

Notification Date: August 23, 2021

Effective Date: August 24, 2021

Creatine Disorders Panel, Plasma

Test ID: CRDPP**Useful for:**

Evaluation of patients with a clinical suspicion of arginine:glycine amidinotransferase deficiency and guanidinoacetate methyltransferase deficiency.

This test is **not useful for** the diagnosis of creatine transporter deficiency.

Genetics Information:

Depletion of cerebral creatine occurs in all 3 types of creatine deficiency syndromes (CDS): arginine:glycine amidinotransferase deficiency, guanidinoacetate methyltransferase deficiency, and creatine transporter deficiency.

Measurement of guanidinoacetate, creatine, and creatinine along with associated analyte ratios in serum and urine distinguishes among the types of creatine deficiency syndromes.

Treatment with oral creatine supplementation is effective in some types of CDS.

Creatine supplementation may impact reliability of test results.

Methods:

Liquid Chromatography-Tandem Mass Spectrometry (LC-MS/MS)

Specimen Requirements:

Preferred: Lavender top (EDTA)

Acceptable: Green top (sodium heparin), yellow top (ACD)

Submission Container/Tube: Plastic vial

Specimen Volume: 0.5 mL

Collection Instructions: Centrifuge and aliquot plasma into plastic vial. Send plasma frozen.

Minimum Volume: 0.1 mL

Specimen Stability Information:

Specimen Type	Temperature	Time
Plasma	Frozen (preferred)	14 days
	Ambient	72 hours
	Refrigerated	7 days

Cautions:

Creatine supplementation will cause falsely elevated creatine results and falsely decreased guanidinoacetate results.

Guanidinoacetate can be elevated in patients with urea cycle defects.

CPT Code:

82540, 82565, 82542

Day(s) Performed: Tuesday; 12 p.m.

Report Available: 2 to 9 days

Reference Values:

Creatine Disorders Panel Reference Values (creatinine, creatinine and guanidinoacetate results reported as nmol/mL)						
	< or = 11 Months		12 - 23 Months		24 - 35 Months	
	Female	Male	Female	Male	Female	Male
Creatine	38.6 - 96.8	39.0 - 97.0	38.2 - 96.5	38.6 - 96.5	37.7 - 96.0	38.2 - 96.0
Creatinine	27.6 - 35.9	27.6 - 35.2	27.6 - 36.5	27.6 - 35.5	27.6 - 37.1	27.6 - 36.0
Guanidinoacetate	0.7 - 2.0	0.7 - 2.1	0.7 - 2.0	0.7 - 2.1	0.7 - 2.0	0.7 - 2.1
Creatine/ Creatinine	< or = 3.07	< or = 3.60	< or = 3.02	< or = 3.54	< or = 2.96	< or = 3.48
Guanidinoacetate/ Creatine	< or = 0.040	< or = 0.040	< or = 0.042	< or = 0.040	< or = 0.043	< or = 0.042
Guanidinoacetate/ Creatinine	< or = 0.051	< or = 0.081	< or = 0.051	< or = 0.080	< or = 0.051	< or = 0.079
	3 Years		4 Years		5 Years	

	Female	Male	Female	Male	Female	Male
Creatine	37.1 - 95.5	37.7 -95.3	36.0 - 94.4	36.8 - 94.1	34.6 - 93.2	35.6 - 92.7
Creatinine	27.6 - 37.9	27.7 - 36.9	27.6 - 39.3	27.7 - 38.2	27.6 - 40.9	27.8 - 39.9
Guanidinoacetate	0.7 - 2.1	0.7 - 2.2	0.7 - 2.1	0.7 - 2.2	0.7 - 2.1	0.7 - 2.2
Creatine/ Creatinine	< or = 2.89	< or = 3.40	< or = 2.77	< or = 3.26	< or = 2.64	< or = 3.09
Guanidinoacetate/ Creatine	< or = 0.045	< or = 0.043	< or = 0.049	< or = 0.045	< or = 0.053	< or = 0.049
Guanidinoacetate/ Creatinine	< or = 0.050	< or = 0.077	< or = 0.050	< or = 0.075	< or = 0.049	< or = 0.072

	6 Years		7 Years		8 Years	
	Female	Male	Female	Male	Female	Male
Creatine	33.0 - 91.7	34.3 - 91.0	31.2 - 90.0	32.7 - 89.2	29.2 - 88.1	31.0 - 87.3
Creatinine	27.6 - 42.8	28.0 - 41.9	27.7 - 44.9	28.3 - 44.3	27.8 - 47.0	28.8 - 47.1
Guanidinoacetate	0.7 - 2.1	0.7 - 2.3	0.7 - 2.1	0.8 - 2.3	0.8 - 2.1	0.8 - 2.4
Creatine/ Creatinine	< or = 2.49	< or = 2.91	< or = 2.33	< or = 2.70	< or = 2.17	< or = 2.49
Guanidinoacetate/ Creatine	< or = 0.058	< or = 0.053	< or = 0.063	< or = 0.058	< or = 0.069	< or = 0.064
Guanidinoacetate/ Creatinine	< or = 0.049	< or = 0.069	< or = 0.048	< or = 0.066	< or = 0.047	< or = 0.063

	9 Years		10 Years		11 Years	
	Female	Male	Female	Male	Female	Male
Creatine	27.2 - 85.9	29.3 - 85.2	25.2 - 83.7	27.4 - 83.1	23.4 - 81.3	25.7 - 80.9
Creatinine	28.0 - 49.3	29.5 - 50.1	28.2 - 51.5	30.6 - 53.6	28.4 - 53.6	32.0 - 57.2
Guanidinoacetate	0.8 - 2.2	0.8 - 2.5	0.9 - 2.2	0.9 - 2.6	0.9 - 2.2	1.0 - 2.6
Creatine/ Creatinine	< or = 2.02	< or = 2.28	< or = 1.86	< or = 2.07	< or = 1.72	< or = 1.87
Guanidinoacetate/ Creatine	< or = 0.075	< or = 0.070	< or = 0.081	< or = 0.078	< or = 0.087	< or = 0.085

Guanidinoacetate/ Creatinine	< or = 0.047	< or = 0.060	< or = 0.046	< or = 0.057	< or = 0.045	< or = 0.055
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	12 Years		13 Years		14 Years	
	Female	Male	Female	Male	Female	Male
Creatine	21.7 - 78.7	23.9 - 78.6	20.3 - 76.2	22.3 - 76.2	19.0 - 73.6	20.8 - 73.8
Creatinine	28.7 - 55.7	33.8 - 61.0	29.1 - 57.7	35.9 - 64.8	29.5 - 59.5	38.1 - 68.5
Guanidinoacetate	0.9 - 2.2	1.0 - 2.7	1.0 - 2.3	1.1 - 2.8	1.0 - 2.3	1.1 - 2.9
Creatine/ Creatinine	< or = 1.58	< or = 1.68	< or = 1.45	< or = 1.50	< or = 1.33	< or = 1.34
Guanidinoacetate/ Creatine	< or = 0.092	< or = 0.093	< or = 0.097	< or = 0.101	< or = 0.101	< or = 0.109
Guanidinoacetate/ Creatinine	< or = 0.044	< or = 0.053	< or = 0.043	< or = 0.051	< or = 0.042	< or = 0.050

	15 Years		16 Years		17 Years	
	Female	Male	Female	Male	Female	Male
Creatine	18.1 - 71.1	19.5 - 71.2	17.4 - 68.7	18.4 - 68.6	16.9 - 66.5	17.4 - 65.9
Creatinine	29.9 - 61.3	40.4 - 71.9	30.4 - 62.9	42.4 - 75.0	30.9 - 64.4	44.2 - 77.6
Guanidinoacetate	1.0 - 2.3	1.2 - 2.9	1.1 - 2.3	1.3 - 3.0	1.1 - 2.3	1.3 - 3.1
Creatine/ Creatinine	< or = 1.22	< or = 1.20	< or = 1.12	< or = 1.07	< or = 1.04	< or = 0.97
Guanidinoacetate/ Creatine	< or = 0.104	< or = 0.117	< or = 0.107	< or = 0.125	< or = 0.109	< or = 0.132
Guanidinoacetate/ Creatinine	< or = 0.041	< or = 0.049	< or = 0.040	< or = 0.048	< or = 0.040	< or = 0.048

	18 Years		19 Years		20 Years	
	Female	Male	Female	Male	Female	Male
Creatine	16.7 - 64.4	16.6 - 63.3	16.6 - 62.7	15.8 - 60.7	16.5 - 61.1	15.2 - 58.3
Creatinine	31.3 - 65.8	45.6 - 80.0	31.8 - 67.0	46.7 - 82.0	32.2 - 68.2	47.4 - 83.9
Guanidinoacetate	1.1 - 2.4	1.4 - 3.1	1.1 - 2.4	1.4 - 3.2	1.1 - 2.4	1.5 - 3.2

Creatine/ Creatinine	< or = 0.98	< or = 0.87	< or = 0.93	< or = 0.80	< or = 0.89	< or = 0.73
Guanidinoacetate/ Creatine	< or = 0.111	< or = 0.139	< or = 0.112	< or = 0.145	< or = 0.113	< or = 0.150
Guanidinoacetate/ Creatinine	< or = 0.039	< or = 0.047	< or = 0.038	< or = 0.047	< or = 0.038	< or = 0.046

	21 Years		22 Years		23 Years	
	Female	Male	Female	Male	Female	Male
Creatine	16.6 - 59.8	14.7 - 56.0	16.6 - 58.8	14.2 - 54.0	16.7 - 57.9	13.7 - 52.2
Creatinine	32.5 - 69.2	47.9 - 85.6	32.8 - 70.2	48.2 - 87.2	33.1 - 71.1	48.4 - 88.8
Guanidinoacetate	1.1 - 2.4	1.5 - 3.2	1.1 - 2.5	1.5 - 3.3	1.1 - 2.5	1.6 - 3.3
Creatine/ Creatinine	< or = 0.87	< or = 0.68	< or = 0.85	< or = 0.64	< or = 0.84	< or = 0.61
Guanidinoacetate/ Creatine	< or = 0.114	< or = 0.156	< or = 0.115	< or = 0.161	< or = 0.116	< or = 0.165
Guanidinoacetate/ Creatinine	< or = 0.037	< or = 0.045	< or = 0.037	< or = 0.045	< or = 0.037	< or = 0.044

	24 Years		25 Years		26 Years	
	Female	Male	Female	Male	Female	Male
Creatine	16.7 - 57.2	13.3 - 50.6	16.7 - 56.5	12.9 - 49.3	16.7 - 56.0	12.5 - 48.1
Creatinine	33.3 - 71.9	48.6 - 90.2	33.6 - 72.8	48.7 - 91.5	33.7 - 73.6	48.9 - 92.7
Guanidinoacetate	1.1 - 2.5	1.6 - 3.3	1.1 - 2.5	1.6 - 3.3	1.1 - 2.6	1.6 - 3.4
Creatine/ Creatinine	< or = 0.84	< or = 0.58	< or = 0.84	< or = 0.56	< or = 0.84	< or = 0.54
Guanidinoacetate/ Creatine	< or = 0.116	< or = 0.170	< or = 0.117	< or = 0.174	< or = 0.118	< or = 0.179
Guanidinoacetate/ Creatinine	< or = 0.036	< or = 0.043	< or = 0.036	< or = 0.043	< or = 0.036	< or = 0.042

	27 Years		28 Years		29 Years	
	Female	Male	Female	Male	Female	Male

Creatine	16.7 - 55.5	12.1 - 47.1	16.6 - 55.1	11.8 - 46.3	16.5 - 54.7	11.5 - 45.4
Creatinine	33.9 - 74.4	49.0 - 93.7	34.1 - 75.2	49.1 - 94.5	34.2 - 76.0	49.2 - 95.3
Guanidinoacetate	1.1 - 2.6	1.6 - 3.4	1.1 - 2.6	1.6 - 3.4	1.1 - 2.6	1.6 - 3.4
Creatine/ Creatinine	< or = 0.84	< or = 0.52	< or = 0.84	< or = 0.51	< or = 0.84	< or = 0.49
Guanidinoacetate/ Creatine	< or = 0.118	< or = 0.182	< or = 0.119	< or = 0.186	< or = 0.119	< or = 0.188
Guanidinoacetate/ Creatinine	< or = 0.036	< or = 0.042	< or = 0.036	< or = 0.041	< or = 0.036	< or = 0.041

	30 Years		31 Years		32 Years	
	Female	Male	Female	Male	Female	Male
Creatine	16.4 - 54.2	11.3 - 44.7	16.4 - 53.8	11.1 - 43.9	16.3 - 53.4	11.0 - 43.2
Creatinine	34.4 - 76.8	49.3 - 96.0	34.6 - 77.5	49.3 - 96.7	34.7 - 78.2	49.4 - 97.4
Guanidinoacetate	1.2 - 2.7	1.6 - 3.5	1.2 - 2.7	1.6 - 3.5	1.2 - 2.7	1.6 - 3.5
Creatine/ Creatinine	< or = 0.84	< or = 0.48	< or = 0.83	< or = 0.47	< or = 0.83	< or = 0.46
Guanidinoacetate/ Creatine	< or = 0.120	< or = 0.190	< or = 0.120	< or = 0.192	< or = 0.119	< or = 0.192
Guanidinoacetate/ Creatinine	< or = 0.036	< or = 0.041	< or = 0.036	< or = 0.042	< or = 0.037	< or = 0.042

	33 Years		34 Years		35 Years	
	Female	Male	Female	Male	Female	Male
Creatine	16.3 - 53.0	10.9 - 42.5	16.4 - 52.7	10.8 - 41.7	16.4 - 52.3	10.7 - 41.0
Creatinine	34.9 - 78.8	49.4 - 98.0	35.1 - 79.4	49.5 - 98.6	35.3 - 79.9	49.5 - 99.2
Guanidinoacetate	1.2 - 2.8	1.6 - 3.5	1.2 - 2.8	1.6 - 3.5	1.2 - 2.8	1.6 - 3.4
Creatine/ Creatinine	< or = 0.82	< or = 0.45	< or = 0.82	< or = 0.45	< or = 0.82	< or = 0.44
Guanidinoacetate/ Creatine	< or = 0.119	< or = 0.192	< or = 0.118	< or = 0.191	< or = 0.118	< or = 0.189
Guanidinoacetate/ Creatinine	< or = 0.037	< or = 0.042	< or = 0.037	< or = 0.042	< or = 0.037	< or = 0.042

	36 Years		37 Years		38 Years	
	Female	Male	Female	Male	Female	Male
Creatine	16.5 - 52.0	10.7 - 40.2	16.7 - 51.6	10.6 - 39.5	16.9 - 51.3	10.6 - 38.9
Creatinine	35.4 - 80.3	49.5 - 99.8	35.6 - 80.7	49.5 - 100.3	35.8 - 81.0	49.6 - 100.8
Guanidinoacetate	1.2 - 2.8	1.6 - 3.4	1.2 - 2.8	1.6 - 3.4	1.2 - 2.9	1.6 - 3.4
Creatine/ Creatinine	< or = 0.82	< or = 0.44	< or = 0.82	< or = 0.44	< or = 0.83	< or = 0.44
Guanidinoacetate/ Creatine	< or = 0.117	< or = 0.187	< or = 0.115	< or = 0.184	< or = 0.114	< or = 0.182
Guanidinoacetate/ Creatinine	< or = 0.037	< or = 0.042	< or = 0.037	< or = 0.042	< or = 0.036	< or = 0.042

	39 Years		40 Years		41 Years	
	Female	Male	Female	Male	Female	Male
Creatine	17.1 - 51.1	10.6 - 38.2	17.3 - 50.9	10.7 - 37.7	17.5 - 50.8	10.7 - 37.2
Creatinine	35.9 - 81.4	49.6 - 101.3	36.0 - 81.6	49.6 - 101.7	36.1 - 81.9	49.7 - 102.1
Guanidinoacetate	1.2 - 2.9	1.6 - 3.4	1.2 - 2.9	1.6 - 3.4	1.2 - 2.9	1.6 - 3.4
Creatine/ Creatinine	< or = 0.83	< or = 0.44	< or = 0.83	< or = 0.44	< or = 0.84	< or = 0.44
Guanidinoacetate/ Creatine	< or = 0.113	< or = 0.179	< or = 0.111	< or = 0.176	< or = 0.110	< or = 0.174
Guanidinoacetate/ Creatinine	< or = 0.036	< or = 0.041	< or = 0.036	< or = 0.041	< or = 0.036	< or = 0.040

	42 Years		43 Years		44 Years	
	Female	Male	Female	Male	Female	Male
Creatine	17.7 - 50.8	10.8 - 36.7	17.8 - 50.8	10.9 - 36.3	17.8 - 50.9	11.0 - 36.0
Creatinine	36.2 - 82.1	49.7 - 102.5	36.3 - 82.4	49.8 - 102.8	36.4 - 82.6	49.8 - 103.1
Guanidinoacetate	1.2 - 3.0	1.6 - 3.3	1.2 - 3.0	1.6 - 3.3	1.2 - 3.0	1.6 - 3.3
Creatine/ Creatinine	< or = 0.84	< or = 0.44	< or = 0.84	< or = 0.43	< or = 0.84	< or = 0.43
Guanidinoacetate/ Creatine	< or = 0.109	< or = 0.172	< or = 0.108	< or = 0.171	< or = 0.107	< or = 0.170

Guanidinoacetate/ Creatinine	< or = 0.036	< or = 0.039	< or = 0.036	< or = 0.039	< or = 0.036	< or = 0.038
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	45 Years		46 Years		47 Years	
	Female	Male	Female	Male	Female	Male
Creatine	17.7 - 51.0	11.1 - 35.6	17.6 - 51.2	11.2 - 35.3	17.4 - 51.4	11.3 - 35.1
Creatinine	36.4 - 82.8	49.9 - 103.4	36.5 - 83.0	49.9 - 103.6	36.5 - 83.2	49.9 - 103.9
Guanidinoacetate	1.2 - 3.0	1.7 - 3.3	1.2 - 3.1	1.7 - 3.3	1.2 - 3.1	1.7 - 3.3
Creatine/ Creatinine	< or = 0.84	< or = 0.42	< or = 0.83	< or = 0.41	< or = 0.83	< or = 0.40
Guanidinoacetate/ Creatine	< or = 0.106	< or = 0.169	< or = 0.106	< or = 0.168	< or = 0.106	< or = 0.167
Guanidinoacetate/ Creatinine	< or = 0.037	< or = 0.038	< or = 0.037	< or = 0.037	< or = 0.037	< or = 0.037

	48 Years		49 Years		50 Years	
	Female	Male	Female	Male	Female	Male
Creatine	17.2 - 51.7	11.5 - 34.8	17.1 - 51.9	11.6 - 34.6	17.0 - 52.1	11.7 - 34.4
Creatinine	36.6 - 83.4	49.9 - 104.1	36.6 - 83.5	49.9 - 104.2	36.7 - 83.7	49.9 - 104.4
Guanidinoacetate	1.2 - 3.1	1.7 - 3.3	1.2 - 3.1	1.7 - 3.3	1.2 - 3.1	1.7 - 3.3
Creatine/ Creatinine	< or = 0.82	< or = 0.39	< or = 0.82	< or = 0.38	< or = 0.82	< or = 0.38
Guanidinoacetate/ Creatine	< or = 0.106	< or = 0.166	< or = 0.106	< or = 0.164	< or = 0.105	< or = 0.163
Guanidinoacetate/ Creatinine	< or = 0.038	< or = 0.036	< or = 0.038	< or = 0.036	< or = 0.039	< or = 0.036

	51 Years		52 Years		53 Years	
	Female	Male	Female	Male	Female	Male
Creatine	17.0 - 52.2	11.9 - 34.3	17.1 - 52.3	12.0 - 34.3	17.3 - 52.4	12.2 - 34.3
Creatinine	36.8 - 83.9	49.8 - 104.6	36.8 - 84.0	49.8 - 104.8	36.9 - 84.2	49.8 - 104.9
Guanidinoacetate	1.2 - 3.1	1.7 - 3.3	1.2 - 3.1	1.7 - 3.2	1.2 - 3.1	1.6 - 3.2

Creatine/ Creatinine	< or = 0.82	< or = 0.37	< or = 0.82	< or = 0.37	< or = 0.82	< or = 0.38
Guanidinoacetate/ Creatine	< or = 0.105	< or = 0.161	< or = 0.104	< or = 0.159	< or = 0.103	< or = 0.157
Guanidinoacetate/ Creatinine	< or = 0.039	< or = 0.036	< or = 0.039	< or = 0.036	< or = 0.039	< or = 0.036

	54 Years		55 Years		56 Years	
	Female	Male	Female	Male	Female	Male
Creatine	17.6 - 52.5	12.4 - 34.3	18.1 - 52.6	12.5 - 34.4	18.6 - 52.7	12.6 - 34.4
Creatinine	37.0 - 84.4	49.8 - 105.0	37.1 - 84.5	49.8 - 105.2	37.2 - 84.7	49.8 - 105.3
Guanidinoacetate	1.2 - 3.1	1.6 - 3.2	1.2 - 3.1	1.6 - 3.2	1.2 - 3.1	1.6 - 3.2
Creatine/ Creatinine	< or = 0.82	< or = 0.38	< or = 0.83	< or = 0.39	< or = 0.84	< or = 0.40
Guanidinoacetate/ Creatine	< or = 0.102	< or = 0.155	< or = 0.100	< or = 0.154	< or = 0.099	< or = 0.152
Guanidinoacetate/ Creatinine	< or = 0.039	< or = 0.036	< or = 0.039	< or = 0.036	< or = 0.039	< or = 0.036

	57 Years		58 Years		59 Years	
	Female	Male	Female	Male	Female	Male
Creatine	19.2 - 52.9	12.7 - 34.4	19.9 - 53.1	12.8 - 34.3	20.5 - 53.3	12.8 - 34.2
Creatinine	37.3 - 84.9	49.8 - 105.4	37.4 - 85.1	49.8 - 105.5	37.6 - 85.2	49.8 - 105.6
Guanidinoacetate	1.2 - 3.0	1.6 - 3.2	1.3 - 3.0	1.6 - 3.2	1.3 - 3.0	1.6 - 3.2
Creatine/ Creatinine	< or = 0.84	< or = 0.40	< or = 0.85	< or = 0.41	< or = 0.86	< or = 0.42
Guanidinoacetate/ Creatine	< or = 0.098	< or = 0.151	< or = 0.096	< or = 0.151	< or = 0.095	< or = 0.150
Guanidinoacetate/ Creatinine	< or = 0.039	< or = 0.036	< or = 0.038	< or = 0.036	< or = 0.038	< or = 0.036

	60 Years		61 Years		62 Years	
	Female	Male	Female	Male	Female	Male

Creatine	21.0 - 53.6	12.8 - 34.1	21.5 - 53.9	12.7 - 34.0	21.9 - 54.2	12.6 - 33.9
Creatinine	37.8 - 85.4	49.9 - 105.7	38.0 - 85.5	49.9 - 105.9	38.3 - 85.7	49.9 - 106.0
Guanidinoacetate	1.3 - 2.9	1.6 - 3.2	1.3 - 2.9	1.6 - 3.1	1.3 - 2.9	1.6 - 3.1
Creatine/ Creatinine	< or = 0.87	< or = 0.43	< or = 0.87	< or = 0.44	< or = 0.88	< or = 0.44
Guanidinoacetate/ Creatine	< or = 0.094	< or = 0.150	< or = 0.093	< or = 0.150	< or = 0.093	< or = 0.150
Guanidinoacetate/ Creatinine	< or = 0.037	< or = 0.036	< or = 0.036	< or = 0.035	< or = 0.036	< or = 0.035

	63 Years		64 Years		65 Years	
	Female	Male	Female	Male	Female	Male
Creatine	22.2 - 54.6	12.4 - 33.7	22.3 - 55.0	12.3 - 33.6	22.5 - 55.5	12.2 - 33.4
Creatinine	38.7 - 85.8	50.0 - 106.1	39.1 - 85.9	50.0 - 106.3	39.6 - 86.1	50.1 - 106.4
Guanidinoacetate	1.3 - 2.8	1.6 - 3.1	1.3 - 2.8	1.6 - 3.1	1.3 - 2.8	1.6 - 3.1
Creatine/ Creatinine	< or = 0.88	< or = 0.45	< or = 0.89	< or = 0.46	< or = 0.89	< or = 0.46
Guanidinoacetate/ Creatine	< or = 0.092	< or = 0.150	< or = 0.092	< or = 0.149	< or = 0.091	< or = 0.149
Guanidinoacetate/ Creatinine	< or = 0.035	< or = 0.035	< or = 0.034	< or = 0.034	< or = 0.034	< or = 0.034

	66 Years		67 Years		68 Years	
	Female	Male	Female	Male	Female	Male
Creatine	22.6 - 55.9	12.3 - 33.1	22.7 - 56.3	12.3 - 32.8	22.9 - 56.7	12.5 - 32.4
Creatinine	40.2 - 86.2	50.2 - 106.6	40.7 - 86.3	50.3 - 106.7	41.3 - 86.5	50.4 - 106.9
Guanidinoacetate	1.3 - 2.7	1.6 - 3.1	1.3 - 2.7	1.6 - 3.0	1.4 - 2.7	1.6 - 3.0
Creatine/ Creatinine	< or = 0.90	< or = 0.47	< or = 0.90	< or = 0.48	< or = 0.90	< or = 0.48
Guanidinoacetate/ Creatine	< or = 0.091	< or = 0.149	< or = 0.090	< or = 0.148	< or = 0.090	< or = 0.148
Guanidinoacetate/ Creatinine	< or = 0.034	< or = 0.034	< or = 0.033	< or = 0.034	< or = 0.033	< or = 0.034

	69 Years		70 Years		> or = 71 Years	
	Female	Male	Female	Male	Female	Male
Creatine	23.2 - 57.0	12.8 - 32.0	23.6 - 57.2	13.1 - 31.4	24.1 - 57.3	13.6 - 30.8
Creatinine	41.9 - 86.6	50.5 - 107.1	42.4 - 86.8	50.7 - 107.4	42.8 - 86.9	50.8 - 107.6
Guanidinoacetate	1.4 - 2.6	1.6 - 3.0	1.4 - 2.6	1.6 - 3.0	1.4 - 2.5	1.5 - 3.0
Creatine/ Creatinine	< or = 0.90	< or = 0.48	< or = 0.90	< or = 0.48	< or = 0.90	< or = 0.48
Guanidinoacetate/ Creatine	< or = 0.090	< or = 0.148	< or = 0.090	< or = 0.148	< or = 0.090	< or = 0.148
Guanidinoacetate/ Creatinine	< or = 0.033	< or = 0.034	< or = 0.033	< or = 0.034	< or = 0.033	< or = 0.034

Questions

Contact Melissa Tricker-Klar, Laboratory Technologist Resource Coordinator at 800-533-1710.