Urinary Free Cortisol	
Description	Cortisol is the most important glucocorticoid secreted by the zona fasciculata and zona reticularis of the adrenal gland. Under basal conditions, only about 5% to 10% of circulating cortisol is free. The rest is bound to proteins: 85% to cortisol-binding globulin and 5% to 10% to albumin. It is the free fraction which is physiologically active, although the albumin-bound fraction is also available because the binding affinity of albumin for cortisol is low. Unbound cortisol is filtered at the glomerulus and excreted. This fraction constitutes less than 1% of the total cortisol synthesized daily; the rest is excreted as soluble metabolites and glucuronide conjugates. Cortisol in urine is a reflection of free, circulating cortisol in blood. Cortisol secretion is pulsatile, so isolated serum cortisol values are of limited value. Stimulation and suppression tests are required to diagnose adrenocortical disorders. Twenty-four-hour urine cortisol excretion reflects the overall cortisol secretion rate and is not influenced by the circadian rhythm.
Indication	Mainly in the investigation of Cushing's disease or syndrome.
Additional Info	UFC is measured by LC-MSMS so is not prone to interference like immunoassays.
Concurrent Tests	Dexamethasone suppression test
Dietary Requirements	See additional info above.
Interpretation	Problems with urine free cortisol measurements include incomplete urine collection. Sensitivity and specificity of urine cortisol measurement for the diagnosis of Cushing's syndrome were reported to be 45% to 71% and 100%, respectively. Reference values vary to some extent, depending on the methods used for cortisol measurement, age, gender, and diurnal variations. Because of decreased cortisol production, children have lower plasma cortisol levels and urinary excretion rates than adults do.
Collection Conditions	24 hour urine collections are required for interpretation. Acidified urine samples are unsuitable for analysis. Specimens can be stored at 2°C to 8°C for 2 days. For longer storage, specimens must be frozen. Freeze/thaw cycles have not been found to significantly alter cortisol concentrations.
Frequency of testing	N/A