

Creatinine

Classification

Creatinine is a metabolic by-product of muscle metabolism, and normally appears in urine in relatively constant quantities over a 24 hour period with "normal" liquid intake. Therefore, urine creatinine can be used as an indicator of urine water content or as a marker identifying a specimen as urine. Greater than normal intake of water will increase the urine water content (lowering the creatinine level) consequently diluting the amount of drug in urine. Conversely, a limited intake of water can lead to an abnormally concentrated urine specimen (as occurs with dehydration) resulting in elevated creatinine levels.

Interpretation of Results

Creatinine Conc.:	Interpretation:
<20 mg/dL	Dilute urine specimen: Most likely due to increased water or liquid intake. Can be a result of short-term water loading (flushing) in an attempt to dilute any drug below testing cut-off concentrations.
<2.0 mg/dL	Abnormally dilute: Specimen showing an excessively low creatinine value. May be an indication that the specimen is not consistent with normal human urine.

NOTE: The above values are based on the critical points that the Federal Department of Health and Human Services, Substance Abuse Mental Health Services Administration (SAMHSA) has set as decision points for interpreting dilute or substituted urine specimens.

The above interpretations are general guidelines only. Redwood Toxicology Laboratory recommends consulting with a certified toxicologist regarding proper interpretation prior to taking administrative action based solely on the creatinine concentrations. Other physiological conditions may account for low creatinine concentrations such as diabetes or use of prescription diuretics.