

## BIOMARKERS

Presenters:

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## Objectives

- The participant will be able to utilize the information presented to decide what testing best serves their need(s).

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## Objectives

- To:
  - Gain awareness of how vital Biomarkers are for identifying a SUD and utilizing criteria for appropriate levels of treatment
  - Be able to identify the objectives for testing clients, based on the knowledge of criteria for different tests
  - Be able to identify unusual outcome possibilities such as positives, negatives, dilutes, and adulterations

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## BIOMARKERS

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Definition:

- These are biological markers used to determine biological events, progress, or generalized outcomes.
  - Used for a multitude of reasons beside drug testing
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## BIOMARKERS

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- For screening/monitoring purposes:
    - Urine
    - Saliva
    - Blood
    - Breath
    - Sweat
    - Nails
    - Meconium
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## Alcohol testing

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★Preferred method: Breathalyzer

★Why?: The reason we test for alcohol (aside from compliance checks) is to gain knowledge of what amount of alcohol is in the brain at that moment.

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## Breathalyzer

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- ★ Exhaled lung air, and its alcohol content, is the same amount that is in the brain at that time of testing.
  - ★ There is accuracy with breath testing, with an amount that the device can quantify.
  - ★ There are consequences at certain times for certain quantities. DWI/DUI
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## OTHER WAYS TO TESTS ALCOHOL

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- ★ Oral swabs - saliva
  - ★ Urine drug screen & alcohol
  - ★ EtG – special urine or hair test
  - ★ Skin / sweat bracelet monitoring
  - ★ Blood – only for healthcare & law enforcement
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## Breathalyzer

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- Basically, if your are going to use a breathalyzer:
1. Be sure to follow protocol for calibration checks and accuracy logs.
  2. Client must take deep breath and blow hard and steady.
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## Breathalyzer

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1. Alcohol level requires deep lung air
  2. Shallow puffs will give false decreased levels
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## More

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- Saliva / oral swabs offer accurate testing.
  - They read out 0.02 or 0.04, these are numbers set by Federal government for D.O.T. test.
  - For other clients: any number, regardless of how low, indicates noncompliance for abstinence.
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## EtG

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- EtG testing in a urine screen, specialized to find the metabolite Ethyl glu-cur-onide
  - The test has an 80 hour look-back time.
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## EtG

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### URINE

It is only used for compliance monitoring, not for quantifying amounts. Did client use or not???

That's 3.5 - 4 days. So if a client drinks even a minimal amount of alcohol, up to 3.5 days later, the metabolite will test out positive.

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## EtG

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Ethyl glucuronide (EtG) is a direct metabolite of ethanol alcohol.

The presence of EtG in the urine can be used to detect recent alcohol consumption, even after the ethanol alcohol is no longer measurable.

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## EtG

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Consequently, the presence of EtG in the urine is a definitive indicator that alcohol has been ingested, or, the client used a product externally.

Important to instruct client about incidental alcohol exposure before monitoring is initiated.

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## EtG

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- Urine
  - The presence of EtG in the urine demonstrates that ethanol alcohol was ingested within the past three or four days, or roughly 80 hours after the ethanol alcohol has been metabolized by the body.
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## Warning

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- Alcohol is often in medications, hygiene products, cosmetics, foods, etc.
  - Research is needed to determine whether incidental alcohol exposure can substantially influence the biomarkers.
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## Continuous Transdermal Alcohol Monitoring

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- SWEAT TESTING
  - The bracelets will test their sweat for alcohol, but not for drugs.
  - Secure Continuous Remote Alcohol Monitor technology — known as SCRAM
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Continuous Transdermal Alcohol Monitoring

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- Every 30 minutes, 24 hours a day, a pump inside the bracelet will aspirate moisture from the client's skin and detect whether he or she has consumed alcohol.
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**Breath vs. Sweat**

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- Sweat - The information is transmitted through a modem, via computer, to a monitoring station.  
(Continuous)
  - Breath testing only looks back 4-6 hours. Efficient monitoring is next to impossible.
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Continuous Transdermal Alcohol Monitoring

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- The cost listed in Montana where it is used effectively for convicted clients' monitoring, is \$75-100 installation fee, and \$15.00 daily for monitoring.
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**HAIR TESTING – NOT HAIR FOLLICLE !!!!**

\*PLEASE DO NOT CALL IT HAIR FOLLICLE TESTING.

\*THERE IS NO SUCH THING!!!!

\*IT IS HAIR TESTING!!!!

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**HAIR TESTING**

\*Hair testing is accurate.

\*It looks back 90 days for head hair.

\*Look back for body hair is 1 year.

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**HAIR TESTING**

Dyeing, bleaching products do not eliminate the finding of drugs, but can affect outcomes.

Head hair must be 1.5" long for 90 days.

It measures 1/2 inch per month growth.

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## Drawbacks

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- ★Short or thin head hair
  - ★Shaved body hair
  - ★Use within 10 days of test will not show up
  - ★ALCOHOL TESTING VIA HAIR available
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## FYI

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- ★Minimal use such as a few puffs of marijuana, or snorts of cocaine do not show, they can show up.
  - ★The list on the result report notes all the metabolites found along with the parent drug.
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## FYI

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- ⇒ If you have a client that has been compliant with all the regular testing;
  - ⇒ Always tested negative
  - ⇒ Shows up once and tests positive with lots of yelling and screaming about a mistake at the lab.....
  - ⇒ Send them for a hair test.
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**NAIL CLIPPINGS - DRUG TESTING**

- Nail clippings for drug testing is being done by several labs.
- The look-back can be up to 6 months.
- Length of nails must be ¼ "
- 10 nails must be cut
- Toenails have a look back of 1 year

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**References**

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  - Joseph Jones, VP
- Omega Laboratories
  - John Davis
- FirstLab
  - Joanne Cole, RN
- Medtox Lab
  - Phyllis Prekopa, Psy.D.
- PharmChek
  - Sweat Patch information
- Clinical Reference Laboratories
  - Testing for Sweat Patch

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THANK YOU FOR INTEREST.

WE ARE BOTH AVAILABLE FOR QUESTIONS AND COMMENTS.

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