

## **Introduction**

Urinary drug screening can detect substances including over-the-counter and prescription drugs. The focus of screening is often illicit drugs.

Simple point-of-care tests, largely immunoassays, can rapidly detect a class of drugs or specific drugs in urine. More complex large scale laboratory screens and confirmatory tests can also be used.

Urine tests can often provide evidence of previous drug consumption.

Screening is therefore useful in monitoring abstinence from drug use, the use of drugs in the workplace and in legal disputes.

## **What can be tested?**

The most common drugs tested in urine include amphetamines, benzodiazepines, cannabis, cocaine and opioids. Other tests can screen for more specific compounds, rather than drug classes, such as alcohol, methadone, buprenorphine, phencyclidine and other stimulants (for example cathinones) and designer drugs.<sup>1</sup>

## **Why test urine for drugs?**

Urine screening can provide an indication that someone has consumed drugs at some point before sampling. Most drugs typically have a detection window of up to 48 hours (**Table**). This may be shorter for some drugs which are eliminated relatively quickly from the body such as alcohol or gamma-hydroxybutyrate. Drugs such as diazepam and cannabis can persist in urine for days or even weeks and so can be detected for longer periods.

The frequency of drug consumption will also have an impact on the effectiveness of urine screening. Acute or once-off use, as in the case of drug-facilitated crime where a drug is used to render someone incapacitated, is more difficult to detect and may challenge the sensitivity of urine screening. People who use drugs more regularly will typically have higher concentrations of drugs in their urine leading to easier detection with possibly longer time frames.

In chronic users, drugs of abuse can be detected in urine for approximately one week after last use, and in extreme cases even longer in cocaine (22 days) and cannabis users (up to three months).<sup>2</sup> Urine testing will not show when a drug

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<sup>1</sup> [www.nps.org.au/australian-prescriber/articles/urinary-drug-screening](http://www.nps.org.au/australian-prescriber/articles/urinary-drug-screening)

<sup>2</sup> Verstraete AG. Detection times of drugs of abuse in blood, urine, and oral fluid. *Ther Drug Monit* 2004;26:200-5.

was used, or how much. Importantly, a positive drug result cannot infer impairment at the time the urine was collected.

Table **Detection of drugs in urine**

Drug or drug class	Detection times in urine
Benzodiazepines (e.g. alprazolam, diazepam, temazepam)	1-7 days or longer depending on half-life of drug*
Cannabinoids	3-28 days depending on frequency of use
Cocaine	1-3 days
Methamphetamine/amphetamine	2-5 days
Methylenedioxyamphetamine	2-5 days
Opioids (e.g. morphine, codeine)	1-2 days
Steroids (e.g. testosterone, stanozolol)	Days to months depending on the half-life of the steroid

\* may be longer in chronic users

The detection times for drugs after usage ceases is an extremely complex issue as it is dependent on: dosage, route of administration, an individual's metabolism, presence of other drugs etc.

## **Results**

Urine testing typically involves a screening test followed by a confirmation test. Confirmation is usually performed on the sample taken for screening.

## **Screening tests**

Most drugs of interest are first detected by simple immunoassays. These are broad screening tests that are quick, often cheap and effective for showing a positive or negative result. However, as with all screening tests there are limitations to the degree of interpretation that can be inferred from the result. The limitations of immunoassay techniques include false positives as well as false negative results.

A false positive is a screening test that fails to be confirmed using other more sensitive and specific techniques such as gas chromatography/mass spectrometry or liquid chromatography/mass spectrometry. This means that the immunoassay has cross-reacted with some other substance in the urine leading to a false positive result for the substance of interest. Other drugs can trigger such false positive results and the laboratory should have a list of

compounds which can cross-react with the screening test. For example, ranitidine can produce a false positive result for amphetamines. It is also worth noting that some foodstuffs can also produce positive results such as poppy seeds for opioids.

A false negative result is possible when the screening test is negative but the confirmatory test is positive. This is less common as negative screening tests are not usually confirmed. When a screening test is negative that is usually the end of the investigation. In a workplace, a false negative test can have far-reaching ramifications if an incident occurs after screening and a urine sample test then finds drugs which were missed by the initial screening process. On-site or point-of-care devices must therefore be rigorously tested and validated before use in the field. AS/NZS 4308 states that on-site screening devices be evaluated at 25% above and 30% below the level considered positive (these are typically referred to as cut-offs). The Standard also specifies that failure of no more than 10% of on-site devices is permitted.

When using immunoassay techniques, samples can easily be adulterated to provide a false result. Adulterations are common in patients who undergo clinical compliance testing, for example abstinence control in drug users. Adulterations can include water (leading to dilution of urine), bleach and masking agents (such as diuretics) or other substances that interfere with the screening test. Adulterant checks are also part of a laboratory's capability to detect an invalid specimen. The Standard provides guidance on what to do to avoid adulteration and how to test for adulterants (for example temperature and creatinine checks).

### **Standards**

An Australian/New Zealand Drug testing standard (AS/NZS 4308:2008) provides guidance on the most common classes of drugs to be tested in urine.<sup>3</sup> The Australian Standard (AS 4308) was the world's first national standard for medicolegal drug testing. It is designed to ensure the standardisation of procedures for specimen collection and the detection of drugs of abuse. These include cannabis metabolites, cocaine metabolites, benzodiazepines, sympathomimetic amines (amphetamines) and opioids. Urine for medicolegal testing should be collected and analysed by an AS/NZS 4308:2008 accredited organisation. Consultation with the laboratory is useful to find out which compounds can be tested as well as for interpretation of negative or positive

3 Australian/New Zealand Standard: procedures for specimen collection and the detection and quantitation of drugs of abuse in urine. AS/NZS 4308:2008. Sydney: Standards Australia; 2008.

findings

### **Confirmatory tests**

Confirmation tests are usually required for medicolegal purposes when drug testing is used in the workplace or for family custody disputes in which parents are allegedly using drugs at home in the presence of children. An initial urinary screening test must be confirmed for evidence of drug use. Confirmatory testing is more sensitive and specific than screening tests and confirms the drug of interest as opposed to the drug class.

Clinical laboratories have relied on gas chromatography/mass spectrometry for confirmation, however developments in liquid chromatography/ mass spectrometry technologies over the last 10 years have meant a wider range of compounds can be confirmed simultaneously. Laboratories must demonstrate compliance with requirements to either International Organization for Standardization (ISO) 17025 (for chemical/forensic testing) or ISO 15189 for medical/pathology testing and must be accredited by the National Association of Testing Authorities.

### **Screening tests other than urine**

The evolution of oral-fluid testing (saliva) both from a policy and technology viewpoint has grown rapidly in recent years. This testing has been used primarily to test drivers for illicit drugs (amphetamines and cannabis) and is now being used in the workplace.

Saliva is easier and safer to collect than urine. Unlike urine, not all drugs are easily detectable in oral fluid, either because of the low concentrations or the short time that drugs are present in saliva. The detection of a drug in oral fluid is normally associated with recent use (up to 24 hours) as the drugs can be related to blood or plasma concentrations and therefore physiological effect. This cannot be inferred from urine as the concentration in urine can only be related to previous consumption and not any effect of the drug.

### **Marijuana (Cannabis)**

THC is the primary active ingredient in marijuana (cannabis). When smoked, or orally administered, THC produces euphoric effects. Users have impaired short term memory and slowed learning. They may also experience transient

episodes of confusion and anxiety. Long term relatively heavy use may be associated with behavioural disorders. The peak effect of marijuana administered by smoking occurs in 20-30 minutes and the duration is 90-120 minutes after one cigarette.

Cannabis and its active ingredient THC is tested for in most drug tests

Cannabis is highly detectable a long time after use because THC lingers in the fatty tissues of the body and leaks steadily into the blood and then the urine over weeks. It is difficult to determine exactly how long it will take the THC to leave the human body. It depends on individual metabolism, how much the person ingested and how often they used weed or hash.

Testing for the presence of THC is probably the most common drug test ordered. In most cases, a urine test is used for this purpose.

The saliva test is less invasive and detection of cannabis is possible via this method for 4 to 14 hours after exposure.

### **Signs of Marijuana Use and Addiction:**

#### **Behaviours:**

- Reduced motivation
- Difficulty thinking
- Distorted sensory perception
- Grandiosity (acting in a pompous or boastful manner)
- Mood swings, social withdrawal and isolation
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#### **Physical:**

- Difficulty thinking and concentrating
- Dry mouth, green or white coating on the tongue
- Appearing sluggish, droopy eyelids
- Impaired judgement
- Impaired short term memory
- Inappropriate laughter
- Increased heart rate
- Increased appetite, craving sweets
- Red puffiness under the eyes, bloodshot, glassy eyes
- Eye lock (pupils slow to respond to movement)

- Common drug paraphernalia, bongos, pipes, roach clips, cigarette papers, novelty tins, burnt knives, spoons, gel caps/pill phials, small pieces of tin foil etc.

### **Marijuana Testing Cut off Levels**

When drug tests are conducted, the unit of measurement is in Nano grams per millilitre.

When a urine sample is analysed, a positive test is one where the subject had a level of 50 ng/ml of urine.

In the event of a positive or non-negative result there is the option to send the sample to a registered laboratory where a confirmatory test can be carried out using gas chromatography-mass spectrometer or GC/MS. In the event of a positive confirmatory test result then the individual being tested would usually be expected to cover the costs.

### **Methamphetamine**

Methamphetamine (or “P”) is an addictive stimulant drug that strongly activates certain systems in the brain. Methamphetamine is closely related chemically to amphetamine, but the central nervous system effects of methamphetamine are greater. Methamphetamine is made in illegal laboratories and has a high potential for abuse and dependence. The drug can be taken orally, injected or inhaled. Acute higher doses lead to enhanced stimulation of the central nervous system and induce euphoria, alertness, reduced appetite and a sense of increased energy and power. Cardiovascular responses to Methamphetamine include increased blood pressure and cardiac arrhythmias. More acute responses produce anxiety, paranoia, hallucinations, psychotic behaviour, and eventually depression and exhaustion. The effect of methamphetamine last 2-4 hours and the drug has a half-life of 9-24 hours in the body. Methamphetamine is excreted in the urine as amphetamine and oxidized and de-aminated derivatives. However, 10 to 20% of methamphetamine is excreted unchanged. Thus the presence of the parent compound in the urine indicates methamphetamine use.

Methamphetamine is generally detectable in the urine for 3-5 days, depending on the urine PH level.

The Drug Screen Multi Test Cup yields a positive result when the methamphetamine level in urine exceeds 300ng/ml.

### **How Does Methamphetamine Effect People?**

#### **Physical:**

- Extreme weight loss
- Severe damage to skin, teeth and immune system
- Uncontrollable tremors and fits
- Severe damage to the respiratory system/ vital organs
- Strokes/blood clots
- Death

#### **Psychological:**

- Irreversible addiction
- Meth psychosis/schizophrenia
- Severe depression/ suicidal tendencies
- Severe paranoia
- Violent and aggressive behaviour
- Loss of will to live

### **Signs of Methamphetamine Addiction:**

#### **Physical**

- Excessive sweating
- Rotten discoloured teeth, lip biting, tongue clicking, teeth grinding. speaking quickly, incessant talking, voice quiver
- Sensitive to noise
- Skin sores, spots, leathery grey/pale skin
- Tremors/convulsions
- Inability to sleep, severe depression
- Extreme weight loss
- Burns to fingers
- Presence of: glass pipes, light bulbs, syringes, discarded point/gram bags etc.
- Sunken eyes, dilated pupils, rapid eye movement

#### **Behaviours:**

- Unpredictable, changeable moods
- Repetitive, meaningless, purposeless
- Paranoid
- Delusion of grandeur/power
- Disinterest in previously held interests
- Confused/ disorientated

### **Amphetamine**

Amphetamines are controlled Drugs, but are also available on the illicit market. Amphetamines are a class of potent sympathomimetic agents with therapeutic applications. They are chemically related to the human body's natural catecholamines, epinephrine and norepinephrine. Acute higher doses lead to enhanced stimulation of the central nervous system and induce euphoria, alertness, reduced appetite, and a sense of increased energy and power. Cardiovascular responses to Amphetamines include increased blood pressure and cardiac arrhythmias. More acute responses produce anxiety, paranoia, hallucinations and psychotic behaviour. The effects of amphetamines generally last 2-4 hours following use and the drug has a half-life of 4-24 hours in the body ( half-life in a medical context, is the time it takes for the [blood plasma](#) concentration of a substance to halve (*plasma half-life*) its steady-state. The relationship between the biological and plasma half-lives of a substance can be complex depending on the substance in question, due to factors including accumulation in tissues, active metabolites, and receptor interactions).-About 30% of Amphetamines are excreted in the urine in unchanged form, with the remainder as hydroxylated and de-aminated derivatives.

The Drug Screen Multi Test Cup yields a positive result when the amphetamines in urine exceeds 300ng/ml.
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### **Benzodiazepines**

Benzodiazepines are medications that are frequently prescribed for the symptomatic treatment of anxiety and sleep disorders. They produce their effects via specific receptors involving a neurochemical called gamma aminobutyric acid (GABA). Because they are safer and more effective Benzodiazepines have replaced barbiturates in the treatment of both anxiety and insomnia. Benzodiazepines are also used as sedatives before some surgical and medical procedures, and for the treatment of seizure disorders and alcohol withdrawal.



Risk of dependency occurs if benzodiazepines are taken regularly (e.g. daily) for more than a few months, especially at the higher than normal doses. Stopping abruptly can bring on such symptoms as trouble sleeping, gastrointestinal upset, feeling unwell, loss of appetite, sweating, trembling, weakness, anxiety and changes in perception.

Only trace amounts (less than 1%) of most benzodiazepines are excreted unaltered in the urine: most of the concentration in urine is conjugated drug. The detection period for the benzodiazepines in the urine is 3-7 days.

The Multi Drug Test kit yields a positive result when the benzodiazepines in the urine exceed 200ng/ml.

## **Cocaine**

Cocaine is a potent central nervous system (CNS) stimulant and a local anaesthetic. Initially it brings about extreme energy and restlessness while gradually resulting in tremors, over sensitivity and spasms. In large amounts cocaine causes fever, unresponsiveness, difficulty in breathing and unconsciousness.

Cocaine is often self-administered by nasal inhalation, intravenous injection and free base smoking. It is excreted in urine in a short time primarily as Benzoyllecgonine. Benzoyllecgonine, a major metabolite of cocaine, has a longer biological half-life (5-8 hours) than cocaine (0.5-1.5 hours), and can generally be detected for 24-48 hours after cocaine exposure.

The Drug Screen Multi Test Cup yields a positive result when the cocaine metabolite exceeds 300ng/ml.
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## **Opiates (Morphine)**

Opiate refers to any drug that is derived from the opium poppy, including the natural products, morphine and codeine, and the semi synthetic drugs such as heroin. Opioid is more general, referring to any drug that acts on the opioid receptor.

Opioid analgesics comprise a large group of substances which control pain by depressing the central nervous system. Large doses of morphine can produce

higher tolerance levels, physiological dependency in users and may lead to substance abuse. Morphine is excreted unchanged in urine for several days after an opiate dose.

The Drug Screen Multi Test Cup yields a positive result when the concentration of opiate exceeds 300ng/ml.

### **The Drug Screen Multi Test Cup**

This test is an immune chromatographic assay for the rapid qualitative detection of drugs of abuse and their principle metabolites in urine at specified cut-off concentrations.

It is a one-step assay, detecting simultaneously for the six most common drugs of abuse found in New Zealand. Each of the tests is read individually and independently of one another.

The drug types detected with this test are:

Abbreviation	Target Analyte	Cut off (ng per ml)
Amp	Amphetamine (Speed)	300
Bzo	Benzodiazepines	200
Coc	Cocaine	300
Met	Methamphetamine (P)	300
Opi	Opiates (Morphine)	300
THC	Marijuana ( Cannabis)	50

This test meets the AS/NZ (Australian/New Zealand) 4308:2008 standards. These standards were developed in 2008 and have lower cut off levels than the US or UK standards. To be validated a drug test must be tested to ensure they reliably meet this standard and then they receive a validation status.

#### **Features of the Drug Screen Multi Test Cup include:**

- Validation against the AS/NZ 4308:2008 standard

- 6 drugs tested simultaneously in the one kit
- Secure container
- Key built in enables the sample to be sent to a laboratory for confirmatory testing if positive, and prevent tampering to occur while “on route”.
- User friendly
- “Wicking” technology improves speed and readability of the test
- Temperature strip and adulteration strips to identify potential “workarounds” to avoid detection such as increased fluid intake prior to the test to masks levels.

### **Synthetic Cannabinoids**

Synthetic cannabinoids are chemicals that mimic the effect of THC – one of the ingredients in cannabis. THC is the part of cannabis that gets you ‘high’. These chemicals are added to a mixture of dried plant matter and sold under brand names such as “Kronic”, “Spice”, and “K2”. Such products were developed to be a legal alternative to cannabis, however many synthetic cannabinoids substances are now banned in New Zealand.

#### **What they are**

Synthetic cannabinoids are structurally different from THC (the active component of cannabis) but act in similar ways to affect the cannabinoid system in the brain.

Synthetic cannabinoids fall into seven major structural groups:

1. Naphthoylindoles (e.g. JWH-018, JWH-073)
2. Naphthylmethyloindoles
3. Naphthoylprroles
4. Naphthylmethyloindenes
5. Phenylacetylindoles
6. Cyclohexylphenols (e.g. CP 47,497)
7. Classical cannabinoids (e.g. HU-210)

Synthetic cannabinoids, in their original state, are a liquid. They are usually sold combined with dried herbs intended for smoking. They can be purchased in a range of quantities, for example, by the gram, ounce or pre-rolled like a 'joint'. They are occasionally sold as powders and if so may be drunk as a tea.

"Spice" was the earliest in a series of synthetic cannabinoids sold in many Western countries. Since then a number of other similar products have been developed for sale such as "Kronic", "Northern Lights", "K2", "Zeus", "Puff", "Tai High", "Aroma" and "Magic Dragon".

There are hundreds of cannabinoid compounds and more are being produced all the time. Manufacturers are constantly changing compositions to produce new products and to keep in step with legal controls over the sale of the substances.

### **Health effects**

We don't know much about the health effects of synthetic cannabinoids. Many synthetic cannabinoids have only recently been developed. They have not been approved for human consumption and there is very limited information available regarding their short and long-term effects.

The majority of information based on medical research around synthetic cannabinoids has focused on JWH products – in particular JWH-018 and JWH-073. Not all synthetic cannabinoid products are based on JWH compounds.

JWH compounds are believed to be active at doses around 2-4mgs when smoked. The effect they have on the consumer tends to be similar to the high people report from cannabis, but with a longer time before onset and shorter duration.

### **Common reported effects of synthetic cannabinoids include:**

- a similar effect to smoking cannabis
- disconnection from thoughts, feelings, memories and sense of identity (dissociative state)
- fast and irregular heartbeat
- relaxation
- euphoria

- rapid pulse rate
- racing thoughts
- delayed reaction time
- dry mouth
- lowering of inhibitions
- dizziness
- agitation
- anxiety
- paranoia

Health professionals and synthetic cannabis consumers have reported that the toxic effects of synthetic cannabinoids can be significant.

**Adverse effects reported in New Zealand include:**

- rapid heart rate
- hypertension
- tachypnea (rapid breathing)
- abdominal pain
- nausea
- vomiting
- chest pain
- heart palpitations
- severe paranoia, especially around fear of dying
- hallucinations
- racing thoughts
- seizures
- tremors
- hallucinations
- psychosis, sometimes lasting for several days

Toxic symptoms generally last no longer than 3-4 hours, with no remaining adverse effects in many cases. However there is increasing concern about serious acute and long-term toxicities and long-lasting psychosis in some consumers. People with pre-existing mental health conditions appear to be particularly negatively affected by synthetic cannabinoids.

The National Poisons Centre reports that the increased availability of synthetic cannabinoids has resulted in more calls from doctors and ambulance officers reporting breathing problems, paranoia and recurring psychotic episodes. New Zealand doctors have reported concerns over the increase in clients in their emergency departments suffering adverse effects.

The inventor of synthetic cannabinoids, Emeritus Professor John Huffman, has publically declared his concern over their use, saying they can lead to serious psychological problems which may be irreversible.

### **Dependence, addiction and overdose risk**

There is limited research evidence around the dependence, addiction and overdose risk from synthetic cannabinoid use.

A 2009 report from the European Monitoring Centre for Drugs and Drug Addiction suggested tolerance to synthetic cannabinoids may develop fairly fast, which could lead to a risk of developing dependence. In late-2012, New Zealand health service professionals report that synthetic cannabinoids are proving to be very addictive for some consumers, with people using up to three bags a day, seeking treatment from addiction services to address their use, and experiencing negative outcomes in their jobs and relationships as a result of heavy use.

A UK study found evidence of a withdrawal effect after smoking the product 'Spice Gold'. This effect has also been found in New Zealand, with increasing reports from health services that some people who use synthetic cannabinoids heavily for several months and then stop using experience withdrawal. Some of the reported withdrawal symptoms include:

- paranoia
- anxiety
- panic attacks (even when sober)
- severe memory problems
- difficulty concentrating
- severe confusion or disorientation
- fear of dying
- rapid heartbeat/tachycardia
- insomnia

- difficulty breathing
- constipation
- nausea
- difficulty eating
- weight loss

Based on similarities between JWH products and THC, the potential for synthetic cannabinoids to cause death is thought to be low, although reports of rapid heartbeat and breathing problems are of concern to health professionals. The real risk of death cannot be assessed without further research.

## ***Appendix 1:***

### **Procedure for the Collection and Screening of Urine Samples using the Drug Screen Multi Test Cup**

#### **General**

All sample collection and screening tests will be supervised or carried out by a suitably qualified technician appointed by the Company.

#### **Sample Collection**

Prior to sample collection, each donor will sign a consent form which will outline the reasons for screening, substances screened for, confidentiality of information and consequences of refusing to provide a sample or sign the consent form. Whilst recognition must be given to donor individual privacy, precautions must be taken to ensure the integrity of the collected urine sample.

Each drug screening program will have one or more designated collection sites that have the appropriate personnel, supervision, facilities and security in place.

No unauthorized persons shall be permitted in any part of the designated collection site when urine samples are being collected.

#### **Screening Procedure**

1. The Drug Screen Multi Test Cup will be removed from the sealed pouch and date, identity and/or reference number of the donor, recorded on the space provided.
2. The cup will then be given to the donor to provide a specimen. After voiding, the donor will secure the cap tightly.
3. The technician will date and initial the security seal and attach the seal over the cup cap.
4. On inspection, should the appearance of the urine sample cause suspicion that it may have been adulterated, then a second sample should be collected.
5. The temperature strip integrated into the cup is then checked to ensure the integrity of the sample.



6. The technician then inserts the key and pushes it to a fully closed position.
7. The label is then peeled off the multi-drug test card to view results.
8. The timer is started and results are read after 5 minutes.
9. A record of the results is obtained by placing the entire test cup face down on a photocopier.

It is recommended that the donor be present throughout the screening to witness the integrity of the procedure.

The donor is then advised of the test results and appropriate action taken.

### **Confirmatory Test**

In the event that a non-negative (positive) test is challenged by the donor, the decision may be taken to have this initial test result confirmed through the test procedures of either laboratory Immunoassay or Gas Chromatography / Mass Spectrometry (GC/MS). The results provide evidential proof of the presence of the drug and, if by GC/MS, the amount. A further urine sample – the B sample – may be taken from the donor and retained for possible future analysis by an alternate laboratory at the donor's request.

If the reason for testing is "Just Cause", "Post Incident" or "Random" and the test result is positive, then it is recommended that a B sample be taken and the original sample – the A - in the cup, be sent to a registered laboratory for confirmatory testing by GC / MS.

### **Chain of Custody – for Confirmatory tests**

To ensure a correct "chain of custody" procedure is followed, the photocopy of the sealed cup test results is retained and other relevant information recorded.

The sealed cup containing the remainder of the urine sample is then dispatched under appropriate security measures to the designated laboratory.

The integrity of the urine sample remaining in the cup is maintained, having been isolated from possible contamination from the test strip.

All confirmatory testing must be carried out through an accredited laboratory.

All testing through an accredited laboratory will conform to the Australian / New Zealand Standard AS/NZS 4308:2008.

The integrated cup containing the urine sample shall remain at all times the property of the Company to be retained or disposed of at their discretion.

## **Appendix 2;**

### **Information from the Drug Foundation Web Site**

<https://www.drugfoundation.org.nz/drug-information>

### **Drug Testing**

This page looks at different types of drug tests, how they are carried out and some of the things that might affect their results. On this page we cover:

- 1 What is a drug test?
- 2 What are the limitations of drug tests?
- 3 What can affect how long a drug stays in my body?
- 4 What are the differences between different types of drug tests?
- 5 How can I pass a drug test?
  - 1 -Will drinking lots of water give me clean urine faster?
- 6 What if I take more than one drug?
- 7 What is a false positive?
- 8 Can I test positive from inhaling someone else's cannabis smoke?
- 9 Why does cannabis stay in the body for so long?
- 10 Do home drug testing kits work?
  - 1 -Pub and home breathalysers
- 11 Can people be forced to have a drug test?

### **What is a drug test?**

Drug testing looks for traces of drugs in the body using samples of urine, breath, hair, saliva, or sweat.

Drug tests detect whether you are under the influence of alcohol or whether you have taken drugs recently. Drug tests use samples to look for very small amounts of drugs in the body. There are different types of drug tests, including breath, blood, hair, saliva and urine, which test for various drugs.

Testing may be used by a range of organisations including:

- Workplaces to check for past use of illicit drugs and blood alcohol concentration while working.
- Sporting bodies to detect drugs that are not permitted while competing in certain competitions.
- Drug treatment services to inform medical decisions.
- Judicial settings to inform legal decisions such as in custody cases.

## What are the limitations of drug tests?

Drug tests can't tell exactly how much of a drug was used or exactly when it was used. Drug tests also don't measure impairment, apart from alcohol breath testing.

Laboratory testing is necessary to confirm any positive test to and is generally more accurate than 'point-of-collection testing' (POCT), but it's not always exact. POCT devices provide more timely results, but laboratory analysis can better differentiate illicit from prescription drug use.

## What can affect how long a drug stays in my body?

Drugs affect people differently, and are metabolised (processed) by people differently. Results of drug tests are always unique to the person who was tested. This means that you and a friend could take the same amount of a drug, at the same time, and have the same type of drug test, but have different test results. This is because individual things about you and your drug use can affect the results.

These include:

- the strength of the drug
- how much of it you use
- how you use it (e.g. drunk, smoked, injected)
- how often you use it
- what other drugs you use
- tolerance to the drug
- gender and age
- overall health and wellbeing
- metabolism

## What are the differences between different types of drug tests?

### Breath

**What they test for:** Alcohol

**Method/process:** Blow into a hand held device.

**Used by:** Police, workplaces. Random roadside breath testing for alcohol takes place in New Zealand.

**Detection time after last use:** It takes approximately 1 hour for the body to break down each [standard drink](#).

## Urine

**What they test for:** Can test for all prescription and illicit drugs, including some forms of [synthetic cannabis](#). Tests can be modified to detect particular substances.

**Method/process:** Urinate into a container. The urine will be tested using a dipstick. If the test is positive the urine sample will be sent to a laboratory for more testing.

**Used by:** Workplaces, drug treatment centres, sporting bodies.

**Detection time after last use:** Cannabis up to 10 days (infrequent use) or 30 days or longer (frequent use), opiates 2 to 4 days, amphetamines 2 to 5 days, cocaine 2 to 3 days, benzodiazepines up to 2 weeks.

## Blood

**What they test for:** Can test for all illicit and prescription drugs. Tests can be modified to detect particular substances. Sometimes used instead of or to confirm a breath test for alcohol.

**Method/process:** A blood sample will be taken from a finger prick, or from a vein in the arm or hand, using a needle. The blood sample will be tested by a laboratory.

**Used by:** Police, drug treatment centres, sporting bodies.

**Detection time after last use:** Cannabis 20 to 36 hours, amphetamines 4 to 8 hours, cocaine 40 to 90 minutes.

## Saliva

**What they test for:** Can test for use of cannabis, amphetamines, MDMA (ecstasy), cocaine, opiates and some benzodiazepines.

**Method/process:** An absorbent collector is put in the mouth or on the tongue.

**Used by:** Workplace.

**Detection time after last use:** Cannabis 3 to 4 hours, amphetamines 12 to 24 hours, cocaine 4 hours and possibly longer, MDMA (ecstasy) 12 to 24 hours. Detection times for opiates and benzodiazepines are currently unknown.

## Hair

**What they test for:** Can test for all illicit drug use and some prescription drugs.

**Method/process:** Approximately 40 to 50 strands of hair will be cut from the scalp line at the crown of the head. The hair sample will be tested by a laboratory.

**Used by:** Sporting bodies, justice settings.

**Detection time after last use:** Can detect past use up to a few months, and can therefore test for chronic use. Hair drug tests are currently the only tests that

can reliably detect drug use beyond a couple of days or weeks. However, hair tests are not used very often because they are expensive.

### **How can I pass a drug test?**

Other than not taking drugs, the only sure way to pass a drug test (i.e. to test negative) is to make sure your body has metabolised (processed) all of the drug(s) you have taken.

Getting a negative drug test result (i.e. passing) means:

- that you haven't taken the drug(s) being tested, or
- that your body has metabolised all traces of the drug(s) being tested, or
- that the test wasn't complex enough to find the traces of the drug(s) being tested.

There are myths that taking various substances (e.g. aspirin, niacin, bleach, vinegar, cranberry juice, goldenseal) will mask or disguise drug use in tests and give you a negative test result. There are also products sold that claim they can help you pass a drug test. However, there's no reliable evidence that any of these actually work.

It is not possible to 'cheat' a hair test except by using someone else's hair.

Bleaching and dying hair do not compromise the testing.

There's no guaranteed way to get rid of a drug other than waiting for your body to metabolise it. If you know you will be drug tested and you are worried, don't use drugs. [Help and support](#) is available.

### **Will drinking lots of water give me clean urine faster?**

Drinking lots of water does not work to cheat a urine (or a blood) drug test.

Most urine tests check for dilution (too much water) and may reject your results because of this.

Also, you can actually get sick from drinking more water than your body can handle. This is called "water intoxication" or "water overdose". If you drink too much water, your kidneys can't get rid of it quickly enough. This can cause headaches, blurred vision, cramps and eventually convulsions.

### **What if I take more than one drug?**

If you have taken more than one drug at a time (including alcohol), your body may take longer to metabolise them than if you had only taken one. Most drugs will stay in your body for at least 24–48 hours, so they don't need to be taken at exactly the same time to have an effect on each other.

Remember that even if you don't feel the effects of the drugs anymore (e.g. you don't feel stoned), they can still be in your body.

### **What is a false positive?**

A false positive is a test result that is positive for a drug that you haven't taken. It is false because the result is incorrect. A false positive usually means that the test wasn't sensitive enough to be able to tell the difference between two drugs.

### **Can I test positive from inhaling someone else's cannabis smoke?**

Traces of cannabis could be found in your body fluids if you have inhaled someone else's cannabis smoke (called passive cannabis smoking). However, testing companies usually say that the concentrations of these traces would be too low to give a positive test result for cannabis.

### **Why does cannabis stay in the body for so long?**

Cannabis is stored in the body differently to other drugs. If you use cannabis once, the body can get rid of it fairly quickly (within a couple of hours). However, if you are a regular user of cannabis, the THC (the active ingredient in cannabis) accumulates in your body's fat cells and can take a long time to be broken down and metabolised. THC can be detected by a urine test for up to 6 weeks after regular use.

### **Do home drug testing kits work?**

Drug testing kits can be bought over the Internet. There are different types of kits, which test a range of drugs. These kits are often promoted to parents as a way of finding out if their kids have used drugs. However, there's little evidence that these kits are accurate or reliable. Also, there can be issues with actually doing the tests. For example, if a parent wanted to test their kid, who didn't want to be tested and denied taking drugs, their relationship could be seriously affected.

There are also kits available for sale that are designed to test the strength, purity and make-up of drugs. But again, there has only been only a small amount of research into how accurate and reliable these tests are, so be wary of any claims made by the test manufacturers or sellers.

## **Pub and home breathalysers**

Many pubs and bars have breathalysers available for patrons to use. There are also a number of personal breathalysers available for purchase, for example at petrol stations. These breathalysers should only be used as a general guide of BAC levels. They are not recommended for calculating if a person can drive or not and test results cannot be used in a court of law or to question a result obtained through a police breathalyser.

## **Can I be forced to have a drug test?**

At some point in your life you may be asked to have a drug test.

New Zealand's public schools don't routinely drug test their students. Drug tests are sometimes required where a student has been suspended and the school Board of Trustees requires that the student agree to drug testing as a condition for reinstatement to school. In contrast, drug testing of students in private and boarding schools may be part of the school's drug policy. If you are a student in one of these schools, you could be asked to have a drug test.

Drug testing in workplaces is usually used when there are safety issues related to the job, such as driving a vehicle or operating machinery. If you are employed in this type of work, you could be asked to have a drug test as a requirement of the job. There will probably be consequences if you refuse, such as losing your job.

If you are driving a motor vehicle in New Zealand, and refuse a random roadside breath test (for alcohol) when you are asked to have one, you can be fined or lose your licence. At this stage, roadside saliva testing for other drug use is not used in New Zealand.

## **Disclaimer**

Disclaimer Information on this page is meant as a general guide only. While we (the New Zealand Drug Foundation) have worked hard to make sure that the information on this page is complete and correct, we do not claim that it is perfectly complete, accurate, reliable or suitable. We do not offer any information in this fact sheet as a tool for treatment or counselling. We recommend that before making any decision based on any information in this fact sheet, you should seek independent professional advice.

This information on this page was adapted from the Australian Drug Foundation's 'DrugInfo' site.

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