



# Comparison of Drug Testing Methodologies

Testing Method	Advantages	Disadvantages
<b>Urine (laboratory-based)</b>		
	<ul style="list-style-type: none"> <li>■ Drugs and metabolites are highly concentrated in urine.</li> <li>■ Specimens are obtained without physical risk to the donor.</li> <li>■ A vast body of scientific literature addresses all aspects.</li> <li>■ Numerous court cases have upheld urine test results.</li> <li>■ Uniform testing criteria (cutoffs) have been established.</li> <li>■ Performance Testing (PT) is consistently practiced.</li> <li>■ Minimal litigation risk is present if procedures are followed.</li> <li>■ Supplying meaningful statistical data to evaluate the testing program</li> </ul>	<ul style="list-style-type: none"> <li>■ The period of detection is 2-3 days.</li> <li>■ No dose to concentration relationship exists.</li> <li>■ Drug concentration may be influenced by water intake.</li> </ul>
<b>Urine (point of collection)</b>		
	<ul style="list-style-type: none"> <li>■ Drugs and metabolites are highly concentrated in urine.</li> <li>■ Specimens are obtained without physical risk to the donor.</li> <li>■ Testing can be performed with non-scientific personnel.</li> <li>■ Minimal space and resources are required for testing.</li> <li>■ Test results are reported quickly.</li> </ul>	<ul style="list-style-type: none"> <li>■ The period of detection is 2-3 days.</li> <li>■ No dose to concentration relationship exists.</li> <li>■ Drug concentration may be influenced by water intake.</li> <li>■ Presumptive results may be acted upon inappropriately.</li> <li>■ Cutoff concentrations are not always accurate.</li> <li>■ A limited body of scientific literature exists.</li> <li>■ Performance testing is lacking.</li> <li>■ The determination is subjective in nature.</li> <li>■ A higher litigation risk exists versus lab testing, unless the results are confirmed.</li> <li>■ Adequate procedures have not been developed to ensure reliability.</li> </ul>

Testing Method	Advantages	Disadvantages
<b>Hair</b>		
	<ul style="list-style-type: none"> <li>■ Testing hair provides a longer estimate of time of drug use.</li> <li>■ Obtaining, storing, and shipping hair specimens is easier.</li> <li>■ A low risk of disease transmission exists when handling hair samples.</li> <li>■ A second specimen can be obtained.</li> </ul>	<ul style="list-style-type: none"> <li>■ Hair testing does not determine recent drug usage.</li> <li>■ A possibility of bias in hair color, ethnic origin, and sex exists.</li> <li>■ Possible environmental contamination exists for some drug classes.</li> <li>■ Performance testing is lacking.</li> <li>■ Analytical results vary due to the lack of uniformity of the matrix.</li> <li>■ Interpretation of dose and time relationships has not been established.</li> <li>■ High to moderate litigation risk exists, depending on the drug.</li> </ul>
<b>Sweat</b>		
	<ul style="list-style-type: none"> <li>■ High subject acceptability exists when wearing the patch.</li> <li>■ Drug intake can be monitored for a period of several weeks.</li> <li>■ Allergic reactions happen less frequently.</li> <li>■ The test is relatively tamper-proof.</li> </ul>	<ul style="list-style-type: none"> <li>■ Performance testing is lacking.</li> <li>■ Sweat production varies greatly.</li> <li>■ The number of collection devices is limited.</li> <li>■ Contamination may occur during application/removal.</li> <li>■ The collection device may be accidentally removed.</li> <li>■ Limited scientific evaluation has been conducted.</li> <li>■ Litigation risk is high.</li> </ul>
<b>Oral Fluid (Saliva)</b>		
	<ul style="list-style-type: none"> <li>■ Saliva is useful in the detection of recent drug use.</li> <li>■ Test results may be interpreted in relationship to behavior of individual.</li> <li>■ Saliva is readily accessible for collection.</li> <li>■ Numerous publications regarding saliva testing have been written.</li> </ul>	<ul style="list-style-type: none"> <li>■ Litigation risk is high.</li> <li>■ Saliva specimens can be contaminated by oral and intranasal routes.</li> <li>■ Collection of saliva requires disease protection measures.</li> <li>■ Performance testing is lacking.</li> <li>■ Testing with saliva has been limited to specific instances involving forensic investigations.</li> </ul>