

BEATING THE DRUG TEST

A Closer Look



TOPICS OF DISCUSSION

- History of Drug Testing
- Adulteration
- Substitution
- Observed Collections
- New Validity Testing
- Flushing
- Internet Resources
- Forgery

HISTORY OF DRUG TESTING

And Subversion

EARLY YEARS

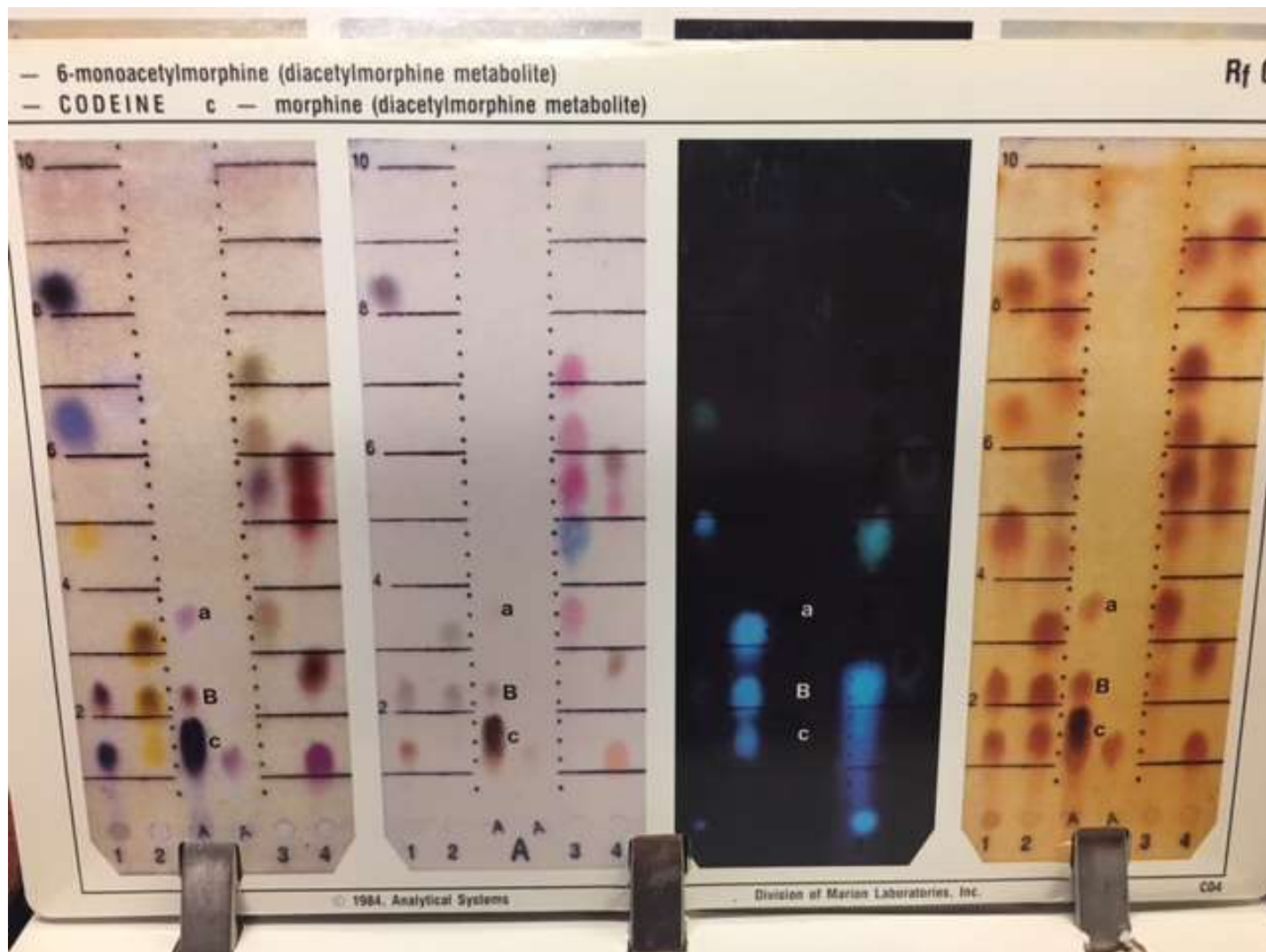
- US Military made the first big push
 - Troops in Vietnam in late 1960s and 1970s
 - Easy to obtain drugs like marijuana and heroin
 - Drug testing program was implemented
 - Immunoassay and TLC techniques
 - Susceptible to false positives
- Attitude during this time period was fairly liberal regarding drug use.
- In the late 1970s & 1980s attitudes began to change

1982 “WAR ON DRUGS”

- President Ronald Reagan
- 1986 Reagan signed Executive Order to establish Federal employee drug testing programs
- Initial work-place drug testing
 - Performed by clinical laboratories
 - Using immunoassay (susceptible to false-positives)
 - Confirmation testing by TLC and GC (relatively non-specific)
 - Chain of custody lacking
- 1988 “Mandatory Guidelines for Federal Workplace Drug-Testing” (DHHS)
 - Revisions: 1994, 1998, 2004
 - Program was administered by NIDA
- 1992 Program responsibility transferred to SAMHSA

TLC – THIN LAYER CHROMATOGRAPHY

a – 6-AM
b – Codeine
c - Morphine



SUBVERSION

- First evaluation of sample adulteration was in 1985
 - Cannabinoid excretion and substances that might affect detection
- Published article in 1988 looking at various products and effect on EIA testing
 - Vinegar, salt, bleach, lemon juice, cleaners, golden-seal tea, hand soap, Visine eye drops
- Dilution and substitution method also used
- Commercial products made available
 - UrinAid (glutaraldehyde) – adulteration
 - In vivo dilution products
 - Products were initially marketed in magazines
 - Then smoking shops, supplement retailers, natural food stores and now the internet.

VALIDITY TESTING

- 1988 guidelines did not have specific requirements for validity testing, it was up to the testing laboratory
- 1993 specific guidelines issued for reporting diluted specimens (creatinine and specific gravity)
- 2001 additional guidelines were issued for validity testing and criteria for determining a substituted or adulterated sample

HHS VALIDITY GUIDELINES

DON'T BREAK THE LAW

- State Laws Addressing Workplace Drug Test Subversion
- AK, FL, IL, KY, LA, MD, NC, NE, NJ, OK, PA, SC, TX, VA
- [2010 Arkansas Code](#)

ADULTERATION

ADULTERATION

- Nationwide product distribution
 - Internet
 - Smoke shops or “head shops”
 - Mail order / magazine advertisements
- Offer next-day delivery with money-back guarantees
- Disseminate misinformation to perpetuate myths about drug testing
- Make exaggerated and unsubstantiated claims as to the efficacy of their products

HOW IT WORKS

- Physical Tampering – Additives
- Destroy the drug
- Interfere with the test mechanism causing a negative result
- Commercial Products
 - Stealth: peroxidase and peroxide
 - [Klear](#): nitrite
 - Clean ADDIT-ive: glutaraldehyde
 - Urine Luck: pyridinium chlorochromate
- Household Product
 - Bleach, Draino, etc.

EFFECT OF ADULTERANTS ON IMMUNOASSAY RESULTS

Table 3. Effects of Adulterants in Urine on Immunoassay Results

Adulterant	Immunoassay						
	Amp	Barb	Bzd	Coc	THC	Opi	PCP
NaCl	E	E	E	E	E	E	E
Base Buffer							EF
Lime-A-Way or Liquid Plumber		R		F		ER	F
Vinegar	ERK	EK	EK	EK	EFRK	ERK	EK
Bleach		C	E	C	EFCKR	R	K
Drano	EFCK R	ECK R	ECK	EFCK R	EFCK R	EFCK R	EFCK RK
Detergent/soap	EC R	EFC R	EC	EC R	EFC R	EC R	FC R
Visine (benzalkonium Cl)	E F	EK E	E	CE	ECK R	E	E
Golden Seal	C	F			EFCKR		
Urinaid (glutaraldehyde)	E KR	CE	E	CE R	EFC R	E R	CEF KR
Klear (KNO ₂)	E RK	E RK	E RK	E R	E RK	E RK	E RK
DETOX					EFRK		
TEST CLEAN	EFR	EFR	EFR	EFR	EFR	EFR	EFR

E = EMIT; F = FPIA; C = CEDIA; R = RIA; K = KIMS.

Underlined abbreviations indicate a false-positive result.

Abbreviations without underlines indicate a false-negative result.

Some of data are from a 1998 personal communication from Sal Salamone, OraSure Technologies, Inc., Bethlehem, PA, and Yale Caplan, Baltimore, MD.

THE ADULTERANT INDUSTRY



Physical Adulterants

- Acids
- Surfactants (Soaps)
- Fixatives (Glues)
- Oxidants

Ingested Compounds

- Vinegar
- Pickle Juice
- Bleach
- Drano
- Water Pills
- Detox Drinks
- Herbal Teas & Supplements



SUBSTITUTION

SPECIMEN SUBSTITUTION



- Dehydrated urine
- Non-urine liquids
- Also used in devices



DEVICES

- Concealed beneath clothing
- Utilizes drug-free urine
- Maintains proper urine temperature with heating pads or digital heating packs
- Typically sold to males; may include prosthetic penis
- Typically very expensive / single use only

CONFISCATED DEVICES

The Whizzinator



CONFISCATED DEVICES

DIY Devices



CONFISCATED DEVICES

Female Devices



OBSERVED COLLECTIONS

URINE COLLECTION

- Client's photo ID verified and signs log book. CCF is initiated.
- ID verified by CST at restroom
- Restroom for visual observation
- CST verifies CCF with client after sample collected
- Security seal applied in client's presence
- Client signs security seal on container & CCF
- Sample placed in secure storage



VISUALLY MONITORED COLLECTION



- One way mirror to view collection
- Bluening agent in toilets
- No hot water
- No chemicals in area
- Remove excessive clothing
- No items allowed in restroom

VISUALLY MONITORED COLLECTION



COLLECTION INSTRUCTIONS

Male

1. Stand in front of the urinal, angled, so the monitor has a full frontal view.
2. Pants and underwear must be lowered to your mid-thigh. The monitor must have a full frontal view.
3. Your shirt has to be pulled up to your belly button.
4. Monitor needs to have a clear view at all times.
5. Monitor must see the urine stream or your sample will not be accepted.
6. You have to fill the bottle at least half way full.
7. You will be provided 3 minutes to produce your sample, if you are not able to produce your sample you must wait a minimum of 30 minutes to retry.
8. Do not bring the bottle to the sink or rinse off bottle in the sink. Samples are to be handed immediately to the monitor (and chain of custody signed) prior to washing your hands.
9. Your sample will not be accepted if you have a bowel movement.
10. The monitor will not accept your sample if you are not following the testing procedures.

COLLECTION INSTRUCTIONS

Female

1. Pants and underwear must be lowered to your ankles and you must sit back on the toilet with your knees apart for a full view.
2. Please urinate into the cup and pour it from the cup into the bottle.
3. Fill your bottle if possible, must be at least half full to be accepted.
4. Hold the cup from the bottom; your fingers can not touch the top of the cup or go inside of the cup at any time.
5. Monitor must see your cup and bottle at all times.
6. Monitor must see your urine stream or your sample will not be accepted.

Remaining rules are same as male.

Tampons must be removed prior to collection or sample will not be accepted.

NEW VALIDITY TESTING

Future Options?

IDENTIFYING SYNTHETIC URINE

- Research published in March 2017 (J. of Analytical Toxicology)
- Substances found in synthetic urine
 - Benzisothiazolinone (BIT)
 - Ethylene glycols
- Additional compounds identified in urine metabolome
 - 3-methylhistidine
 - Normetanephrine
 - Urobilin
 - Uric acid
- Compounds identified by LC-MS-MS
- Perhaps future screening tests will be developed

UR CODE MARKER

- Product developed by Marker Test Diagnostics
- Combination of polyethylene glycols in a soft gel capsule
 - Client consumes the capsule
 - Quickly cleared through the kidney
 - 30 minutes after consuming a urine sample can be collected without supervision
- Testing laboratory identifies unique combination using LC-MS-MS
- Issues
 - Client weary of taking capsule
 - Laboratory must be equipped to test for marker
 - Increase cost of drug testing

FLUSHING

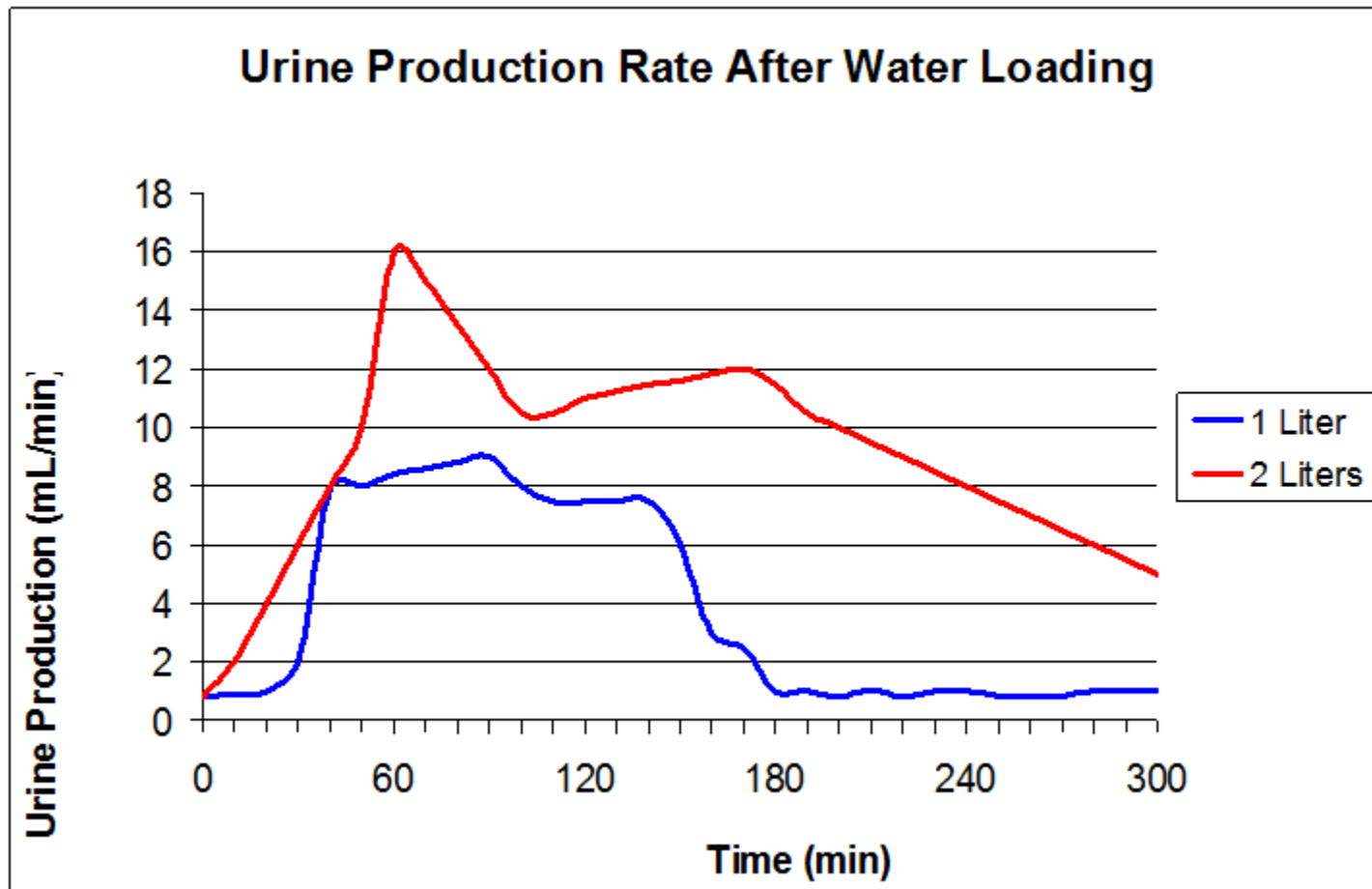
DILUTED

In vivo dilution is the most common method employed to circumvent a drug test.

Principle:

The ingestion of copious amounts of fluids prior to providing a urine sample in order to induce polyuria and ultimately lower the concentration of drugs in the bladder below the detectable limit.

EFFECTS OF WATER LOADING



DIURETICS

- Natural diuretics are natural foods and herbs that induce the removal of excess fluids in the body by increasing urination.
- Caffeine, fruits and vegetables, fruit juices, some herbs like green tea.
- Diuretic drugs treat edema caused by disorders of the heart, kidneys, liver or lungs. They are used commonly in treatment of hypertension.

INGREDIENTS IN DETOX DRINK

- Herbal Clean QCarbo32 Ingredients
 - Herbs
 - Extracts
 - Vitamins

Supplement Facts		
Serving Size 1 Bottle (32 oz)		
	Amount Per Serving	% Daily Value
Calories	320	
Total Carbohydrate	83 g	28%*
Dietary Fiber	16 g	64%*
Sugars	56 g	†
Protein	1 g	2%
Vitamin C	130 mg	217%
Thiamin (Vitamin B1)	80 mg	5333%
Riboflavin (Vitamin B2)	80 mg	4706%
Vitamin B12	250 mcg	4167%
Eliminex Plus™ Blend:	17.448 g	†
Fibersol 2® (Maltodextrin), Dandelion Root Extract, Burdock Root Extract, Creatine Monohydrate, Turmeric Root Extract, Rice Protein, Milk Thistle Seed Extract, Echinacea Purpurea Leaf Extract, Juniper Berry Extract, Psyllium Seed Husk, Licorice Root Extract, Uva Ursi Leaf Extract, Ligustrum Berry Extract, Cornsilk Extract, Apple Pectin, Alfalfa Leaf Extract, Papain, Bromelain, Triphala Fruit Extract, Guarana Seed Extract, Cayenne Pepper.		
* Percent Daily Values are based on a 2,000 calorie diet. † Daily Value not established.		

Other Ingredients: Water, Fructose, Dextrose, Inulin, Glycerine, Sorbitol, Artificial Flavor, Citric Acid, Sodium Benzoate (Preservative), Potassium Sorbate (Preservative), Phosphoric Acid, F, D & C Red No. 40, Sucralose, F, D & C Blue No. 1.

A CLOSER LOOK

- [Detox Drink](#)

INTERNET RESOURCES

CONFLICTING INFORMATION

- [Baking Soda...Does it Really Work?](#)
- [What do the "experts" say?](#)

15 BEST METHODS TO PASS A URINE DRUG TEST

- [I'm gonna pass!!!](#)

PUTTING THE MYTH TO THE TEST

- CERTO/Sure-Jell/Fruit Pectin
- **Certo Drug Test Instructions:**
 - Stop Using all toxins immediately
 - Drink at least a gallon of water a day to stay hydrated
 - Mix 1 Packet of Certo with a Gallon of water and drink night before urinalysis
 - Drink plenty of water day of test
 - 1-2hr before Mix one packet of Certo with 32oz lemon Gatorade
 - You should be free of toxins for up-to 4 hours
- [Myth Buster](#)



FORGERY

REPORTS

TASC DRUG DETECTION LABORATORY
2234 N. 7th Street — Phoenix, AZ 85006
CLIA# 03D0506729 / CAP-LAP# 3201701
DIRECTOR: Dr. Gerald Clement, Ph.D.

DONOR NAME: ~~XXXXXXXXXXXXXXXXXXXX~~ CLIENT ID: C CDC
ACCESSION NUMBER: 1028941 DONOR ID: 2248375
COLLECTION DATE: 06/06/16 13:02 D.O.B.: 4/19/16
RECEIVED DATE: 06/06/16 TEST COLOR: N/A
REPORT DATE: 06/07/16 3:12
REFERRED BY: HON. JUSTIN BERESKY
TASC Random Testing Color Schedule for 06/06/2016 12:00:00AM: BLUE LILAC PINE PINK RUBY TAN

SCREENING TESTS				
TEST NAME	TEST RESULT	CUTOFF LEVEL	METHODOLOGY	MEDIA
AMPHETAMINE	Negative	1000 NG/ML	EIA	URINE
BARBITURATES	Negative	200 NG/ML	EIA	URINE
BENZODIAZEPINES	Negative	200 NG/ML	EIA	URINE
COCAINE	Negative	300 NG/ML	EIA	URINE
ETHYL GLUCURONIDE	Negative	500 NG/ML	EIA	URINE
OPiates	Negative	2000 NG/ML	EIA	URINE
PHENCYCLIDINE	Negative	25 NG/ML	EIA	URINE
PROPOXYPHENE	Negative	300 NG/ML	EIA	URINE
THC	Negative	50 NG/ML	EIA	URINE

URINE VALIDITY TESTS			
TEST NAME	TEST RESULT		ACCEPTABLE RANGE
SPECIFIC GRAVITY	1.002	Normal	1.0000 or greater
CREATININE	90	Normal	20.0 mg/dL or greater

REPORTS

TASC DRUG DETECTION LABORATORY
2234 N. 7th Street - Phoenix, AZ 85006
CLIA# 0500928729 / CAP-LAP# 3201701
DIRECTOR: Dr. Gerald Clement, Ph.D.

DONOR NAME: **[REDACTED]** CLIENT ID: CCDC
ACCESSION NUMBER: 10592223 DONOR ID: 2246375
COLLECTION DATE: 07/14/16 14:12 D.O.B.: 4/19/15
RECEIVED DATE: 07/14/16 TEST COLOR: N/A
REPORT DATE: 07/14/16 15:38
REFERRED BY: HON. JUSTIN BERESKY
TASC Random Testing Color Schedule for 7/14/2016 12:00:00AM: BLUE: LILAC: PINE: PINK: RUBY: TAN

SCREENING TESTS				
TEST NAME	TEST RESULT	CUTOFF LEVEL	METHODOLOGY	MEDIA
AMPHETAMINE	Negative	1000 NG/ML	EIA	URINE
BARBITURATES	Negative	200 NG/ML	EIA	URINE
BENZODIAZEPINES	Negative	200 NG/ML	EIA	URINE
COCAINE	Negative	300 NG/ML	EIA	URINE
ETHYL GLUCURONIDE	Negative	500 NG/ML	EIA	URINE
OPiates	Negative	2000 NG/ML	EIA	URINE
PHENCYCLIDINE	Negative	25 NG/ML	EIA	URINE
PROPOXYPHENE	Negative	300 NG/ML	EIA	URINE
THC	Negative	50 NG/ML	EIA	URINE

URINE VALIDITY TESTS			
TEST NAME	TEST RESULT		ACCEPTABLE RANGE
SPECIFIC GRAVITY	1.0113	Normal	1.0030 or greater
CREATININE	73.3	Normal	20.0 mg/dL or greater



Distribution:

Beating the Drug Test

2017

RECEIPTS

DONOR NAME: JENKINS, [REDACTED]
SAMPLE ID: 10859620
DATE: 11/16/2016 TIME: 17:29

AGENCY ID: UTDCFSW
TASC ID: 236092205

Sample for N. Thomas
Agency MHP



DONOR NAME: JENKINS, [REDACTED]
SAMPLE ID: 10873024
DATE: 11/26/2016 TIME: 15:30

AGENCY ID: UTDCFSW
TASC ID: 236092205

Sample for D. Ruiz
Agency KPRI

Void

DONOR NAME: JENKINS, [REDACTED]
SAMPLE ID: 10877590
DATE: 11/22/2016 TIME: 15:23

AGENCY ID: UTDCFSW
TASC ID: 236092205

Sample for W. Ivy
Agency ADOC



DR. LETTERS

- Misspelled words
 - Prescriptions
 - Urinayallsis
- Grammar issues
 - Several blood test here...
- No contact information for the doctor

Feb 19, 2017

Medical Center of Dallas
4172 Mckinney Ave Ste 200
Dallas, TX 75204

LaQuencilla Green
9101 Blackstone Dr

Donor Name and Address

To Whom It May Concern:

The above-named patient is being treated for Ovarian Cancer (non-malignant).

This patient has been under my care since April of 2016.

The following is a list of her prescriptions:

Naproxen 1000mg once daily

Ketoprofen 500 mg once daily

Doxorubicin hydrochloride 50ml injections 2 times monthly

(Please note these taken together can often cause false positives in testing for drugs because of the high dosage taken)

Cisplatin 50 mg daily (Started Feb 2017)

I have spoken with Ms. Green regarding the prescriptions she is taking and the effects they can have. While none of them contains THC, her taking them together can often cause a false positive in an urinayallsis because of the high dosage she is taking. Taking high dosage of Naproxen daily can often cause a false positive as well. We have taken several blood test here because of her diagnoses and none of them has come back positive for any drugs. Please feel free to contact me with any questions.

Dr. Seriby

Medical City

SUMMARY

- Most effective method to beat a drug test is substitution with a synthetic urine.
- Dilution is most effective when observed collections are mandatory.
- Don't believe everything you read on the internet.
- There is no scientific data supporting the effectiveness of detox drinks.