

## COCAINE METABOLITE: BENZOYLECGONINE

Cocaine is a commonly abused illicit substance detected in urine by the presence of its metabolite benzoylecgonine.<sup>1</sup> There are three potential sources that can cause a positive result for benzoylecgonine in drug testing: illicit drug use by several routes of administration, nasal or oral topical anesthetic predominantly used during surgical procedures, and illicit coca leaf tea.<sup>1,2,3</sup>

Current industry standards have set the cocaine metabolite cut off to be 50ng/mL while SAMHSA workplace guidelines have set a cut off to be 100ng/mL for quantitative testing in urine. Recent clinical studies have suggested these cut offs may be too high, the benzoylecgonine analysis was validated to a cutoff level of 20 ng/mL in urine. This was determined by plotting all positive benzoylecgonine results on a logarithmic scale as a frequency distribution (Figure 1) to obtain a false negative rate.<sup>6</sup>

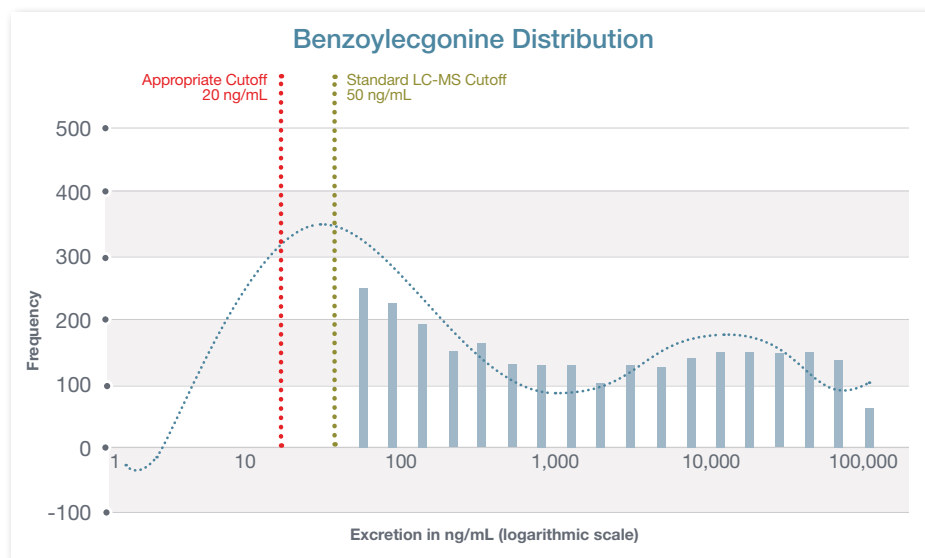


Figure 1. Distribution of benzoylecgonine excretion shows a large number of positive results below 100 ng/mL<sup>6</sup>

The cocaine metabolite can be detected in urine for 2 to 3 days after a single dose through intranasal administration, and up to 22 days after use for chronic users.<sup>7,8</sup> In oral fluid, the cocaine metabolite can be detected for 12 to 24 hours after single use and up to 10 days for chronic users.<sup>7,8</sup> Chronic use of cocaine can prolong the detection window in both urine and oral fluid matrices due to the lipophilic nature of the drug, which causes it to partition into fatty tissue.<sup>9</sup>

Clinical interpretation of low concentrations can be challenging. Chronic use of the drug causes the substance to store in fat cells which can lead to a prolonged elimination in patients with certain body types and/or liver health conditions. Additionally, presence of the drug in the patient's environment may be a possible source, though no cutoff level definitively determines active use from environmental exposure.

**A Precision Diagnostics trained Clinical Support Specialist can  
assist with further review of your patient's results**

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References:

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