# A Review of Drug Detection for Court Professionals-How to Beat a Drug Test with Best Practices



Presented by: Helen Harberts HelenHarberts@gmail.com

# **Quick Fix**

Quick Fix Whizzinator Pack One Whizzinator One Quick Fix





#### http://www.quickfixurine.com/













This is the original design of CUPID and uses the patented Flow Restrictors to actuate the flow urine. The only difference between **CUPID** and Original SheWhizz is the size of the bottle. CUPID was designed around a 2 oz bottle. And is exactly double the size of SheWhizz's 1 fl oz bottle. Made for those times when your golden shower fantasy needs to be TWICE the fun! NOW WITH NEW **TEXTURED SURFACE!** 

Full Kit contains: 1- CUPID Device, 1- 10ml Syringe, 1-3-pack of Flow Restrictors, 1-3 fl oz bottle of Laboratory Grade Synthetic Urine



#### https://youtu.be/ZJQLMM\_G-YY

CUPID now comes pre-filled with dehydrated, synthetic urine and fully incased in latex. You simply clip off the sealed hose caps, fill with warm water and shake.

\$ 89.99

#### **DO I HAVE YOUR ATTENTION?**

Learn the Best Practices and Follow Them.

# **Best Practices**



- Frequent- 2 times per week
- Random- 7 day week, not 5. Nights, weekends, holidays
- Duration- throughout drug court stay-last thing removed
- Breadth-broad panel
- Witnessed collection- don't blink!
- Valid Specimens -creatinine, and specimen validity
- Accurate and Reliable Testing Procedures -due process, chemistry
- Rapid Results -48 hour lab results
- Participant Contracts-write down the rules! SHARE!

**Drug Testing Basics** 

# Reasons for Drug Testing - WHY?

- act as a deterrent to future drug use
- identify participants who are maintaining abstinence
- identify participants who have relapsed
  - rapid intervention
  - efficient utilization of limited resources
- provides incentive, support and accountability for participants
- adjunct to treatment & frames sanction decisions

#### **Drug Testing Specimens**

- urine current specimen of choice
  - generally readily available large quantities
  - contains high concentrations of drugs
  - good analytical specimen
  - provides both recent and past usage
- alternative specimens
  - breath
  - hair
  - sweat patch test
  - saliva oral fluids

# Keep 'Em Guessing

- The schedule of drug and alcohol testing random and unpredictable.
- effective drug testing <u>must</u> be <u>random</u>
  - equal chance of being tested on any given day -INCLUDING weekends and holidays
  - unexpected, unannounced, unanticipated
  - limit time between notification & testing
- urine no longer than 8 hours following notification
- four hours for oral fluids



#### Drug Testing Reality Check

- When developing and administering your drug testing program <u>assume</u> that the participants you are testing know <u>more</u> about urine drug testing than you do!
- Sources:
  - Internet
  - High Times magazine
  - other court clients

# Challenging Urine Collection Strategies

# **Random Testing**

- if you schedule your drug testing, your clients will "schedule" their drug usage
- what is truly random?
- element of surprise as a therapeutic tool
- if participants know in advance when they will be tested, they can adjust the timing of their usage or take tampering countermeasures
- nights, weekends, holidays
- 7 day week, not 5 day week.

#### OBSERVED TESTING IS <u>NOT</u> AN OPTION

- Yes, it is icky.
- Yes, it is uncomfortable
- Yes, it presents unique challenges
- It is mandatory.
- Not mirrors, not privacy screens, DIRECT
  OBSERVATION





#### The "witnessed" collection (for urine)

- single most important aspect of effective drug testing program
- urine collections not witnessed are of little or no assessment value
- denial component of substance abuse requires "direct observation" collections of participants

# Sample Collection:

- pre-collection preparation
  - site selection
    - minimize access to water sources
    - use an area with a scant floorplan
    - find privacy & security
  - gather supplies beforehand
  - obtain proper collection receptacle
- confirm ID
- removal of outer clothing

# Sample Collection: (continued)

- wash hands prior to donation
- "witness" collection
  - additional clothing removal
  - body inspection
  - squat and cough
- label sample correctly

# Sample Collection: (continued)

- accept sample & inspect
  - temperature (90-100° F)
  - color (no color  $\rightarrow$  diluted ?)
  - odor (bleach, sour apples, aromatics, vinegar, etc.)
  - solids or other unusual particulates
- store sample properly
- forensic sample custody documents

#### How to conduct at test:

- Impersonal, like a doctor's office
- Impeccable chain of evidence in both appearance and fact
- Do it exactly the same way every time. You will need to testify from habit and custom.

# Questions: Same every time

- Have you used any drugs or alcohol since I last saw you?
- Is there anything I need to know before this test?
- Will this test be clean or not?

# Get your stuff in order!

- Get all of your paperwork ready WITH the client. You sign, they sign, everything.
- CHECK Photo ID each time.
- If possible design a urine testing room that works better than a standard room.
- Removal of all outer clothing like coats.

#### Always the same process:

- Wash hands before (and after) donation
- Proper collection receptacle
- Witness collection process.



### Actual testing:

- Drop your drawers...<u>all</u> of them, all persons
- Roll up sleeves
- NO band-aids on hands
- Turn around 360 degrees
- Women: squat and cough 3X
- Men *and* women: start, stop, start.

### Squat and Cough..... Really?

"Tech Rawlinson instructed the defendant to squat to the ground with her knees and feet shoulder width apart, and to cough as hard as she could. Ms. Doe then squatted as instructed and coughed with her hand over her mouth. *Tech Rawlinson heard a loud thumping sound on the floor immediately after Ms. Doe coughed.* "

#### You don't do it... this is what gets past you.



# Developing control strategies to prevent sample tampering is critical.

Once clients understand that they cannot beat the system, they are much more likely to engage in the therapeutic process toward recovery.

# Drug Testing Methods Understanding what is done



#### Two-Step Testing Approach

- screening test designed to separate negative samples from samples that are "presumptively" positive
- confirmation test follow-up procedure designed to validate positive test results
  - distinctly different analytical technique
  - more specific and more sensitive

### Step One – Screening

- often based on immunoassay technology
- more drug more binding more "color" produced – more instrument detector response
- numerous commercial manufacturers
- designed for high throughput instrumentation or onsite devices

#### **On-site DOA screening**

- often based on immunoassay technology
- concept of color "switch"
- "dynamic" versus "static" calibration
- hand-held cassettes or test-cup devices
- one test at a time no batching
- available in DOA panels or single drugs
- numerous commercial manufacturers
  - differential sensitivity & selectivity

#### **On-site Drug Detection:**



Read the results. Any band, even if faint, partial, or broken, indicates a negative result. The absence of color is a presumptive positive result.



#### Follow package insert guidance exactly!

#### **On-site Drug Detection:**



Intensity of band is NOT quantitative!



# Step Two - Confirmation

- gas chromatography-mass spectrometry GC/MS or LC/MS, or LC/MS/MS
  - drug molecules separated by physical characteristics
  - identified based on chemical "finger-print"
  - considered "gold standard"
- other chromatographic techniques

# Why confirm ?

- Is it really necessary to confirm drugs that tested positive by initial screening tests?
- Why can't the court adjudicate cases based on the screening test results?
- FALSE POSITIVES

# Drug tests & cross reactivity:

- screening tests can and do react to "non-target" compounds
  - amphetamines
  - benzodiazepines
- obtain list of interfering compounds from lab or on-site test vendor
- initial screening ("instant" tests) may only be 60-70% accurate
- confirm positive results
# **Drug tests & cross reactivity:**





(300 ng/mL opiate cutoff test)

# 150 ng/mL codeine

1500 ng/mL oxycodone

# Interpretation of Drug Test Results

# Negative or None Detected Results

- indicates that no drugs or breakdown products (metabolites), tested for, were detected in the sample tested
- no such thing as "zero" tolerance or "drug free"
- negative does not mean NO drugs present

Negative/None Detected Interpretation

- client is not using a drug that can be detected by the test
- Other possible explanations
  - client not using enough drug
  - client's drug use is too infrequent
  - collection too long after drug use
  - urine is tampered
  - test being used not sensitive enough
  - client using drug not on testing list

#### Negative/None Detected Interpretation

- <u>no</u> need to second-guess every "negative" result
- <u>not</u> suggesting withholding positive reinforcement & rewards for positive behaviors
- drug testing is a monitoring tool
- assess none detected drug testing results in the context of your client's overall program compliance (or noncompliance) and their life's skills success (or lack thereof)

# Positive Test Result Interpretation

- indicates that drug(s) or breakdown products (metabolites), tested for, were detected in the sample tested
- drug presence is above the "cutoff" level
- greatest confidence achieved with confirmation
- ALWAYS confirm positive results in original sample

#### Typical Cutoff Levels screening & confirmation

- amphetamines \*
- benzodiazepines
- cannabinoids \*
- cocaine (crack)\*
- opiates (heroin) \*
- phencyclidine (PCP) \* 25 ng/mL
- alcohol

500 ng/mL

300 ng/mL

20 mg/dL

20& 50 ng/mL 150 ng/mL

300/2000 ng/mL

250 ng/mL variable 15 ng/mL

100 ng/mL

variable

25 ng/mL 10 mg/dL

□ \* SAMHSA (formerly NIDA) drugs

# What is a "cutoff" level ?

- cutoffs are not designed to frustrate CJ professionals
- a drug concentration, *administratively* established for a drug test that allows the test to distinguish between negative and positive sample - "threshold"
- cutoffs provide important safeguards:
  - scientific purposes (detection accuracy)
  - legal protections (evidentiary admissibility)
- measured in ng/mL = ppb

# The Issue of Urine Drug Concentrations

# Drug Tests are Qualitative

 screening/monitoring drug tests are designed to determine the presence or absence of drugs - NOT their concentration
drug tests are NOT quantitative Drug concentrations or levels associated with urine testing are, for the most part, USELESS !

- cannabinoids
- opiates
- cocaine metabolite
- amphetamines

negative negative negative

# The Twins



200 mg Wonderbarb @ 8:00 AM

Collect urine 8:00 PM 12 hours later

# The Twins - urine drug test results



Wonderbarb = 638 ng/mL



## The Twins - urine drug test results



physiological make up

exact amount drug consumed

exact time of ingestion

exact time between drug exposure and urine collection

AND YET . . . .



# The Twins - urine drug test results



Wonderbarb = 638 ng/mL

Twin B's urine drug level is 5 times higher than Twin A

![](_page_50_Picture_4.jpeg)

Wonderbarb = 3172 ng/mL

# Are any of the following questions being asked in your court?

- How positive is he/she?
- Are his/her levels increasing or decreasing?
- Is that a high level?
- Is he/she almost negative?
- Is this level from new drug use or continued elimination from prior usage?
- What is his/her baseline THC level?
- Does that level indicate relapse?
- Why is his/her level not going down? (or up?)

# THE ISSUE

Urine drug concentrations are of little or no interpretative value. The utilization of urine drug test levels by drug courts generally produces interpretations that are inappropriate, factually unsupportable and without a scientific foundation. Worst of all for the court system, these urine drug level interpretations have no forensic merit.

#### DRUG COURT PRACTITIONER FACT SHEET

URINE DRUG CONCENTRATIONS: THE SCIENTIFIC RATIONALE FOR ELIMINATING THE USE OF DRUG TEST LEVELS IN DRUG COURT PROCEEDINGS

By Paul L. Cary, M.S.

#### PREFACE

As the title implies, the objective of this fact sheet is to provide drug court protessionals with a scientifically based justification for discontinuing the interpretation of urine drug levels in an effort to define client drug use behavior. As the premise of this document is not without some controversy, clarification of its intent seems werranted.

This fact sheet is intended for drug court practitioners who are routinely engaged in the interpretation and evaluation of urine drug testing results for the purpose of participant case adjudication, particularly client sanctioning. Given that most drug courts do not have routine access to biomedical or phermecological expertise. This fact sheet recommends that the use of urine drug concentrations be eliminated from the court's decision-making process in order to protect client rights and ensure that evidentiary standards are maintained.

It is not the intention of this document to prohibit the interpretation of aborstory data by qualified scientists. Nor is it the objective of this fact sheet to assert that urne drug levels have no interpretative value. However, drug court practitioners are calibored that the interpretation of urine drug levels is highly complex and even under the best of circumstances provides only limited information regarding a performant's drug use patterns. Further, such interpretations can be a matter of disagreement even between experts with the reguisite knowledge and training to render such opinions.

It is for these stated reasons that the NDCI strongly encourages drug court programs to utilize the information contained herein to evaluate their drug testing result interpretation practices. This organization recognizes that the use of urine drug levels to assess client behavior may be widespread and longstanding. However, because courts rarely have the necessary toxicology expertise, the routine use of urine drug levels by court personnel in formulating drug court decisions is a practice that in most cases would not withstand scientific or judicial scrutiny. It is hoped that this fact sheat will serve as the foundation for those drug court programs routinely interpreting urine drug levels to transition to a strictly qualitative loos tive or negative only result formst. Drug courts are also encouraged to seek expert toxicology advice when necessary and appropriate to essist in the interpretation of testing data associated with challenging cases.

# Scientific Rationale

- Technical Issues
  - testing not linear
  - tests measure total drug concentrations
- Physiological
  - variability of urine output
  - differential elimination of drug components

432 indicates he going up, right?

# THIS ? is 22 above the cutoff?

does 219 mean new use?

307 – well she's almost negative, correct?

639 is really high for THC, isn't it?

115 is down from yesterday, probably continued elimination?

I think 1200 is a new record, isn't it?

515 is much higher than last week, right?

don't we need to consider relapse at 57?

# OR THIS ? Negative or Positive

# The Drug Detection Window

## Drug Detection Times - by Drug (this is general guidance!)

- amphetamines: up to 4 days
- cocaine: up to 72 hours
- opiates: up to 5 days
- PCP: up to 6 days
- barbiturates: up to a week
- benzodiazepines: up to a week
- then there's alcohol & cannabinoids

# Cannabinoid Detection in Urine

- Conventional wisdom has led to the common assumption that cannabinoids will remain detectable in urine for 30 days or longer following the use of marijuana.
- RESULT:
  - -delay of therapeutic intervention
  - hindered timely use of judicial sanctioning
  - -fostered denial of marijuana usage by clients

# **INSTIT**

# DRUG COURT PRACTITIONER

#### THE MARIJUANA DETECTION WINDOW: DETERMINING THE LENGTH OF TIME CANNABINOIDS WILL REMAIN DETECTABLE IN URINE FOLLOWING SMOKING

A CRITICAL REVIEW OF RELEVANT RESEARCH AND CANNABINOID DETECTION GUIDANCE FOR DRUG COURTS By Paul L. Cary, M.S.

#### PREFACE

The duration of the urinary cannabinoid detection window is not settled science. The number of days, following the cessation of marijuana amoking, necessary for cannabinoids to become non-detectable using traditional drug testing methods is the subject of debate among forensic toxicologists and a matter of on-going scientific research. This article makes no bretense to limit this important discussion, but rather, seeks to enhance it. It is hoped that drug court practitioners will find that this information clarifies some of the complex issues associated with the elimination of marijuana from the human body.

Conventional wisdom has led to the common assumption that cannabinoids will remain detectable in unne for 30 days or longer following the use of marijuana. These prolonged cannabinoid elimination projections have likely resulted in the delay of therapeutic intervention, thwarted the timely use of judicial sanctioning, and fostered the denial of marijuana usage by drug court participants.

This review challenges some of the research upon which the 30-plus day elimination assumption is based. Careful scrutiny of these studies should not be interpreted as an effort to discredit the findings or the authors of this research. However, as our knowledge evolves, the relevancy of previously published scientific data should be evaluated anew. One fact is clear—more research is needed in the area cannabinoid elimination. Cannabinoids - Recent/Relevant Research

- 30+ day detection window often exaggerates duration of detection window
- reasonable & pragmatic court guidance
- detection time: at 50 ng/mL cutoff
  - up to 3 days for single event/occasional use
  - up to 10 days for heavy chronic use
- detection time: at 20 ng/mL cutoff
  - up to 7 days for single event/occasional use
  - up to 21 days for heavy chronic use

# **Alcohol - Results Interpretation**

- screening tests specific for ethanol, ethyl alcohol
- positive results indicate presence alcohol
- alcohol is rapidly cleared from the body
- negative results don't necessarily document abstinence
- detection time = hours
- example person intoxicated at 11:00 PM, collect second urine sample of next day (11:00 AM), most likely test negative for alcohol

# EtG...EtS

- You can test for alcohol in a different fashion!
- EtG [Ethyl glucuronide] is here.
- Detects a metabolite of ethyl alcohol that remains in the system between two and five days.
- Requires different lab equipment and processes-detects use when standard tests do not.
- <u>Highly</u> sensitive, and very effective.
- Cut off: 500 reveals use for 48 hour window
- SAMHSA Advisory
- EtS should come in at ¼ the EtG.

# Another problem:

![](_page_64_Picture_1.jpeg)

This is the ingredient list on "vaping" fluid. Probably will not pass cut off, but be aware

# How to beat a drug test: *simple!*

![](_page_65_Picture_1.jpeg)

Dilute Urine Samples: Court's Response to Low Creatinine Specimens

![](_page_66_Picture_1.jpeg)

Creatinine testing is a specimen validity issue!

The most common form of specimen tampering is sample dilution.

# **Urine Creatinine & Dilute Samples**

# What is creatinine ?

- creatinine is produced as a result of muscle metabolism
- creatinine is produced by the body at a relatively constant rate throughout the day
- creatinine is a compound that is unique to biological material (i.e. urine, other body fluids)
- creatinine measurements can:
  - determine the "strength" or concentration of a urine sample
  - ensure the sample being tested IS urine

![](_page_70_Picture_0.jpeg)

# EVERY urine sample used for drug detection should be tested for creatinine!

# **Pre-Collection Dilution**

- high-volume ingestion of fluids (water loading, flushing, hydrating, etc.)
- may be in conjunction with products designed to "enhance" drug elimination or removal of drugs (Gold Seal, Clean 'n Clear, Test-Free, Naturally Klean, etc.)
- no evidence these products have any additional effect on drug elimination


# DILUTION GOAL

Client has a bladder full of urine with a drug concentration of greater than the cutoff level of the test - thus producing a positive result.



Urine in the bladder is diluted by the consumption of large amounts of non-drug containing fluid; which results in a drug concentration that is less than the cutoff level of the test thus producing a negative result.

### Water contains no drugs!

- easiest, cheapest, simplest
- urines with a creatinines of less than 20 mg/dL are considered "dilute" and rarely reflect an accurate picture of recent drug use
- dilute samples are more like water than like urine
- all drug court/criminal justice samples should be screened for creatinine

# The "Normal" Creatinine

- normal urine creatinine: 2005 study "Urinary Creatinine Concentrations in the U.S. Population" determine the mean (based upon 22,245 participants) was 130 mg/dL
  - less than 1% below 20 mg/dL
  - less than 1% greater than 400 mg/dL
- incidence of low creatinines in a population undergoing random drug testing is significantly (up to 10 times) greater than a non-drug tested population

### More Creatinine Issues

- rapid ingestion (90 minutes) of 2-4 quarts of fluid will almost always produce low creatinines & negative urine drug tests within one hour
- recovery time of urine creatinine and drug concentrations can take up to 10 hours
- next morning collection not helpful.

# "Dilute" Result Interpretation:

- negative or none detected results should never be interpreted as indicating no drug use (abstinence), because if, in fact, drugs were present, they probably could not be detected by the test
- positive drug test results from a dilute sample however, are considered valid (donor was not able to dilute the sample sufficiently to deceive the test)

# Helen's response/<u>opinion</u> NOT science

- First dilute, do some education, go over contract, and have a discussion about diet, etc. Their job is to give you a valid test.
- Second dilute, see a doctor.
- Third dilute, things get focused on behavior

# **Specimen Tampering**



### Basics of Specimen Tampering - The Three Approaches

- dilution
- adulteration
- substitution

### **Urine Specimen Adulteration**

- addition of foreign substances designed to "mask" drug presence
- post-collection tampering
- low-tech adulterants that cause "pH shift" (lime, vinegar, bleach, ammonia, lemon, drano)
- low-tech adulterants that disrupt testing chemistry (salt, methanol, detergent)
- "high-tech" adulterants

### Urine Luck

- pyridinium chlorochromate/dichromate
- oxidizing agent in organic synthesis
- compromises the confirmation (GC/MS) carboxy-THC and opiates
- can also effect screening tests
- oxidizes drug and standards
- can be identified by laboratories employing specimen validity tests (SVT)
- effects can not be reversed



# **Urine specimen substitution**

- Involves replacing donor urine with another drug free specimen
  - A biological substitution: someone else's clean urine
  - Non biological substitution: colore mountain dew, etc.
  - If testing is observed NEITHER of
  - these methods should work.





Addiction makes folks do strange things....this, of course, is an example of an attempted urine substitution.

"As long as no one is following you into the stall and watches you pee, then get a condom and fill it with warm water + a little bit of yellow food coloring. Hide scissors on you somewhere, and when you go take the test, cut the top on the condom (where you tied it off) and pour it into the cup. That's what I did when I was on probation and it worked." (internet advice column")

### Controlling Specimen Tampering

- develop challenging collection strategy ie. make the testing unannounced and RANDOM!
- directly observed collections is the most effective approach to preventing adulteration and substitution
- inspect sample train collection staff
- keep abreast of tampering techniques
- take temperature measurements (90° 100° F)
- use laboratory employs specimen validity tests & use with onsite devices

#### Unsupervised Drug Test







Instant Clean Add-It-Ive\*

8 ml. \$75 \$50 99.9% Success Rate! Spike Additive\* 2 (TWO) 1.5 ML Vials \$125 99.9% Success Rate! Synthetic Urine \$75\$55 100% Success Rate!

# **Oral Fluids?**

Saliva Swab Drug Test

Mouthwash



Oral Clear Gum

 (Saliva)\*\*
 Neutralizing Gum \$90
 99.9% Success Rate!



### THERE ARE SOME FANCY DEVICES...

Some are gender neutral

### **Substitution**









# Substitution

"The urinator the ultimate urine testing device only \$149.95. A digitally temperature controlled unit that is reusable, reliable and by far the most superior product on the market."



#### Lil' Whizz Kit

New, from the makers of the legendary Whizzinator! A Non- refillable, use and dispose 3oz belt! Everything you need right out of the box. Works every time. Clean, Safe, Dependable, and Toxin Free Synthetic Urine.

### SOME ARE NOT GENDER NEUTRAL.









S. marin







-3







# So, assume this is happening

- Monitor testing carefully
- Watch for "to go" containers during community supervision



## **Remember:**

- This is not about "gotcha"
- It is about helping folks to resist cravings and work programs.
- It is about supporting recovery.
- It is about objectively measuring the presence of disease.
- Remember what your proximal and distal goals are and what the focus of our work is.
- Be patient, be kind, but NEVER underestimate the power of this disease.

# email address:

HelenHarberts@gmail.com