Quest Diagnostics™

ClevelandHeartLab®
Know your risk.

Report Status: Final

GREENFIELD, BEN

Patient Information	Specimen Information	Client Information
GREENFIELD, BEN **DOB:** [redacted] **AGE: 38** Gender: Male Fasting: Unknown Phone: Patient ID:	Order ID: 2021200572 Requisition: 2021200572 Collected: 07/28/2020, 12:00 PM Received: 07/30/2020, 08:45 AM Reported: 08/04/2020, 2:44 PM	RAMPRASAD C. DANDILLAYA, M.D. 13811 ATELIER HEALTH - BEVERLY HILLS 150 NORTH ROBERTSON BOULEVARD SUITE 150 BEVERLY HILLS, CA 90211

Cardiometabolic Report

Test Name	Current Result & Relative Risk: Optimal	Current Result & Relative Risk: Non-Optimal	Reference Range/Relative Risk Categories: Optimal	Moderate	High	Units	Historical Result & Relative Risk: / /	/ /
INFLAMMATION								
Lp-PLA$_2$ Activity[1]		154	≤123	N/A	>123	nmol/min/mL		
hs-CRP	<0.3		<1.0	1.0-3.0	>3.0	mg/L		
LIPIDS								
Lipid Panel								
Cholesterol, Total		248	<200	N/A	≥200	mg/dL		
HDL Cholesterol	104		≥40	N/A	<40	mg/dL		
Triglycerides	82		<150	150-199	≥200	mg/dL		
LDL Cholesterol, Calculated		126	<100	100-129	≥130	mg/dL (calc)		
Chol/HDL-C	2.4		≤3.5	3.6-5.0	>5.0	calc		
Non-HDL Cholesterol		144	<130	130-189	≥190	mg/dL (calc)		
Lipoprotein Fractionation, NMR								
LDL-P[2]		1407	<935	935-1816	>1816	nmol/L		
Small LDL-P	<154		<467	467-820	>820	nmol/L		
LDL Size	21.6		>20.5	N/A	≤20.5	nm		
HDL-P	42.3		>32.8	29.2-32.8	<29.2	umol/L		
Large HDL-P	19.1		>7.2	5.3-7.2	<5.3	umol/L		
HDL Size	10.5		>9.0	8.7-9.0	<8.7	nm		
Large VLDL-P	2.6		<3.7	3.7-6.1	>6.1	nmol/L		
VLDL Size	46.5		<47.1	47.1-49.0	>49.0	nm		

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Test Name	Current Result & Relative Risk		Reference Range/Relative Risk Categories				Historical Result & Relative Risk	
	Optimal	Non-Optimal	Optimal	Moderate	High	Units	/ /	/ /
Apolipoproteins								
Apolipoprotein B		96	<90	90-119	≥120	mg/dL		
Lipoprotein (a)	16		<75	75-125	>125	nmol/L		
METABOLIC								
TMAO (Trimethylamine N-oxide)[3]		18.9	<6.2	6.2-9.9	≥10.0	uM		

UND = UNDETECTABLE **INC = INCOMPUTABLE**

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 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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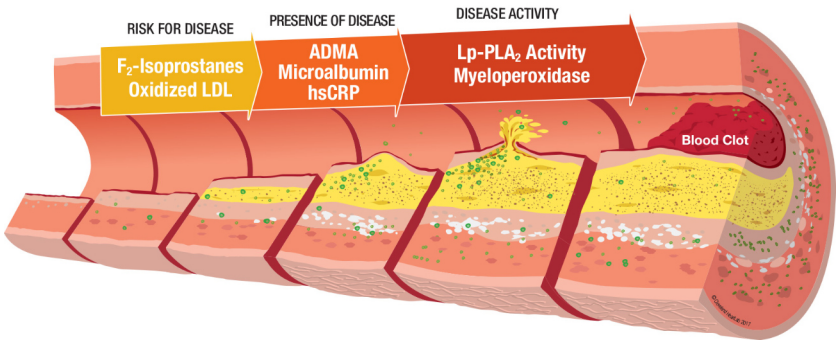
Inflammation Summary

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)	TNO

This blood test was not ordered.

ADMA is a chemical in your blood that reduces nitric oxide, a molecule needed to keep a healthy endothelium (the cells that line your blood vessels). High levels of ADMA indicate unhealthy cells in the blood vessel and may identify risk of cardiovascular disease.

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)	<0.3 L

Your result in the desirable range suggests that you have low amounts of general inflammation in your body.

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)	154 H

You have high levels of $Lp\text{-}PLA_2$ Activity suggesting that you may have increased 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)	TNO

This blood test was not ordered.

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 Relative Risk
UND = Undetectable
"M" or Moderate Relative Risk
"H" or High Relative Risk
TNO = Test Not Ordered
TNP = Test Not Performed
INC = Incomputable

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Cardiometabolic Comment Report

INFLAMMATION

Lp-PLA$_2$ Activity[1] — Lab: Z4M

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

hs-CRP — Lab: Z4M

The AHA/CDC Guidelines recommend hs-CRP ranges for identifying Relative Cardiovascular Risk in patients ages >17 years: <1.0 mg/L Lower Relative Cardiovascular Risk; 1.0-3.0 mg/L Average Relative Cardiovascular Risk; 3.1-10.0 mg/L Higher Relative Cardiovascular Risk. For patients with higher cardiovascular risk, consider retesting in 1-2 weeks to exclude a benign transient elevation secondary to infection or inflammation from the baseline CRP value. Persistent elevations of >10.0 mg/L upon retesting may be associated with infection and inflammation. The AHA/CDC recommendations are based on Pearson TA et al. Circulation. 2003;107:499-511.

LIPIDS

Cholesterol, Total — Lab: Z4M

HDL Cholesterol — Lab: Z4M

Triglycerides — Lab: Z4M

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)

Chol/HDL-C — Lab: Z4M

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[2] — 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.

Apolipoprotein B — Lab: Z4M

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Risk: Optimal <90 mg/dL; Moderate 90-119 mg/dL; High >= 120 mg/dL; Cardiovascular event risk category cut points (optimal, moderate, high) are based on National Lipid Association recommendations- Jacobson TA et al. J of Clin Lipid. 2015; 9: 129-169 and Jellinger PS et al. Endocr Pract. 2017;23(Suppl 2):1-87.

Lipoprotein (a) Lab: Z4M

Risk: Optimal <75 nmol/L; Moderate 75-125 nmol/L; High >125 nmol/L. Cardiovascular event risk category cut points (optimal, moderate, high) are based on Tsimika S. JACC 2017;69:692-711.

METABOLIC

TMAO (Trimethylamine N-oxide)(3) Lab: Z4M

Based on a population (N=4007) 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 (N=180), we have defined the following cut-offs for TMAO to assess relative risk of a cardiovascular event: A cut-off of <6.2 uM defines a population at optimal relative risk for a cardiovascular event relative to those above this level. 6.2-9.9 uM defines a population at moderate relative risk for a cardiovascular event (two-fold increased risk of MACE at 3 years) relative to those with TMAO <6.2 uM (1). Given the dose-dependent relationship between TMAO and cardiovascular event risk demonstrated across multiple clinical subgroups (2), those above the upper limit of the Cleveland HeartLab 95% population interval (>=10.0 uM) are defined as high relative risk for a cardiovascular event relative to those with TMAO <6.2 uM. (References: 1-Tang et al. N Engl J Med. 2013; 368:1575-1584. 2-Heianza Y, et al. J Am Heart Assoc. 2017;6(7)).

Footnotes

(1) 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.

(2) 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.

(3) 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 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