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**Lab Dept:** Urine/Stool

**Test Name:** CARNITINE, URINE

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***General Information***

**Lab Order Codes:** UCAR

**Synonyms:** Carnitine Total and Free, Urine; L-Carnitine, Urine

**CPT Codes:** 82379 - Carnitine (total and free), quantitative, each specimen

**Test Includes:** Total Urine Carnitine, Free Urine Carnitine and Ratio of Acylcarnitine to Free Carnitine

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***Logistics***

**Test Indications:** Measurement of carnitine in urine and plasma is of interest in patients with a clinical suspicion of a wide range of inborn errors of metabolism. These include more than 100 disorders, especially organic acidemias and fatty acid oxidation disorders, where abnormal metabolites are cleared by excretion into the urine and bile as carnitine derivatives, with resulting secondary carnitine deficiency.

**Lab Testing Sections:** Urine/Stool - Sendouts

**Referred to:** Mayo Medical Laboratories (MML Test: CARNU)

**Phone Numbers:** MIN Lab: 612-813-6280

STP Lab: 651-220-6550

**Test Availability:** Daily, 24 hours

**Turnaround Time:** 2 - 7 days, test set up Thursday

**Special Instructions:** N/A

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***Specimen***

**Specimen Type:** Urine, random collection

**Container:** Plastic leakproof container (No preservatives)

**Draw Volume:** 1.5 mL (Minimum: 1 mL) from a random urine collection

**Processed Volume:** Same as Draw Volume

**Collection:** A random urine sample may be obtained by voiding into a urine cup and is often performed at the laboratory. Bring the refrigerated container to the lab. Make sure all specimens submitted to the laboratory are properly labeled with the patient's name, medical record number and date of birth.

**Special Processing:** Lab Staff: Send specimen frozen to reference lab in a plastic, 10 mL urine tube.

**Patient Preparation:** None

**Sample Rejection:** Warm specimens, mislabeled or unlabeled specimens

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***Interpretive***

<b>Reference Range:</b>	Total Carnitine	180 - 412 nmol/mg Cr
	Free Carnitine	77 - 214 nmol/mg Cr
	Ratio (Acyl to Free)	0.7 - 3.4

**Critical Values:** N/A

**Limitations:** N/A

**Methodology:** Tandem Mass Spectrophotometry (MS/MS)

**Contraindications:** Increased values are obtained after carnitine supplementation or meat consumption.

Recommend determination of serum carnitine concentration concurrently with urine collection.

**References:** [Mayo Medical Laboratories Web Page](#) August 2015

**Updates:** 9/17/2010: Units change from umol/g Cr to nmol/mg Cr