



MEDTOX[®] Journal

Public Safety Substance Abuse Newsletter

July 2010

Welcome to the MEDTOX Journal

Thank you for subscribing to the MEDTOX Journal. We hope that you find it interesting and informative. You may forward a copy on to others by clicking the "[forward email](#)" button at the bottom of this email.

If you have questions or suggestions on articles you would like to see featured, please contact us at medtoxjournal@medtox.com.

For a PDF Version of the newsletter click here: [PDF Version of Newsletter](#).

MEDTOX Quick Links

[Website](#)

[Products](#)

[Services](#)

[Contact Us](#)

[Past Issues](#)

In This Issue

[LEADER IN FIELD SOBRIETY TESTS
RETIRES](#)

[miRNA STUDY](#)

[OPIATE ADDICTED TEENS](#)

[PURPLE EARLOBES FINDINGS](#)

[GHB](#)

[NYSTAGMUS \(HGN\)](#)

[NAME THAT DRUG](#)

[Join Our Mailing List!](#)

Leader in the Development of Standard Field Sobriety Testing Protocols Retires

After 34 years of faithful research, a leader who helped craft Drug Abuse Recognition (DAR) and Drug Recognition Expert (DRE) evaluation protocols has retired. Dr. Marcelina Burns was the founder and director of the Southern California Research Institute (SCRI). Dr. Burns was instrumental in bringing scientific rigor to these two important drug abuse assessment tools. Her work will influence the specialized world of drug abuse evaluations for years to come.

Dr. Burns earned her doctorate from the University of California at Irvine in experimental psychology, a discipline that is heavily involved in the field of research psychology. Dr. Burns began her studies of the physical effects of substance use on humans in 1972. It was



not long after her research began that she established the SCRI (1973). Dr. Burns' work involved the questioning of means through which drug or alcohol impaired people are evaluated in the field, particularly in conditions that lack the controls and tools found in laboratory settings.

Dr. Burns' interest in this field led her to a career-long study of roadside (DUI) testing. Dr. Burns crisscrossed the United States looking at how police agencies went about evaluating drugged or drunken motorists. Consequently, Dr. Burns realized that there was no standardized method used by the police when conducting these investigations. A rule of "when in Rome" seemed to dominate how any particular police agency conducted drug and alcohol evaluations. No two agencies did things alike. Dr. Burns conjured approximately 15

Marcelina Burns tests that she thought might be practical for field drug influence assessments and brought them back to the laboratory with her to study. With the funding and support of the National Highway Traffic Safety Administration (NHTSA), she began her research (1975-1977).

Dr. Burns ultimately reported back to the NHTSA that she had determined that some of the tests that she had investigated appeared to be useful as assessments for drivers suspected of driving while impaired (DWI). Dr. Burns' battery of tests included the following: Romberg, walk and turn, fingertip to nose, one leg stand, horizontal gaze nystagmus (HGN), finger digit count, and paper and pencil writing. Dr. Burns argued that much more research was needed to determine how accurate these tests were. After some refinement and with the help of police officers, Dr. Burns and her retinue determined that horizontal gaze nystagmus, walk and turn, and the one leg stand tests were the most accurate. The NHTSA agreed with the conclusions of Burns' research and the batteries of tests became known as the NHTSA 3 and were used for standardization purposes. Not long after did the Romberg and finger to nose tests become official. They were then added to the battery of standardized field sobriety tests (SFST). The Romberg balance test is used in the DAR 7-step exam and has been a staple of drug influence evaluations for over 30 years. These tests were eventually refined to a point that they are validated clues added to the NHTSA 3. This package of standardized assessments is the only validated test recognized by the U. S. Department of Transportation, NHTSA, and the International Association of Chiefs of Police (IACP).

Dr. Burns has dedicated her career and life to helping law enforcement make quality decisions about intoxication and impairment associated with incidents of DWI. To that end, Dr. Burns has traveled to countless court trials and hearings where her testimony became the basis for important case law. When NHTSA is stumped and needs an answer to a difficult problem with DWI assessments, they call on Dr. Burns. Dr. Burns once told MEDTOX Master DAR Instructor Rich Ulrich that she wanted to be remembered as the "lady who made a difference" in the investigation and assessment of people suspected of drugged or drunk driving. Mr. Ulrich remarked that Dr. Burns was much, much more than just a lady who made a difference. Her intellect and insight into the technical challenges faced by police officers made her a tour de force. Her impact on DWI investigations is legendary. Those in law enforcement recognize Dr. Burns for her many contributions to police work. Dr. Burns' "standardized system" is taught every day in police academies and at DAR and DRE schools throughout the country. Dr. Marceline Burns was indeed a lady who made a difference.

Written by Rich Ulrich and Donald Mac Neil
MEDTOX Laboratories, Inc.

Study: miRNA Proves to Lessen Substance Abuse in Rats

The brain appears to contain molecular substances that have a quieting effect on the drive to use and abuse drugs. Announced in the journal Nature this month[1], scientists identified small non-coding RNA as having a notable roll in preventing substance abuse. The published study examined the roll that microRNA has in altering the motivations of rats to the use of cocaine.

Cocaine is a powerful drug that prompts the release of neuronal dopamine in the brain and a cascade of reinforcing feelings of excitement, euphoria, and satisfaction. Chronic, long-term use of cocaine alters the chemistry of the brain by triggering molecular changes that increase sensitivity to the effects of the drug. These changes then serve to reinforce the abuse of the drug and help establish unwanted behaviors that facilitate continued use of the drug. In the brains of the rats exposed to cocaine in the study, scientists studied the concentrations of various miRNA located in the dorsal striatum, an area of the brain where compulsive drug use seems to take root.

Scientists focused their investigation on the roll of miR-212, one of the various miRNA expressed in the dorsal striatum. Following close monitoring of rats with various rates of use, dependency, and access to cocaine, scientists found that the greater the concentration of miR-212 in the brain, the more likely it was that a rat would abstain from cocaine use. This observation applied to rats that had easy access to the cocaine and who could self-administer the drug as needed. Rats with high miR-212 levels that were denied access to the cocaine stopped searching for the drug in what seemed to be the elimination of compulsive drug seeking behavior.

The molecular actions of miR-212 revolve around its ability to regulate CREB, a transcription factor that has a role in reducing the rewarding and reinforcing properties of cocaine. CREB appears to increase the expression of miR-212; increasing use of cocaine by drug users stimulates CREB. Therefore, it appears that CREB and miR-212 have a self-limiting roll to play in cocaine abuse. Scientists opine that the brain has a process whereby it tried to protect itself in the face of exposure to chronic substance abuse.

This exciting discovery will undoubtedly spawn additional research and experimentation into the roll that microRNA plays in preventing and treating drug abuse and dependency in humans.

[1] J.A. Hollander, et al., "Striatal microRNA controls cocaine intake through CREB signaling," Nature 466: 197-202, 2010.

Medications that Help Teens Who are Addicted to Opiates

One of the greatest challenges facing healthcare professionals who deal with adolescent substance abusers is how to get them into treatment. Adolescents are notoriously difficult to steer to treatment. A conference of the "Blending Addiction Science and Practice" meeting was organized by the National Institute on Drug Abuse in April 2010 to address the unique challenges posed by adolescents addicted to prescription opiates. Next to marijuana (THC), prescription opiates top the list of drugs abused by teenage and young adult substance abusers. "Cabinet parties" are popular assembly points for young people who are drawn to the highs of prescription opiates and benzodiazepines. The Internet and social networking sites help fuel these gatherings and spur the further use of these drugs by teenagers. Prescription drug abuse is aggravated by the fact that many teenagers have come to experiment with drugs such as opium and heroin. In some regions of the United States, heroin is more affordable, and in some cases, more available than Oxycontin, a popular prescription narcotic-analgesic drug.



Surveys of substance abusing teenagers in California have revealed that many believe that drug addiction only occurs with those who abuse drugs intravenously. Many youngsters are led to believe that smoking a drug like heroin or Oxycontin is a way to avoid becoming addicted or dependent. The fallacy of that belief is obvious. In places such as Glendale, California, this mistaken understanding of addiction and dependency has resulted in acute numbers of addicted junior high and high school students. This problem has spread into surrounding

suburbs of Los Angeles to create a problem of immense concern.

Abuse of prescription drugs amongst teenagers has grown significantly between 1992, when 3.3% of 12th graders reported the use of these drugs, and 2004, when 9.5% reported such abuse. This is according to the Monitoring the Future Survey that was released by NIDA in 2009 <http://www.monitoringthefuture.org>. Since then, prescription drug abuse has remained fairly steady, although some regional reports have shown sharp spikes in use of prescription opiates. In particular, abuse of oxycodone (Oxycontin) by 12th graders has jumped. In 2008, 4.7% of 12th graders had reported abuse of oxycodone. Admissions of adolescent addicts to treatment centers for prescription opiate addiction now exceed the rate of those admitted for heroin addiction. Prescription opiate abuse now tops the list of concerns of physicians and other treatment professionals.

Fortunately, there are a number of effective medications that improve the rates and chances of success in treating these disorders. Drugs like buprenorphine (Suboxone, Subutex) can significantly improve an adolescent patient's adherence to a treatment program. And although there has been a great deal of skepticism in the use of prescription drugs to treat adolescent substance use disorders, there seems to be a growing tendency and consensus towards their utilization. Like adults, adolescents face the hard reality of cravings in their efforts to remain sober. Cravings are major factors in relapse. Buprenorphine is an effective drug in relieving cravings and pangs for relapse to the drug. Behavioral therapy and group "talk" does little to reduce these powerful feelings. Several recent research publications have established the value of drugs like Suboxone in treating the challenging conditions of opiate dependency[1].

The National Institute on Drug Abuse (NIDA) has now released a video for physicians to assist in the treatment of opioid addicted youths. Buprenorphine Treatment for Young Adults is a tool for physicians in dealing with increasing numbers of youths (and their parents) who are seeking help in the treatment of prescription drug addictions. It appears that adolescents and young adults are particularly vulnerable to developing addictions, which may peak in their 20s and 30s. Many experts in the field of adolescent substance abuse believe that only a small number of needy patients actually succeed in obtaining the help they need in treating their addiction. Physicians of all types need to be prepared and sensitized in recognizing the signs of prescription drug abuse and be able to make the appropriate referrals so that an opportunity for intervention and treatment is not lost.

Much of the research on opiate abuse has focused on people addicted to heroin. But recent research published by Dr. Subramaniam compared the differences between patients using heroin and those who abuse prescription drugs like Vicodin and Oxycontin.[2] On one of these studies, researchers compared one cohort of 41 adolescents who abused prescription drugs and 53 others who were abusing heroin. Researchers revealed that in both groups, most of the abusers were white and they mostly lived in suburban neighborhoods. The groups were balanced in terms of males and females. Reflecting broader trends seen elsewhere in the country, most heroin-abusing adolescents did so intravenously (73% in the last 30 days). None of the prescription drug abusing adolescents reported intravenous drug use. They used the drugs orally or intranasally. Interestingly, people abusing prescription opioids were likely to have been suspended from school; heroin users were more likely to have dropped out of school.

More than half of the patients in the Subramaniam investigation reported the use of cocaine, although the prescription drug abusers were more likely to have reported other drug use in the past month. Heroin abusers reported that the drug was their drug of first choice. In the prescription drug-abusing cohort, marijuana was reported as a drug of first choice by 46% of participants; 27% reported that prescription opiates were their drug of first choice. Investigators noticed that although participants reported significant use of marijuana, most were dependent on prescription opiates.

The Subramaniam study revealed that buprenorphine powered treatment was more successful than traditional opiate detoxification therapy. Patients on extended treatment regimens did better in the rate of positive drug tests than those who were on shorter therapeutic schedules. Dr. Subramaniam made it clear that if buprenorphine helps

keep an opiate addicted adolescent in school or helps facilitate his or her road to graduation or acquisition of a GED, then there is a good reason for continued administration of the drug over time.

In Santa Clarita, California, a community where prescription opiate abuse is of growing concern, the Hart Unified School District (USD) has embarked on a unique program designed to assist parents and adolescent students in addressing the growing trend of prescription drug abuse. In 2009, the district launched a voluntary drug-testing program for grades 7-12. Entry into the program requires that both parents and student sign an authorization form. A student or parent may unilaterally withdraw from the program at any time and for any reason. Drug test results are not reported to the school district or any other authority connected to the school. Positive drug test results are referred to a specially trained physician for consultation with parents as to what steps should be taken next in treatment or counseling. The Hart school district provides special training sessions for parents and teachers in recognizing the signs of adolescent drug abuse and addiction. Parents also have 24-hour access to a telephone hotline that can provide them with reliable advice for dealing with the frustrations and conundrums of teenage drug use. For the parents and students participating in the program, there has been nothing but kudos for it. Students are particularly appreciative of the program as a means of deflecting peer pressure to use drugs at parties and other student gatherings. Being able to just say no to friends when offered a joint, an alcoholic beverage, or a pill is easier to do with the certainty that a drug test is just around the corner when he/she returns to school. Random student drug testing is an effective means of empowering students and parents in resisting the dangerous allure of prescription drug use.

[1] Woody G E et al. Journal of the American Medical Association. 2008; 300 (17): 2003-2011.

[2] Subramaniam GA, Stitzer MA. Journal of Drug and Alcohol Dependency. 2009; 101; 1-2:13-19.

What Do Purple Earlobes and Cocaine Have in Common?

Recently, the widely circulated New England Journal of Medicine published an advisory for physicians to be on the lookout for cocaine users with blue, black, or dark, discolored earlobes. The damage occurring in the earlobes is not caused by the cocaine itself. Cocaine rubbed onto the earlobes or smoke expelled from the cocaine onto the earlobes causes no damage. Instead, the necrotic destruction of the earlobes is a result of cocaine contamination by levamisole.

In 2009, levamisole was detected in over 75% of all large cocaine seizures. Levamisole is a drug used mostly in veterinary medicine as a deworming agent. For humans, the drug has been used in a cocktail of drugs used to treat cancer. For reasons that are not totally clear, the drug has become part of most cocaine concoctions. Over the years, veterinary agents and animal foodstuffs have been used as cutting agents in drugs that were made or prepared for shipment in Mexico. Many of the processing labs that prepare these shipments are on large farm spreads where fertilizer and feed are abundant. The additions of these substances as cutting agents to drugs like cocaine probably seem logical for a typical drug trafficker. Quality control is not a priority at the large super labs south of the border.

Levamisole is absorbed into the bloodstream when cocaine is smoked or snorted. Rocking up cocaine (freebasing) does not remove the levamisole from the cocaine mixture. Once in the bloodstream, the drug has a number of harmful effects. One of the more common developments is vasculitis, especially in the areas of the earlobes. Red, palpable plaques can also form on the ears, as well as on the thighs and buttocks. If the earlobe is left untreated, the condition can lead to the death of the earlobe and the connective tissue. There are a number of medications that physicians can prescribe to reverse the condition. Of course, avoiding the use of cocaine also works.

Professionals who work with cocaine users should be alert to changes in skin color of their patients' earlobes. Lab tests can be performed to determine if any lesions are a result of levamisole toxicity. Affected patients should see a physician immediately.

Readers who would like more information regarding the effects of cocaine and levamisole can obtain the information by emailing

Potential Changes to the FDA Status of Xyrem (Prescription GHB)

Trinka Porrata is a special contributor to this newsletter. Ms. Porrata is a retired Los Angeles Police Department detective and internationally respected expert on gamma hydroxy butyrate (GHB) abuse. Ms. Porrata has informed the newsletter staff that on August 20, the FDA will hold hearings to determine if it will approve Xyrem (prescription GHB) for the treatment of fibromyalgia. Physicians are already prescribing this drug for a variety of off-label uses, including fibromyalgia. They are mostly oblivious to the addictive powers of the drug. In fact, most physicians do not know that this drug is capable of causing profound drug dependency and serious medical complications. At present, the drug is approved for use in treating narcolepsy and catalepsy. Xyrem is a unique drug in that although it is approved for medical use in the United States under the terms and guidelines of Federal Schedule II, the drug is illegal to possess in the GHB form, as per its assignment to Schedule I.



Readers interested in this issue are asked by Ms. Porrata to visit the FDA link for public input at www.fda.gov/advisorycommittees/calendar/ucm217265.htm for more information. Readers interested in reviewing prior expert testimony about Xyrem abuse can do so by linking to www.fda.gov/ohrms/dockets/ac/01/transcripts/3754t1_03.pdf.

Ms. Porrata maintains a website devoted to dealing with the issues of GHB addiction and dependency. The MEDTOX staff strongly recommends that readers take the time to visit her site and become familiar with the uniquely dangerous phenomenon of GHB abuse at www.projectghb.org.

HGN: A Robust Tool for Public Safety and Corrections Officers



Horizontal gaze nystagmus (HGN) is a modern tool utilized by law enforcement officers, clinical medical personnel, and drug influence evaluators nationwide. HGN is a component of a battery of tests included in roadside drugged or drunk driver testing, and is a staple of standard field sobriety testing (SFST). Other SFST tests include the following: Romberg stand, walk and turn, one leg stand, and finger to nose. Of the tests mentioned, the most challenged in court is the HGN test. Most courtroom arguments revolve around the credentials and certifications of personnel who administer HGN examinations. For those who do not meet National Highway Traffic Safety Administration (NHTSA) muster, their testimony is suppressed and ruled inadmissible. Problems with the admissibility of HGN resulted in the creation of the Southern California Research Institute (SCRI). Part of the institute's effort is to establish and prove the veracity of standard field sobriety test techniques.

In 2003, the SCRI began laboratory and field research associated with the utilization and administration of horizontal gaze nystagmus. The first experiment evaluated the speed of stimuli used for tracking the elevation of the stimuli and its distance from a subject's face. All assessments were conducted in the laboratory in a controlled setting. A second assessment involved HGN testing of participants positioned in a variety of different settings: standing, sitting, or lying down. The police officers charged with conducting these examinations followed precise HGN protocols set by the International Association of Chiefs of Police (IACP) and the NHTSA.

The subjects who volunteered to be examined for this study had been allowed to consume alcoholic beverages in amounts and concentrations that were later correlated to the appearance and strength of horizontal gaze nystagmus (HGN) signs. Principle findings from the SCRI research were as follows:

- o Stimulus speed that tracks faster than two seconds (center-to-side and side-to-center) will result in the production of false negative results.
- o Holding stimuli closer (10 inches) to a participant's face increases the number of HGN signs correctly observed. This gain is relatively small however, and must be weighed against considerations of officer safety in having to squeeze closer to a suspected drugged or drunk driver for the evaluation.
- o In laboratory experiments, examining officers made no observational errors when participants' blood alcohol concentrations (BACs) were greater than .10 grams per deciliter (g/dL), and very few errors were made when participants' BACs were greater than .08.
- o Participants' positioning (standing, sitting, or lying down) while being examined had no statistically significant impacts on officers' accurate reporting of HGN signs.
- o HGN appears to be less noticeable in a non-functioning eye. If examining officers were to rely solely on eye signs, this reduction in HGN signs in non-functioning eyes would only increase officers' false-negative rates of evaluation. Evaluating officers might improperly release individuals with monocular vision because of less visible HGN in a poor functioning eye. There is no evidence that HGN signs with monocular individuals will lead to false arrests.

HGN used by appropriately trained and certified evaluators is a robust procedure. The study findings provide no basis for conclusions that the validity of HGN is compromised by minor procedural variations by evaluators.[1]

The content for this article was provided by Mr. Rich Ulrich, Master DAR Instructor, DRE Instructor, and MEDTOX Criminal Justice Consultant. Mr. Ulrich participated with SCRI in the original study conducted in 2003. To view the study in its entirety, search "Robustness of Nystagmus" and look for the NHTSA PDF document.

[1] "The Robustness of Horizontal Gaze Nystagmus Test," 2003-2007, SCRI Contract DTNH22-98-D-55079, p IV, 35; Marcelline Burns, PhD. See www.NHTSA.Gov.

Name that Drug: A Problem Drug of the 70s and 80s Is Back



In the world of drug abuse, there are many fads whose popularity reflects dynamic interrelations of social, economic, and demographic forces. This month's drug involves a walk down memory lane. It is a medication that was part of a popular fad that got its start in the 1970s and has persisted as a drug of abuse well into the new millennium. Recent changes in drug use habits have made it clear that this month's drug is still abused. It is a prescription drug that is diverted from legitimate medical use to sales and abuse on the streets. This drug is a controlled substance; it is regulated and was assigned in 1979 to

Schedule IV of the Federal Controlled Substances Act. The drug is a narcotic analgesic that was brought to the pharmaceutical marketplace by Sterling-Winthrop. The drug is available in brand and generic formats.

A revealing clue for this month's drug involves the roll that it played in a notorious drug combination ("combo" or "load") that was extensively abused in the United States in the 1980s. A dominant "load" of the 80s was a combination of glutethimide and codeine phosphate. Back then, glutethimide was known by the brand name of Doriden. Codeine was mostly used in the form of Tylenol #4, a tablet containing 60 milligrams of codeine. Addicts who were attracted to Doriden and Tylenol #4 codeine were typically disaffected heroin users. By taking two (500 mg) Doriden tablets and four Tylenol #4 tablets, users could often attain a drug high that they would then later claim was qualitatively better than a high they'd experience by using heroin alone. Doriden was a potent sedative hypnotic drug in its own right and was capable of causing a barbiturate-like drug dependency over a relatively short period of time. Codeine is a narcotic, and as such, is capable of causing dependency and addiction as well. Addicts who abused "loads" were very challenging patients when it came time to detoxify. While high on

"loads," addicts reported serious problems, such as coma, convulsions, peripheral numbness and tingling. The Doriden and codeine habit quickly earned a street nickname of 4s and doors.

In the shadow of "4s and doors" emerged another drug combination, one that was headlined by this month's mystery drug. This month's drug was "combo'd" with another prescription drug of the time called Pyribenzamine. This substance was a powerful antihistamine that was used to treat serious allergic reactions in humans. The drug was effective in reversing cases of large hives and serious allergic reactions. The coupling of a narcotic with an antihistamine is a technique that is still commonly practiced in modern medicine today. Antihistamines boost the effectiveness of analgesics as a consequence of their tendencies to sedate and relax a patient. In the 1980s, Pyribenzamine was mostly found in the form of a small blue capsule. Its nickname quickly became "blue" or "blues." In fact, the street name for this "load" was "Ts and blues." The drugs were typically dissolved together in water and then injected intravenously using a small gauge needle and syringe. Intravenous use of these two drugs reached epidemic proportions and became a serious public health concern. So indeed, the first letter in the name of this month's drug is "T." But this prescription opiate drug exists in a generic form as well. In that formula the first letter in the name is "P." These are giveaway clues to drug historians, but we'll nevertheless push on for the rest of the readers.

An important distinction for this month's drug is that it is classified as a synthetic opiate of the benzomorphan family. The drug is active at sigma and kappa opiate receptor sites. The drug is assessed as being approximately one-third to one-sixth as potent as morphine. The drug has a 4-6 hour span of analgesic effects.

As a member of the Ts and blues "load," scientists and pharmacists conjured that if the opiate receptor antagonist drug naloxone was added to the formula, then there would be a surefire way to block any future intravenous abuse. Naloxone was in fact added to the drug's formula in the 12.5 mg and 50 mg tablet forms. Naloxone is widely known and referred to by its brand name of Narcan. Naloxone is a narcotic antagonist, a drug that is utilized to reverse opiate caused deliberate overdose or inadvertent poisoning. By adding naloxone to a tablet containing the drug, any effort to inject it intravenously would result in a near instant antagonism of the mu opiate receptor site and a blockade of all other sibling opiate receptor sites. By doing this, naloxone reverses and prevents any sort of opiate mediated high. But, if such a tablet were to be taken by mouth as by design, and absorbed via the gastrointestinal tract, gastric juices will destroy the naloxone and allow for the natural uptake and action of this month's drug at opiate receptor sites. When naloxone is compounded with this month's drug, the product name includes the added initials of "Nx." This month's drug has functional similarity to another mixed property narcotic that is on the market today, a drug called Suboxone. In fact, Suboxone is also compounded with naloxone to prevent intravenous use and abuse. Suboxone is the brand name for the drug combination of buprenorphine and naloxone.

Although first synthesized and brought to market as a drug of low abuse potential, this month's drug has weathered periods of significant misuse and abuse. With the rapid proliferation of prescription drug abuse in the United States over the last five years, this month's drug is again a cause for concern. Pyribenzamine, the blue drug that was its "load" partner of the 70s and 80s has disappeared. For the most part the drug is only used in veterinary medicine settings today. But on its own, or in combination with other drugs like the benzodiazepines, this month's drug continues to attract beives of interested users. Not part of most drug screens, users of this month's drug will escape detection. And although the drug lacks the potencies of morphine, hydrocodone, or oxycodone, the high is sufficient enough to satisfy many opiate-seeking drug abusers. As a Schedule IV drug, the medication can be prescribed by telephone and multiple refills can be approved with each order. On the street, kids are led to believe that the drug has hallucinogenic properties. This adds to the mystique of the drug and the peak in interest seen with younger groups of abusers.

Someone under the influence of this month's drug will exhibit classic opiate signs of intoxication, save for constriction of the pupils. Any constriction of the pupil will be modest, certainly not like the phenomenon seen with the use of heroin, oxycodone, or hydrocodone. The extent and degree of symptoms is dose dependent. Someone taking a 12.5 mg tablet may exhibit few classic opiate symptoms. Someone taking a more powerful

dose of 50 mg will probably present with signs and symptoms similar to that of someone who may have taken 10 mg of hydrocodone or 5 mg of oxycodone.

This month's drug is "T" for Talwin. The drug is widely prescribed and distributed as pentazocine. In combination with naloxone, the drug is identified as Talwin Nx.

[Forward email](#)

 **SafeUnsubscribe®**

This email was sent to medtoxjournal@medtox.com by medtoxjournal@medtox.com.
[Update Profile/Email Address](#) | Instant removal with [SafeUnsubscribe™](#) | [Privacy Policy](#).

Email Marketing by



MEDTOX Scientific, Inc. | 402 West County Road D | St. Paul | MN | 55112