



Urine Drug Analysis

At Douglas Hanly Moir Pathology urine specimens for drug screening are routinely tested for the presence of the following drugs/drug classes:

- Amphetamine type substances e.g. speed, ecstasy
- Benzodiazepines, e.g. clonazepam, diazepam
- Cannabis metabolites
- Cocaine metabolites
- Opiates including heroin, morphine & codeine

Screening is also available for other drugs including alcohol, barbiturates, methadone, PCP, propoxyphene, oxycodone, and buprenorphine.

Screening of urine specimens is carried out using immunoassay based methods, either on-site or within the laboratory. Immunoassay screening can be non-specific showing reactivity with parent drugs, metabolites and similarly structured compounds to produce an overall result. If the presence of drugs cannot be excluded (non-negative screening test), then further confirmatory testing may be performed to identify the presence of specific members of a particular drug class. Confirmatory analysis is carried out using a chromatographic mass spectrometry method (GC/MS, LC/MS/MS).

The table below lists the screening cut-off levels as applied in AS/NZ 4308:2008 as well as drugs that may produce a non-negative result with respect to the various classes listed. It should be noted that immunoassay cross-reactivity is dependent upon the compound concentration in the urine.

| URINE DRUG SCREEN | | | | | |
|-----------------------------|---------------|--|--|--|---|
| Drug/Drug class | Cut-off level | Drugs that may be associated with a positive or 'DETECTED' result | | | |
| Amphetamine type substances | 300 ug/L | Amphetamine [^] Methamphetamine [^] BDB MDA [^] | MDMA (Ecstasy) [^] MDEA MBDB PMA | PMMA Phentermine [^] Phenylpropanolamine Pseudoephedrine [^] | Ephedrine [^] Dexamphetamine |
| Benzodiazepines | 200 ug/L | Alprazolam [^] Bromazepam Clobazam Clonazepam [^] Clorazepate Delorazepam | Diazepam [^] Estazolam Flunitrazepam [^] Flurazepam Halazepam Lorazepam | Lormetazepam Medazepam Midazolam Mirtazapine Nitrazepam [^] Nordiazepam [^] | Oxazepam [^] Prazepam Sertraline Temazepam [^] Trazolam |
| Cannabinoids | 50 ug/L | 11-Hydroxy- Δ^9 -THC 11-Hydroxy- Δ^9 -THCCOOH [^] 11-Hydroxy- Δ^8 -THCCOOH | 8- β -Hydroxy- Δ^9 -THC 8- β -11-Hydroxy- Δ^9 -THC Δ^9 -THC | Cannabinol | |
| Cocaine Metabolites | 300 ug/L | Cocaine [^] | Benzoyllecgonine [^] | Ecgonine methyl ester [^] | |
| Opiates | 300 ug/L | Morphine [^] Codeine [^] Dihydrocodeine | Hydrocodone Hydromorphone Oxycodone | 6-monoacetylmorphine (Heroin metabolite) [^] | |
| Alcohol* | 0.01 mg/dL | Ethyl alcohol | n-propanol | | |
| Barbiturates* | 200 ug/L | Alphenal Amobarbital Aprobarbital Barbital | Butobarbital Butalbital Butethal Diallylbarbital | Pentobarbital Phenobarbital Secobarbital Talbutal | Thiopental |
| Buprenorphine* | 5 ug/L | Buprenorphine | Norbuprenorphine | codeine | |
| Methadone* | 300 ug/L | Methadone* | | | |
| Methadone metabolite* | 100 ug/L | EDDP (primary metabolite of methadone)* | | | |
| Oxycodone* | 100 ug/L | Oxycodone | Oxymorphone | | |

*Only tested for if specifically requested

[^]Compounds designated can be identified by confirmatory analysis

Urine Drug Analysis

The creatinine level is tested in all urines as a routine check of specimen integrity. The report will indicate if the specimen was abnormally dilute based upon the measured creatinine value.

Detection Times

Estimates of drug detection times have been obtained from various published references. Detection times will differ amongst individuals and are dependent on the amount of drug intake and frequency of drug exposure as well as a range of parameters such as physical size, age, metabolic rate, diet and physical activity.

| DRUG DETECTION TIMES | |
|--|-----------------------|
| Drug/Drug class | Detection time (days) |
| Amphetamine type substances | 1–4 |
| Cannabis metabolites | 1–5 |
| Oral Ingestion | 2–3 |
| Acute dosage (1–2 joints) | 5 |
| Moderate (4 / week) | 10 |
| Heavy (daily) | 14–20 |
| Chronic (>5 joints / day) | Up to ~60 possible |
| Cocaine | 2–4 |
| Barbiturates – short acting (e.g. secobarbital) | 1–2 |
| Barbiturates – long acting (e.g. phenobarbital) | 14–21 |
| Benzodiazepines (therapeutic) Long term users (>1 year) can be positive several months following cessation. | 2–4 |
| Methadone and its metabolites | 2–4 |
| Opiates | 1–3 |

For further information regarding our services please contact Stephen Hawkins on

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