

An Overview of Drug test

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INTRODUCTION

A drug test is a scientific examination of a biological specimen, such as urine, hair, blood, breath, perspiration, and/or oral fluid/saliva, to assess the presence or absence of specified parent substances or their metabolites. Detecting the presence of performance-enhancing steroids in sports, employers and parole/probation officers screening for drugs prohibited by law (such as cocaine, methamphetamine, and heroin), and police officers testing for the presence and concentration of alcohol in the blood (commonly referred to as BAC) are all examples of common drug testing applications. A breathalyser is usually utilised for BAC tests, but urinalysis is used for the great majority of drug testing in sports and the workplace. There are a variety of additional approaches with varying degrees of accuracy, sensitivity, and detection time. A drug test can also refer to a test that provides a quantitative chemical analysis of an illegal drug, which is usually used to promote safe drug usage.

Detection periods

Multiple factors influence the detection windows, including drug kind, amount and frequency of usage, metabolic rate, body mass, age, overall health, and urine pH. The detection timings of metabolites have been included into each parent medication for simplicity of usage. Heroin and cocaine, for example, can only be identified for a few hours after usage, but their metabolites can be detected in urine for several days. The graph displays the metabolites' longer detection times.

The results of oral fluid or saliva testing are very similar to those of blood tests. THC (tetrahydrocannabinol) and benzodiazepines are the only exceptions. THC will most likely be detected in oral fluid 6–12 hours after intake. This continues to make detecting THC and benzodiazepines in oral fluid problematic.

Breathing air, for the most part, resembles blood tests. According to a recent study that looked into 12 analytes, liquid

chromatography–mass spectrometry had to be employed to assess the sample due to the very low amounts of chemicals in the breath air.

Types

Urine drug screen

The inexpensive cost of urine analysis is the main reason for its adoption. One of the most prevalent testing methods is urine drug testing. The most common urinalysis is the enzyme-multiplied immune test. There have been complaints regarding the test's relatively high percentage of false positives.

Breath test

A breath test is a common way for assessing whether or not someone is inebriated. A breath test uses a deep-lung breath to determine the amount of alcohol in the body. Different equipment is used to determine an individual's alcohol concentration through their breath. The Breathalyzer is a well-known instrument that was developed in 1954 and, unlike other breath-testing instruments, contained chemicals. Infrared light-absorption devices and fuel cell detectors are more recent equipment. These two tests are computer controlled, so the user simply has to click the start button.

Hair testing

Hair analysis has been utilised by courts in the United States, the United Kingdom, Canada, and other nations to detect addictive chemicals. Hair testing has been allowed as forensic evidence in court cases in the United States under the Frye Rule, the Federal Rules of Evidence, and the Daubert Rule. As a result, the results of hair testing are legally and scientifically accepted as admissible evidence.

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