

DRUG AND ALCOHOL TESTING

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State Bar of Texas
SEX, DRUGS, & SURVEILLANCE
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CHAPTER 3

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CURRICULUM VITAE

Current Employment:

Forensic DNA & Drug Testing Services, Inc. Dallas, Texas – August 2008 to Present
President

Past Employment:

Forward Edge, Inc. Dallas, Texas – Aug 2000 to July 2008
Vice President, Drug Testing, DNA Testing

Safety Analysis, Inc. Dallas, Texas – Jan. 1990 – July 2000
Pres./Owner; Drug Testing, DNA Testing

Secon, Inc. Dallas, Texas- Aug. 1988 – 1989
General Manager of Marketing, Drug Testing

Sedco Forex Dallas, Texas-June 1981 - July 1988
Safety Director, Organized and developed a safety department and program for worldwide operations. Organized, implemented and administered company's drug testing program 1982 – 1988

Eastman Whipstock Anchorage, Alaska, June 1979 – Feb. 1981
Oklahoma City, Dec. 1978 - June 1979

Dowell Schlumberger Netherlands, Feb 1978-Nov. 1978
Italy, Jan. 1977 – Jan. 1978

Sedco, Inc. Iran, Sept. 1974 - Oct. 1976

Published Works:

Drug & Alcohol Testing; 39th Annual Marriage Dissolution Institute; State Bar of Texas; 2016

Drug Testing and Blood Draws: Do You Dare Re-test the State's Evidence; State Bar of Texas; Sex, Drugs & Surveillance Conference; January 2014

Innovations in Substance Abuse Testing (Myths of Drug Testing), State Bar of Texas, 36th Annual Advanced Family Law Course, 2010; Updated for 35th Marriage Dissolution Institute, 2012 and 38th Annual Advance Family Law Course, 2012, State Bar of Texas, Sex, Drugs & Surveillance Conference, January 2013

Is Your Client Urophobic, A Druggie, or a Liar; UT School of Law; 11th Annual Family Law on the Front Lines; 2011

The 2 Steps to the 12 Steps: How to Determine if a Parent is a Druggie, a Drunk or Just Dry;

Co-Authors Christy Bradshaw Schmidt and Diana S. Friedman; UT School of Law, 2010 Parent-Child Relationships: Critical Thinking for Critical Issues; 2010

Substance Abuse Cases, What Every Attorney Should Know About Drug Testing and Alcohol Testing; Co-Author Beth E. Maulsby, UT School of Law, 9th Annual Family Law on The Front Lines, 2009

Speaking Seminars/Lectures/Presentations:

NTXFIT; Use, Misuse and Abuse: Differentiating Drug & Alcohol Issues with Family Court Clients; 2016

Family Law Seminar, TX A&M Univ. School of Law, Legal Aid of NW Texas EJV Program, 2016

TX Dept. of Family & Protective Services, Attorney Conference; Austin; Myths & Facts of Drug Testing; 2015

5th Annual: Child Welfare Conference; Juvenile Justice Committee of the Dallas Bar Association; Innovations in Substance Abuse Testing. 2014

Sex, Drugs & Surveillance Conference, State Bar of Texas, "Drug Testing and Blood Draws: Do You Dare Re-test the State's Evidence." 2014

Dallas CASA - 2013

Texas Academy of Family Law Specialists (TAFLS), Trial Institute, A Rocky Mountain High, Colorado Springs, Colorado, 2013

State Bar of Texas, "Sex, Drugs and Surveillance" 2013

Williamson County Bar Association CLE, 2012

38th Annual Advanced Family Law Course, "Drug Testing-Use and Defense - 2012

Legal Aid of NW Texas EJV Program, Texas Wesleyan Univ. School of Law, Family Law Seminar, "Drug Testing: Cough Medicine Doesn't Test as Meth"- 2012

34th, 35th & 39th Annual Marriage Dissolution Inst., State Bar of Texas,

"Making or Breaking Your Case: The Role of Forensic Evidence 2011"

"Drug Testing/The Impaired Parent," 2012

"Drug & Alcohol Testing" 2016

27th Annual Conference, Texas Assoc. of Domestic Relations Offices (TADRO) & Assoc. of Family Conciliatory Courts, TX Chapter (AFCCTX) - 2011

City Square Legal Action Works Center, "Six Things You Need To Know That Are Not Found In The Family Code", "When Positive is Negative: Substance Abuse Issues in Your Case" - 2011

American Bar Association, Teleconference, "Defending the Drug User, P.S. Your Client is a Liar" - 2010

Texarkana Young Lawyers Association - 2010

21st Annual Texas CASA Conference - 2010

36th Annual Advanced Family Law Course, Innovations In Substance Abuse Testing - 2010

Ad Litem and Amicus Attorney Court Appointments: Inside and Outside the Box Training - 2010

Austin Bar, Family Law Austin Style - 2010

Collin and Denton County Bench Bars– 2010, 2011, 2012

UT School of Law, Parent-Child Relationship: Critical Thinking for Critical Issues - 2010

SMU Dedman School of Law, Caruth Child Advocacy 2009 - 2016

UT School of Law, 9th & 11th Annual Family Law on The Front Lines – 2009, 2011

Fifth Administrative Judicial Regional Conference - 2009

Texas Center for the Judiciary/Family Track - 2009

Dallas Area Paralegal Association - 2008

Texas Center for the Judiciary/Assoc. Judges Conference - 2008

Dallas Bar Association, Family Law Section – 2003, 2007, 2011

Denton Bar Association - 2007

Annette Stewart Inn of Court – 2007

Family Court Services, Annual Meeting, 2007

CPS Training Academy – 2005 - 2010

Court Appointed Special Advocates (CASA) Rockwall- 2005, 2007, 2009, 2012, 2014, 2016

Chemical Awareness Resources & Education (CARE) Board of Directors – 2001, 2006, 2011

UT Southwest Medical Center, Texas Assoc. of Addiction Professionals, 2000

Plano Family Bar Association - 1999

Testimony Experience:

2000 plus cases related to drug & alcohol testing

Qualified as an “Expert in Drug Testing” (Daubert challenge) in many cases

Qualified Safety Expert, Drilling Industry, Fifth Circuit, US District Court, Eastern District of LA.

Training & Other Related Qualifications:

ST System & ETS Operator Training, SYVA, Advanced Drug Testing Lab Technician

FAA, Drug Testing Consortium Manager

Breathe Alcohol Technician (BAT), Intoximeter, Inc. DOT, Certified

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DRUG AND ALCOHOL TESTING

ABSTRACT

The objectives of this paper are to provide an overview of the current means of drug testing explaining the different types of samples used today, the advantages of each including tips and tricks you need to know before you go to court. The information is intended to explain the limitations, nuances and applications in laymen's terminology. It will explain the truths about drug and alcohol testing. Illegal drugs are here to stay but many users are changing to Designer Drugs and/or prescription drugs knowing their previous illegal drug of choice is easily detected and the new drug of choice may not be included in the drug panel tested.

INTRODUCTION

Since most drug users are not always truthful (AKA liars), testing then becomes a valuable truth serum. A person that states under oath that he or she will be negative on any drug test or used drugs only one time usually testifies truthfully of his or her actual drug history after the drug test results are revealed at the next hearing. Still today, judges and attorneys are often uninformed regarding the advantages and disadvantages of the various testing methods and myths which results in drug and alcohol testing that is inappropriate to the specific circumstances of the case. Hopefully, the following will provides valuable information to help choose the right test for the circumstances.

All tests referenced in this paper are forensic tests therefore HIPAA regulations do not apply. Forensic means we are looking for the evidence of the drug and drug metabolites in the specimen to be tested. HIPAA regulations apply to medical or monitored drug tests.

URINE TESTING

Urine is the most common sample type used to detect drugs. It can test a broader range of legal and illegal drugs compared to other types of samples. The detection window is usually a few days to a week with some prescriptions up to several weeks. Marijuana has a greater window of detection up to 30 to 40 days for chronic users and occasionally longer. It is the best type of test to detect very recent drug use and for random testing.

Urine samples go through an initial screening test and a confirmation test if the initial screen is positive. The immunoassay tests used to perform initial drug screening are designed to detect a wide range of chemically similar compounds that react with the antibodies which are at the core of the chemistry making up the tests. In contrast; GC/MS, and LC/MS confirmatory testing methodology detects specific metabolites that provide identification and quantification of a specific drug which the initial screen does not. For example, marijuana has approximately 5 metabolites that the immunoassay will identify. The total nanogram level is the sum of all 5 metabolites. The confirmation methodology (GC/MS, LC/MS/MS, etc.) identifies only one of the 5 metabolites and reports the sum of only that metabolite. The confirmation quantitation level is reported on the lab report and never the immunoassay screening level. This is also a good example of why the screen and confirmation cutoff levels are usually different.

The most common method of sample manipulation to avoid a positive drug screen is getting the urine creatinine below 20 mg/mL. Creatinine is the normal metabolic waste in urine. The level of creatinine is the primary means to determine if a donor is attempting to alter or manipulate his or her test results below the cutoff level. Because the creatinine is excreted from the body at a constant rate, there are expected values for creatinine in normal human urine. Normal creatinine levels in urine range between 100 and 200 mg/dL. The creatinine level is considered low or abnormal if it is between 6 and 20 mg/mL. The sample is considered substituted if the creatinine value is 5 mg/dL or less meaning the sample is not consistent with human urine. To lower the creatinine level, the donor has poured something into the urine such as water or consumed excessive liquids to get the creatinine level below 20 mg/dL. This alters or cuts the concentration of a consumed drug by 10 to 24 times usually putting the drug level below the cutoff level. The result report is a false-negative test. To eliminate this problem, order the donor to provide a witnessed collection. This means a collector of the same gender actually observes the sample going into the collection cup. Also, allow a person a maximum of 3 hours or less from notification to taking a urine test. Exceptions exist, such as a doctor performing surgery or a lawyer in the middle of a trial, but never allow a person to test the next day after notification.

One study addressed how much water is needed to be consumed to have a negative urine test. On day one the subjects ingested one marijuana cigarette. On day two the subjects consumed one gallon of water with one quart given every hour. After the second quart, most subjects had a negative urine test. On day three the subjects ingested 40 mg of cocaine. On day four the subjects consumed one gallon of water with one quart given every hour. Again, after the second quart, most subjects had a negative urine test. The study did not state the creatinine level but most tests were giving a false-negative after two quarts of water.

Amitava Dasgupta states in his book published in 2012, "Resolving Erroneous Reports in Toxicology and Therapeutic Drug Monitoring, A Comprehensive Guide" that "A lower cut-off concentration may also be useful to identify illicit drug users because they often drink a large amount of fluid prior to drug testing to avoid a positive test.

Usually a creatinine concentration below 20 mg/dL **or** a specific gravity below 1.003 should be considered an indication of diluted urine.”

The urine test can only detect whether or not a specific drug or drug metabolite is present at the time the test is performed. Many factors unique to the individual being tested determine the actual half-life of the particular drug including such variables as age, metabolic rate, overall health, body hydration, amount of drug consumed over what period of time, strength of the drug, etc. Therefore, no conclusions can be drawn as to when a particular drug was taken or how much was consumed. Only assumptions can be made.

In reality or normal conditions found in a car, home or concert, urine concentrations above the cutoff sensitivity level of the test, or a positive result, are not possible by exposure to second hand smoke. This is not a valid claim for any smokable form of drug.

A. What To Do When You Receive Urine Drug Test Results

1. Once the results are received, ALWAYS look at the creatinine levels.
2. If the creatinine level is not listed on the report, ask for it.
3. If the person being tested is female, a normal creatinine level is 100 to 150 mg/dl.
4. If the person being tested is male, a normal creatinine level is 150 to 200 mg/ml.
5. If the creatinine level of the person being tested, whether male or female is below 20, you should be suspicious of dilution and investigate now.
6. If the creatinine level is below 20, it usually means an intentional attempt has been made to get the drug below the cutoff level resulting in a false negative.
7. Combining specific gravity and creatinine levels to determine if a urine sample is diluted/invalid only applies to Federal drug testing or if the Judge specifically states in the order that Federal drug testing regulations apply. I do NOT recommend putting this in any Court Order, MSA, Rule 11, etc.

B. Tips

1. A person who has a creatinine level below 20 has likely ingested large amounts of fluid in an attempt to alter the urine drug test results.
2. A few medical conditions exist that may cause a person to have a creatinine level below 20 for a short period of time.
3. Ask the Court to order the party being tested to not consume large amounts of fluids prior to testing.
4. Put in the Order that any diluted specimen, after the first one with an explanation to the donor what causes dilution, will be deemed the same as a positive.
5. Judges will order, and attorneys will request, a urine test during the hearing allowing 8, 12 or 24 hours to have the test completed. The Judge should order the person to proceed immediately to the collection site and never longer than 3 hours.
6. All random urine testing should require that the person appear at the testing facility within 3 hours for the most accurate test results.
7. Random testing should be in intervals of 30 days with “up to 3 random tests” within the 30 days.
8. After the person has consistent negative tests for a period of months, the number of tests per month can be reduced to “up to 2 random tests” per month.
9. NEVER write an Order with ONE (1) random test per month. After the one test is conducted, the donor knows he/she has the rest of the month to use the drug of choice without fear of a test before the end of the month.
10. The opposing party not being drug tested should have in the final Decree, MSA, Rule 11, etc. the right to request a random test one time a month in addition to all other testing ordered.

HAIR TESTING

It is **NOT** a “hair follicle test.” The hair is cut as close as possible to the scalp with the follicle remaining under the scalp. “Hair test” accurately describes the test being performed.

Drugs are captured in the core of the hair as blood passes through the hair follicle. The standard test from head hair covers a 90 day window of drug use. The most recent two weeks is eliminated since the hair is growing from follicle to above the scalp plus the thickness of the scissors. During collection of the sample, the hair is cut as close as possible to the scalp or body. The standard head test includes the first 1.5 inches closest to the root end representing a 90 day window. Degradation starts to occur beyond 1.5 inches preventing an accurate test, or picture, of what actually occurred regarding drug use. It takes approximately 150 strands of hair to have sufficient quantity to perform the test

not 1 or 2 strands as many believe. Body hair may be used when head hair is too short or non-existing. The window of detection for body hair can be as long as 12 months but can be much shorter as explained in the next paragraph. Body hair grows for 7 to 12 months and then becomes dormant.

Once a person shaves his or her body or head hair, the history of drug use is gone. The individual will delay taking the hair test for as long as possible to let the hair grow back while abstaining from drugs. The hair grows for three to four months and then the person takes the test. Of course the test results are negative. But the misleading implication is a statement usually on all hair test reports that the window of detection is one year. The lab has no way of knowing that the hair growth is only 3-4 months. The lawyer for this person will then go into court stating that the client has not used drugs for a year when in fact it is not true.

Hair testing is accurate but manipulation to alter the test results exist. Shampoos designed specifically to remove the drug from the core of the hair can be bought at head shops and the internet. Some of these products reduce the drug levels, some do not. Even bleaching or coloring the hair has an effect of reducing the levels of the drug in the hair.

A man volunteered to test one of the shampoo products at my office in 90s. Each time his cocaine level dropped by 50%. After the 3rd use, his scalp was burning to point of not able to use it again. Hence, the appropriate name for the shampoo applies..... After Burner. Many of the shampoos designed to remove drugs from the hair actually work.

Drugs are incorporated into hair by 3 main routes. First is environmental exposure. If an individual is exposed to drug smoke or particulate matter, the drug will physically transfer the parent drug to the hair and bind to it. Second is from the sweat and oil of the scalp. The sweat and oil from the scalp contain drug and drug metabolites. As these fluids bathe the hair shaft, they deposit the drug onto the hair where it binds and is available for analysis. Third is from the blood. As the blood travels through the follicle, it deposits drug and drug metabolites into the core of the hair.

It takes approximately 4 – 5 days from the time of drug use for the affected hair to grow above the scalp and for the drug to start to show up in a person's hair. The thickness of the scissors used to cut the hair as close as possible to the scalp is a factor. Adding this to the hair growth rate, the test results will not indicate any drug use in approximately the first two (2) weeks starting with the date the hair was collected. In other words, your window of detection starts two (2) weeks before the hair was collected.

Body hair growth rates are slower and cannot be utilized in the same manner as head hair to determine a timeframe of drug use. Body hair grows for 7 to 12 months and then becomes dormant. It falls out and new hair begins to grow. Although the lab report may state approximately 12 month window of detection, it is by no means a 12 month test in all cases.

Once the drug and drug metabolites are incorporated into hair, they begin to slowly leach out due to normal daily hygiene and exposure to the elements. Head hair grows an average of 0.5 inches per month. After approximately 3 months, most drugs begin to leach out which will not represent an accurate indication of drug use. As such, a standard head hair test covers a period of approximately 90 days or 3 months.

Hair collected from a brush can be used but a timeframe of use cannot be determined. Normally the test results from a brush are not admissible in court.

A reputable lab will always perform a confirmation test of all positive hair (or any other type of sample) results found in the initial screen. The confirmation usually utilizes GC/MS, GC/MS/MS or LC/MS/MS for all specimens that screen positive in the initial test.

All hair samples are usually washed extensively to remove external contamination before screening begins. The lab tests for the metabolite of the parent drug to rule out environmental contamination or exposure. For example, to rule out the possibility of external contamination for marijuana, the labs detect only the metabolite (THC-COOH) which is only produced by the body and cannot be an environmental contaminant. If the ratio of the wash solution is greater than 10% of the confirmation result, the lab will consider this sample still contaminated. If the ratio of the wash solution is less than 10% of the confirmation result, the lab will consider the sample as positive.

A lab test is available to determine if a child has been exposed to the smoke from illegal drug use. Meaning if only the parent drug is found and no metabolites, the report will state positive for the parent drug only. This test can be used to determine if a child or infant has been exposed to illegal drug use by the parent or others. It is important not to wash the child's hair after exposure before collecting the sample to be tested. The test will indicate the presence of the parent drug and not the metabolite proving the child is in the environment where drugs are being used.

It takes multiple uses to test positive in hair from normal drug use. A one-time use of the average amount of drug will not be above the cutoff level. A person claiming he or she used one time is not a valid claim for a positive test results in most cases. The exception may be a person on a continuous binge for several days and that person claims that as a one-time use.

A. Head Hair

1. Has a longer detection period than urinalysis drug testing.

2. Can detect drug use for up to 90 days.
3. Typically takes from 100 to 150 strands of hair for a hair test sample.
4. The part of the hair that is tested is 1.5 inches of hair closest to the scalp.
5. Marijuana is difficult, but not impossible, to detect in a hair test.
6. The test will not detect drugs consumed within approximately the two weeks prior to when the nail sample is collected.

B. Body Hair

1. Has a longer detection period than urinalysis drug testing and head hair testing.
2. Can detect drug use for 7 to 12 months if not shaved and regrown in the previous few months.
3. Drugs can be detected for a longer time period in body hair than head hair because body hair grows for 7 to 12 months, becomes dormant and then falls out several months later.
4. The test will not detect drugs consumed within the two to three weeks prior to the collection of the hair.

C. TIPS

1. Ask the Court for an injunction early in the case to prevent the party from cutting, altering the hair by any means, coloring or bleaching the body or head hair. These could significantly impact the levels of drug(s) detected or not even found.
2. Any future testing should be done in 90 day intervals.
3. There are shampoos and other products on the market that are proven to reduce the level of drugs detected in hair drug tests.
4. If the use of shampoos or other products is suspected another method of testing is recommended such as nails.
5. If a person has stopped using the drug, the level of the drug being detected should be decreasing with each additional test if testing occurs at shorter intervals than the window of detection.
6. If the level increases in subsequent tests, then the drug is likely still being consumed.

NAIL TESTING

Nail testing is relatively new in drug testing but is rapidly becoming the preferred test over hair. The detection of a drug in nails is accurate just as it in hair. The window of detection is 3 to 5 months for fingers and 8 to 12 months for toenails.

Like hair, fingernails and toenails are composed of a hard protein called keratin. Drugs are incorporated into nails from the blood stream and remain locked in the nail as it grows. Nails grow in both length and thickness. Drugs enter the nail from the base (cuticle end) as the keratin is formed and via the nail bed that extends under the full length of nail.

The distal end or free end of the fingernails and toenails are clipped for testing. The method of screening for drug use in nail tests is the same as hair, immunoassay. The nail is put in a chemical solution to remove external contaminants and then liquefied. All drugs found in the initial screen are confirmed by one of the methods previously explained. Drugs can be identified in nail clippings 2-4 weeks following ingestion.

There is one product on the market that purports to ensure that the drug abusing individual passes the fingernail test. It has not proven to be effective at this time.

If a person handles cocaine on a regular basis, it is possible for the person to be positive for parent cocaine. Nails are porous allowing the cocaine to absorb into the nail. It is important to remember that the nail test results will usually be positive for the parent drug cocaine at a very low level and NOT the metabolites of cocaine which are norcocaine and benzoylecgonine.

If the metabolite cocaethylene (alcohol) is positive on a nail or hair test, it proves that the person consumed alcohol at the same time as the cocaine.

A. Fingernail

1. The person being testing must have sufficient nail length for the test to be completed.
2. All acrylic nails and fingernail polish must be removed from the nails prior to testing.
3. Fingernail testing is done by clipping off the white end of the fingernail.

4. Scraping the surface of the nail with a razor blade to obtain a sample for testing is no longer recommended or preferred plus a razor blade is a medical device, technically putting the test under HIPAA, instead of forensics.
5. Fingernail testing has a longer detection period than urinalysis testing.
6. Drugs can be detected in fingernails for approximately 3 to 5 months.
7. If a person tests positive on a fingernail test, additional testing should be conducted every 90 days to monitor the levels.
8. If a person has stopped using the drug, the level of the drug being detected should be decreasing with each additional test if testing occurs at shorter intervals than the window of detection.
9. If the level increases in subsequent tests, then the drug is likely still being consumed.
10. Fingernail testing will not detect drugs consumed within approximately the two weeks prior to when the nail sample is collected.

B. Toenail

1. The person being testing must have sufficient nail length for the test to be completed.
2. All acrylic nails and fingernail polish must be removed from the nails prior to testing.
3. Toenails grow approximately 4 times slower than fingernails. You will capture drug use farther back in time than with fingernail.
4. Testing is done by clipping the end of the finger or toe nails.
5. Toenail testing has a longer detection period than urinalysis and fingernail testing.
6. Drugs can be detected in toenails for approximately 8 to 12 months.
7. If a person tests positive on a toenail test, additional testing should be conducted every 90 days to monitor the levels.
8. If a person has stopped using, the level of the drug being detected in toenails should be decreasing with each additional test if testing occurs at shorter intervals than the window of detection.
9. If the level increases in subsequent tests, then the drug is likely still being consumed.
10. Toenail testing will not detect drugs consumed within approximately the two to three weeks prior to when the nail sample is collected.

C. Tips

1. If fingernail or toenail testing will be requested, seek an order from the Court that the person being testing not cut his or her nails or have acrylic or other substances placed on the nails.
2. If acrylic nails or other substances are on the nails, seek an order from the Court that the substance be removed immediately and not re-applied until all testing has been completed.
3. It is also recommended to seek that the Court take judicial notice or a record of the length of the fingernails or toenails, in open court, at the hearing when the testing is being sought.
4. Finger or toenail testing is the preferred type of sample over hair when deciding which test to choose since hair results can be manipulated and altered resulting in a false negative test for a drug user.

ALCOHOL TESTS

URINE

The presence of EtG and EtS in urine indicates that ethanol was ingested. Ethyl Glucuronide (EtG) and Ethyl Sulfate (EtS) are a direct metabolite of ethanol/ethyl alcohol. EtG/EtS has emerged as the marker of choice for alcohol due to the advances in technologies. Its presence in urine may be used to detect recent alcohol consumption, even after ethanol is no longer measurable using the older methods of testing. The presence of EtG/EtS in urine is a definitive indicator that alcohol was ingested. Other types of alcohol, such as stearyl, acetyl and dodecanol, metabolizes differently and will not cause a positive result on an EtG/EtS test.

The EtG/EtS test became known as the “80-hour test” for detecting any amount of consumed ethyl alcohol. This is a misnomer. It is true that EtG can be detected in chronic drinkers for 80 hours or even up to 5 days but not from a person that only consumed 2 or 3 drinks. During the period of chronic use, the EtG level can exceed 100,000 ng/mL. A level of 1.25 million was found in one sample. Two primary factors to determine the window of detection is based on volume of alcohol consumed and the time between each drink. A person that consumes 3 drinks will only have a detectable level of EtG for approximately 20 to 24 hours. The level peaks at approximately 9 hours with an EtG level around 15,000 ng/mL.

EtG/EtS is only detected in urine when alcohol is consumed. This is important since it is possible to have alcohol in urine without drinking. Alcohol in urine without drinking is due to the production of ethanol in vitro. Ethanol in vitro is spontaneously produced in the bladder or the specimen container itself, due to fermentation of urine samples containing sugars (diabetes) and yeast or bacteria. Since the ethanol produced is not metabolized by the liver, EtG/EtS will not be produced and will therefore not be detected in a urine containing alcohol as a result of fermentation.

Tests show that “incidental exposure” to the chronic use of food products (vanilla extract), hygiene products, mouthwash, or OTC medications (cough syrups) can produce EtG/EtS concentrations in excess of 100 ng/mL. However, if EtG is detected in excess of 250 ng/mL, then this is very strong evidence that beverage alcohol was consumed. Most labs will allow you to select 100, 250 or 500 ng/mL as the cutoff level. It is strongly recommended that only the 500 ng/mL level be used. This avoids and eliminates any claim by the donor that the positive EtG test is a result of incidental or unintentional exposure. All testing performed on products or foods classified as incidental or unintentional exposure has never produced a positive EtG level greater than 500 ng/mL.

The benefits of an EtG and EtS urine test indicates recent usage more accurately and for a longer period of time than standard testing. No false positives because EtG and EtS are not found in non-drinkers. It is ideal for zero tolerance and abstinence situations. It is a strong indicator of alcohol ingestion within the previous 3 to 5 days. EtG and EtS is only evident when alcohol is consumed and is not produced because of fermentation.

A. Tips

1. EtG testing in urine, commonly known as the 80-hour test, can only detect alcohol consumption based on the amount of alcohol consumed. Chronic consumption of alcohol can be detected for up to 3 to 5 days. Consumption of 3 drinks can on be detected for approximately 20 hours.
2. The volume of alcohol consumed and the length of time between each drink impacts the numbers of hours that an EtG test can detect alcohol consumption.
3. Detects recent alcohol consumption more accurately and for a longer period of time than the old urine test.
4. EtG is now the standard alcohol test when using urine.
5. There are no false positives.
6. EtG is not found in non-drinkers.
7. It is ideal for zero tolerance and abstinence situations.
8. EtG is not produced as a result of fermentation.

HAIR & NAILS

EtG alcohol testing performed in hair and nails indicates binge or chronic drinking occurring in the previous 3 months. Bias does exist when comparing male and female hair. An Italian study reported that bleaching the hair completely destroys EtG. Another study with water from a commercial pool was performed to determine the effects of chlorine. Hair exposed to the pool water found that two, 20 minute exposures reduced EtG by approximately 20%. It was found that this did not have any effect to alter or reduce the drug levels in nails. Based on these facts alone, it is recommended that only nails be used to test for EtG and EtS, not hair.

This test will not pick up casual drinking. The individual must be a chronic/binge drinker to get above the cutoff level. Binge drinking is normally defined as 4 or more drinks within a two hour period for females and 5 or more drinks for males. It also requires a total consumption of at least 20 or more drinks per month for females and 40 or more for males.

B. Tips

1. EtG alcohol testing is performed in hair and nails.
2. The window of detection is approximately 3 months for head/body hair and finger/toe nails.
3. One limitation is that hair exposed to pool water containing chlorine can reduce the level of EtG by approximately 20% after each time.
4. Stronger chemicals applied to the hair can completely destroy the EtG, resulting in a false negative.
5. It is recommended that only nails be used to test for EtG and not hair.
6. A positive EtG in hair or nails results from chronic/binge episodes during the 3 month window of detection.

BLOOD

Phosphatidylethanol (PEth) is a relatively new test for the drug testing industry to detect moderate to chronic alcohol consumption. Five blood spots are collected from the tip of a finger eliminating the need for a blood draw. It is a fast and convenient way to test for alcohol. The test can differentiate between incidental exposure (hand sanitizer use, etc.) and the consumption of alcohol. The window of detection is 2-3 weeks. The dried blood spot collection is performed by the individual being tested (the donor) and a staff member. A PEth test will be positive after consuming approximately 200 grams of alcohol in a binge/chronic episode or moderate consumption of alcohol for 6-7 consecutive days. This is a test that will cover the window of detection gap between a urine EtG test and a nail EtG test.

C. TIPS

1. Phosphatidylethanol (PEth) is a direct alcohol biomarker.
2. The window of detection is up to 2-3 weeks.
3. Five blood spots collected from the fingertip.
4. A positive is from consuming alcohol chronically or from binge drinking.
5. Donor cannot alter test results.

BREATHE TESTING

SOBERLINK is a handheld breath analyzer that remotely monitors a person's blood alcohol content (BAC). Within seconds and from any location, a subject's BAC, digital photograph of the person, GPS location and the time of the report are compiled and sent to a secure monitoring website and within two minutes the BAC result is transmitted by text and/or email to the ex-spouse, attorney or any party designated to receive the test results. The mobile device is practical, convenient and eliminates the need for the person to travel to a drug testing facility to give a urine sample and then wait 2-3 days before the test results are back from the lab. The device is compact and travels easily with the individual anywhere in the US and overseas. It allows the individual to prove compliance and abstinence while maintaining their dignity and quality of life. It also provides proof when the exchange of the children occurs that the receiving parent of the children is alcohol free. If the report indicates alcohol consumption, then the exchange of the children does not occur. A monthly or weekly report can be submitted to the attorneys and court.

When a person has been ordered to use a Soberlink device, certain issues must be decided before obtaining the device. The following are recommendations for setting up an optimal program for the user and all parties receiving the test results to detect the use of alcohol and abstinence. These recommendations may not fit each case but modifications can be made to accommodate specific circumstances.

The times to take the first and last scheduled test of the day should be established. Test times should allow the person 8 hours of sleep without getting up in the middle of the night to take a test. After the first time to take the test is determined, a test should be taken at that time and then every three hours until the last test time of the day while in possession.

Taking a test every 3 hours is the optimum time between tests. It is possible to consume 2 average alcoholic drinks immediately after taking a test and be negative 3 hours later for the next test. If a person consumes more alcohol between tests, he or she will have a positive test.

On the day of taking possession, a scheduled test should occur within one hour of the exchange. If the test is negative, the exchange takes place. If it is positive, the exchange does not take place. After the exchange occurs, a test every 3 hours begins and continues until the child is returned.

The ex-spouse should have the option to request one random test at any time during possession when suspicion occurs of alcohol or drug consumption or the person is not taking the scheduled Soberlink test as required. The ex-spouse should send an email and/or text requesting the test. The requested test may be a Soberlink test or to go to the drug testing facility to take a urine EtG test, urine drug test and/or PEth blood alcohol test.

The ex-spouse should also have the right to request one random drug test per month for alcohol and/or drugs. The ex-spouse can select the type of test and test panel using urine, nails, blood and/or hair.

If the person is ordered to abstain from alcohol and continue testing when not in possession of the child, then the frequency can be reduced to a minimum of 4 times per day. If any test is missed, then the ex-spouse has the right to request a test as explained above when in possession.

CONCLUSION

In my 35 years in the field of drug testing, I have heard a common thread among lawyers. Never ask a question in court without knowing the answer first, if possible. The same is true with drug testing. Too many lawyers do not properly prepare for court when the case involves illegal or prescription drugs. Know your drug testing provider personally to ensure they have the knowledge and experience to know the answers to help assist you in preparation for

court or post hearing questions when you were not prepared. If the provider cannot adequately assist, find a provider that can. Drug testing is not as simple as it appears. The nuances and variables are many. A solid understanding is needed to know exactly what a drug test means or does not mean.

APPENDIX A

COMMON LAB PANELS

5-PANEL

- a) Cocaine
- b) Amphetamines (includes amphetamines, methamphetamines, MDMA)
- c) Opiates (includes morphine, codeine, heroin..... extended panel for other Rx can be requested)
- d) PCP
- e) Marijuana

7- PANEL

- a) Cocaine
- b) Amphetamines
- c) Opiates
- d) PCP
- e) Marijuana
- f) Benzodiazepines
- g) Barbiturates

9-PANEL

- a) Cocaine
- b) Amphetamines
- c) Opiates
- d) PCP
- e) Marijuana
- f) Benzodiazepines
- g) Barbiturates
- h) Methadone
- i) Propoxyphene

12- PANEL

- a) Cocaine
- b) Amphetamines
- c) Opiates
- d) PCP
- e) Marijuana
- f) Benzodiazepines
- g) Barbiturates
- h) Methadone
- i) Propoxyphene
- j) Meperidine
- k) Tramadol
- l) Oxycodone

14-PANEL

- a) Cocaine
- b) Amphetamines
- c) Opiates
- d) PCP
- e) Marijuana
- f) Benzodiazepines
- g) Barbiturates
- h) Methadone
- i) Propoxyphene
- j) Meperidine
- k) Tramadol
- l) Oxycodone
- m) Fentanyl
- n) Sufentanil

17-PANEL

- a) Cocaine
- b) Amphetamines
- c) Opiates
- d) PCP
- e) Marijuana
- f) Benzodiazepines
- g) Barbiturates
- h) Methadone
- i) Propoxyphene
- j) Meperidine
- k) Tramadol
- l) Oxycodone
- m) Fentanyl
- n) Sufentanil
- o) Ketamine
- p) Buprenorphine
- q) Zolpidem

APPENDIX B

EXAMPLE OF AGREED ORDER FOR DRUG TESTING

On this date, the Court heard Respondent's motion for drug testing.

Appearances

Petitioner, **DIANE J.**, has made a general appearance and has agreed to the terms of this order to the extent permitted by law, as evidenced by Petitioner's signature and the signature of Petitioner's attorney, _____, below.

Respondent, **JACK P.**, has made a general appearance and has agreed to the terms of this order to the extent permitted by law as evidenced by Respondent's signature and the signature of Respondent's attorney, _____, below.

Jurisdiction

The Court, after examining the record and the agreement of the parties and hearing the evidence and argument of counsel, finds that all necessary prerequisites of the law have been legally satisfied and that the Court has jurisdiction of this case and of all the parties.

Drug and Alcohol Testing of Diane J.

IT IS ORDERED that **DIANE J.**, shall submit to all randomly requested urine drug test, urine EtG alcohol test, nail drug test and/or hair drug test requested as provided herein below.

IT IS FURTHER ORDERED that all of the aforementioned random tests shall be facilitated by _____.

IT IS FURTHER ORDERED that the aforementioned random testing shall be coordinated by _____ and will notify **DIANE J.** of the time and place of said testing as described herein. IT IS ORDERED that **DIANE J.** shall submit to the random testing as directed by the facilitator at _____.

IT IS ORDERED that **JACK P.** shall be solely responsible for any and all costs associated with the aforementioned testing so long as the test is negative. In the event that **DIANE J.** tests positive for alcohol and/or drugs as described herein, IT IS ORDERED that **DIANE J.** shall reimburse **JACK P.** for the cost of the test(s) within 48 hours of receiving the positive test result(s). The parties agree and IT IS ORDERED that **DIANE J.** failure to submit to testing as described herein and/or failure to appear within the standard protocol of three (3) hours of notification for a test described herein and/or provides a diluted urine sample as determined by _____, then it shall be treated as producing a positive test result for alcohol and/or illegal drugs.

The parties agree and IT IS ORDERED that this order serves as a release to allow the testing facility to release any and all testing results of **DIANE J.** to **JACK P.**, the Court and the parties' respective attorneys.

The parties agree and IT IS ORDERED that testing shall occur for the next twelve (12) months beginning the day after the date this order is signed by the court. IT IS ORDERED that hair or nail tests (will/can) be conducted up to four (4) times during the twelve (12) month period. IT IS ALSO ORDERED that urine tests for drugs and EtG alcohol (will/can) be conducted up to two (2) times per month during the twelve month period. The individual to be tested has three (3) hours to arrive at the testing facility upon notification of said testing. IT IS FURTHER ORDERED that all urine samples will be witnessed collections.

The parties agree and IT IS ORDERED that the individual to be tested must not color, dye, bleach or use any shampoos or products on the hair that are designed to alter the results of a hair test. IT IS ALSO ORDERED that head hair must remain a minimum of 1.5 inches and body hair must never be trimmed or shaved during the period of testing. IT IS FURTHER ORDERED that fingernails and toenails must remain a length approved by the testing facility for the purpose of nail testing. Artificial nails are not allowed during the period of testing or must be removed prior to arriving at the testing facility for a nail test.

The parties agree and IT IS ORDERED that the individual to be tested is responsible for contacting the testing facility to provide all required information by the facility to conduct random testing in accordance with the court order. IT IS ALSO ORDERED that a valid photographic identification will be provided to the testing facility each time testing occurs. Current phone numbers must be provided and any changing of phone numbers provided to the facility within twenty four (24) hours.

The parties agree and IT IS ORDERED that the individual to be tested is responsible for notifying the testing facility in writing of any travel 24 hours prior to departure. The departure and return dates must be included in the written notification. IT IS ALSO ORDERED that if the travel is an extended period of time, the individual must take all necessary supplies to be tested while traveling. The testing facility will provide necessary supplies and locate a collection facility in the city of travel.

Supervised Possession

The parties agree and IT IS ORDERED that in the event that **DIANE J.** test positive for alcohol or drugs or fails to comply with the terms of this order, possession of the children will revert to supervised visitation until a hearing or agreement of the parties is received.

CONCLUSION

As simple as the term “Drug Testing” sounds, it is not. A negative drug test does not mean the donor is not a drug user or the test is inaccurate. There is an explanation for a negative results when expected to be positive. Just like a math equation, if part of the formula is missing, the correct answer is impossible to find. Same with a negative drug test of a known user. After obtaining as many of the facts, the missing parts of the formula begin to surface to answer why the test is negative. An expert in drug testing should be able to solve the missing part of the formula.

On the other hand, the donor is positive for an illegal substance and adamantly denies any drug use to the point the attorney is also convinced that drugs use has not occurred. The typical phone call comes in from the lawyer. “Your test is wrong! I have known my client for years and he/she is not a cocaine (pick any drug) user. What is wrong with your test?” The answer is very simple. “Your client is a liar!”

Drug testing is not as simple as it appears on the surface. The nuances and variables are many and must be known and understood to know exactly what a drug test means or does not mean.