingredients of a drug are directly posited in blood that is destined for non-stop direct travel to the brain. Smoking is one of a couple different methods for delivery of nicotine to the brain. Cigarette smoking is especially dangerous because it deposits into the body a number of nasty carcinogens and poisonous gasses; cigarette smoking causes the majority of lung cancer cases in America. Several types of heart disease are also directly tied to the smoking of cigarettes. Not only is smoking a toxic exercise, but technically it also prevents people in drug rehabilitation programs from staying completely "clean."

Unfortunately, the rate of smoking among people in recovery is very high. If medications like Chantix are as effective as data suggests, then rehabilitation programs and recovery centers should strongly encourage their clients to quit smoking. Past editions of this newsletter have reported on studies that address the impact of smoking cessation programs on people in recovery. These studies found that efforts made to help addicts in drug rehabilitation to quit smoking early in their drug rehabilitation treatment did not lead to increased relapse and drug use. Discussions about how to best address smoking and nicotine dependency in rehabilitation programs are likely to grow.

1 Jorenby DE et al. "Efficacy of varenicline an alpha,beta-2 nicotinic acetylcholine receptor partial agonist,vs. placebo or sustained release bupropion for smoking cessation: a randomized controlled trial." Journal of the American Medical Association 2006, Jul 5; 296:47-55.

Editorial: Issues in "Medicalization" of Marijuana



A short time ago, a Medtox DAR instructor was invited to debate a respected author and jurist on the matter of decriminalization of marijuana and by extension, the legalization of most (if not all) other drugs of abuse. Advocating for the decriminalization and medicalization of marijuana was Judge James Gray, a retired California superior court judge and a staunch political libertarian who has railed against America's "war on drugs" approach for many years. Although the advertised dialog was to be a discussion of medical marijuana and public policy, Judge Gray quickly steered the debate into a dissertation on the merits for the abolition of all drug laws and criminal sanctions. Judge Gray is a persuasive speaker for his cause; he has honed his message in support of drug legalization over a long and distinguished career. His paternal and relaxed style reduces a very complicated and esoteric discussion into broad strokes about constitutional liberty and the erosion of civil rights; his incantations are replete with stories about corrupt cops, prisons packed with drug addicts and disparate (biased and/or racist) application of drug laws. Inherent to his calls for the legalization of drugs is his earnest belief that most people can maturely choose to use drugs of abuse and that if the choice is made to do so; people are capable of doing it safely and responsibly.

the spoils of war. Following the cessation of hostilities, Allied powers searched the research laboratory where the drug had been cooked up. They found the apothecary formula and a treasure trove of other pharmaceutical innovations that were quickly shared with the rest of the free world.

This month's drug took very little time in coming to the attention of American and British scientists. Several iconic American drug companies (Eli Lilly et. al) capitalized on the compounds and began to manufacture and sell the drug. This drug is used globally in an array of medical settings.

In the decades that followed the war, this month's drug made slow, but steady gains in terms of worldwide prescriptions written. The drug had many of the direct effects and characteristics of heroin, but didn't stir all that much interest as a drug of abuse. In both America and the United Kingdom however, there were hundreds of documented cases of addiction and physical dependency associated with the use of this drug, nevertheless, these overall numbers were small when compared to the addiction statistics generated by the relative legions of heroin abusers.

In medicine, this month's drug was mostly used in particular settings; obstetrics was one of those special areas of practice & surgery where the drug seemed to find regular work. The drug was recognized as having a slow onset of action, but when it finally hit a point of peak plasma concentration, it was equal if not superior to morphine in effects of overall analgesia. Of additional interest to researchers and physicians was the realization that this drug did not cause the sought after opiate high and euphoria that users experience when using drugs like Demerol & heroin (diamorphine).

If this utopian vision can be achieved, money saved by dismantling of drug enforcement agencies would go to organizations involved with the treatment of substance abuse disorders. Taxes gleaned from tariffs on newly legalized drugs would also go for the treatment of a minority population of people who unwittingly discovered that they could not responsibly or maturely use one or more of a bevy of legalized substances (PCP, LSD, methamphetamine, cocaine and heroin included) they chose to experiment with. In his utopian world, the federal government would regulate and in some cases sell drugs to the public according to strict commerce rules that would be overseen by a newly created bureaucracy. Federal government control and participation in drug use would be necessary in order that drugs be sold at low prices; if prices were to too high in this new legal market, black marketers would then assert themselves by providing cheaper (and more pure) products. The whole concept is founded upon a principle that once the profit motive is taken out of drug dealing, then drug addiction and attendant crime will roundly dissipate. Gangs, cartels and drug producers will pack up and go home once they realize that the federal government will undercut them. What a grand idea it is to have one's federal government providing addictive and anesthetizing drugs at bargain basement prices? Making this idea more attractive is the notion that the elimination of criminal penalties and prohibitions will empty prisons of good people whose only societal transgression was to be an addict to a drug or narcotic. Pie in the sky? Sure it is. But the rhetoric and stump speech doesn't stop here.

Behind his frontal assault on drug laws, was Judge Gray's attempt to soften up the crowd for a second wave of proposals, amongst them was the further relaxing and "medicalization" of marijuana laws. Marijuana is couched as a drug that is equal, but has fewer health consequences than alcohol. Marijuana was posited as an overly reasonable candidate for decriminalization; marijuana's recent popularity as a medicinal tonic evidenced a compelling reason for a downgrade in its current status as a controlled drug. The proposal for marijuana as a medicine was an emotional high point for the audience that was reached when Judge Gray asserted that police officers were intruding into the private arenas of doctor-patient relationships by arresting medical marijuana using patients and recommending physicians. The judge's point was that marijuana's current hazy legal and political status is complicated by police officers that seek to arrest medical marijuana patients for cultivation and sales of the stuff. Although he ultimately retracted his claim, his shrill and emotional assertion caused an emotional shift in the crowd, a move towards his claims that drug laws perpetuated misery and suffering.

Marijuana as a medicine is complicated. A present, 13 states have chosen to take steps that decriminalize the drug and make it legal to possess if used at the direction or "recommendation" of a physician. California is the leader in terms of establishing a well-oiled system for collecting and dispensing marijuana to "patients" who meet the criteria of legislation that was passed by voters or judicially ordained. Marijuana is the only drug in existence where Americans called for an end-run around established protocol, rules and laws that exist to safeguard them from drugs that are brought to market. None of the 13 states associated with medicalized marijuana consulted the FDA with their initiatives. Marijuana's official federal classification into Schedule I establishes it as a drug that has no accepted medical application; the drug is also judged to be a substance that has a high potential for abuse. Marijuana's status as a Schedule I drug misleads many listeners into believing that cruel and ignorant federal officials stand in the way of curative powers associated with tetrahydrocannabinol (THC), the principal active ingredient in marijuana. This isn't the case. For many years now, synthetic versions of

Ushered in with the 60's was a period of rapid growth in the number of Americans who used and abused heroin. Chronic use of heroin led to the development of stubborn addictions and painful drug dependencies. This is the point where this month's drug found a new role in medicine and public policy. Drug abuse clinicians had come to realize that heroin addicts exhibited very high rates of relapse following detoxification and rehabilitation. The unique and potent allure of their "needle high" resulted in powerful heroin cravings for those who'd reached sobriety by having successfully "kicked the habit."

Treatment professionals, over the years, had also come to realize that many heroin addicts had carved out functional, even profitable lives while engaged in a regular, predictable schedule of heroin use; this genre of addicts had essentially established themselves on a heroin maintenance program providing they had the money and means to do so. Unique to this class of drugs, narcotic addicts can lead relatively calm and stable lives if they can maintain consistent levels (opiate baseline) of narcotic in the bloodstream.

The use of opiate maintenance techniques, sometimes called opiate replacement therapy quickly caught on. The \$64,000 question for doctors quickly became, "What drug should be used to maintain or be switched to as an alternative to heroin use?" A variety of experimental and well-worn opiates were used in the roll. But out of all the experimentation, this month's drug emerged as the best performer for the roll as a replacement or maintenance drug. Although the drug still had front line clinical uses as a narcotic-analgesic medication, its product name became synonymous with the utilization of narcotic maintenance therapy.

THC have been pharmaceutically available in the forms of capsules and nasal sprays; these versions of THC have undergone rigorous testing and scientific study before physicians and their patients approved them for use. These drugs are widely available for free in cases where patients lack insurance or financial wherewithal to buy them.

For the purposes of a medical marijuana discussion, marijuana needs to be understood as being distinct and different from THC. Marijuana (weed, bud, ganja, chronic, dope, grass, skunk, indica, kush, smoke) is a plant, cannabis sativa-l. It grows wildly and doesn't need much gardening to grow; it can thrive in harsh environments. The plant has a distinctive shape and structure; marijuana's unattractive garden appearance prompted the assignment of its widely accepted name, "weed." In the leaves, flowering tops and buds are the concentrated stores of THC, its principal psychoactive ingredient. In addition to THC, there are other lesser-related cannabinoids that have not been officially classified; by all accounts, THC is recognized as the principal ingredient involved with the various physiological effects associated with smoking or eating the drug. Cultivation of marijuana is a significant cash crop in California, particularly in its northern counties. A good deal of marijuana sold in America comes from Mexico though. Viewed as inferior or of poorer quality, Mexican "weed" on average contains less THC than marijuana grown in California. Besting the market is Canadian marijuana that flows out of British Columbia. Marijuana users are in a constant search for rarefied strains of marijuana that contain double digit levels of THC; THC concentrations in the 20% range are not uncommon anymore. Genetically bred to produce ultra high levels of THC, modern marijuana is very different than the drug that had earlier spawned the "flower children" of the 60's and 70's. Only recently have scientists been able to assess some of the long-term consequences and dangers of marijuana use.

Marijuana's THC is delivered to the bloodstream in the form of a gas. In so-called medical marijuana, much is made of the fact that the drug is impregnated in brownies, muffins, cookies and other baked goods. For some, this is the only way that they can tolerate it. But for the bulk of all other users, the drug is smoked. Smoking delivers large amounts of THC to the brain in a very fast, very efficient way. Like all other psychoactive drugs, THC transits the blood-brain barrier and finds its way to receptor complexes that are distributed in the hippocampus and cerebellum. Two receptor types have documented affinity with THC; these receptors are known as CB1 and CB2. Each of these receptors is connected to and responsible for directing the effects of THC. Central feelings of euphoria, relaxation and a sense of social bondedness are the likely result of CB1 & CB2 effects on systems associated with the regulation of neurotransmitters dopamine, serotonin and GABA. Secondly, THC action at CB1 and CB2 has other ordered affects that lead to appetite stimulation; inhibition of these receptors conversely has anorectic effects and can reduce appetite in humans. New medicines are coming to market that will likely exploit the CB receptors for the purpose of appetite management.

Because marijuana is not regulated by any official government entity or scientific authority, it's anyone's guess as to how much of the active ingredient any given user absorbs in a "typical" dose. Complicating things even further is the fact that no one really knows what an average or typical dose is? Is one puff on a joint a sufficient dose to cause the desired effects of the drug? How many hits on a "bong" (marijuana water pipe) does it take to spur sufficient THC into the bloodstream and up into the brain? No one knows exactly because the use of smoked marijuana to treat medical conditions has not been studied. Evidence of marijuana's efficacy (smoked and eaten) is almost entirely anecdotal, the same sort of information

Today, this drug still is a standard of care for narcotic replacement therapy-replacing heroin as an addicts "drug of choice"; the drug is also called upon to treat prescription drug addicts who've developed serious dependencies on drugs like Vicodin (hydrocodone) and Oxycontin (oxycodone). When used as narcotic replacement therapy, the drug is routinely dispensed in a liquid suspension that's designed for prolonged, uniform absorption into the bloodstream. Competing with this month's drug as therapy in treating opiate addiction is buprenorphine (Suboxone, Subutex).

This relative newcomer has emerged as a provocative and effective means of taking on the stubborn challenge of opiate dependency; it appears have greater utility and fewer untoward effects. It remains to be seen though if this month's drug is ultimately bumped from its primary role in narcotic replacement. Buprenorphine is a synthetic narcotic that possesses complex qualities and characteristics that makes it a tricky drug for doctors. Buprenorphine centered opiate treatment programs are growing fast; federal regulations now allow for office-based treatment of opiate addicts.

This shift in federal government policy has substantially changed the manner and extent to which opiate addiction is now treated.

This month's drug is known by its market or product name of "dolophine" (dolor + fin). In spite of its well-recognized roll as a drug that is used to treat or counter drug addiction and dependency, it has also proven to be a drug of abuse that has a strong following with trendy and tony populations; the club drug scene is a frequent redoubt for this drug. Unlike heroin, this month's drug has some unusual and

resulted in the use of secret tonics and potions used in pre-modern medicine. The studies that have evaluated marijuana's used to treat conditions like glaucoma have ultimately determined that marijuana is essentially no more effective than placebo is. But in its life as an illicit drug, many Americans have come to identify marijuana smoking with relaxation and reduction of anxiety. It's these sorts of effects that have been posited as potentially helpful effects for a variety of diseases and conditions. In fact, most medical marijuana statutes lay out a laundry list of maladies that are adjudged to be where marijuana might be helpful. In fact, undercover investigations at marijuana dispensaries and at the offices of "marijuana doctors" have uncovered a near hilarious menu of aches, pains, neuroses, skin conditions, sprains, bruises and hang nails (yes...hang nails) that are claimed as illnesses worthy of a marijuana recommendation. Since marijuana is a Schedule I drug on the federal schedule, it cannot be legally prescribed by any licensed physician; but state level medical marijuana statutes provide for only a written or oral communication from a doctor to recommend the use of the drug. County public health agencies usually coordinate marijuana "recommendations" and provide a putative patient with an identification card that can be presented to authorities should he/she be stopped with medical marijuana in their possession. Medical cannabis patients can easily find dispensaries; in cities like Los Angeles, dispensaries have exploded all over town, some luck communities have two marijuana warehouses occupying space in the same strip mall. Local governments have little authority over dispensaries once they've opened their doors for business. Some communities have health and welfare agencies that can undertake site inspections and examinations for the purpose of ensuring cleanliness and proper storage of foodstuffs, but that's about it.

If as a Newsletter reader, you have a medical marijuana statute that is the law in your state, it's very much worth your time to check out the details. Most legislation can be found online at official government websites. The particulars for physicians and patients are usually spelled out at these venues. But be prepared, most of what suffices, as guidelines are deliberately vague, in some cases the rules, as they exist, lead to a sort of marijuana free for all. Most professional medical societies have created standards of care for doctors who have chosen to use marijuana as a medicine. Most medical societies are opposed to the use of medical marijuana on multiple grounds. But to protect physicians, standards of care for the utilization of medical marijuana must to be in place.

The propriety of medical marijuana will be debated for some time to come; advocates for medical marijuana and decriminalization of the drug are very well funded. Fortunately, an ill American these days has access to hundreds of different prescription medications that can be prescribed for conditions such as chronic pain, migraine headache and fibromyalgia, conditions that marijuana is touted as being nothing less than a miracle cure for. The traditional drugs approved and utilized for these conditions have been thoroughly studied, acceptable dosages have been determined and adverse effects have been clearly detailed. If THC is believed to be an appropriate therapy for such a condition, a physician can easily write a prescription for a legally approved pharmaceutical preparation of THC.

Marijuana is a drug of abuse; very tough, resistant marijuana dependencies occur with the chronic use of the drug; ironically one of the slang names for marijuana is "chronic." Readers who work in the trenches of drug abuse clearly understand the power that this drug has in addiction. Only now are we coming to understand the long-term consequences of marijuana use on memory and brain systems that regulate emotional well-being. Long-term marijuana use may lead to development of a serious type of depression

pointed side effects that can lead to sudden death. Sudden death is always a possibility when opioids are used in large doses; it's especially risky for people who are non-tolerant or opiate naïve.

This month's drug has a well-documented association with a dangerous cardiac arrhythmia or tachycardia known in medical circles as Torsades de Pointes. Complicating this association is the fact that the long acting nature of this drug can lead to toxic accumulations of the drug and a list of problems that stem from the marked sedation that occurs with it.

Because of this drug's utility and associations with drug treatment and rehabilitation, it has acquired a reputation on the street as a safe drug, a mature and responsible alternative choice to smoking or injecting heroin, or nowadays, a better choice than Oxycontin. In some parts of the country, this drug is combined with other non-opiate drugs to create a "load." These cocktails are ad hoc combinations that strive to maximize the sedating and euphoric effects that each drug brings to the high. On the east coast, dolophine and Xanax are frequently mixed together by heroin addicts who are enrolled in narcotic maintenance programs. Users of "loads" claim that Xanax "sticks" elevate dolophine's high to an extent that is even more euphoric than heroin.

What drug am I?

This month's drug: methadone (aka: dolophine). When used in drug treatment and addiction medicine settings, the protocol is called methadone maintenance.

* Methadone maintenance program participants who combine the use of these drugs are known on the streets as "Methadonians."

that is very difficult to reverse. Marijuana is undeniably a gateway drug for teenagers too. For kids, high THC concentrations can lead to quick, serious problems that can steamroll an adolescent brain. A recent statistical connection between teen marijuana use and later violent behavior has been detailed in a prior edition of this newsletter. Medicalized marijuana creates a societal environment where there are fewer inhibitions and impediments for its use. But maybe that's what the medical marijuana was after in the first place? For Judge Gray, medicalized marijuana is a segue towards the making of his case that all drugs should be legalized. Maybe that's where we're really headed here?

Is "Brain Viagra" a Potential Drug of Abuse?

Provigil (modafanil) is a prescription drug that tops the list of a new class of medications called "wake promoting" drugs. Originally approved by the FDA in 1998, Provigil was designed and intended to treat narcolepsy, excessive sleepiness associated with a handful of central nervous system disorders and fatigue associated with shift work. Provigil acts on the areas in the brain associated with neurochemical processes of the sleep/wake mechanism it does this by affecting the reuptake of dopamine and norepinephrine. Modafanil accomplishes this without producing a feeling of euphoria or central stimulation. Central nervous system stimulant drugs like methamphetamine and Ritalin work in a manner very different than Provigil; these drugs are extremely potent substances that can bring about powerful emotions of excitement and personal power. Unlike the central nervous stimulants, Provigil's potential for abuse is believed to be relatively low and is therefore controlled under the Federal Controlled Substance Act Schedule IV. To obtain Provigil, a patient must have a prescription from a physician.



These days, like many other prescription drugs, Provigil is utilized in "off-label" sort of applications, used to treat a condition(s) other than what it was approved for. Provigil is one of several prescription drugs that are used in "off-label" fashion to treat cocaine and methamphetamine addiction. In cases of recovery from cocaine addiction, Provigil seems to reduce cravings and contributes towards the reduction of relapse. More importantly is the fact that Provigil works in the prefrontal cortex area of the brain to strengthen the brain's decision-making apparatus, a process that can be substantially degraded for people recovering from methamphetamine or cocaine addiction.

Provigil may not be troublesome as a drug of abuse, but it does beg some questions for those who are concerned about chemical purity in sport and other competitions. Could a psycho-stimulant drug like Provigil enhance athletic or academic performance by making the brain's cognitive processes move faster and more efficiently? Called "Viagra for the brain" in some quarters, will Provigil use elevate a competitor's game? Is someone somehow cheating if he/she takes Provigil before an academic competition such as an LSAT or MCAT exam? How about Provigil in the workplace? Is it wrong for someone who is sleep deprived to obtain a prescription for Provigil in order to stay awake at work?

One of the applications for Provigil is as a wakefulness aid for shift working emergency personnel. There is a vested public interest in having alert and responsive police and fire fighters at 4:00 in the morning; we can all agree that early morning shifts are tough on the body and on the brain. There are over the

A Public Service Announcement from the State of Alabama

What is the Narcotics Anonymous Program? For more information go to:

- [Alabama North West Florida Regional Service Committee of Narcotics Anonymous](#)

and

[Central Alabama Narcotics Anonymous Events](#)

counter drugs currently available to help with wakefulness, No-Doz and caffeine preparations have been around for decades. Modern energy drinks like Red Bull are capable of causing stimulation and hyperactivity in the consumer that goes beyond the limits of Provigil. Nevertheless, Provigil has more central nervous system potency than caffeine. Provigil is a medication where it can be sometimes difficult to draw the line between what is appropriate use of a performance-enhancing drug and what isn't? These sorts of questions do not begin or end with Provigil. There will probably be other drugs like Provigil that will come to market and be made available by prescription. Is there really any downside to enhancing the capacity and performance of a person's executive function? Not if it's your executive functioning right?

Further information about Provigil and its utilization in the treatment of stimulant addiction can be obtained by contacting the MEDTOX DARS Program at darsprogram@mac.com

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