



# HEART HEALTH

BioReference  
LABORATORIES  
an **OPKO** Health Company

## THE PATH TO **DIAGNOSING HEART HEALTH**

Approximately 50% of people who are at risk of heart disease are not identified by routine testing. The unique Heart Health testing by BioReference Laboratories supports better identification and treatment of the growing population of individuals with or at risk for atherosclerotic cardiovascular disease (ASCVD) through four clinically relevant panels.

The patient-friendly Heart Health report allows for improved treatment management, and promotes patient compliance with their care.

### FEATURES INCLUDE:

#### Lipoprotein Particle Evaluation

Heart Health now includes a Lipoprotein Particle Evaluation that measures the lipoprotein subgroups, allowing healthcare providers to accurately determine and diagnose cardiovascular risk in patients.

#### Global Risk Calculations

Heart Health gives physicians the option of incorporating a Global Risk Calculation using Framingham, Reynold's or Pooled Cohort to assess patient risk for atherosclerotic cardiovascular disease (ASCVD) events.

#### Previous Results

Historical data listed on the Heart Health report allow physicians to quickly reference previous results and more easily monitor patient progress.

Markers	Relevance
<b>HDL Cholesterol</b>	High Density Lipoprotein (HDL) slows arterial plaque buildup by transporting the cholesterol to the liver for disposal.
<b>HDL Particle Number</b>	The HDL particle number corresponds to the amount of bad cholesterol disposed by the liver. Therefore, the higher the number, the more cholesterol is disposed.
<b>HDL2b</b>	Elevated levels of HDL2b and HDL3 are cardioprotective and are an indicator of how well excess lipids are removed from cells and transported back to the liver. Women tend to have higher levels than men. Reduced levels are associated with a risk of development of diabetes.
<b>Hemoglobin A1c</b>	Hemoglobin A1c (HbA1c) measures the average amount of sugar in your blood over a 3-month period and is used in the diagnosis and monitoring of diabetes. Diabetics are at an increased risk of ASCVD events.
<b>hs-CRP</b>	C-reactive protein (CRP) is an inflammatory protein; it is associated with inflammation of blood vessels and is associated with ASCVD, even in the absence of an elevated total cholesterol.
<b>LDL Direct</b>	Low Density Lipoprotein (LDL) can slowly build up in the inner walls of arteries, causing them to narrow.
<b>LDL Particle Number</b>	LDL particles transport cholesterol. The higher the number of LDL particles, the more carriers of cholesterol, and a greater risk for developing ASCVD.
<b>LP(a) Excess</b>	Lp(a) excess is the most commonly inherited lipid disorder in patients with premature coronary heart disease. Very high levels of Lp(a) are associated with elevated vascular risk.
<b>Remnant Lipoprotein (RLP)</b>	RLP is an atherogenic lipoprotein composed primarily of Very Low Density Lipoprotein (VLDL) and Intermediate Density Lipoprotein (IDL), and is believed to be a building block of plaque.
<b>Small, dense LDL</b>	Small, dense LDL are atherogenic particles that can easily penetrate the arterial endothelium and cause plaque formation.

**HEART HEALTH TESTING FROM BIOREFERENCE LABORATORIES IS A COMPREHENSIVE APPROACH TO DIAGNOSING AND MANAGING PATIENTS WHO HAVE OR MAY BE AT RISK FOR HEART DISEASE.**

## HEART HEALTH PROFILES

## COMPONENTS AND SPECIMEN REQUIREMENTS

<b>Comprehensive Heart Health Baseline Profile Test Code F306-6</b>	CBC w/Diff; CMP Basic Lipid; LDL Direct; Lipoprotein Particle Evaluation; LP(a); hs-CRP; HbA1c	 1 SST	 1 Lavender
<b>Heart Health Baseline Profile Test Code Q471-5</b>	Basic Lipid; LDL Direct; Lipoprotein Particle Evaluation; LP(a); hs-CRP; HbA1c	 1 SST	 1 Lavender
<b>Comprehensive Heart Health Monitoring Profile Test Code F307-4</b>	CBC w/Diff; CMP Basic Lipid; LDL Direct; Lipoprotein Particle Evaluation; hs-CRP; HbA1c	 1 SST	 1 Lavender
<b>Heart Health Monitoring Profile Test Code Q472-3</b>	Basic Lipid; LDL Direct; Lipoprotein Particle Evaluation; hs-CRP; HbA1c	 1 SST	 1 Lavender

\*For Government Healthcare Programs, tests should be ordered individually and as needed, not in panel form.

## Prevention and Early Detection

- Identifies at-risk patients otherwise missed with traditional lipid testing
- Enables clinicians to treat atherogenic lipoprotein profiles before overt dyslipidemia becomes apparent
- Includes markers that characterize dyslipidemia and prognosticate relevant outcomes.

## Clinically Relevant Information

- Replaces traditional lipid testing for cardiometabolic risk and diabetic patients
- Provides global risk score to identify patient's 10-year projection ASCVD events, including Myocardial infarction (MI) and ASCVD death
- Includes tests endorsed by Heart Health organizations and guidelines including AHA, ACC, ADA, CDC and NCEP.
- Detects NCEP emerging risk factors, including Lp(a), RLP (Remnant Lipoprotein), HDL2b, and Small dense LDL
- Accurately measures the lipoprotein subgroups of VLDL, LDL, and HDL

## Convenient Ordering\* and Quick Reporting

- Complete test kit and transport provided
- Cost effective and covered by most insurances
- Results report available online
- Easy to understand interpretation of results for patients
- Fast turn-around-time gets your patients on the path to treatment

## Additional Resources:

American Heart Association: [www.aha.org](http://www.aha.org)  
 Cardiovascular Research Foundation: [www.crf.org](http://www.crf.org)  
 Centers For Disease Control: [www.cdc.gov/heartdisease](http://www.cdc.gov/heartdisease)

## SAMPLE REPORT

**BioReference LABORATORIES**  
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**Heart Health Final Report**

<b>PHYSICIAN</b>	<b>TEST PATIENT</b>	<b>SAMPLE</b>	
BIOREFERENCE 123 Main Street Suite 456 Anytown, USA 12345 Acct. #: (123456) P:(123)456-789	DOB: 03/16/1964 Age: 52 Y Sex: M Address: P:(123)456-7890	Specimen ID: 18867237 Date Of Report: 04/05/2016 Date Collected: 04/05/2016 Time Collected: 09:00 Date Received: 04/05/2016 Time Received: 15:05 North America Eastern Time	

**Global Risk Calculation - Reynolds**

Risk calculation using estimated 10-year projection for ASCVD	2%	Low Risk <5%	Moderate Risk 5-9.9%	Borderline High Risk 10-19.9%	High Risk >=20%
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**Risk Factor Assessment**

Smoked cigarettes in the last month:	No	Diabetic:	No
Blood pressure:	110/60 mm Hg	Parent History of Myocardial Infarction:	No

**Basic Lipid Evaluation**

	Low Risk	Moderate Risk	High Risk	Previous Result	Date
Total Cholesterol	150 mg/dL	<200	200-239	>239	
Triglycerides	100 mg/dL	<150	150-199	>199	
HDL-C Direct	45 mg/dL	>40	40-20	<20	
HDL-C as % of Total Cholesterol	30%	>25	25-9	<9	
Cholesterol:HDL-C Ratio	3.3	<4.2	7.4-11.5	>11.5	
LDL:HDL-C Ratio	1.33	<3.56	3.56-8.00	>8.00	
Non-HDL Cholesterol	105 mg/dL	<130	130-189	>189	
VLDL Cholesterol	20 mg/dL	<30	30-40	>40	
LDL-C Direct	60 mg/dL	<100	100-160	>160	

**Lipoprotein Particle Evaluation**

	Low Risk	Moderate Risk	High Risk	Previous Result	Date
VLDL Particles	77 nmol/L	<85	85-110	>110	
Total LDL Particles	379 nmol/L	<700	700-900	>900	
Non-HDL Particles	1056 nmol/L	<800	800-1000	>1000	
RLP - Remnant Lipoprotein	161 nmol/L	<150	150-175	>175	
Small - Dense LDL III	295 nmol/L	<300	300-350	>350	
Small - Dense LDL IV	101 nmol/L	<100	100-115	>115	
Total HDL Particles	7491 nmol/L	>8000	8000-7000	<7000	
Large - Buoyant HDL 2b	2219 nmol/L	>1750	1750-1500	<1500	

**Independent Risk Factors**

	Low Risk	Moderate Risk	High Risk	Previous Result	Date
hs-CRP	0.3 mg/L	<1.0	1.0-3.0	>3.0	0.3 06/29/2015
Hemoglobin A1c	5.3%	<5.7	5.7-6.4	>6.5	

Note: Refer to clinical report for performing laboratories.

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 GenPath is a business unit of BioReference Laboratories, Inc.

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