The Great Plains Laboratory, Inc.

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Requisition #:	271355	*Physician Name:*	JAY NIELSEN
Patient Name:	Jason Richardson	*Date of Collection:*	6/25/2012
Patient Age:	44	*Time of Collection:*	11:30 AM
Sex:	M	*Print Date:*	7/2/2012

Copper Zinc Profile with Glutathione

Compound	Reference Range	Units	Patient Value		Reference Interval Low / Normal / High
Glutathione	800.0 - 1500.0	umol/L	553.0	L	
**Ceruloplasmin	1.5 - 4.5	umol/L	1.6		
Ceruloplasmin-Copper	9.0 - 27.0	umol/L	9.5		
*Copper Serum	12.0 - 23.0	umol/L	14.9		
*Zinc Serum	10.0 - 17.0	umol/L	14.5		
NonCeruloplasmin-Copper	2.3 - 6.3	umol/L	5.4		
Copper/Zinc	0.8 - 2.0	Ratio	1.0		

*Tests performed by Laboratory Corporation of America, LabCorp, Burlington, NC.

**Tests performed by Quest Diagnostics, Lenexa, KS

Low glutathione

Low total glutathione may be due to deficiencies of glucose-6-phosphate dehydrogenase, glutathione synthetase, and gamma-glutamylcysteine synthetase. Deficiency of glutathione synthetase is associated with high pyroglutamic acid values in the organic acid test. Halogenated hydrocarbons such as carbon tetrachloride and chloroform and halogenated insecticides such as DDT may deplete glutathione.

REVIEWED
JAY W. NIELSEN, M.D.