



MEDTOX® Journal

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MEDTOX News

MEDTOX is pleased to announce a new service program geared specifically for social service organizations. ToxGuard allows child and family service agencies, as well as probation agencies, to have all of their drug testing needs bundled into one complete package. ToxGuard includes: Drug testing by a SAMHSA certified lab or utilizing SureScreen lowered cut-off onsite devices, collection site management, random program management, customized billing and reporting options and specialized training for social workers. ToxGuard supports includes a random color-coded call in system with a automated no-show list. A color coded call-in system requires the monitored person to call into ToxGuard as frequently as daily to determine if they are to be tested. This effectively makes them think they could be tested each and every day. This aides in reducing drug use by changing offender behavior daily.

Frequently Asked Questions



Each month MEDTOX will feature various frequently asked questions and the technical response regarding topics involving substance abuse and testing. If you have questions you would like to see in a future issue, please contact Lisa Mize at: lmize@medtox.com

Question: Why is it not a good idea to have the donor go to a clinic or hospital to provide another sample (urine, blood, or saliva) for a second drug test when

they contest the original urine drug screen result?

Answer: Once a presumptive positive is screen is obtained on a urine sample, that sample, not a second urine sample, or a blood or saliva sample should be sent to the lab for confirmation.

There are at least 9 reasons why a second sample should not be obtained at another location:

- 1) You already have a presumptive positive sample in your possession.
- 2) The original sample is the one that is being contested, and that is the sample that should be sent for confirmation.
- 3) The cost(s) of having a second sample collected as well as the screening and confirmation of that sample at a clinic or alternate lab typically EXCEEDS that of sending the original sample to MEDTOX Laboratories for confirmation.
- 4) A second urine sample obtained some time later (even if only 30 minutes to an hour) will contain a different amount of drug, usually less drug (due to metabolism, and/or over hydration) and thus screen below the cut off--therefore resulting in a conflicting 'negative screen' on the second sample.
- 5) The donor would have opportunity to do any of the following: a) over hydrate themselves and thus dilute the drugs in their urine, b) obtain a clean urine sample and substitute it for theirs, c) obtain adulteration substances that they could add to their second urine sample to destroy the drugs present or defeat the drug test.
- 6) The lab performing the screening on the second sample will be using different cut offs or using screening reagents that don't detect the drug(s) as well as the original screening test does---Sure-Screen has lower cut offs than conventional drug screens. Different drug screens from different manufacturers typically do not detect closely related (non target drugs) the same-it will not normally detect hydrocodone until it reaches very high concentrations---whereas the original screen can detect hydrocodone at a lower concentration.
- 7) Even if the 'second sample' screens "Presumptive Positive", you still only have screening results that still can be contested by the donor (it is still just a 'screening result') versus that of forensically defensible confirmed results done by GC/MS or LC/MS/MS.
- 8) Blood and saliva screens use cut off levels different than urine screens and have far smaller time periods in which the drug can be detected. Many drugs can be detected in urine up to drugs 3 - 5 days, saliva and blood for only 24 hours.
- 9) Many drugs are more difficult to screen for in blood and saliva, and/or are not present at the concentrations found in urine.
- 10) Most individuals you test already know the information provided above. By allowing them to be retested under their terms you are allowing them to skirt the system and they have a greater chance of testing negative.

Question: What are the various substances that can create false positive urines for opiates (metabolite morphine)?

Answer: The only documented "non opiate" drug that might cause a false positive opiate screen is the

Training Opportunities

MEDTOX provides clients with the following training opportunities. MEDTOX training programs are California POST, BBS and STC, CAADAC and OASAS certified and approved.

- *Standard Drug Abuse Recognition (DAR)
- *Rapid Eye Drug Abuse Recognition (DAR)
- *Street Development
- *Club Drugs and Trends in Adolescent Drug Abuse
- *Managing Methamphetamine
- *Understanding Dual Diagnosis: The Crossroads of Substance Abuse Disorders and Mental Illness
- *Ethics and Professional Standards for Community Corrections
- *Current Issues in Leadership and Supervision
- *Pharmacology of Drug Abuse
- *The Essentials of Search Warrant Development
- *The Essentials for Social Workers and Family Counselors I-IV
- *Grant Writing and Non-Traditional Fund Raising for Public Organizations

If your organization is interested in hosting one of the above training courses, would like to know where/when a course is available or would like further information, please contact Lisa Mize at: lmize@medtox.com

antibiotic ofloxacin. This interaction has been documented for the Sure-Screen Opiate test only.

If you have have questions you would like to see answered in a future issue or articles to contribute please email Lisa Mize at: lmize@medtox.com.

Nutmeg High????



The nutmeg high was popular in past generations of drug users (60's, 70's and 90's) its current popularity exists because its component chemicals bear resemblance to MDMA; there are intrepid cooks out there who distill nutmeg into safrole and myristicin in an effort to synthesize MDMA, one of our DAR instructors (Jack Meier, passed away in 2008) actually took down a safrole conversion lab some years back--the guy was trying to make Ecstasy). Anyway, nutmeg can be prepared in any number of ways to elucidate and extract the safrole and myristicin in it. Nutmeg oils or nutmeg pastes are spread on bread or whipped into a "milkshake." The effects are slow to come on and they are slow to wear off. The physical experience and symptoms are

weakly similar to what is seen with people who use Jimson Weed. The effects are scopolamine-like. The two chemicals (safrole and myristicin) can inhibit the MAO, an enzyme that regulates the activities of dopamine and serotonin. The euphoria that's experienced probably comes from the MAO inhibition. The ultimate high would be considered very weak as compared to potent (and deadly) highs from Jimson Weed and Morning Glory.

The "nutmeg" high can last for up to 24 hours. Most people who are able to later describe what they experienced seem to best remember the nausea and vomiting that resulted. Most claim that they slept alot and had very vivid and bizarre dreams. Some say that peripheral colors and background noise/ sounds were all exaggerated and stimulating. Someone under the influence of pureed nutmeg would present in DAR as under the influence of a hallucinogen. Expect very dilated pupils, fast pulse and fast clock. Piloerection would be noticeable too.

The chemicals in nutmeg, if extracted are regulated substances, in some states it might be a misdemeanor to possess them. Safrole is on our watch list as an optional pre-cursor chemical in the production of MDMA. Some super labs in Mexico (Texas border areas) have found large caches of safrole being used to launch MDMA synthesis.

Sure Gel: Can Pectin Mask the Presence of Drugs in Urine?

Recently, stories have reached the DAR program about the consumption of Sure Gel pectin solution as a means of masking THC in otherwise positive urine tests. Sure Gel, made up mostly of dextrose and fruit pectin, can be found in most American grocery stores. Sure Gel is a powder that easily dissolves in water. If mixed with modest amounts of water and allowed to dry, the emulsifying gel will become a substance that can be used to seal a jar of fruit preservatives for storage. Rumor has it that by adding Sure Gel to a gallon of water and drinking that water as quickly as can be tolerated, the solution will impede the release of THC into urine by somehow altering pH. Plenty of successful test-beaters have reported their triumphs using Sure Gel. But as many if not more have reported that the Sure Gel technique was useless, a waste of time and served as a dangerous recommendation to marijuana smokers who had serious interests in beating an upcoming drug test. In assessing the veracity of this claim, we believe that any success that is claimed by Sure Gel ingestion is due to the dilution of urine achieved when gallons of water are consumed before a test. In a case like that, collected urine will look obviously dilute, if not totally clear. By taking B vitamins, or niacin etc., someone using the Sure Gel technique can bring color back to what would otherwise be a clear case of dilution. Claims about Sure Gel seem to be a case of much ado about nothing.

New Drugs on the Block: Suboxone & Subutex



Suboxone and Subutex are brand names for a synthetic narcotic called buprenorphine. The pharmacology of buprenorphine is novel, it blocks opiate receptors in the brain, the receptors most associated with opiate euphoria that narcotic abusers seek.

Buprenorphine is however active at subset of opiate receptors, receptors that aren't chemically connected to an opiate euphoria. In fact, people who've abused buprenorphine with an expectation that they'll get high like they do on heroin, report that the experience a feeling of unease, nausea and a sense that they're about to jump out of their skin. Nevertheless, geographical clusters of buprenorphine abuse have emerged in cities and communities where the drug has been extensively used to detoxify opiate addicted patients.



Like other pharmaceuticals, Buprenorphine has been diverted to the street and has been experimented with by ever-curious drug users. Addiction, dependence and withdrawal can occur with chronic use of the drug. When used as directed, buprenorphine clamps down on opiate receptors in the brain and elsewhere in the body, it blocks the activity of powerful opiate euphoricants like heroin, oxycodone and morphine. As physicians become more and more familiar and comfortable with the use of this drug, newsletter readers should expect to see and hear of more cases of

buprenorphine abuse on the street. An upcoming edition of the DAR Newsletter will address the latest information associated with the legal and illegal uses of this drug.

What is a "Dilute" Urine Sample?



What is a "dilute" urine sample? When a lab report informs you that a particular sample that you've submitted was "diluted," of what relevance is this fact and what should you do about it? These questions are frequently posed to us and unfortunately, "dilution" is a gray area of inference and suspicion. Although there is not a clear-cut explanation as to how dilution occurs, the federal government has established guidelines for the determination as to what dilute is. It is incumbent upon any institution that undertakes drug testing to establish its own particular policy and procedures for dealing with samples that have been identified by the

laboratory as dilute. This responsibility extends to instances where a person being tested somehow managed a substitution of his or her urine; substitution is an additional phenomenon that collectors must actively guard against.

What is a dilute urine sample? What is a substituted sample? The laboratory follows the rules set forth by the Substance Abuse and Mental Health Services Administration (SAMHSA). Here are the rules:

A sample is "Dilute" if it meets one of the following conditions:

- 1) Dilute: Creatinine is greater than or equal to 5.0mg/dL **AND** less than 20 mg/dL **AND** the Specific Gravity equals 1.002
- 2) Dilute: Creatinine is less than or equal to 5.0 mg/dL **AND** the Specific Gravity is greater than 1.0010 **AND** less than 1.0030.

A sample is "Substituted" if it meets one of the following conditions:

- 1) Substituted: Creatinine is less than 2.0 mg/dL **AND** the Specific Gravity is less than 1.0010
- 2) Substituted: Creatinine is less than 2.0 mg/dL **AND** Specific Gravity is greater than or equal to 1.0200.

Dilution is not the same as sample adulteration. Adulteration has occurred when foreign substances are intentionally and directly added to a urine specimen that is to be submitted for testing. There are various products available and sold over the Internet for oral consumption claiming to help "rid the body of toxins". Although these "body cleansing" products claim efficacy in beating drug tests, they're typically no more effective or useful than old-fashioned techniques of water or green tea system flushing.

But a dilute specimen isn't always the result of a nefarious act on the part of the person being tested. There are medical conditions that can produce dilute urine specimens from otherwise compliant people. Dilute urine can also be caused by the direct pouring of water or some other liquid it into a urine specimen at the time of collection; over-hydration, or over consumption of liquids prior to collection, especially those that contain diuretic agents. These sorts of things may be entirely innocent, or they may be done intentionally on the part of an individual who wishes to influence the result of a drug test. Testing agencies might consider the development of a set of rules and admonitions that can be

communicated to people being tested that establishes an agency's processes for interpretation of samples that have been tampered by dilution or substitution. Consequences for such behaviors are important towards insuring that your process of drug testing is secure and reliable.

Federal guidelines can be found by visiting:

<http://edocket.access.gpo.gov/2008/E8-26726.htm>

or <http://www.samhsa.gov/index.aspx>

Impacts of Peer and Family on Adult Marijuana Use



Recently published research shed light on the impacts that drug use by friends, parents and siblings have on drug use later in a person's life. The study focused on the specific effects that marijuana use by significant others has on adult marijuana use in the 4th decade of life (31-37 years of age), the impacts were compelling and they were profound. Reviewed in the Journal of the Addictions [1], the study evaluated the impacts that marijuana use by parents, spouses, brothers, sisters and peers had on an individual's propensity to use marijuana a later in life.

Addiction professionals have known anecdotally that relapse and a person's later life use of a particular drug of abuse is influenced by whether or not important people in their life also used. Studies reviewed in past issues of the MEDTOX DAR quarterly newsletter have illuminated the role that peers have in the drug use habits of adolescents and young adults, it's axiomatic that peer pressure is uniquely powerful in its ability to prompt teenagers to experiment and later regularly use drugs like alcohol, marijuana, methamphetamine and cocaine.

This study isolated four separate variable forces of influence and ranked each for its predictive power in the establishment of mid-adulthood marijuana use. Further work will need to be done to establish whether there is a clear causal relationship between one and the other however. The independent variables were established as: (1) History of parental marijuana use, (2) Sibling marijuana use, (3) Peer marijuana use and (4) Significant other (spouse etc.) marijuana use. The least predictive factor in this study was history of parental marijuana use. The strongest factor was that of peer marijuana use, something that most parents and teachers would vouch for. Not too far behind peer marijuana use was that of sibling marijuana use. The lessons from this extensive survey are obvious. Guiding youngsters in the selection of their friends, clearly communicating values and expectations to kids are vital towards good judgment used in the selection of their friends. Who kids hang out with is an area of worthy study and concern for parents. As it is, it's important for parents to not use drugs around their kids as well. These concepts would seem to be self-evident, but not until data hits paper and then gets published do adults really pay attention. But as life rolls on, it's important to keep an eye on our kids' friends and acquaintances. Companions who are known marijuana users continue to influence an adult's decision to use marijuana later in life. Considering the compelling scientific evidence that marijuana has long-term deleterious effects on the brain, we should do all we can to dissuade a friend or family member from using the drug.

[1] Brook JS, Zhang C, et. al. Pathways from earlier marijuana use in the familial and non-familial environments to self-marijuana use in the fourth decade of life. *Am J Addict* 2008; 17: 497-503

What is a False-Negative Drug Test?



One of the more dangerous assumptions made in the business of drug testing is that a negative drug screening result is always a reliable one. For sure, concerns about the impacts of false positive test results dominate discussions about the certainty of drug tests and the potential of inaccurate drug use accusations made against individuals who are clean. But as bothersome as false positive drug screen results are to those being tested, false negative results are posed to be larger and more obvious safety risks for those who undertake the tests. When a false negative test result occurs, rarely does the affected subject jump up and down and protest what he/she knows to be an erroneous result. No, when false negative results rolls in, a person involved quietly sashes away, smirk suppressed, maybe. In the case of a false positive test result, protests from the accused will certainly ensue and a process of re-screening is a sure bet. Far and away, those screens that are alleged to be false positives are shortly thereafter resolved

and properly adjudicated in favor of the accused donor. False negative results and the wrongly exonerated donor? Who knows what will happen next exactly, but history has shown that there is a potential for all sorts of bad things to occur.

The most important component of a drug testing device's accuracy is its rate of false negative screening results. Onsite diagnostic devices can vary widely in terms of their rates of specificity (false negative results). A great number of diagnostic device users, believe that their chosen product is 100% accurate in terms of rate of false negatives this is very unlikely. It is not uncommon for there to be 5%-6% error rates in false negative results in certain types and brands of testing devices. On the other hand some devices perform extremely well, coming close to 99% (less than 1% false negative incidents); false positive rates (selectivity) are typically greater than those found with false negatives. Which result in drug screening is more palatable, one that is a false negative or one that is a false positive? False positive is the one result that is relatively easy to identify, diagnose and remedy. The false negative is pernicious and most likely to seriously threaten the veracity of a given drug test system.

Word of the propensity for false negative results would spread like wildfire within the community of those being tested, security problems and disregard for rules, conditions and policies would quickly ensue. Organizations that conduct drug tests with diagnostic screening devices (onsite, instant-result etc.) should review literature associated with their devices' certifications and FDA clearances (and hopefully they're FDA cleared). Check and compare rates of specificity (false negative reports). It is not uncommon for cut-rate, highly discounted devices to produce noticeably high rates of error. Diagnostic drug screening devices, like many other products in our lives, will often live up or down according to the price that we pay for them. If a reader is paying an outrageously low price for a drug-screening instrument, take a moment to do some side by side testing with a high-performance device to see the qualitative differences in results.

Suspicious drug screening results can be quickly and reliably confirmed by sending a questionable sample to a SAMHSA certified laboratory like MEDTOX. In the laboratory, with absolute certainty, a sample will be analyzed for the qualitative and quantitative presence of a drug or drugs that are being sought.

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