

Creatinine, Serum

Analyte: Creatinine

Specimen Type: For information on this assay, please contact PBI.

Biological or Clinical Significance:

Creatinine is a waste product formed by the spontaneous dehydration of body creatine. Most of the body creatine is found in muscle tissue where it is present as creatinine phosphate and serves as a high-energy storage reservoir for conversion to adenosine triphosphate. The rate of creatinine formation is fairly constant with about 2 percent of the body creatine being converted to creatinine every 24 hours.

The amount of creatinine excreted in the urine each day is directly related to muscle mass and approximately proportional to the lean body mass. Thus, the level of many substances produced at rates that are proportional to body size may be normalized by using creatinine excretion as an index of body size. While the ratio of biomarker to creatinine in a 24-hour urine collection would be a better index than the ratio in a spot urine, use of the biomarker: creatinine ratio in a spot urine correlates well with the 24-hour value. This allows the excretion of these markers to be compared to reference ratios obtained from individuals of varying body sizes. Because creatinine is produced at a constant rate, urinary creatinine may be used to monitor glomerular filtration rate.