

Authorizing Clinician	Patient	Received Samples	Reported
BioHealth Laboratory 23900 Hawthorne Blvd, Suite 150 Torrance, CA 90505	Rebecca Stein Gender: Female DOB: 11/26/1968	12/02/2016	12/02/2016

Metabolic Assessment Profile (#101)

Parameter	Result	Reference Range	Units
Urinary Bile Acids	10.1*	11.0 - 34.0	umol/g

Bile acids are synthesized by liver cells from cholesterol. They are then stored in the gallbladder after conjugation. After entering the intestinal lumen subsequent to gallbladder contraction, bile acids are reabsorbed in the ileum and cleared from the portal circulation on the first pass through the liver. Elevated bile acids in urine represent bile acids that were not cleared by the liver, indicating liver dysfunction. A low level of bile acids is suggestive of inflammatory bowel disease, chronic malabsorption, diarrhea, or starvation.

Urinary Lipid Peroxides	4.3*	<4.0	umol/g
--------------------------------	-------------	------	--------

Lipid peroxidation is a mechanism of cellular injury and is used as an indicator of oxidative stress. The elevation of lipid peroxides serves as an early warning of the potential long-term effects of oxidative stress. Oxidative stress can result from exposure to toxins or pathogens, inappropriate lifestyle - such as over-exercising and smoking - or byproducts of normal metabolism. Lipid peroxides are unstable and decompose to form a series of compounds, such as malondialdehyde (MDA). MDA can be quantified through a controlled reaction with thiobarbituric acid, generating Thiobarbituric Acid Reactive Substances (TBARS).

Urinary Indican	(+2) Moderate
------------------------	----------------------

POS (+1) = LOW; POS (+2) = MODERATE; POS (+3) = HIGH; POS (+4) = VERY HIGH

Urinary Indican is an effective screening tool for assessment of protein digestion, dysbiosis, SIBO, and malabsorption states. Also known as indoxyl sulfate, indican is produced when there is putrefaction of tryptophan from dietary protein by dysbiotic bacteria in the gastrointestinal tract. Problems with protein digestion are often caused by the following factors: Helicobacter pylori, parasite infections, dysbiosis, a lack of digestive enzymes, and liver dysfunction. Inability to digest protein can lead to bowel putrefaction, adverse effects on glycemic control, and hormone imbalance.

Urinary Creatinine	234	20 - 300	mg/dL
---------------------------	------------	----------	-------

Creatinine is formed as the end product of creatine metabolism. Creatinine is transported through the bloodstream to the kidneys where it is secreted into urine. Urine creatinine is used as a guide for evaluation of sample concentration in order to normalize other urine chemistry tests performed on the same sample.

Lipid Peroxides and Bile Acids are measured in units of creatinine concentration.