

Patient

Specimen

Report Date & Time: 08.08.2017 1:00 PM
Received Date & Time: 08.03.2017 11:30 AM
Collection Date & Time: 08.02.2017 11:35 AM

Test Name	Optimal	Borderline	High Risk	Notes	Previous Results 09.07.16
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Test Name	Optimal	Borderline	High Risk	HDL Particles	Notes	Previous Results 09.07.16
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Lipid Tests

Boston Heart HDL Map® Test^{1,6}

Total Cholesterol	198	<200	200-240	>240 mg/dL	181
Direct LDL-C	128	<100	100-160	>160 mg/dL	112
HDL-C	69	>50	40-50	<40 mg/dL	65
Triglycerides	81	<150	150-200	>200 mg/dL	75
Non-HDL-C	129	<130	130-190	>190 mg/dL	116
ApoB	93	<80	80-120	>120 mg/dL	86
sdLDL-C ¹	19	<20	20-40	>40 mg/dL	17
%sdLDL-C	15	<20	20-30	>30 %	15
VLDL-C	1	<30	30-40	>40 mg/dL	4
Lp(a)	38	<30	30-50	>50 mg/dL	21
ApoA-1	158.0	>160	120-160	<120 mg/dL	148.4

α-1	53.5	>35	25-35	<25 mg/dL	39.6
α-2	54.2	>55	45-55	<45 mg/dL	63.2
α-3	18.2	<20	20-25	>25 mg/dL	18.5
α-4	17.9	<20	20-25	>25 mg/dL	17.5
preβ-1	11.6	<20	20-25	>25 mg/dL	8.3

Interpretation: This HDL map is **OPTIMAL** and is associated with a lower risk of CVD.

Boston Heart Cholesterol Balance® Test¹

Normalized Value (μmol x 100/mmol of Total Cholesterol)	Normalized Value	Absolute Value	Notes
Production Markers: BORDERLINE			
Lathosterol	136	2.7	
Desmosterol	56	1.1	
Absorption Markers: BORDERLINE			
Beta-sitosterol	165	3.5	
Campesterol	210	4.3	
Cholesterol Balance Score (Production/Absorption)	0.6		
Over Absorber		Over Producer	

Interpretation: Increased amounts of Lathosterol and Beta-sitosterol and Campesterol may indicate an increased cellular production and intestinal absorption of cholesterol. Desmosterol accounts for a minor portion (20%) of overall cholesterol production.

Consideration: Consider lifestyle modification, statin and ezetimibe therapy.

Lipid Ratios

TC/HDL-C	2.9				2.8
	4.4	4-6	>6		
VLDL-C/TG	0.01				0.05
	<0.2	0.2-0.3	>0.3		
ApoB/ApoA-1		0.6			0.6
	<0.6	0.6-0.9	>0.9		
HDL-C/TG	0.85				0.87
	≥0.5	0.25-0.5	<0.25		

Patient

Gender: M
Fasting: Yes
BMI:

Provider

Specimen

Report Date & Time: 09.11.2018 3:15 PM
Received Date & Time: 09.06.2018 3:02 PM
Collection Date & Time: 09.05.2018 09:25 AM

Test Name	Optimal	Borderline	High Risk	Notes	Previous Results
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Lipid Tests

Total Cholesterol	<200	207	>240 mg/dL		
Direct LDL-C	<100	134	>160 mg/dL		
HDL-C	50	54	<40 mg/dL		
Triglycerides	<150	128	>200 mg/dL		
Non-HDL-C	<130	153	>190 mg/dL		
ApoB	<80	104	>120 mg/dL		
sdLDL-C ¹	<20	26	>40 mg/dL		
%sdLDL-C	<20	19	>30 %		
VLDL-C	<30	19	>40 mg/dL		
Lp(a)	<30	24	>50 mg/dL		
ApoA-1	>160	142.0	<120 mg/dL		

Lipid Ratios

TC/HDL-C	3.8	4-6	>6		
VLDL-C/TG	0.15	0.2-0.3	>0.3		
ApoB/ApoA-1	0.7	<0.6	>0.9		
HDL-C/TG	0.42	>0.5	<0.25		

Test Name	Optimal	Borderline	High Risk	HDL Particles	Notes	Previous Results
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Boston Heart HDL Map® Test^{1,6}

α-1	31.0	>35	25-35	<25 mg/dL		
α-2	56.4	>55	45-55	<45 mg/dL		
α-3	20.5	<20	20-25	>25 mg/dL		
α-4	17.7	<20	20-25	>25 mg/dL		
preβ-1	14.4	<20	20-25	>25 mg/dL		

Interpretation: This HDL map is **BORDERLINE**. ApoA-1 levels are reduced in the very large alpha-1 particle; lower levels are associated with abnormal HDL metabolism and an increased CVD risk.

Consideration: Rule out therapies that may lower alpha-1 levels such as some non-select beta blockers, anabolic steroids, or progestational agents. Rule out secondary causes of dyslipidemia such as thyroid, kidney, or liver disorders. Optimize LDL-C, sdLDL, ApoB, HOMA-IR, Omega-3 Index, consider encouraging increased activity, restriction of refined carbohydrates and if indicated, weight reduction and smoking cessation.

Boston Heart Cholesterol Balance® Test¹

Normalized Value (μmol x 100/mmol of Total Cholesterol)	Absolute Value (mg/L)	Normalized Value	Absolute Value	Notes
Production Markers:				
Lathosterol	90	160	82	1.7
Desmosterol	70	90	49	1.0
Absorption Markers:				
Beta-sitosterol	100	180	122	2.7
Campesterol	150	260	214	4.6
Cholesterol Balance Score (Production/Absorption)				
Over Absorber	0.2	0.5	1.1	Over Producer
			0.4	

Interpretation: Increased amounts of Beta-sitosterol and Campesterol may indicate an increase in intestinal absorption of cholesterol.

Consideration: Consider lifestyle modification and ezetimibe therapy.

Patient

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Test Name	Optimal	Borderline	High Risk	Notes	Previous Results 09.07.16
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Inflammation Tests

Fibrinogen	295				325
	<370	370-470	>470 mg/dL		
hs-CRP	0.5				0.4
	<1.0	1.0-3.0	>3.0 mg/L		
LpPLA ₂ Activity		206			
	<180	180-224	≥225		
			nmol/min/mL		

Interpretation: BORDERLINE LpPLA₂ may indicate vascular inflammation, plaque instability and may be associated with increased CVD risk.

Consideration: Consider evaluating potential contributing CVD risk factors. Identify and treat underlying causes such as atherogenic lipoproteins and metabolic markers. If indicated, control blood pressure, encourage smoking cessation, and weight reduction.

Metabolic Tests

HbA1c	5.1				5.5
	<5.7	5.7-6.4	>6.4 %		
HOMA-IR		2.0			1.8
	<2	2-3	>3		
Glucose ²	99				104
	70-99	100-125	<70 or >125 mg/dL		
Adiponectin ¹	>25.0				23.2
	>10	7-10	<7 µg/mL		

Test Name	Low	Optimal	High	Notes	Previous Results 09.07.16
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Insulin ³		6			7
	<5	5-15	>15 µU/mL		
C-Peptide ³		2.49			2.84
	<1.40	1.40-3.30	>3.30 ng/mL		

Interpretation: BORDERLINE HOMA-IR may indicate high risk of developing diabetes, hyperlipidemia, hypertension and CVD.

Consideration: Consider encouraging dietary modification supported by education. If indicated encourage weight reduction, smoking cessation, increased activity and control blood pressure.

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Test Name	Optimal	Borderline	High Risk	Notes	Previous Results
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Inflammation Tests

Fibrinogen		441			
	<370	370-470	>470 mg/dL		
hs-CRP	0.9				
	<1.0	1.0-3.0	>3.0 mg/L		
LpPLA ₂ Activity		191			
	<180	180-224	≥225 nmol/min/mL		

Interpretation: BORDERLINE LpPLA₂ may indicate vascular inflammation, plaque instability and may be associated with increased CVD risk.

Consideration: Consider evaluating potential contributing CVD risk factors. Identify and treat underlying causes such as atherogenic lipoproteins and metabolic markers. If indicated, control blood pressure, encourage smoking cessation and weight reduction.

Metabolic Tests

HbA1c	5.5				
	<5.7	5.7-6.4	>6.4 %		
HOMA-IR		2.5			
	<2	2-3	>3		
Glucose ²					
		100-125	<70 or >125 mg/dL		
Adiponectin ¹					
		7-10	<7 µg/mL		

Test Name	Optimal	Borderline	High Risk	Notes	Previous Results
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Insulin ³				10	
	<5		>15 µU/mL		
C-Peptide ³				10	
	<1.40	1.40-3.30	>3.30 ng/mL		

Interpretation: BORDERLINE HOMA-IR may indicate high risk of developing diabetes, hyperlipidemia, hypertension and CVD.

Consideration: Consider encouraging dietary modification supported by education. If indicated encourage weight reduction, smoking cessation, increased activity and control blood pressure.

Test Name	Optimal	Borderline	High Risk	Notes	Previous Results
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Cardiac Muscle Function Tests

NT-proBNP	50			10	
	<125	125-450	>450 pg/mL		

Patient

Specimen

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Test Name	Test Result	Interpretation	Notes
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Test Name	Test Result	Interpretation	Notes
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Genetic Tests by Genotyping^{1,4}

Reported Date: 09.07.16			
Statin Induced Myopathy (SLC01B1)²	T/T	Normal statin transporter. Consider recommending standard doses of statins.	
Reported Date: 09.07.16			
ApoE	E2/E3	Genotype associated with lower LDL-C levels than the common E3/E3. Consider recommending lifestyle modification and statin therapy.	
Reported Date: 09.07.16			
Clopidogrel Response (CYP2C19)	*1/*1	Normal clopidogrel metabolizer.	

Reported Date: 09.07.16			
Factor II	-/-	Normal risk of clot formation.	
Reported Date: 09.07.16			
Factor V Leiden	-/-	Normal risk of clot formation.	
Reported Date: 09.07.16			
MTHFR	677 C/C	677(C/C) genotype – no variant.	
	1298 A/C	1298(A/C) genotype – single copy of variant. Due to elevated homocysteine consider nutritional therapy and/or folate and other B vitamin supplementation.	

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Specimen

Report Date & Time: 09.11.2018 3:15 PM

Test Name	Test Result	Interpretation	Notes
Genetic Tests by Genotyping^{1,4}			
Reported Date: 09.06.18			
Statin Induced Myopathy (SLC01B1)?	TNP	Normal statin transporter.	9
Reported Date: 09.06.18			
ApoE	TNP	Genotype associated with lower LDL-C levels than the common E3/E3. Consider recommending lifestyle modification and statin therapy.	9
Reported Date: 09.06.18			
Clopidogrel Response (CYP2C19)	TNP	Normal clopidogrel metabolizer.	9

Test Name	Test Result	Interpretation	Notes
Reported Date: 09.06.18			
Factor II	TNP	Normal risk of clot formation.	9
Reported Date: 09.06.18			
Factor V Liden	TNP	Normal risk of clot formation.	9
Reported Date: 09.06.18			
MTHFR	TNP	677(C/C) genotype – no variant. 1298(A/C) genotype – single copy of variant. Due to elevated homocysteine consider nutritional therapy and/or folate and other B vitamin supplementation.	9

Patient

Specimen

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Test Name	Optimal	Borderline	High Risk	Interpretation	Notes	Previous Results 09.07.16
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Boston Heart Fatty Acid Balance™ Test¹

Saturated Fatty Acid Index	29.4			Saturated FA Index is OPTIMAL.		29.7
Trans Fatty Acid Index	<30.0	30.0-33.0	>33.0 %	Trans FA Index is HIGH. Higher levels of plasma trans fatty acids are associated with an increased risk of CVD. Consider restricting dietary intake of fried foods, foods containing partially hydrogenated fats, shortening, or stick margarine, and replacing with plant based oils.		0.48
	<0.50	0.50-0.80	>0.80 %			
	Optimal	Borderline	Low			
Monounsaturated Fatty Acid Index			18.0	Monounsaturated FA Index is LOW. Higher plasma levels of MUFA have been associated with a lower risk of CVD. Consider increasing intake of almonds, avocado or plant based oils (including olive).		17.1
	>22.0	19.0-22.0	<19.0 %			
Unsaturated/Saturated Ratio Index	2.28			Unsaturated/Saturated Ratio Index is OPTIMAL.		2.31
	>2.25	2.00-2.25	<2.00			
Omega-3 Fatty Acid Index	6.12			Omega-3 FA Index is OPTIMAL. Eicosapentaenoic Acid (EPA) level is OPTIMAL. Docosahexaenoic Acid (DHA) level is OPTIMAL. Maintain current level of dietary and/or supplemental intake of Omega-3 fatty acids.		5.43
	>4.50	2.00-4.50	<2.00 %			
EPA	92.2					58.1
	>50.0	15.6-50.0	<15.6 µg/mL			
DHA	106.9					96.4
	>100.0	45.0-100.0	<45.0 µg/mL			
ALA	31.6			Alpha Linolenic Acid (ALA) level is OPTIMAL. Maintain current level of dietary and/or supplemental intake of Omega-3 fatty acids.		18.7
	>30.0	14.0-30.0	<14.0 µg/mL			
	Low	Mid	High			
Omega-6 Fatty Acid Index		43.6		Values are reported according to the lowest, middle and highest thirds of our reference population. Some authorities have recommended a goal below the 10th percentile for the Omega-6/Omega-3 Ratio Index (a value of 9.0) and the AA/EPA Ratio Index (a value of 5.0).		45.9
	<41.0	41.0-46.0	>46.0 %			
Linoleic Acid (LA)			1152.0			1074.8
	<825.0	825.0-1040.0	>1040.0 µg/mL			
Arachidonic Acid (AA)		225.7				194.6
	<220.0	220.0-290.0	>290.0 µg/mL			
AA/EPA Ratio Index	2.5					3.4
	<13.0	13.0-25.0	>25.0			
Omega-6/Omega-3 Ratio Index	6.14					7.54
	<15.0	15.0-24.0	>24.0			

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Test Name	Optimal	Borderline	High	Interpretation	Notes	Previous Results
Boston Heart Fatty Acid Balance™ Test¹						
Saturated Fatty Acid Index		30.1		Saturated FA Index is BORDERLINE. Higher levels of plasma saturated fatty acids are associated with an increased risk of CVD. Consider restricting dietary intake of saturated fat by choosing poultry without skin, fish, low fat dairy products, lean cuts of meat, and replacing butter with plant based oils.		
Trans Fatty Acid Index	<30.0	30.0-33.0	>33.0 %	Trans FA Index is OPTIMAL.		
	0.44					
	<0.50	0.50-0.70	>0.70 %			
	Optimal	Borderline	Low			
Monounsaturated Fatty Acid Index	22.2			Monounsaturated FA Index is OPTIMAL.		
	>22.0	19.0-22.0	<19.0 %			
Unsaturated/Saturated Ratio Index	2.28			Unsaturated/Saturated Ratio Index is OPTIMAL.		
	>2.25	2.00-2.25	<2.00			
Omega-3 Fatty Acid Index		2.80		Omega-3 FA Index is BORDERLINE. A lower Omega-3 FA index is associated with an increased risk for CVD. Eicosapentaenoic Acid (EPA) level is BORDERLINE. Increased EPA levels have been associated with lower risk of heart disease. Docosahexaenoic Acid (DHA) level is BORDERLINE. Increased DHA levels have been associated with a lower risk of heart disease. Consider recommending consumption of at least 2-3 meals of oily fish such as salmon, sardines, herring, tuna, and mackerel weekly or a fish oil or EPA supplement.		
EPA	>4.50	2.50-4.50	<2.50 %			
		22.8				
DHA	>50.0	20.0-50.0	<20.0 µg/mL			
		75.6				
ALA	>100.0	60.0-100.0	<60.0 µg/mL			
		23.8		Alpha Linolenic Acid (ALA) level is BORDERLINE. Higher levels of ALA have been associated with a lower risk of CVD. Consider recommending increasing intake of walnuts, chia seeds, ground flaxseeds, and canola or flaxseed oil.		
	>30.0	14.0-30.0	<14.0 µg/mL			
	Low	Mid	High			
Omega-6 Fatty Acid Index			43.1	Values are reported according to the lowest, middle and highest thirds of our reference population. Some authorities have recommended a goal > 0.20 for the Omega-3/Omega-6 Ratio Index. Some authorities indicate that an EPA/AA ratio of > 0.75 is optimal, usually only achieved with supplementation.		
	<39.0	39.0-43.0	>43.0 %			
Linoleic Acid (LA)			1198.2			
	<930.0	930.0-1150.0	>1150.0 µg/mL			
Arachidonic Acid (AA)		252.3				
	<250.0	250.0-320.0	>320.0 µg/mL			
AA/EPA Ratio Index		11.07				
	<6.67	6.67-12.50	>12.50			
EPA/AA Ratio Index		0.09				
	<0.08	0.08-0.15	>0.15			
Omega-3/Omega-6 Ratio Index		0.08				
	<0.07	0.07-0.10	>0.10			

Specimen

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Chemistry Tests

Test Name	Low	Normal	High	Notes	Previous Results 09.07.16
BUN		17.1			18.8
Creatinine	<3.0	3.0-25.0	>25.0 mg/dL		
		1.02			1.13
Albumin	<0.67	0.67-1.17	>1.17 mg/dL		
		4.2			4.4
Uric Acid	<3.5	3.5-5.2	>5.2 g/dL		
	5.0				5.6
	<7	7-10	>10 mg/dL		

Test Name

Test Name	Optimal	Borderline	High Risk	Notes	Previous Results 09.07.16
Glucose ²	99				104
	70-99	100-125	<70 or >125 mg/dL		
AST	25				20
	<40	40-120	>120 U/L		
ALT	20				16
	<40	40-120	>120 U/L		
Alkaline Phosphatase	40				48
	<130	130-200	>200 U/L		

Test Name

Test Name	Low	Optimal	High	Notes	Previous Results 09.07.16
TSH		1.67			2.04
	<0.27	0.27-4.2	>4.2 µIU/mL		

Thyroid Tests

Test Name

Other Kidney Tests

Test Name	Low	Normal	High	Notes	Previous Results 09.07.16
Cystatin C	0.98		>1.20 mg/L		1.13
	<=1.20	Borderline	High		
BUN/Creatinine	16.8		>23		16.6
	<=23			10	
eGFR / Non-African American	74				66
	>60	30-60	<30 mL/min/1.73 m ²		
eGFR / African American	86			10	76
	>60	30-60	<30 mL/min/1.73 m ²		
eGFR / Cystatin C	76.73			10	63.76
	>60	30-60	<30 mL/min/1.73 m ²		

Muscle Tests

Test Name	Low	Mid	High	Notes	Previous Results 09.07.16
Creatine Kinase (CK)	93				93
	<100	300-1500	>1500 U/L		
NT-proBNP	36				25
	<125	125-450	>450 pg/mL		

Other Tests

Test Name	Low	Mid	High	Notes	Previous Results 09.07.16
Vitamin D, 25-OH		32			63
	<30	30-100	>100 ng/mL		
Homocysteine		11.0			9.3
	<10	10-14	>14 µmol/L		

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Test Name	Low	Normal	High	Notes	Previous Results
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Chemistry Tests

BUN		17.4			
	<3.0	3.0-25.0	>25.0 mg/dL		
Creatinine		1.03			
	<0.67	0.67-1.17	>1.17 mg/dL		
Albumin		4.5			
	<3.5	3.5-5.2	>5.2 g/dL		
Test Name	Optimal	Borderline	High Risk	Notes	Previous Results

Uric Acid	10				
	<7	7-10	>10 mg/dL		
Glucose ²	99				
	70-99	100-125	<70 or >125 mg/dL		
AST	18				
	<40	40-120	>120 U/L		
ALT	15				
	<40	40-120	>120 U/L		
Alkaline Phosphatase	72				
	<130	130-200	>200 U/L		
Test Name	Low	Normal	High	Notes	Previous Results

Test Name	Low	Normal	High	Notes	Previous Results
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Thyroid Tests

TSH		2.30		10	
	<0.27	0.27-4.2	>4.2 µIU/mL		
Free T4		1.23		10	
	<0.93	0.93-1.70	>1.70 ng/dL		
Total T3		1.3		10	
	<0.8	0.8-2.0	>2.0 ng/mL		
TPO		11		10	
		<40	≥40 IU/mL		

Test Name	Low	Normal	High	Notes	Previous Results
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Other Kidney Tests

Cystatin C		0.99			
		≤1.20	>1.20 mg/L		
Magnesium		2.1			
	<1.6	1.6-2.6	>2.6 mg/dL		
Test Name	Optimal	Borderline	High Risk	Notes	Previous Results

BUN/Creatinine	16.9				
	≤23		>23		
eGFR / Non-African American	73			11	
	>60	30-60	<30 mL/min/1.73 m ²		
eGFR / African American	84			11	
	>60	30-60	<30 mL/min/1.73 m ²		
eGFR / Cystatin C	75-115			11	
	>60	30-60	<30 mL/min /1.73m ²		

Muscle Tests

Creatine Kinase (CK)		101			
		<300	300-1500	>1500 U/L	
Test Name	Low	Normal	High	Notes	Previous Results

Iron Tests

Iron		126			
	<59	59-158	>158 µg/dL		
Ferritin		100			
	<30	30-400	>400 ng/mL		
Test Name	Low	Mid	High	Notes	Previous Results

Other Tests

Vitamin D, 25-OH		29			
		<30	30-100	>100 ng/mL	

Patient

Specimen

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Test Name	Test Results	Range	Notes	Previous Results 09.07.16
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Male Hormone Tests

Estradiol	52.4	11.3-43.2 pg/mL		<25.0
SHBG	200.0	19.3-76.4 nmol/L		75.8

Test Name	Test Results	Range	Notes	Previous Results 09.07.16
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Total Testosterone	1725.2	193.0-740.0 ng/dL		893.1
Free Testosterone	100.9	50.0-210.0 pg/mL		114.2
DHEA-S	82.3	33.6-249.0 µg/dL		195.1

Test Name	Low	Optimal	High	Notes	Previous Results 09.07.16
PSA, Total		<=4.0	4.8 >4.0 ng/mL	9	

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Test Name	Optimal	Borderline	High Risk	Notes	Previous Results
B12		550		10	
	>900	500-900	<500 pg/mL	10	
Folate		14.6		6	
	>18.0	12.0-18.0	<12.0 ng/mL		
CoQ10 ¹		1.35			
	>1.40	0.70-1.40	<0.70 mg/L		
Homocysteine		11.6			
	<10	10-14	>14 µmol/L		

Test Name	Test Results	Range	Notes	Previous Results
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Male Hormone Tests

Estradiol	35.7	11.3-43.2 pg/mL	10	
SHBG	89.2	19.3-76.4 nmol/L	10	

Test Name	Test Results	Range	Notes	Previous Results
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Total Testosterone	829.7	193.0-740.0 ng/dL	10	
Free Testosterone	89.8	50.0-210.0 pg/mL	10	
DHEA-S	89.3	33.6-249.0 µg/dL	10	

Test Name	Low	Optimal	High	Notes	Previous Results
Parathyroid Hormone		34		10	
	<15	15-65	>65 pg/mL		

Test Name	Low	Normal	High	Notes	Previous Results
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Complete Blood Count (CBC)

WBC		6.42			
	<3.50	4.50-10.50	>10.50		
			x10E3/µL		
RBC		4.86			
	<4.30	4.20-5.70	>5.70		
			x10E6/µL		
Hemoglobin		15.5			
	<13.5	13.5-17.5	>17.5 g/dL		
Hematocrit		44.4			
	<39.0	39.0-50.0	>50.0 %		

Test Name	Low	Normal	High	Notes	Previous Results
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MCV		98			
	<80.0	80.0-100.0	>100.0 fL		
MCH		31.4			
	<27.0	27.0-33.0	>33.0 pg		
MCHC		34.9			
	<32.0	32.0-36.0	>36.0 g/dL		
RDW		12.4			
	<11.0	11.0-15.0	>15.0 %		
Platelet		246			
	<150	150-450	>450		
			x10E3/µL		
MPV		10.9			
	<7.5	7.5-12.5	>12.5 fL		

Patient

Specimen

Report Date & Time: 08.08.2017 1:00 PM

For **Lipid Tests** only. Refer to the previous reports for complete results.*

Test Name	09.07.2016	08.08.2017 (Current)
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Lipid Tests

Total Cholesterol	181	198
Direct LDL-C	112	128
HDL-C	65	69
Triglycerides	75	81
Non-HDL-C	116	129
ApoB	86	93
sdLDL-C ¹	17	19
%sdLDL-C	15	15
VLDL-C	4	1
Lp(a)	21	38
ApoA-1	148.4	158.0

Lipid Ratios

TC/HDL-C	2.8	2.9
VLDL-C/TG	0.05	0.01
ApoB/ApoA-1	0.6	0.6
HDL-C/TG	0.87	0.85

Boston Heart HDL Map[®] Test^{1,6}

α-1	39.6	53.5
α-2	63.2	54.2
α-3	18.5	18.2
α-4	17.5	17.9
preβ-1	8.3	11.6

Boston Heart Cholesterol Balance[®] Test¹

Lathosterol	144	136
Desmosterol	50	56
Beta-sitosterol	216	165
Campesterol	203	210

Inflammation Tests

Fibrinogen	325	295
hs-CRP	0.4	0.5
LpPLA ₂ Activity		206

Test Name

Metabolic Tests

HbA1c	5.5	5.1
HOMA-IR	1.8	2.0
Glucose ²	104	99
Adiponectin ¹	23.2	>25.0
Insulin ³	7	8
C-Peptide ³	2.84	2.49

Boston Heart Fatty Acid Balance[™] Test¹

Saturated Fatty Acid Index	29.7	29.4
Trans Fatty Acid Index	0.48	1.03
Monounsaturated Fatty Acid Index	17.1	18.0
Unsaturated/Saturated Ratio Index	2.31	2.28
Omega-3 Fatty Acid Index	5.43	6.12
EPA	58.1	92.2
DHA	96.4	106.9
ALA	18.7	31.6
Omega-6 Fatty Acid Index	45.9	43.6
Linoleic Acid (LA)	1074.8	1152.0
Arachidonic Acid (AA)	194.6	225.7
AA/EPA Ratio Index	3.4	2.5
Omega-6/Omega-3 Ratio Index	7.54	6.14

Chemistry Tests

BUN	18.8	17.1
Creatinine	1.13	1.02
Albumin	4.4	4.2
Uric Acid	5.6	5.0
Glucose ²	104	99
AST	20	25
ALT	16	20
Alkaline Phosphatase	48	40

Specimen

Report Date & Time: 09.11.2018 3:15 PM

Test Name

Lipid Tests

09.11.2018
(Current)

Total Cholesterol	207
Direct LDL-C	134
HDL-C	54
Triglycerides	128
Non-HDL-C	153
ApoB	104
sdLDL-C ¹	26
%sdLDL-C	19
VLDL-C	19
Lp(a)	24
ApoA-1	142.0

Lipid Ratios

TC/HDL-C	3.8
VLDL-C/TG	0.15
ApoB/ApoA-1	0.7
HDL-C/TG	0.42

♥ Boston Heart HDL Map[®] Test^{1,6}

α-1	31.0
α-2	56.4
α-3	20.5
α-4	17.7
preβ-1	14.4

♥ Boston Heart Cholesterol Balance[®] Test¹

Lathosterol	82
Desmosterol	49
Beta-sitosterol	122
Campesterol	214

Inflammation Tests

Fibrinogen	441
hs-CRP	0.9
LpPLA ₂ Activity	191

Cardiac Muscle Function Tests

NT-proBNP	50
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Test Name

Metabolic Tests

09.11.2018
(Current)

HbA1c	5.5
HOMA-IR	2.5
Glucose ²	99
Adiponectin ¹	19.1
Insulin ³	10
C-Peptide ³	2.70

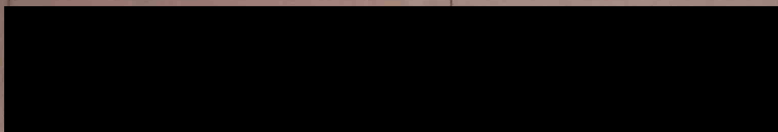
♥ Boston Heart Fatty Acid Balance[™] Test¹

Saturated Fatty Acid Index	30.1
Trans Fatty Acid Index	0.44
Monounsaturated Fatty Acid Index	22.2
Unsaturated/Saturated Ratio Index	2.28
Omega-3 Fatty Acid Index	2.80
EPA	22.8
DHA	75.6
ALA	23.8
Omega-6 Fatty Acid Index	43.1
Linoleic Acid (LA)	1198.2
Arachidonic Acid (AA)	252.3
AA/EPA Ratio Index	11.07
EPA/AA Ratio Index	0.09
Omega-3/Omega-6 Ratio Index	0.08

Chemistry Tests

BUN	17.4
Creatinine	1.03
Albumin	4.5
Uric Acid	6.0
Glucose ²	99
AST	18
ALT	15
Alkaline Phosphatase	72

Patient



Specimen



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Test Name	09.07.2016	08.08.2017 (Current)
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Other Kidney Tests

Cystatin C	1.13	0.98
BUN/Creatinine	16.6	16.8
eGFR / Non-African American	66	74
eGFR / African American	76	86
eGFR / Cystatin C	63.76	76.73

Muscle Tests

Creatine Kinase (CK)	93	96
NT-proBNP	25	36

Thyroid Tests

TSH	2.04	1.67
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Other Tests

Vitamin D, 25-OH	63	32
Homocysteine	9.3	11.0

Male Hormone Tests

Estradiol	<25.0	52.4
SHBG	75.8	200.0
Total Testosterone	893.1	1725.2
Free Testosterone	114.2	100.9
DHEA-S	195.1	82.3
PSA, Total		4.8

Patient

Specimen

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Test Name

09.11.2018
(Current)

Other Kidney Tests

Cystatin C	0.99
Magnesium	2.1
BUN/Creatinine	16.9
eGFR / Non-African American	73
eGFR / African American	84
eGFR / Cystatin C	75.40

Muscle Tests

Creatine Kinase (CK)	101
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Iron Tests

Iron	126
Ferritin	100

Thyroid Tests

TSH	2.30
Free T4	1.23
Total T3	1.3
TPO	11

Other Tests

Vitamin D, 25-OH	29
B12	550
Folate	14.6
Homocysteine	11.6
CoQ10 ¹	1.35

Male Hormone Tests

Estradiol	35.7
SHBG	89.2
Total Testosterone	829.7
Free Testosterone	89.8
DHEA-S	89.3
Parathyroid Hormone	34

Test Name

09.11.2018
(Current)

Complete Blood Count (CBC)

WBC	6.42
RBC	4.93
Hemoglobin	15.5
Hematocrit	44.4
MCV	90.1
MCH	31.4
MCHC	34.9
RDW	12.4
Platelet	246
MPV	10.9

Patient

Specimen

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Treatment Consideration Summary

The intended use of this report is to provide an aid in the physician's treatment decisions. This report is intended for a physician or other qualified health care provider. Please consult with your physician regarding any questions.

	Lifestyle and Dietary Modification	Statins	Ezetimibe	Niacin	Fibrates	Omega-3 Fatty Acids	Aspirin	Soluble Fiber Supplements	Bile Acid Sequestrants
Lipids									
LDL-C	•	•	•	•	•			•	•
ApoB	•	•	•	•	•				•
Lp(a)				•	•		•		
ApoA-I	•	•		•					
Cholesterol Balance Test									
Production Markers	•	•							
Absorption Markers	•		•					•	
Inflammation Tests									
LpPLA ₂ Activity	•	•	•	•	•	•			
Metabolic Tests									
HOMA-IR	•								
Other Tests									
Homocysteine	•								

Lifestyle and Dietary Modification

Therapeutic lifestyle change is the cornerstone for reducing risk for Cardiovascular Disease (CVD) and diabetes.

The following recommendations are based on the American Heart Association's dietary and lifestyle guidelines. Consume a dietary pattern that achieves ≤6% of calories from saturated fat and emphasizes intake of vegetables, fruits, and whole grains; includes low-fat dairy products, poultry, fatty fish, legumes, non-tropical vegetable oils, and nuts; and limits intake of refined grains, sweets, sugar-sweetened beverages, and red meats. Eliminate foods high in trans fat.

If indicated: control blood pressure, **reduce weight**, engage in smoking cessation and **be physically active** — work up to getting at least 30 minutes of a moderate intensity physical activity, at least 5 days per week.

- Elevated production markers indicate an increased cellular production of cholesterol which may be associated with obesity and metabolic syndrome. Therapeutic lifestyle changes focus on LDL-C reduction through weight loss and decreased intake of animal fat, refined carbohydrates, sweets and sugar-sweetened beverages.
- Increased amounts of sterol absorption markers indicate increased intestinal absorption of cholesterol. Decreasing dietary cholesterol as found in eggs, dairy products, and meats, and consuming more soluble fiber may reduce LDL-C. Sources of soluble fiber include pectin in apples and pears, psyllium, legumes, and oats.
- To increase ApoA-1, and to decrease ApoB, LDL-C levels it is important to reduce saturated fat intake, refined carbohydrates, sugars and eliminate trans fats.
- To optimize HOMA-IR, and reduce risk of diabetes and CVD it is important to reduce weight and simple carbohydrate intake.
- Elevated homocysteine may contribute to endothelial dysfunction and increase risk of CVD. Consider supplementing with methyl folate along with vitamins B6 and B12 if homocysteine is elevated.
- Homocysteine is an amino acid that is associated with endothelial dysfunction and an increased risk for CVD. Increasing intake of foods rich in folate (such as legumes or dark green vegetables), and vitamins B6 and B12; smoking cessation and decreasing excess alcohol and caffeine intake may help lower homocysteine.
- Consider visiting mybostonheart.com to create a Personalized Nutrition and Life Plan to help you achieve your lifestyle and dietary modification goals.

Statins

According to studies, statins have been shown to reduce cholesterol production, increase LDL clearance and lower the risk of CVD and its progression. Statins can lower CoQ10 levels.

Statins:

- may be effective in reducing cholesterol production and LDL cholesterol levels but also may increase absorption of cholesterol.
- may lower LDL-C by 30-60%.
- may raise ApoA-1; may lower ApoB; ApoA-1 is the primary protein on each HDL particle. ApoB is the primary protein on non-HDL lipoproteins and is a direct measure of the number of atherogenic lipoproteins.
- may lower LpPLA₂ up to 30% and stabilize plaque. LpPLA₂ is highly expressed in the necrotic core of atherosclerotic plaques and has been associated with atherosclerotic plaque instability. High levels increase risk of CVD.

Specimen

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Treatment Consideration Summary

The intended use of this report is to provide an aid in the physician's treatment decisions. This report is intended for a physician or other qualified health care provider. Please consult with your physician regarding any questions.

	Lifestyle and Dietary Modification	Statins	Ezetimibe	Niacin	Fibrates	Omega-3 Fatty Acids	CoQ10	Soluble Fiber Supplements	Bile Acid Sequestrants
Lipids									
LDL-C	•	•	•	•	•			•	•
Non-HDL-C	•	•	•	•	•				•
ApoB	•	•	•	•	•	•			•
sdLDL-C	•	•	•	•	•				
ApoA-I	•	•		•	•	•		•	
HDL Map Test									
Alpha-1	•	•		•					
Cholesterol Balance Test									
Absorption Markers	•		•					•	
Inflammation Tests									
Fibrinogen	•								
LpPLA ₂ Activity	•	•	•		•	•			
Metabolic Tests									
HOMA-IR	•								
Fatty Acid Balance Test									
Omega-3 FA Index	•					•			
EPA	•					•			
DHA	•					•			
Other Tests									
Homocysteine	•								
CoQ10							•		

Lifestyle and Dietary Modification

Therapeutic lifestyle change is the cornerstone for reducing risk for Cardiovascular Disease (CVD) and diabetes.

The following recommendations are based on the American Heart Association's dietary and lifestyle guidelines. Consume a dietary pattern that achieves ≤6% of calories from saturated fat and emphasizes intake of vegetables, fruits and whole grains; includes low-fat dairy products, poultry, fatty fish, legumes, non-tropical vegetable oils and nuts; and limits intake of refined grains, sweets, sugar-sweetened beverages and red meats. Eliminate foods high in trans fat.

Indicated: control blood pressure, **reduce weight**, engage in smoking cessation and **be physically active** — work up to getting at least 30 minutes of a moderate intensity physical activity, at least 5 days per week.

To increase alpha-1 levels it is important to reduce weight, reduce refined carbohydrate intake, eliminate trans fats and increase physical activity.

Increased amounts of sterol absorption markers indicate increased intestinal absorption of cholesterol. Decreasing dietary cholesterol as found in eggs, dairy products and meats and consuming more soluble fiber may reduce LDL-C. Sources of soluble fiber include pectin in apples and pears, psyllium, legumes and oats.

To increase ApoA-1, and to decrease ApoB, non-HDL-C, LDL-C levels it is important to reduce saturated fat intake, refined carbohydrates, sugars and eliminate trans fats.

To lower small dense LDL-C reduce intake of simple carbohydrates and alcohol and if indicated reduce weight and increase physical activity. An elevation in small dense LDL-C is associated with metabolic syndrome.

To optimize HOMA-IR, and reduce risk of diabetes and CVD it is important to reduce weight and simple carbohydrate intake.

Elevated homocysteine may contribute to endothelial dysfunction and increase risk of CVD. Consider supplementing with methylfolate along with vitamins B6 and B12 if homocysteine is elevated.

To improve Fatty Acid Balance results refer to the dietary changes provided in the Fatty Acid Balance interpretation section of this report.

Consider visiting mybostonheart.com to create a Personalized Nutrition and Life Plan to help you achieve your lifestyle and dietary modification goals.