Drug Testing: Rationale, Utility and Effectiveness

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Rationale For Drug Testing

The three main reasons for drug testing are to: 1) detect use; 2) deter use; and 3) improve safety. Contexts within which drug testing is implemented vary according to reason for testing.

1. To detect drug use
   - Clinical
   - Sporting
   - Workplace
   - Roadside
   - Custodial
   - Schools
   - Welfare recipients

2. To deter drug use
   - Clinical
   - Sporting
   - Workplace
   - Roadside
   - Custodial
   - Schools
   - Welfare recipients

3. To improve safety
   - Workplace
   - Roadside
   - ‘Pill’ testing (music events etc.)

Utility and effectiveness

The utility and effectiveness of drug testing can be evaluated against the three main reasons for its introduction (i.e., to detect use, to deter use, and to improve safety).

1. Detecting Drug Use

   Urinalysis, oral fluid/saliva, and hair testing can only detect past drug use. They cannot indicate intoxication/impairment, the drug dose, or the pattern of use. While most drug test types are reliable indicators of past drug use, their utility and effectiveness varies between test types.

<table>
<thead>
<tr>
<th>Urinalysis</th>
<th>Oral fluid/saliva testing</th>
<th>Hair testing</th>
</tr>
</thead>
<tbody>
<tr>
<td>Typically detects use that has occurred up to 3 days prior to the test</td>
<td>Has a much shorter window of detection compared to urinalysis</td>
<td>Can detect use that has occurred up to 6 months prior to the test (depending on individual hair growth rates)</td>
</tr>
<tr>
<td>The exception is cannabis use, where occasional use can be detected for up to 6 days and more regular use can be detected for up to several weeks</td>
<td>For most drug types it detects use that has occurred in the previous 1-3 days</td>
<td>Cannot detect relatively recent use (past 1-4 weeks)</td>
</tr>
<tr>
<td>The main disadvantages of urinalysis are that it may not detect very recent use (past 2-6 hours) and urine specimens can be adulterated or substituted relatively easily.</td>
<td>Compared to urinalysis, oral fluid/saliva specimens are less easily adulterated or substituted</td>
<td>Cannot detect single use of drug</td>
</tr>
<tr>
<td></td>
<td>The main disadvantage of oral fluid is that pH levels can affect drug concentrations in oral fluid/saliva.</td>
<td>No Australian Standards for hair testing (unlike urinalysis and oral fluid/saliva)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Prohibitive cost.</td>
</tr>
</tbody>
</table>
Table 1: General detection times\(^1\) for urinalysis, oral fluid/saliva testing and hair follicle testing

<table>
<thead>
<tr>
<th>Drug Test</th>
<th>Non Detectable Period</th>
<th>Detectable Period (^2)</th>
<th>Non Detectable Period</th>
</tr>
</thead>
<tbody>
<tr>
<td>Urinalysis</td>
<td>0 - 4 hrs</td>
<td>4 hrs - 3 days(^2)</td>
<td>&gt; 3 days(^2)</td>
</tr>
<tr>
<td>Oral fluid/saliva</td>
<td>-</td>
<td>0 - 36 hrs</td>
<td>&gt; 36 hrs</td>
</tr>
<tr>
<td>Hair follicle</td>
<td>0 hrs - 4 weeks</td>
<td>2 - 6 months(^3)</td>
<td>-</td>
</tr>
</tbody>
</table>

\(^1\) For each test type, detection times can vary widely by drug type and/or individual differences  
\(^2\) Urinalysis can detect frequent cannabis use for up to several weeks  
\(^3\) Can be longer depending on hair growth rate and individual/environmental differences

Table 2: Detection times for the most common drug types by test type

<table>
<thead>
<tr>
<th>Common Drug Types</th>
<th>Urinalysis</th>
<th>Oral fluid/saliva</th>
<th>Hair(^1)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Meth/Amphetamine</td>
<td>Up to 3 days</td>
<td>Up to 48 hours</td>
<td>Up to 6+ months</td>
</tr>
<tr>
<td>Benzodiazepines</td>
<td>Up to 14 days</td>
<td>Up to 36 hours</td>
<td>Up to 6+ months</td>
</tr>
<tr>
<td>Occasional cannabis use</td>
<td>Up to 4 days</td>
<td>Up to 24 hours</td>
<td>Up to 6+ months</td>
</tr>
<tr>
<td>Frequent cannabis use</td>
<td>Up to 30 days</td>
<td>Up to 48 hours</td>
<td>Up to 6+ months</td>
</tr>
<tr>
<td>Cocaine</td>
<td>Up to 3 days</td>
<td>Up to 36 hours</td>
<td>Up to 6+ months</td>
</tr>
<tr>
<td>Methadone</td>
<td>Up to 3 days</td>
<td>Up to 36 hours</td>
<td>Up to 6+ months</td>
</tr>
<tr>
<td>Opiates (Codeine, Morphine)</td>
<td>Up to 3 days</td>
<td>Up to 48 hours</td>
<td>Up to 6+ months</td>
</tr>
</tbody>
</table>

\(^1\) Varies according to hair type and growth rate and cannot detect single use of a drug.  
2. Deterring drug use

- Evidence of the deterrent effect of drug testing, regardless of the test type used, is limited and inconclusive.
- The few studies that have utilised rigorous methodologies indicate that workplace testing either has no effect, or only a very small deterrent effect.
- Any deterrent effect of drug testing is likely to vary according to the context of testing and penalties that apply for positive test results.
- According to deterrence theory, immediate sanctions for breaches are required for a deterrence effect. Where the sanction is immediate and severe (e.g., immediate loss of licence for a positive roadside test) there may be some deterrent effect. However, offenders may also succumb to the “gambler’s fallacy” (i.e., believing that they would be very unlikely, or unlucky, to be caught more than once) thereby mitigating any deterrent effect.
- The longer term impact of any sanction also needs to be considered.
- In the case of welfare recipients and workplace testing, sanctions for a positive test may:
  - further stigmatise and marginalise individuals and lead to financial difficulties for the individual and dependent family members
  - and/or hamper entry into treatment.

3. Improving safety

- Evidence for the effectiveness of drug testing to improve safety or reduce risk of harm is limited.
- Few quality evaluations of drug testing programs have been undertaken and evidence indicates that drug testing has little, if any, effect.
- Cost effectiveness studies of workplace and welfare testing have found testing programs have little economic value.
- There is some limited evidence that ‘party pill’ testing at music festivals and other venues may have a positive effect on the health and safety of young people who attend these events.
- Unlike alcohol breath analysis, drug testing detects past use not impairment/intoxication.
- A positive drug test does not necessarily mean that drug use played a causal role.
- Testing programs can have an unexpected negative impact on safety.
  - Rather than reducing or stopping drug use, individuals may change their behaviour to avoid detection.
    This can include changing patterns of use, using drugs that have a shorter window of detection (e.g., meth/amphetamine), are less detectable (e.g. ‘synthetic’ drugs) or more easily explained (e.g., pharmaceuticals), or the use of masking agents.
    When this occurs, drug testing programs are likely to have counter-productive consequences.
References


