



LAB #: Sample Report
 PATIENT: Sample Patient
 ID:
 SEX: Male
 DOB: 01/01/1949 AGE: 72

CLIENT #: 12345
 DOCTOR: Sample Doctor, MD
 Doctor's Data, Inc.
 3755 Illinois Ave.
 St. Charles, IL 60174 U.S.A.

Metabolomic Profile; serum

| | RESULT / UNIT | | REFERENCE INTERVAL | RISK | | | | |
|---------------------------------|---------------|--------|--------------------|------|----------|----------|-----|------|
| | | | | LOW | MODERATE | HIGH | | |
| CRP(hs) | 2.1 | mg/L | < 1.0 | | | | | |
| | | | | HIGH | MOD | RISK LOW | MOD | HIGH |
| Glucose | 110 | mg/dL | 70.0- 100 | | | | | |
| Glycomark (1,5-Anhydroglucitol) | 7.6 | ug/mL | 10- 32 | | | | | |
| Insulin | 5.9 | µIU/mL | 2.8- 14.0 | | | | | |
| *Leptin | 1.1 | ng/mL | 1.8- 20 | | | | | |
| *Adiponectin | 4.1 | µg/mL | 3.0- 16 | | | | | |
| Leptin : Adiponectin ratio | 0.3 | | 0.4- 2.0 | | | | | |
| Body Mass Index (BMI) | 22.8 | | 18.5- 30.0 | | | | | |
| Cystatin C | 0.8 | mg/L | 0.5- 1.5 | | | | | |
| Creatinine | 1.2 | mg/dL | 0.7- 1.5 | | | | | |
| eGFR (calculated) | 60 | mL/min | > 60 | | | | | |

SPECIMEN DATA

Comments:

Date Collected: 03/17/2021 Time Collected: <dl: less than detection limit
 Date Received: 03/19/2021 Fasting:
 Date Reported: 03/25/2021 *For Research Use Only. Not for use in diagnostic procedures
 Methodology: CRP: Chemistry Analyzer; Insulin: Chemiluniescent; Leptin, Adiponectin: Enzyme Immunoassay

Elevated hsCRP

An elevated level of hsCRP is a well-established indicator of arterial inflammation that is associated with substantial risk of coronary artery disease and cardiovascular events. It is an independent risk factor for future heart attack, stroke and death for asymptomatic men and woman. Elevated CRP has also been related to risk for metabolic syndrome; it tracks well with a high leptin to adiponectin ratio. Reductions in hsCRP levels along with other CVD risk factors such as non-HDL cholesterol levels has been associated with decreased progression of atherosclerosis and better clinical outcomes.

Guidelines for cardiovascular risk related to levels of CRP are: moderate; 1-3 mg/dL, high; 3-10 mg/dL. Levels greater than 10 are likely associated with non-cardiovascular inflammation (e.g. acute infection), and the hsCRP test should be repeated in about three weeks. Some suggested interventions to lower hsCRP levels include statins, decreasing adiposity, aspirin, and low-dose methotrexate.

1,5-anhydroglucitol Low

A low level of 1,5-anhydroglucitol (1,5-AG) indicates poor control of blood glucose even when HbA1c levels are 6.5-8. Low levels of 1,5-AG specifically indicate frequent extreme episodes of hyperglycemia greater than 180 mg/dL over the past 1-2 weeks.

Postprandial hyperglycemia is associated with cardiovascular disease, and reduction of hyperglycemic events appears to decrease macro- and microvascular complications in diabetic patients. Low 1,5-AG is also associated with renal damage. Clinical intervention for tighter, more compliant blood glucose regulation may be warranted. 1,5-AG may also be low in association with pregnancy, kidney disease, advanced cirrhosis, prolonged fasting, and with steroid therapy.

HbA1C indicates average blood glucose levels over the past 2-3 months and does not specifically reveal extreme hyperglycemic events. 1,5-AG is a naturally occurring dietary glucose-like sugar and serum levels are normally stable as intake and urinary excretion are balanced. However, when blood sugar spikes above 180 mg/dL it competitively inhibits resorption of 1,5-AG.

Leptin Low

The level of leptin is lower than expected in this sample. Leptin is a hormone produced by adipocytes to provide a satiety signal to the hypothalamus. The net action of leptin is to inhibit appetite, stimulate thermogenesis, enhance fatty acid oxidation, decrease glucose, and reduce body fat. Abnormally low leptin levels may be associated with very low body mass index (BMI), and low leptin levels may also predict cardiovascular mortality due to an increased rate of cardiac cell apoptosis.

Approximately 10% of obese patients may have low leptin levels; this may reflect an inherited leptin deficiency. Leptin may also be decreased pharmacologically by pindolol, valsartan, ramipril, candesartan, efonidipine, bunazosin hydrochloride, atorvastatin, metformin and amlodipine medications.

Low Leptin to Adiponectin

The leptin/adiponectin ratio is lower than expected. The ratio of leptin to adiponectin has been evaluated as a biomarker for a variety of health conditions. As with any ratio, it is important to examine the levels of the individual analytes to determine which of the two is out of line. Approximately 10% of obese patients may

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Low eGFR

Low estimated glomerular filtration (eGFR) indicates compromised clearance of waste products by the kidneys. Low eGFR is not a risk factor for CVD, but GFR is often lower than normal with type II diabetes, hypertension and CVD.

| eGFR | Stage of Damage |
|-------|---|
| 90+ | 1. Normal or minimal damage; may have mildly elevated levels of amino acids or albumin in urine |
| 89-60 | 2. Mild decrease in eGFR; may have elevated levels of amino acids, and total protein and albumin in urine |
| 59-30 | 3. Moderate decrease in eGFR |
| 29-15 | 4. Severe decrease in eGFR |
| <15 | 5. Renal failure |

If there are clinical concerns regarding renal health, a better estimate of renal function may be obtained with serum cystatin C levels, or a direct creatinine clearance test which requires measures creatinine in both serum and urine.