Quest Diagnostics™

ClevelandHeartLab®
Know your risk.

Report Status: Final

TEST, SAMPLE3

Patient Information	Specimen Information	Client Information
TEST, SAMPLE3 **DOB: 08/30/1964** **AGE: 55** Gender: Male Fasting: Not Fasting Phone: Patient ID:	Order ID: 1927300202 Requisition: 1927300202 Collected: 09/29/2019, 12:02 PM Received: 09/30/2019, 12:02 PM Reported: 09/30/2019, 2:55 PM	HUMPHREY BACCHUS, CCN, P.T. 13323 INVIVO CLINICAL UNIT 1, THE NEW WAREHOUSE LIBBY'S DRIVE, STROUD GLOUCESTERSHIRE, EN GL5- 1RN

Cardiometabolic Risk Report

Test Name	Current Result & Risk		Reference Range/Risk Categories			Units	Historical Result & Risk from	
	Optimal	Non-Optimal	Optimal	Moderate	High		/ /	/ /
INFLAMMATION								
Myeloperoxidase[3]		496	<470	470-539	≥540	pmol/L		
Lp-PLA$_2$ Activity[2]	71		≤123	N/A	>123	nmol/min/mL		
ADMA (Asymmetric dimethylarginine)[1]		108	<100	100-123	>123	ng/mL		
SDMA (Symmetric dimethylarginine)	96			73-135		ng/mL		
LIPIDS								
Lipid Panel								
Cholesterol, Total		206	<200	N/A	≥200	mg/dL		
HDL Cholesterol	56		≥40	N/A	<40	mg/dL		
Triglycerides	110		<150	150-199	≥200	mg/dL		
LDL Cholesterol, Calculated		128	<100	100-129	>129	mg/dL (calc)		
Chol/HDL-C		3.7	≤3.5	3.6-5.0	>5.0	calc		
Non-HDL Cholesterol		150	<130	130-189	≥190	mg/dL (calc)		
TG/HDL-C		2.0	<2.0	2.0-3.0	>3.0	calc		
Lipoprotein Fractionation, NMR								
LDL-P[4]		1379	<935	935-1816	>1816	nmol/L		
Small LDL-P	248		<467	467-820	>820	nmol/L		
LDL Size	21.6		>20.5	N/A	≤20.5	nm		
HDL-P	33.2		>32.8	29.2-32.8	<29.2	umol/L		
Large HDL-P	7.6		>7.2	5.3-7.2	<5.3	umol/L		

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Test Name	Current Result & Risk		Reference Range/Risk Categories			Units	Historical Result & Risk from	
	Optimal	Non-Optimal	Optimal	Moderate	High		/ /	/ /
HDL Size	10.3		>9.0	8.7-9.0	<8.7	nm		
Large VLDL-P	3.2		<3.7	3.7-6.1	>6.1	nmol/L		
VLDL Size	46.3		<47.1	47.1-49.0	>49.0	nm		
METABOLIC								
HbA1c	5.4		<5.7	5.7-6.4	>6.4	%		
Estimated Average Glucose	108		<117	117-137	>137	mg/dL		

4myheart Diet & Exercise Coaching Program: Need help achieving and maintaining an optimal weight? Managing stress? Trying to improve physical fitness levels? The 4myheart program provides support and personalized lifestyle guidance to help improve heart health. Please talk to your provider, visit 4myheart.com or call 1-800-432-7889 opt 2 to learn more.

Medical Information For Healthcare Providers: If you have any questions about any of the tests in our Cardiometabolic Risk Report, please call Cleveland HeartLab Client Services at 866.358.9828, option 1 to arrange a consult with our clinical education team.

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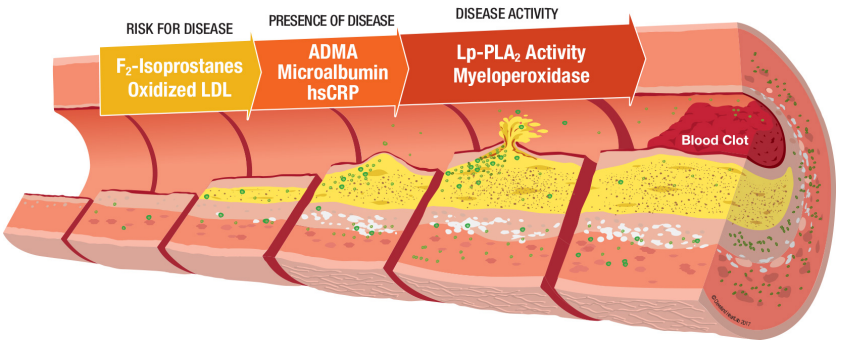
Inflammation Summary

Your medical provider has gone beyond standard testing to examine your inflammation levels so you can Know Your Risk® for heart attack and stroke!

Lowering blood pressure, blood sugar and cholesterol reduces risk, but 50% of heart attack or stroke victims have normal cholesterol levels. Measuring inflammation levels can help identify hidden risk so your provider can catch the beginning or treat advanced stages of vascular disease. Always review your results and treatment considerations with your medical provider.



Disclaimer: The information provided here is for educational purposes only, and the results provided should be reviewed and interpreted by the treating physician. This Inflammation Summary is generated when two or more of the inflammation tests listed below are ordered, or for repeat tests due to a sample problem.

Risk for Disease

Test	Result
F_2-Isoprostanes/Creatinine (ng/mg)	TNO

This urine test was not ordered.

Your body needs F2-Isoprostanes for basic functions like making muscle. In excess, F2-IsoPs caused by inactivity, smoking and processed foods increase oxidation and blood vessel damage.

Test	Result
Oxidized LDL (OxLDL) (U/L)	TNO

This blood test was not ordered.

OxLDL measures oxidized damage to LDL cholesterol (bad cholesterol). High levels trigger inflammation, increasing your risk of developing metabolic syndrome and your future risk of plaque build-up.

Your Lifestyle Considerations

- Limit your intake of processed foods, exercise regularly and if you smoke, quit.
- Eat foods rich in anti-oxidants and high in fiber, and consider a heart healthy Mediterranean-style diet.
- Limit foods high in sugar and salt (sodium) to reduce the damage to your endothelium (vessel lining).
- Your provider may order an imaging test to identify cardiovascular disease.
- Strive for optimal oral health to reduce inflammation associated with periodontal disease.

Presence of Disease

Test	Result
ADMA (ng/mL)	108 M

You have modest levels of ADMA in your blood suggesting you may have low nitric oxide levels and endothelial dysfunction.

ADMA is a chemical in your blood that reduces nitric oxide production needed to keep a healthy endothelium (the cells that line your blood vessels). High levels of ADMA indicate damage to these cells.

Test	Result
Microalbumin/Creatinine (ng/mg)	TNO

This urine test was not ordered.

Microalbumin measures the health of the endothelium, a thin layer of cells lining blood vessels. Risk factors can damage that lining in the kidneys leading to abnormal release of albumin into the urine, which is linked to increased risk of cardiovascular or kidney disease.

Test	Result
hsCRP (mg/L)	TNO

This blood test was not ordered.

hsCRP measures inflammation in the body. Increases of hsCRP are seen with recent illness, tissue injury, if you are fighting a virus or infection, with periodontal (gum) disease as well as with cardiovascular disease.

Disease Activity

Test	Result
$Lp\text{-}PLA_2$ Activity (nmol/min/mL)	71 L

Your result is in the desirable range suggesting that you may have limited active cholesterol build-up.

$Lp\text{-}PLA_2$ Activity measures vascular-specific inflammation. When cholesterol enters and gets trapped in the vessel wall, inflammation occurs. $Lp\text{-}PLA_2$ Activity may identify active cholesterol build-up inside the vessel wall and the progression of cardiovascular disease.

Test	Result
Myeloperoxidase (MPO) (pmol/L)	496 M

You have modest levels of MPO that suggest you may have vessel damage and increased risk of plaque rupture which may lead to a heart attack.

MPO identifies vulnerable plaque due to the breakdown of cells lining the blood vessel. This breakdown leads to white blood cells attacking the vessel wall and marks the progression of cardiovascular disease.

"L" or Low Risk
UND = Undetectable

"M" or Moderate Risk

"H" or High Risk

TNO = Test Not Ordered
TNP = Test Not Performed
INC = Incomputable

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Cardiometabolic Comment Report

INFLAMMATION

Myeloperoxidase[3] — Lab: Z4M

Based on a high risk sub-population (N=920) defined as ambulatory stable patients without acute coronary syndrome who underwent elective diagnostic coronary angiography (1) and a reference range study of apparently healthy donors, we have defined the following cut-offs for MPO: A cut-off of <470 pmol/L defines an 'apparently healthy' population at lower risk for a cardiovascular event, 470-539 pmol/L defines a population at intermediate risk for a cardiovascular event (2-fold increased risk of MACE at 3 years), and > = 540 pmol/L defines a population with an increased risk for a cardiovascular event. (Reference: 1. Tang et al. Am J Cardiol. 2013; 111:465-470 and personal communication with Tang et al).

Lp-PLA$_2$ Activity[2] — Lab: Z4M

Relative Risk: Optimal <=123 nmol/min/mL; High >123 nmol/min/mL.

ADMA (Asymmetric dimethylarginine)[1] — Lab: Z4M

Elevated ADMA levels are associated with significant subclinical atherosclerosis while elevated SDMA levels are associated with kidney function and strongly correlate with reduced eGFR. Available prospective studies suggest an increased risk of cardiovascular disease with higher ADMA concentrations (1). Based on an internal reference range study using 180 'apparently healthy,' non-smoking donors, CHL has defined the following cut-offs for ADMA: A cut-off of <100 ng/mL defines an 'apparently healthy' population at a relatively low risk for a cardiovascular event, 100-123 ng/mL defines a population at intermediate risk for a cardiovascular event, and >123 ng/mL defines a relatively high risk population. (Reference: 1-Willeit P. et al. J Am Heart Assoc. 2015; 4: e001833).

SDMA (Symmetric dimethylarginine) — Lab: Z4M

LIPIDS

LDL Cholesterol, Calculated — Lab: Z4M

Desirable range <100 mg/dL for primary prevention; <70 mg/dL for patients with CHD or diabetic patients with >= 2 CHD risk factors. LDL-C is now calculated using the Martin-Hopkins calculation, which is a validated novel method providing better accuracy than the Friedewald equation in the estimation of LDL-C. Martin SS et al. JAMA. 2013;310(19): 2061-2068 (http://education.QuestDiagnostics.com/faq/FAQ164)

Non-HDL Cholesterol — Lab: Z4M

For patients with diabetes plus 1 major ASCVD risk factor, treating to a non-HDL-C goal of <100 mg/dL (LDL-C of <70 mg/dL) is considered a therapeutic option.

LDL-P[4] — Lab: Z4M

Relative risk: Optimal <935; Moderate 935-1816; High >1816 nmol/L. Reference range is 592-2404 nmol/L.

Small LDL-P — Lab: Z4M

Relative risk: Optimal <467; Moderate 467-820; High >820 nmol/L. Reference range is <1408 nmol/L.

LDL Size — Lab: Z4M

Relative risk: Optimal >20.5; High <20.6 nm. Reference range is 20.0-22.3 nm.

HDL-P — Lab: Z4M

Relative risk: Optimal >32.8; Moderate 29.2-32.8; High <29.2 umol/L. Reference range is 21.1-43.4 umol/L.

Large HDL-P — Lab: Z4M

Relative risk: Optimal >7.2; Moderate 5.3-7.2; High <5.3 umol/L. Reference range is >3.5 umol/L.

HDL Size — Lab: Z4M

Relative risk: Optimal >9.0; Moderate 8.7-9.0; High <8.7 nm. Reference range is 8.3-10.5 nm.

Large VLDL-P — Lab: Z4M

Relative risk: Optimal <3.7; Moderate 3.7-6.1; High >6.1 nmol/L. Reference range is <16.0 nmol/L.

VLDL Size — Lab: Z4M

Relative risk: Optimal <47.1; Moderate 47.1-49.0; High >49.0 nm. Reference range is 41.1-61.7 nm.

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Cardiometabolic Comment Report

METABOLIC

HbA1c — Lab: Z4M

For the purpose of screening for the presence of diabetes: <5.7% is consistent with the absence of diabetes; 5.7-6.4% is consistent with increased risk for diabetes (prediabetes); >= 6.5% is consistent with diabetes. This assay result is consistent with a decreased risk of diabetes. Currently, no consensus exists regarding use of hemoglobin A1c for diagnosis of diabetes in children. According to American Diabetes Association (ADA) guidelines, hemoglobin A1c <7.0% represents optimal control in non-pregnant diabetic patients. Different metrics may apply to specific patient populations. Standards of Medical Care in Diabetes (ADA).

Estimated Average Glucose — Lab: Z4M

The estimated average glucose value is an adjunct to the treatment of both Type I and Type II Diabetes. It is not intended for the diagnosis or risk assessment of patients without diabetes. (Reference: Nathan DM et al. Diabetes Care 2008;31:1473-1478).

Footnotes

(1) This test is performed by a Liquid Chromatography-Tandem Mass Spectrometry (LC/MS/MS) method. This test was developed and its performance characteristics determined by the Cleveland HeartLab, Inc. It has not been cleared or approved by the U.S. FDA. The Cleveland HeartLab, Inc. is regulated under Clinical Laboratory Improvement Amendments (CLIA) as qualified to perform high-complexity testing. This test is used for clinical purposes. It should not be regarded as investigational or for research.

(2) This test is performed by an enzymatic method. This test was developed and its performance characteristics determined by the Cleveland HeartLab, Inc. It has not been cleared or approved by the U.S. FDA. The Cleveland HeartLab, Inc. is regulated under Clinical Laboratory Improvement Amendments (CLIA) as qualified to perform high-complexity testing. This test is used for clinical purposes. It should not be regarded as investigational or for research.

(3) This test is performed by a turbidimetric immunoassay method. This test was developed and its performance characteristics determined by the Cleveland HeartLab, Inc. It has not been cleared or approved by the U.S. FDA. The Cleveland HeartLab, Inc. is regulated under Clinical Laboratory Improvement Amendments (CLIA) as qualified to perform high-complexity testing. This test is used for clinical purposes. It should not be regarded as investigational or for research.

(4) This test is performed by a Nuclear Magnetic Resonance method. This test was developed and its performance characteristics determined by The Cleveland HeartLab, Inc. It has not been cleared or approved by the U.S. FDA. The Cleveland HeartLab is regulated under Clinical Laboratory Improvement Amendments (CLIA) as qualified to perform high-complexity testing. This test is used for clinical purposes. It should not be regarded as investigational or for research.

PERFORMING SITE:

Z4M CLEVELAND HEARTLAB INC, 6701 CARNEGIE AVENUE SUITE 500, CLEVELAND, OH 44103-4623 Medical Director: Bill G. Richendollar, MD, CLIA: 36D1032987