OVERVIEW

Poor blood sugar regulation and unhealthy triglyceride and lipoprotein levels often present long before a diagnosis of Type 2 Diabetes (T2D). Collectively, these risk factors increase atherosclerotic cardiovascular disease (ASCVD). It is widely recognized that measuring cholesterol, which is carried by lipoproteins, does not accurately quantify cardiovascular risk. Alternatively, measuring the number and type (density) of lipoproteins has proven to be more clinically relevant. Lipoprotein particle numbers are helpful in determining the best treatment, since efficacy of treatment depends on which lipoprotein is elevated.

SpectraCell’s CardioMetabolic test offers a clinically-relevant evaluation to help define risk for ASCVD, progression toward T2D, and inflammation. The advanced Lipoprotein Particle Profile™ Plus (LPP Plus) measures lipoprotein size and density, triglycerides, cardiovascular risk stratification, and includes traditional cholesterol screening. The CardioMetabolic Risk Assessment is an indication of risk (low, moderate, or high) for developing cardiovascular disease, including stroke and diabetes; the Type 2 Diabetes Risk Assessment estimates one’s risk for developing T2D. OmegaCheck™ measures the ratio of omega-6 to omega-3 fatty acids in one’s blood. The higher the content of omega-3 fatty acids, the lower the risk of a fatal heart attack and other inflammatory conditions. Collectively, these check points help patients understand that not just one factor; but rather a constellation of factors, contribute to the genesis and progression toward ASCVD.

TEST COMPONENTS

- Lipoprotein Fractionation
- Lipoprotein Particle Numbers
  - VLDL Particles
  - Total LDL Particles
  - Total HDL Particles
  - Non-HDL Particles
  - Remnant Lipoprotein
  - Dense LDL III
  - Dense LDL IV
  - Buoyant HDL2b
- Cholesterol
- Non-HDL Cholesterol
- HDL
- LDL
- Triglycerides
- Apolipoprotein B
- Apolipoprotein A-I
- Lipoprotein (a)
  - hs-CRP
  - Homocysteine
  - Leptin
  - Adiponectin
- Insulin
- Glucose
- Hemoglobin A1c
- C-peptide
- OmegaCheck
  - Arachidonic Acid/EPA Ratio
  - Omega-6/Omega-3 Ratio
  - Omega-3 Total
  - EPA
  - DPA
  - DHA
  - Omega-6 Total
  - Arachidonic Acid
  - Linoleic Acid
  - Estimated Average Glucose (eAG)
- Homeostatic Model Assessment of Insulin Resistance (HOMA-IR)
- CardioMetabolic Risk Assessment
- Type 2 Diabetes Risk Assessment

This material is for informational and educational purposes only, and is not intended to constitute or substitute for the advice of a physician or other healthcare professional. Specific diagnosis, treatment plans, and interpretations, should be provided and reviewed by the treating practitioner.
**Diagnosis** | **Dx Code** | **Diagnosis** | **Dx Code**
---|---|---|---
Type 2 Diabetes Mellitus with hyperglycemia | E11.65 | Atherosclerotic heart disease of native coronary artery without angina pectoris | I25.10
Type 2 Diabetes Mellitus without complications | E11.9 | Atherosclerotic heart disease of native coronary artery with unstable angina pectoris | I25.110
Other specified Diabetes Mellitus without mention of complications | E13.9 | Atherosclerotic heart disease of native coronary artery with angioplasty with documented spasm | I25.111
Pure hypercholesterolemia | E78.0 | Atherosclerotic heart disease of native coronary artery with other forms of angina pectoris | I25.118
Pure hyperglycemia | E78.1 | Atherosclerotic heart disease of native coronary artery with unspecified angina pectoris | I25.119
Mixed hyperlipidemia | E78.2 | Cardiac arrhythmia, unspecified | I49.9
Other and unspecified hyperlipidemia | E78.5 | Congestive heart failure, unspecified | I50.9
Lipoprotein deficiency | E78.6 | Impaired fasting glucose | R73.01
Metabolic syndrome | E88.81 | Impaired glucose tolerance test (oral) | R73.02
Essential (primary) hypertension | 110 |  |

**SPECIMEN REQUIREMENTS**

**Specimen Type:** Serum, EDTA Whole Blood, Sodium Fluoride

**Collection Tube:** 1 SST, 1 Purple Top (HgbA1c and OmegaCheck)

**Fasting:** Required; except for HgbA1c. OmegaCheck - preferred but not required. It is recommended that patients do not take a fatty acid supplement within 12-24 hours of collection.

**Collection:**
- For Serum Tests (SST)
  1. Let SST clot for 20 min.
  2. Centrifuge within 1 hour of collection for 15 min. at 3000 rpm.
  3. Ship with frozen ice brick in the refrigerated kit provided; keep refrigerated until shipped.
- HgbA1c (Purple Top)
  1. Gently invert 5-6 times
  2. Do not centrifuge or freeze.
  3. Ship with frozen ice brick in the refrigerated kit provided.
- OmegaCheck™ (Purple Top)
  1. Gently invert 5-6 times.
  2. Do not centrifuge
  3. Ship with frozen ice brick in the refrigerated kit provided.

**Turn Around Time:** 3-5 days without OmegaCheck; 7-8 days with OmegaCheck.

**REFERENCES**