

Hair Drug and Alcohol Testing

1. When considering hair drug testing results several principal areas need to be looked at including (1) collector accreditation and training (2) laboratory accreditation and experience, (3) the cut-off levels of drug detection reported. (4) the thoroughness of the hair wash process prior to testing and (5) chain-of-custody compliance.
2. Other considerations should be costs and time taken to receive results.

Collector Accreditation and Training

3. Australian Workplace Drug Testing Services (AWDTS) collectors are trained in drug and alcohol testing, possess nationally-accredited Collector qualifications in accordance with ASQA requirements and the requirements of AS/NZS4308:2008 *Procedures for specimen collection and the detection and quantitation of drugs of abuse in urine* and AS4760:2006 *Procedures for specimen collection and the detection and quantitation of drugs of abuse in oral fluids*.
4. AWDTS collectors have also been trained and certified as competent hair drug test collectors by *Psychomedics Corporation* whose laboratory we primarily utilise. AWDTS is also available to act as specimen collectors for QML, HASTA and *Forensic Science SA* laboratories in Australia. Our main office on the Gold Coast is located at 89 Oceanic Drive, Mermaid Waters QLD 4218. AWDTS also operates a network of other offices and contractor collector agencies nationally. All contracted collectors are also required to undertake the same training and certification as AWDTS staff.
5. AWDTS operates a Registered Training Organisation (RTO), which offers a range of courses, one being a nationally-accredited course in alcohol and drug testing including the collection of samples and the testing of breath, urine, oral fluids, hair and nails for alcohol and other drugs. AWDTS numbers several pathology firms among our clients, including *Queensland Medical Laboratories (QML)*, *Laverty Pathology* and *Clinicalabs*.
6. The AWDTS course HLPAT005 *Collect specimens for drugs of abuse testing* was written by forensic toxicologists and biochemists including three members of relevant Australian Standards committees. Two of our three trainers are members of the Oral Fluids Standards Committee. The training course includes Chain-of-Custody procedures. Chain-of-Custody procedures for urine, oral fluids and hair are consistent, and identical to those used by Police Forces around Australia. AWDTS has trained NSW and NT Police in these processes.
7. AWDTS conducts collection of hair samples mostly for *Psychomedics Corporation* (Culver City, Los Angeles, California USA) and also for Australian laboratories, including QML, HASTA, and *Forensic Sciences SA* as required.

The laboratory chosen by AWDTS will depend upon whether a particular laboratory has been specified by the Court, or the nature of testing required. AWDTS chooses *Psychemedics Corporation* for the vast majority of its testing for reasons expanded below. AWDTS has predominantly used *Psychemedics' Corporation* for hair drug testing for legal and employment related matters in Australia for the last nine (9) years. Our record of evidence being accepted in Family Law and Criminal Law Courts in all Australian jurisdictions is exemplary.

Laboratory Accreditation

8. There is no Australian Standard for Hair Drugs Testing. A group of industry experts including AWDTS consultants are currently investigating producing one. To the best of AWDTS' knowledge there is no specific National Association of Testing Authorities (NATA) accreditation for Hair Drug Testing in Australia given the absence of an Australian Standard. Internationally, accreditation is based on compliance with ISO 17025. Australian laboratories and *Psychemedics* have this accreditation from respective national accrediting authorities (*NATA* in Australia and *ANSI-ASQ National Accreditation Board* in the USA). *Psychemedics* has accreditation specifically for testing drugs of abuse in hair.

Cut-off Levels in Hair Alcohol and Drug Testing

9. There are no formal Australian cut-offs for Hair Testing. The *Society of Hair Testing (SoHT)*, the world body based in France, recommends cut-off levels to ensure the integrity of levels of drug reported, and specifically to minimise false positives and false negative results. *Psychemedics* adherence to *SoHT* cut-offs is closer than the adherence of the Australian laboratories currently conducting hair drugs testing. *Psychemedics* is the world pioneer in hair drugs testing, and is a reference laboratory for *SoHT*. The cut-off levels used in the *Psychemedics* tests are acceptable to the FBI (who have conducted extensive Scientific Analysis). Police forces throughout the world including FBI, NYPD, LAPD, Surry Police in the UK and Australian Police Forces (AFP, NSW and WA Police) use *Psychemedics* Drug Testing services. They are also = or > the recommended cut-offs of *SoHT*.

10. The cut off-levels are relevant where the Laboratory ingestion process gets all the drug out of the hair. The patented process from *Psychemedics* does this. We are aware from parallel testing conducted in the USA that other US Laboratory ingestion processes destroy a large portion of the drugs in the Hair Cortex. Where laboratories cannot get all the drug from the hair sample, a lower cut-off level is required by them. *Psychemedics* in parallel testing have proven higher detection rates in comparison testing in the US:

- Quest states 1.65 X urine
- Omega states 2-3 X urine
- PMD side by side cases prove 6 to 10+ X urine

11. The *Psychemedics* screening process has much greater sensitivity and reliability than all other EIA methods used by other Laboratories (**EIA** methodologies are approaches developed to identify, predict and value changes of an action. EIA uses methods and techniques to quantify or to qualify those changes. All aspects and variables can be measured. The problem is to value them.) *Psychemedics'* proprietary process to confirm drug levels uses triple-quad mass-spectrometry technology (MS/MS) – and is multiple times more sensitive than GC/MS;

12. Some Australian laboratories are concerned with the possibility of contamination from hair dyes and bleach. *Psychemedics* is not. The lower the cut-off level the greater the risk of external contamination effecting results' reliability; Australian laboratories all have significantly lower cut-offs

than *Psychemedics* and as recommended by *SoHT*. A 2011 US Department of Justice study demonstrated that in the US only *Psychemedics*' wash procedure was effective at addressing external contamination and drug use. (2011 Jeri D. Roper-Miller and Peter R. Stout)

Laboratory Experience

13. *Psychemedics Corporation* pioneered hair drug testing 26 years ago. *Psychemedics* Scientists are dedicated exclusively to hair analysis with over 16 years average tenure performing more than 100,000 hair tests per month compared with a few hundred performed by Australian laboratories.

Hair Wash Processes

14. The lower the cut-off level of drug to be reported, the more critical the wash process. NB the problem in many cases where two different methodologies are performed on different samples of hair, even from the same donor with different wash processes and different cut-off levels generally means that no accurate comparison may be made with the results.

15. Inferior wash processes may reduce the drug level in the sample. Some Laboratories use shorter wash times and use alcohol in the process; Australian laboratories all have shorter wash processes than *Psychemedics*. The wash process puts in doubt some results from Australian Hair Testing providers as they are significantly lower than recommended *SoHT* standards and cannot always rule out external contamination. Laboratory results from Australian laboratories have been successfully challenged on occasions due to inadequate wash processes, with several challenges currently being conducted. Two of the three Australian laboratories used warn that their testing cannot rule out the possibility of external contamination. *Psychemedics*' wash process can virtually rule out any external contamination source, and were found to do so by a scientific *FBI* investigation into *Psychemedics* wash processes.

Chain-of-Custody

16. *AWDTS* collectors are all formally trained in chain-of-custody procedures. Collectors and donors sign the necessary certifications to allow for collection, sealing and forwarding to the laboratory for testing. Collectors take the sample and insert inside a foil and place it into a Sample Acquisition Card (SAC) which is then sealed, and initialled by the donor. A second red security seal is then placed on the SAC and signed by the collector.

17. The signed and sealed SAC is then placed with a signed laboratory copy of the Custody and Control form (CCF), both bearing identical barcodes inside a plastic pouch which is then sealed. A Medical Review Officer (MRO) copy of the same form with the same barcode is scanned and sent to the MRO. The MRO copy is then placed inside an Australia Post (AP) tracked overnight satchel with the sealed SAC. The AP satchel is forwarded overnight to the MRO who has received notification that it is in transit.

18. The sealed SAC with CCF is checked and forwarded the same day by FedEx courier to *Psychemedics* LA, California. It is checked, logged and receipt advised. Providing chain-of-custody has been observed, *Psychemedics* will accept custody of the sample and commence testing of the sample. Adulterated samples, or those in breach of chain-of-custody conditions are rejected.

Referral Process

19. Referral through a General Practitioner is generally not required, nor referral to a Pathology Laboratory...simply an appointment booked with *AWDTS*. *AWDTS* team is made up of accredited collectors Australia-wide, supervised by forensic toxicologists and biochemists ensuring that collection and chain-of-custody procedures are observed from clinic to laboratory. *Medical Review Officers (MROs)* are available to release and interpret results and demystify the process for clients and lawyers alike.

20. Hair drug testing is an excellent testing medium, but not absolutely precise in all details, so it is not possible to give “exact” dates covered by the test. Test results would date back approximately three to four months (3-4) from the date of collection of head hair samples 3.9cm in length allowing for different rates of head hair growth, and five to seven days (5-7) for the drug-affected follicle to die and present through the top of the scalp.

Yours Faithfully,

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