



MythBusters – Dispelling Drug Testing Myths

Paul L. Cary, M.S.
Forensic Toxicology
Consultant

Why Client's "Invent" Excuses

- denial of the disease
- "learned" behavior of chronic dishonesty
- risk taking/manipulative behavior
- paranoia (co-occurring disorders)
- threat of court sanctions

Passive Inhalation Myth:

- passive inhalation (second-hand smoke) of marijuana smoke can cause a “positive” drug test result.
- **NO!** - not if standard cutoffs are used
- THC (cannabinoid) assay uses variable cutoffs (20/25 or 50 ng/mL)
- passive inhalation research indicates less than 10 ng/mL in volunteer urines

The Excuse:

“I’m still positive for
THC because of excess
body fat.”

The Excuse:

“I’m positive for THC because I’m on a diet and breaking down fat cells containing THC.”

The Excuse:

“I’m positive for THC because I exercise a lot and I’m burning up fat cells containing THC.”

The Excuse:

“I’m positive for THC
because I had a deep
tissue massage.”

The Excuse:

“I’m positive for THC because I was in a hot tub and the THC was sweat out of my fat cells.”

Body Fat Myth:

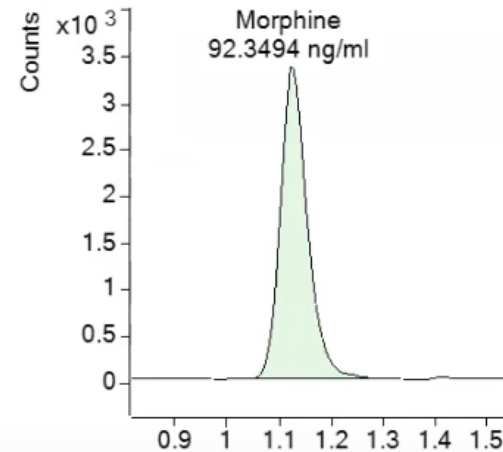
- n body fat and/or obesity significantly influences the results of drug tests for marijuana
- n **NO!**
- n body fat excuses by clients widespread
- n lean versus obese comparison

Poppy Seed Myth:

- n consuming poppy seeds (i.e., eating poppy seed bagels) can cause a positive urine drug test for opiates
- n What would Adam & Jamie do?

- **Unpublished Study**

- One average poppy seed bagel purchased
 - Contained 0.96 g poppy seeds
- Bagel and seeds were consumed
- Urine specimen collected three hours later and analyzed for morphine



Cordant Laboratory Study

Place a poppy prohibition in your agreement and don't allow clients to use this excuse to "explain away" a positive urine opiate test result!

Drink Some “Acid” Myth:

- drinking vinegar or cranberry juice will produce a “negative” urine drug test.
- **NO!**
- theory is to cause a “pH shift”, making the urine sample acidic - altering the chemistry of immunoassay tests
- in reality - the body detoxifies the acid & dilutes to physiological pH

Vitamin Myth:

- consuming large doses of vitamins (niacin - B3) purges marijuana from the system and/or speeds up its elimination from the body by increasing a person's rate of metabolism
- **FALSE!**

Blood Testing is Best Myth:

- blood is a good alternative specimen for drugs of abuse testing
- FALSE!
 - sample of limited volume
 - “dirty” sample (protein, blood cells, lipids)
 - drugs in low concentrations
 - parent drugs with short half-life
 - many testing methods not sufficiently sensitive

Are You Serious!?!?

Myth:

- beer-battered fish can cause a positive urine test for alcohol

□ **FALSE!**

Creatine Tampering Myth:

Tampering Myths

Many myths have been born over the years as people attempt to beat drug tests and share ideas. The list below contains some of the most common myths. Although some seem plausible in theory, they do not work in practice.

- **Taking Creatine to Raise Creatinine Levels:** Creatinine, a compound produced by the metabolism of creatine, is one of the parameters tested when identifying diluted urine. A common myth is that ingesting creatine (as a supplement or with a food high in creatine like red meat or fish) will boost the amount of creatinine in the urine. This is a false assumption. In fact, it has no effect.

**BRAND
NEW!**

The Use of Urine Creatinine Concentrations for Abstinence Monitoring in Treatment Courts

By Paul L. Cary, M.S.
Forensic Toxicologist



Paul L. Cary, M.S., retired as director of the Toxicology and Drug Monitoring Laboratory at University of Missouri in Columbia, Missouri, in 2015. For forty years, Mr. Cary was actively involved in the management of a nationally recognized toxicology laboratory. He has authored numerous scientific publications, has served on a variety of clinical and technical advisory committees, has taught at the university, is involved in drug testing research, and serves as a consultant in toxicology-related matters. He has been certified as an expert and provided expert testimony in court (local, state, and federal) and in labor arbitration and is a member of the Society of Forensic Toxicology. Mr. Cary has been a resource to treatment court teams throughout the nation and overseas for the past two decades.

Introduction

The fundamental goal of abstinence monitoring in a treatment court environment is to enable the court to evaluate a participant's compliance with program requirements—in other words, the participant's abstinence from prohibited substances. If the court is unable to reliably monitor abstinence, the ability to use rewards/incentives and sanctions as treatment intervention strategies is all but lost. If the court is unable to identify participant relapse or prohibited substance use, it is powerless to intervene therapeutically to change undesired behavior.

When urine is being used as the drug testing specimen, the monitoring of creatinine in each sample obtained is critical in establishing specimen validity. For example, if a urine specimen is determined to be dilute, the drug test may not be able to detect the presence of prohibited substances in the sample, because the concentrations of the drugs have been diluted until they are below the cutoff point of the assay. In this circumstance, test results would produce a false negative finding: prohibited substances were present, participant drug use occurred, but the testing was unable to detect the violation because the sample was more like water than urine. A dilute urine sample, regardless of whether it is intentional or not, prevents the court from evaluating a participant's abstinence.

Unlike testing for drugs, in which the analysis produces either a negative or positive result, the interpretation of urine creatinine concentrations is not always straightforward. Consequently, the therapeutic response to a urine sample that falls outside the acceptable creatinine criteria is often more complicated. This fact sheet addresses many of the issues associated with testing for urine creatinine concentrations in a treatment court context and provides guidance as to appropriate court responses to urine samples that fall outside the acceptable criteria.

Creatine Supplement Issue:

- ❓ food has little or no immediate effect on urine creatinine concentrations
- ❓ **WEB SITE IS WRONG!!**
- ❓ consuming over-the-counter creatine can disguise pre-collection hydration and a diluted urine
- ❓ creatine converted to creatinine can mask urine sample dilution efforts
- ❓ in reality - very difficult for participants to titrate the intake timing and volume of creatine and dilution liquid

Urine Sediment Myth:

- The presence of urine sediment (material that settles to the bottom of the collection cup) is a good indicator of sample tampering.

- **FALSE!**

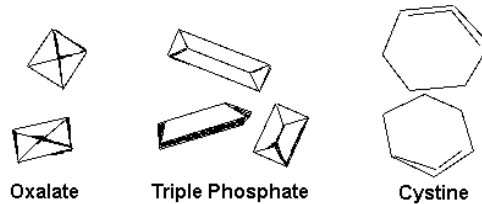
Urine is a complex matrix:

Urine sediment occurs naturally & is comprised of:

cells - (epithelial, kidney, blood)

casts - (cylindrical particles formed by WBC, RBC, granular material, fat, etc.)

crystals -



organisms (bacteria, yeast, fungi)

Pectin Myth:

- Sure-Jell or Certo is an effective technique clients can use to adulterate urine samples and produce negative test results.
- **FALSE!**

Sure-Jell/Certo - Pectin

- pectin - complex carbohydrate found in plant cells (skins & seeds of fruit)
- pectin used to “set” jams & jellies
- “activation” of pectin requires boiling
- pectin (ingested/added directly) *may* cause urine to be more viscous

Sure Jell/Certo - Pectin

- Don't believe in the Certo or Sure Jel method. I tried it...failed all the drug tests I took every time I used it...I was being tested for marijuana for Arkansas Drug Court. Tested me every week...failed all three drug screens...they use a new on site screening machine that spins the sample around...supposedly it can even detect meth for up to 10 days...and can detect adulterants too...I cleaned up rather than try to cover up.

Exchange of Bodily Fluids Myth:

- having sex with someone who uses drugs will cause a positive urine drug screen in an abstinent client

□ **FALSE!**

Prescription Drug Myth:

- Urine drug testing is an excellent strategy for monitoring clients using prescription drugs and determining potential abuse of prescribed medications.
- **FALSE!**
- urine drug testing is a qualitative tool!

Drug testing is an excellent tool for the abstinence monitoring of court clients, however it provides limited information for the differentiation between the appropriate therapeutic use of prescribed medications and the misuse/abuse of those same drugs - regardless of the specimen tested.

Other Control Strategies

- search & seizure (client contract)
- healthcare contact forms
- pill counts
- no out-of-state prescriptions
- use of specified pharmacies
- loss of completion credits/time while on certain prescription meds

COVID Vaccine Myths:

- ❑ alters your DNA
- ❑ makes women infertile
- ❑ vaccine effects worse than COVID-19
- ❑ rushed production – vaccine unsafe
- ❑ imparts microchips in your brain
- ❑ will cause you to become magnetic
- ❑ I had COVID, don't need the vaccine
- ❑ were developed using fetal tissue
- ❑ weren't enough clinical trial participants
- ❑ ALL OF THESE MYTHS ARE **FALSE!**

CBD Won't Test Positive Myth:

- CBD & THC almost identical chemical structures
- CBD is largely unregulated (even those claiming to be “pure”)
- Probably False

SAMHSA Memo – July 2019

In one study, the amount of CBD in 69% of the 84 tested CBD products was inconsistent with that on the label (less than 0.3% – legal requirement), and some products contained unlabeled cannabinoids, including THC in amounts up to 6.4 mg/mL

Items Often Banned by Treatment Courts

- alcohol
- poppy seeds
- creatine
- alcohol-containing OTC medicines
- dietary supplements
- energy drinks
- homeopathic/herbal substances
- sports nutrition powders
- anything not regulated by FDA

The Bottom Line!

Treatment courts should *prohibit* the use of any materials (i.e. chemicals, ingestibles, drugs, non-medicinal products, non-FDA approved supplements, etc.) that have the potential to interfere with the court's ability to accurately and reliably evaluate or interpret the results of abstinent monitoring testing – unless, that material has been legally prescribed by a licensed physician.

Dentist Visit Myth:

- Having a novocaine shot from a dentist will cause a positive urine drug test result for cocaine.

□ **FALSE!**

The Excuse:

“I tested positive for cocaine because I used Orajel/ Anbesol for a tooth ache.” (benzocaine)

The Excuse:

“I tested positive for cocaine because I got a bad sunburn and applied Solarcaine®.”

Diabetes Myth:

- n A client with diabetes is likely to produce dilute specimens (with urine creatinine levels of less than 20 mg/dL) because of his/her disease.
- n **Probably False!**

Diabetes & Creatinine

- what does the research say
- question is whether diabetes causes dilute urine samples - the answer is NO!
- average urine creatinine level for a non-Hispanic black participant, 20-49 years of age is 180 mg/dL - subtract 30 mg/dL of creatinine for a diabetic condition, starting with an average urine creatinine level of 150 mg/dL

Cooked Foods Have No Alcohol Myth:

- n The act of cooking/heating foods that contain alcohol liberates the alcohol in the process, thus producing alcohol-free food.
- n **False!**

Alcohol in Food - Cook's Illustrated Study (2005) “A Few Sobering Thoughts”

- beef burgundy - three hours in oven, lid on, 40% alcohol retained
- flambé recipes - igniting brandy over high heat 29% alcohol retained - igniting brandy in cold pan 57% alcohol retained

Hemp Products Are OK Myth:

- Food and beauty products containing hemp seed will not lead to a positive THC (cannabinoid) test.

- **False!**

Exercise Myth:

- strenuous exercise will cleanse your body of drugs
- a quick trip to the gym the morning of a surprise test will do nothing to help your chances of passing
- FALSE!

Hair Washing Myth:

- Washing hair with “special” shampoos will remove drugs of abuse from hair

“Special” Shampoos

- False! This stuff doesn't work!

Baking Soda Myth:

- ❑ consuming baking soda will produce a negative drug test for meth
- ❑ sodium bicarbonate
- ❑ No research to support this theory!
- ❑ “Over 500 Fabulous, Fun, and Frugal Uses You've Probably Never Thought Of” by Vicki Lansky she mentions nothing about using Baking Soda to pass a drug test

Baking Soda Myth:

- Ur-ine Trouble, 200 pages – no mention of baking soda
- Arm & Hammer – largest mining company of sodium bicarbonate does drug testing a gets positive results
- sodium bicarbonate is a naturally occurring body chemical
- FALSE!

“Just Holding It” Myth:

- “Holding” drugs “for a friend” produces positive drug test results.
- Really!!!! Pleading to a felony in order to beat a drug test?
- FALSE!

Delta 8 Myth:

- Delta 8 THC won't test positive on a drug test
- Delta-8 THC metabolites look just like Delta-9 THC metabolites
- initial immunoassay screens will generally test positive for cannabinoids for both D-8 & D-9
- **FALSE!**

email address:

n carypl@missouri.edu