



Patient: **SAMPLE
PATIENT**

Order Number:

Completed:

Age: 30

Received:

Sex: M

Collected:

MRN:

Glycolysis Metabolites

Reference Range

mmol/mol creatinine

1. Lactic Acid	4.5	6.3-36.4
2. Pyruvic Acid	6.2	1.1-15.4

Citric Acid Cycle Metabolites

mmol/mol creatinine

3. Citric Acid	35.3	21.9-475.1
4. Cis-Aconitic Acid	3.9	1.4-76.8
5. Isocitric Acid	9.4	3.7-87.4
6. a-Ketoglutaric Acid (AKA)	0.9	0.5-16.0
7. Succinic Acid	1.1	<= 20.0
8. Fumaric Acid	1.2	<= 1.4
9. Malic Acid	1.0	<= 2.4

Ketone and Fatty Acid Metabolites

mmol/mol creatinine

10. Adipic Acid	0.9	<= 5.2
11. Suberic Acid	0.8	<= 3.0
12. b-OH-b-Methylglutaric Acid (HMG)	3.3	<= 6.7
13. b-OH-Butyric Acid (BHBA)	1.3	<= 6.4

Creatinine Concentration

mol / L

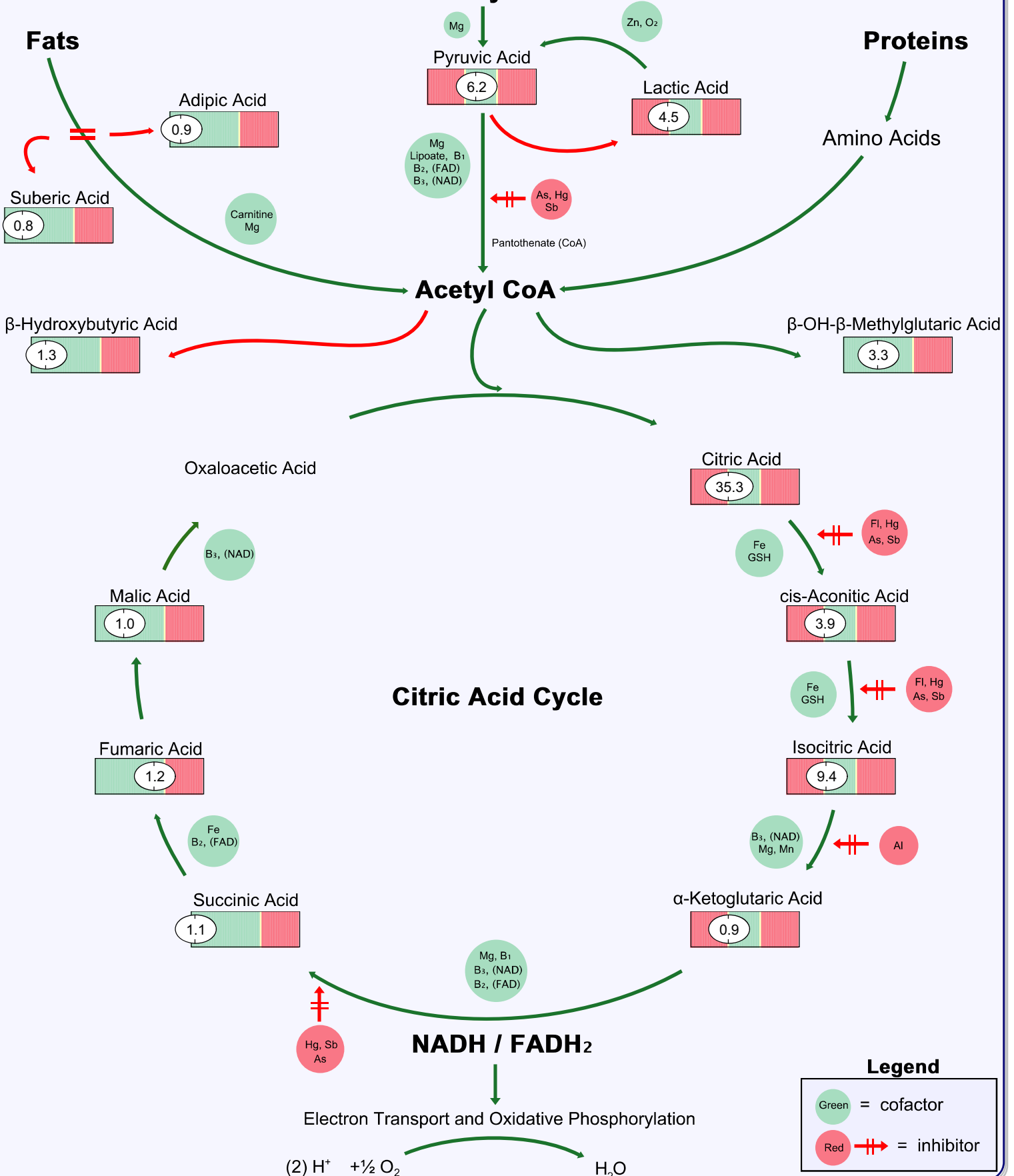
14. Creatinine Concentration	0.0221	0.0048-0.0310
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Lab Comments

This test has been developed and its performance characteristics determined by GSDL, Inc. It has not been cleared or approved by the U. S. Food and Drug Administration.

Kreb's Cycle at a Glance

Carbohydrates



Commentary

ANALYTES CHARACTERISTIC OF CELLULAR ENERGY AND MITOCHONDRIAL FUNCTION

These markers are metabolites from four important biochemical pathways in the body, all of which significantly impact the production and availability of energy at the cellular level: glycolysis, the citric acid cycle (Krebs cycle) and both beta-oxidation and omega-oxidation of fatty acids. These analytes provide unique insight into macronutrient catabolism and mitochondrial function in cells. Abnormal levels may be associated with fatigue, malaise, myalgia, headache, muscle weakness, myopathy, hypotonia, or acid-base imbalance. This test is intended to be a diagnostic aid for acquired disorders in these pathways. It is not intended for diagnosis of inborn errors of organic acid metabolism, as this would require extensive molecular genetics testing. However, significantly abnormal findings could be consistent with such inborn errors.

If significant abnormalities persist after removal of toxics, supplementation of appropriate nutrients, dietary and hormonal adjustments, and correction of intestinal dysbiosis or infection, it is suggested that the patient be referred to a medical center with capabilities for diagnosis and treatment of congenital metabolic defects.

Lactic Acid, or lactate, is measured to be low. Lactate is formed from pyruvate in anaerobic or oxygen starved (hypoxic) circumstances to allow for ongoing production of ATP in these anaerobic conditions. There are no known clinical problems associated with low lactic acid. Low levels are usually a result of reduced amounts of its precursor, pyruvic acid.