DRUG TESTING 101
Methods & Myths
TOPICS OF DISCUSSION

- Sample Media Types and Detection Times
- General Drug Information/New Drug Trends

- Beating a Drug Test: Is it Possible?
  - Adulteration/Substitution
  - Dilution/Masking

- Incidental Exposure/Examining the Excuses
SAMPLE MEDIA / DETECTION
SAMPLE MEDIA

Various sample media types available to implement a drug abuse monitoring program

- Hair, Oral Fluid, and Urine - most common
- Blood and Sweat - uncommon

Each media type has its advantages/disadvantages
HAIR FOLLICLE

Detection times are: Head hair: 14-90 days prior  
Body hair: 30-365 days prior

- **Pros**
  - Effective baseline test – Unknown drug use history
  - Adulteration difficult

- **Cons**
  - Not useful for routine monitoring since the drug use cannot be pinpointed
  - Limited test menu
  - Head hair may not be available/ Potential issue with treated hair
  - May not pick up a single drug use
ORAL FLUID

Detection time is 12-36 hours/ 6-8 hours for THC

- Pros
  - Samples may be collected in the field and does not require same gender collection.
  - If its collected correctly it is difficult to adulterate
  - Is recommended for clients that may be on certain medications

- Cons
  - Short detection period
  - Ineffective for THC and EtG Detection
  - Moderate cost
URINE

Detection time is 24-72 hours

- Pros
  - Ability to split the sample for additional testing
  - Industry standard
  - Long history of legal acceptance
  - Broad cost effective menu

- Cons
  - Requires visually observed collection to avoid adulteration
  - Potential for specimen dilution/adulteration in vivo and in vitro
## DETECTION TYPES FOR EACH MEDIA

<table>
<thead>
<tr>
<th>Media</th>
<th>Approximate Detection Period</th>
</tr>
</thead>
<tbody>
<tr>
<td>Urine</td>
<td>24-72 hours</td>
</tr>
<tr>
<td>Oral Fluid</td>
<td>12-36 hours / 6-8 hours THC</td>
</tr>
<tr>
<td>Hair</td>
<td>Head hair: 14-90 days prior</td>
</tr>
<tr>
<td></td>
<td>Body hair: 30-365 days prior</td>
</tr>
<tr>
<td>Blood</td>
<td>8-36 hours</td>
</tr>
<tr>
<td>Sweat</td>
<td>1-4 weeks (period patch is worn)</td>
</tr>
</tbody>
</table>
# URINE DETECTION TIMES

**Stimulants:**
- Amphetamines, Cocaine, Ecstasy, Bath Salts  
  - 24-72 hrs

**Narcotics / Narcotic Analgesics:**
- Methadone, Opiates, Propoxyphene  
  - 24-72 hrs

**Sedative Hypnotics**
- Barbiturates, Benzodiazepines  
  - 24-72 hrs / 2-6 wks*

**Hallucinogens:**
- Marijuana  
  - 24-72 hrs / 2-6 wks*
- PCP, LSD  
  - 2-5 days

**Depressants:**
- Alcohol  
  - 1-12 hours
- Ethyl Glucuronide (EtG)  
  - 8-72 hours

*It is always recommended to order a GCMS or a LC-MS/MS confirmation if a client is contesting the result.*
GENERAL DRUG INFORMATION
MARIJUANA

- THC metabolites are fat-soluble, and may be retained in fatty tissue depending upon dosage and recent usage history.

- May take time to produce consistent negative urine samples.
  - Casual Users: 2-5 days
  - Chronic Users: 3-6 Weeks (6 weeks is very rare)

- Most chronic users will be clean by 21 days.
  - Levels drop by 50% every 3-10 days

Note: Poppy seeds, Ibuprofen, Spice or Synthetic cannabinoids will NOT test positive for THC
AMPHETAMINES

- Methamphetamine

- Amphetamines
  - Adderall, Vyvanse, Dextrostat, Dexedrine
  - Dimethylamine (Pre-workout Supplement)
  - Ephedrine taking in access can cause a positive.

Note: Call the laboratory for assistance with any questions or concerns. Individuals taking Ritalin or asthma inhalers such as Albuterol, ProAir, Advair will not test positive for Amphetamines

*It is always recommended to order a GCMS or a LC-MS confirmation if a client is contesting a result.
## OPIATES

<table>
<thead>
<tr>
<th>Looking For</th>
<th>Test For</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vicodin/Hydrocodone/Codeine/Morphine</td>
<td>Opiates</td>
</tr>
<tr>
<td>Oxycodone/Oxycontin/Percocet</td>
<td>Oxycodone</td>
</tr>
<tr>
<td>Heroin</td>
<td>Heroin (in conjunction with the opiate test)</td>
</tr>
<tr>
<td>Methadone</td>
<td>Methadone</td>
</tr>
<tr>
<td>Suboxone/Buprenorphine</td>
<td>Buprenorphine</td>
</tr>
</tbody>
</table>
ETHYL GLUCURONIDE (EtG)

- Ethyl glu·cu·ro·nide (EtG) is a unique biological metabolite that is formed in the body after the consumption of ethanol, typically from drinking alcoholic beverages.

- Reported to be detectable in urine depending on the dosage for 8-80 hours after ingestion, and 2-36 hours in blood.

- Cannot determine the level of intoxication or impairments of a client.
  - Age, gender, race, physical health, diet, metabolism, and time of sample collection are but a few significant variables that can affect EtG detection.

<table>
<thead>
<tr>
<th>EtG Case Study Examples</th>
<th>TASC CUT OFF LEVEL IS 500 ng</th>
</tr>
</thead>
<tbody>
<tr>
<td>Single Beer (4.5% Alcohol)</td>
<td>Positive for up to 16 hours</td>
</tr>
<tr>
<td>Three glasses of wine (12% Alcohol) consumed over 3 hours</td>
<td>Positive for up to 32 hours</td>
</tr>
<tr>
<td>Six shots of vodka over 3 hours</td>
<td>Peaked at 16 hours and Detectable for up to 54 hours</td>
</tr>
</tbody>
</table>
NEW DRUG TRENDS
DEXTROMETHORPHAN (DXM)

- Dextro-meth-orphan (DXM)
- Referred to as “Triple C”, “Robo-tripping” or “Skittling”
- Stored behind the pharmacy
- Cough Suppressant
- Found in more than 120 OTC cold medications
- Detection time is about 2-3 days
- Specialized tests used to pick up drug
- Abuse occurs in all age groups but is more prevalent in youth
BATH SALTS

- Stimulant
- Have one or more manmade synthetic compound chemicals that are related to Cathinone.
- Consumed orally or nasally
- Sold in head shops, convenient stores and online

Packaging
- Bath Salts
  - Plant Food – White Snow
  - Insect Repellent – White Lightning
  - Stain Remover – Thunda Cat
- “NOT FOR HUMAN CONSUMPTION”
SPICE

- Chemicals are not similar to THC but react to the receptors the same way
- Most say “Not for Human Consumption” so that they do not need to be regulated by the FDA
- Sold in smoke shops and online
- Assassin Revolution, Bizarro Blueberry, Black Magic Smoke, Cloud 10, Colorado, Darkness, Kite, Purple Diesel, Sunshine Daydream, Sunshine Nightmare, Hammerhead, Diablo
DILUTED

A diluted test means a client has too much liquid in their system (i.e. water, coffee, juice, etc.). It is very hard for most people to be diluted - they have to work at it!

- Had to drink a lot
- May be on certain medications

Look for:

- Is there a history of diluted samples?
- Are there occurrences of missed scheduled or random testing dates?
- Results of recent prior samples “Positive” for drug(s)?
- Is the donor under medical supervision that dictates use of diuretics and/or high fluid intake?
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
COMMON METHODS

- Physical Tampering - Additives
- Specimen Substitution
- Devices
THE ADULTERANT INDUSTRY

- Nationwide product distribution
  - Internet, smoke shops or “head shops” and mail order / magazine advertisements
  - Offer next-day delivery with money-back guarantees
  - Will go off of myths to get people to buy their product.

<table>
<thead>
<tr>
<th>Physical Adulterants</th>
<th>Ingested Compounds</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acids</td>
<td>Vinegar</td>
</tr>
<tr>
<td>Surfactants (Soaps)</td>
<td>Pickle Juice</td>
</tr>
<tr>
<td>Fixatives (Glues)</td>
<td>Bleach</td>
</tr>
<tr>
<td>Oxidants</td>
<td>Drano</td>
</tr>
<tr>
<td></td>
<td>Water Pills</td>
</tr>
<tr>
<td></td>
<td>Detox Drinks</td>
</tr>
<tr>
<td></td>
<td>Herbal Teas &amp; Supplements</td>
</tr>
</tbody>
</table>
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
- TASC has a very specific monitoring system and clients are instructed to use very detailed testing procedures
THE WHIZZINATOR - $139.95

- 1 Whizzinator Touch
- 4 Heat Packs
- 1 Syringe
- 1 Freeze Dried Synthetic Urine Sample
- 1 Instruction Manual
VAGINAL INSERTS
VISUAL MONITORING COLLECTION

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

- Male Restroom
INCIDENTAL EXPOSURE
TYPES OF EXPOSURE

- Sexual intercourse with a drug user
- Touching a contaminated surface
- Inhaling second-hand smoke
- Consuming products cooked with alcohol
- Hand Sanitizer
- Mouthwashes
INCIDENTAL EXPOSURES

- Hand sanitizer applied every 15 minutes for 8 hours – **Negative**
- Gargling mouthwash 3 times a day for 5 days – **Negative**
- Gargling mouthwash 4 times a day for 78 hours – **Negative**
- Eating beer brats – **Negative**
- Communion wine – **Negative**
CUTOFF LEVELS

- Regulated standards observed by SAMHSA, CLIA, CAP
- Set to eliminate positive results due to incidental exposure
- Reports will indicate cutoff levels for screening and confirmation testing
COMPARING RESULTS

- Results from different samples collected the same day may not correlate.
  - Hair vs. Urine
  - Oral Fluid vs. Urine

- Point of Care vs. Lab-based Testing
  - Different Cutoff Levels
  - Higher potential for false positives
  - Subjective
  - Refer to Package Insert
EXAMINING THE EXCUSES

Are they legitimate?
THC

- “I’m overweight so THC stays in my system longer”.
  - Chronic users should test negative after approximately 21-24 days
  - 99% of chronic users will test negative after 6 weeks

- “I use hemp products”.
  - Oils, butters, seeds
  - Contains little to no psychoactive THC

- “I have a prescription for Marinol (dronabinol)”.
  - Synthetic THC
  - Will test positive for marijuana metabolite
“I am positive because of my Albuterol inhaler”.
- This is not an amphetamine

“I use a Vick’s inhaler”.
- Contains L-methamphetamine
- D vs. L isomer test recommended

“I had a bad cold and took Sudafed”.
- Pseudoephedrine can test positive on screening test
OPIATES

- “I am positive for opiates because of my methadone”.
  - Synthetic Opioids will not test positive for opiates
    - Methadone
    - Buprenorphine
    - Tramadol
    - Fentanyl
    - Meperidine

- “I tested positive because I ate a poppy seed bagel”.
  - Possible morphine in or on the seeds
  - Problematic at the 300 ng/mL cutoff
THANK YOU
Contact us anytime with questions or if you would like a full drug testing training!!