Ordered Items: **NMR LipoProfile+Lipids+Graph; T4F+T3F; CBC With Differential/Platelet; Comp. Metabolic Panel (14); UA/M w/rflx Culture, Routine; Apo E Genotyping: Cardio Risk; Iron and TIBC; Testosterone Free, Profile I; Albumin/Creatinine Ratio,Urine; Apo A1 + B + Ratio; Vitamin B12 and Folate; ESR-Wes+CRP; Hemoglobin A1c; Cortisol; TSH; Vitamin D, 25-Hydroxy; Lipoprotein (a); Testosterone, Free, Direct; Methylmalonic Acid, Serum; Homocyst(e)ine; Uric Acid; Phosphorus; Bilirubin, Direct; Magnesium; Insulin; Ferritin; Venipuncture**

Date Collected: **10/30/2024**

NMR LipoProfile+Lipids+Graph

	Test	Current Result and Flag		Previous Result and Date	Units	Reference Interval
	LDL Particle Number[01]					
	LDL-P[A, 01]	756			nmol/L	<1000
				Low	< 1000	
				Moderate	1000 - 1299	
				Borderline-High	1300 - 1599	
				High	1600 - 2000	
				Very High	> 2000	
	Lipids[01]					
	LDL-C (NIH Calc)[01]	70			mg/dL	0-99
				Optimal	< 100	
				Above optimal	100 - 129	
				Borderline	130 - 159	
				High	160 - 189	
				Very high	> 189	
▼	**HDL-C**[A, 01]	**37**	**Low**		mg/dL	>39
	Triglycerides[A, 01]	91			mg/dL	0-149
	Cholesterol, Total[A, 01]	125			mg/dL	100-199
	LDL and HDL Particles[01]					
▼	**HDL-P (Total)**[A, 01]	**26.3**	**Low**		umol/L	>=30.5
	Small LDL-P[A, 01]	328			nmol/L	<=527
	LDL Size[A, 01]	20.9			nm	>20.5

```
------------------------------------------------------------
               ** INTERPRETATIVE INFORMATION**
               PARTICLE CONCENTRATION AND SIZE
                  <--Lower CVD Risk   Higher CVD Risk-->
 LDL AND HDL PARTICLES   Percentile in Reference Population
 HDL-P (total)        High     75th    50th    25th   Low
                      >34.9    34.9    30.5    26.7   <26.7
 Small LDL-P          Low      25th    50th    75th   High
                      <117     117     527     839    >839
 LDL Size   <-Large (Pattern A)->    <-Small (Pattern B)->
                   23.0    20.6           20.5      19.0
------------------------------------------------------------
```

	Comment:[01]					

```
Small LDL-P and LDL Size are associated with CVD risk, but not after
LDL-P is taken into account.
```

	Insulin Resistance Score[01]					
	LP-IR Score[A, 01]	37				<=45

```
INSULIN RESISTANCE MARKER
    <--Insulin Sensitive    Insulin Resistant-->
```

NMR LipoProfile+Lipids+Graph (Cont.)

	Percentile in Reference Population				
Insulin Resistance Score					
LP-IR Score	Low	25th	50th	75th	High
	<27	27	45	63	>63

Comment: [01]

LP-IR Score is inaccurate if patient is non-fasting.
The LP-IR score is a laboratory developed index that has been associated with insulin resistance and diabetes risk and should be used as one component of a physician's clinical assessment.

PDF [01] .

T4F+T3F

Test	Current Result and Flag	Previous Result and Date	Units	Reference Interval
Triiodothyronine (T3), Free [02]	2.4		pg/mL	2.0-4.4
T4,Free(Direct) [02]	1.37		ng/dL	0.82-1.77

CBC With Differential/Platelet

Test	Current Result and Flag	Previous Result and Date	Units	Reference Interval
WBC [02]	6.2		x10E3/uL	3.4-10.8
RBC [02]	5.16		x10E6/uL	4.14-5.80
Hemoglobin [02]	13.3		g/dL	13.0-17.7
Hematocrit [02]	42.5		%	37.5-51.0
MCV [02]	82		fL	79-97
▼ **MCH** [02]	**25.8** **Low**		pg	26.6-33.0
▼ **MCHC** [02]	**31.3** **Low**		g/dL	31.5-35.7
RDW [02]	14.6		%	11.6-15.4
Platelets [02]	247		x10E3/uL	150-450
Neutrophils [02]	67		%	Not Estab.
Lymphs [02]	21		%	Not Estab.
Monocytes [02]	7		%	Not Estab.
Eos [02]	4		%	Not Estab.
Basos [02]	0		%	Not Estab.
Neutrophils (Absolute) [02]	4.2		x10E3/uL	1.4-7.0
Lymphs (Absolute) [02]	1.3		x10E3/uL	0.7-3.1
Monocytes(Absolute) [02]	0.5		x10E3/uL	0.1-0.9
Eos (Absolute) [02]	0.2		x10E3/uL	0.0-0.4
Baso (Absolute) [02]	0.0		x10E3/uL	0.0-0.2
Immature Granulocytes [02]	1		%	Not Estab.
Immature Grans (Abs) [02]	0.0		x10E3/uL	0.0-0.1

Comp. Metabolic Panel (14)

Test	Current Result and Flag	Previous Result and Date	Units	Reference Interval
Glucose [02]	90		mg/dL	70-99
BUN [02]	20		mg/dL	6-24
Creatinine [02]	0.82		mg/dL	0.76-1.27

Comp. Metabolic Panel (14) (Cont.)

	eGFR	106		mL/min/1.73	>59
▲	**BUN/Creatinine Ratio**	**24**	**High**		9-20
	Sodium [02]	141		mmol/L	134-144
	Potassium [02]	4.4		mmol/L	3.5-5.2
▲	**Chloride** [02]	**107**	**High**	mmol/L	96-106
	Carbon Dioxide, Total [02]	20		mmol/L	20-29
	Calcium [02]	9.1		mg/dL	8.7-10.2
	Protein, Total [02]	6.5		g/dL	6.0-8.5
	Albumin [02]	4.4		g/dL	3.8-4.9
	Globulin, Total	2.1		g/dL	1.5-4.5
	Bilirubin, Total [02]	0.4		mg/dL	0.0-1.2
	Alkaline Phosphatase [02]	67		IU/L	44-121
	AST (SGOT) [02]	18		IU/L	0-40
	ALT (SGPT) [02]	21		IU/L	0-44

UA/M w/rflx Culture, Routine

Test	Current Result and Flag	Previous Result and Date	Units	Reference Interval
Urinalysis Gross Exam [02]				
Specific Gravity [02]	1.026			1.005-1.030
pH [02]	5.5			5.0-7.5
Urine-Color [02]	Yellow			Yellow
Appearance [02]	Clear			Clear
WBC Esterase [02]	Negative			Negative
Protein [02]	Negative			Negative/Trace
Glucose [02]	Negative			Negative
Ketones [02]	Negative			Negative
Occult Blood [02]	Negative			Negative
Bilirubin [02]	Negative			Negative
Urobilinogen,Semi-Qn [02]	0.2		mg/dL	0.2-1.0
Nitrite, Urine [02]	Negative			Negative
Microscopic Examination [02]	Microscopic follows if indicated.			
Microscopic Examination [02]	See below: Microscopic was indicated and was performed.			
WBC [02]	None seen		/hpf	0 - 5
RBC [02]	0-2		/hpf	0 - 2
Epithelial Cells (non renal) [02]	0-10		/hpf	0 - 10
Casts [02]	None seen		/lpf	None seen
Bacteria [02]	None seen			None seen/Few
Urinalysis Reflex [02]	This specimen will not reflex to a Urine Culture.			

Apo E Genotyping: Cardio Risk

Test	Current Result and Flag	Previous Result and Date	Units	Reference Interval
APO E Genotyping Result: [03]	E3/E3			
Methodology: [03]	Patient DNA is assayed for the APOE genotype by PCR amplification of a specific region in exon 4 of the APOE gene followed by digestion with restriction enzyme Hha I and separation of fragments by polyacrylamide gel electrophoresis. This approach allows the APOE E2, E3, and E4 alleles to be distinguished. Analytical sensitivity and specificity are >99.5%. Individuals are interpreted as having one of the following genotypes: E2/E2, E3/E3, E4/E4, E2/E3, E2/E4, E3/E4.			
Interpretation: [03]	Both APOE alleles were determined to be E3. Therefore, this individual has the APOE genotype E3/E3 (homozygote for the E3 allele). This individual does not have the APOE genotype E2/E2 associated with type III hyperlipoproteinemia (broad beta disease) and is unlikely to have this specific dyslipidemia. E3/E3 is the most common APOE genotype in the general population. Approximately 95% of individuals with type III hyperlipoproteinemia have the E2/E2 genotype. The remainder have rare mutations in one copy of the APOE gene some of which are not detectable by the APOE genotype test. NOTE: This test evaluates only for the APOE genotype and cannot detect genetic abnormalities elsewhere in the genome. It should be realized that there are possible sources of diagnostic error including sample misidentification, rare technical errors, trace contamination of PCR reactions, and rare genetic variants that interfere with analysis. For inquiries or genetic consultation please call Esoterix at 1-800-444-9111.			
Comment: [03]	INFORMATION ABOUT THE APOE GENOTYPE E2/E2 AND TYPE III HYPERLIPOPROTEINEMIA Apolipoprotein E (apoE) is a component of several lipoproteins. There are three main apoE isoforms reflecting three alleles (E2, E3, and E4) of which E3 is the most common. The E2 variant has a cysteine at amino acid position 158 which severely reduces binding to receptors that clear chylomicron remnants from the circulation. The APOE genotype E2/E2 is present in 1% of the population and predisposes to type III hyperlipoproteinemia (broad beta disease). Type III hyperlipoproteinemia involves abnormal build-up in the blood of remnant chylomicrons and VLDL particles (collectively called B-VLDL) containing cholesterol and triglycerides. Excess B-VLDL is taken up in blood vessel walls and can lead to atherosclerosis. Therefore, individuals with type III hyperlipoproteinemia			

Apo E Genotyping: Cardio Risk (Cont.)

have high total serum cholesterol, LDL and TG, a VLDL/TG ratio of >0.3, and in most cases B-VLDL detectable by lipoprotein electrophoresis. The main clinical manifestation is premature atherosclerosis leading to coronary artery disease or peripheral vascular disease. However, some patients may be asymptomatic.

1-5% of individuals with the E2/E2 genotype develop type III hyperlipoproteinemia. The E2/E2 genotype is present in 95% of individuals with type III hyperlipoproteinemia and is diagnostic of the disorder in individuals with the appropriate lipid profile. A number of secondary factors are known to provoke type III hyperlipoproteinemia in individuals with the E2/E2 genotype, including glucose intolerance, diabetes mellitus, hypothyroidism, obesity, low estrogen levels, and excessive alcohol intake.

This test was developed and its performance characteristics determined by LabCorp. It has not been cleared or approved by the Food and Drug Administration. The FDA has determined that such clearance or approval is not necessary.

REFERENCES
Eichner AE et al. Am J Epidemiol 2002;155:487-495. Feussner G et al. Clin Investig 1993;71:362-366. Fung M et al. BMJ Case Reports 2011; doi:10.1136/bcr.02.2011.3895. Mahley RW et al. J Lipid Res 1999;40:1933-1949. Smelt AHM et al. Semin Vasc Med 2004;4:249-257. Wilson PWF et al. JAMA 1994;272:1666-1671.

Iron and TIBC

Test	Current Result and Flag		Previous Result and Date	Units	Reference Interval
Iron Bind.Cap.(TIBC)	335			ug/dL	250-450
UIBC [02]	299			ug/dL	111-343
▼ **Iron** [02]	**36**	**Low**		ug/dL	38-169
▼ **Iron Saturation**	**11**	**Low**		%	15-55

Testosterone Free, Profile I

Test	Current Result and Flag	Previous Result and Date	Units	Reference Interval
Testosterone [02]	268		ng/dL	264-916
	Adult male reference interval is based on a population of healthy nonobese males (BMI <30) between 19 and 39 years old. Travison, et.al. JCEM 2017,102;1161-1173. PMID: 28324103.			
Sex Horm Binding Glob, Serum [02]	27.3		nmol/L	19.3-76.4
Testost., Free, Calc	57.4		pg/mL	35.8-168.2

Albumin/Creatinine Ratio,Urine

Test	Current Result and Flag	Previous Result and Date	Units	Reference Interval
Creatinine, Urine [02]	154.5		mg/dL	Not Estab.
Albumin, Urine [02]	12.9		ug/mL	Not Estab.

Albumin/Creatinine Ratio,Urine (Cont.)

Test	Current Result and Flag	Previous Result and Date	Units	Reference Interval
Alb/Creat Ratio	8		mg/g creat	0-29

```
Normal:                  0 -  29
Moderately increased: 30 - 300
Severely increased:       >300
```

Apo A1 + B + Ratio

Test	Current Result and Flag	Previous Result and Date	Units	Reference Interval
Apolipoprotein A-1 [01]	112		mg/dL	101-178
Apolipoprotein B [01]	59		mg/dL	<90

```
                    Desirable              < 90
                    Borderline High     90 -  99
                    High               100 - 130
                    Very High              >130
-------------------------------------------------
      ASCVD RISK                THERAPEUTIC TARGET
      CATEGORY                     APO B (mg/dL)
Very High Risk          <80 (if extreme risk <70)
High Risk               <90
Moderate Risk           <90
```

Test	Current Result and Flag	Previous Result and Date	Units	Reference Interval
Apolipo. B/A-1 Ratio	0.5		ratio	0.0-0.7

```
Apolipoprotein B/A-1 Ratio
                 Male  Female
    Avg.Risk     0.7   0.6
  2X Avg.Risk    0.9   0.9
  3X Avg.Risk    1.0   1.0
```

Vitamin B12 and Folate

Test	Current Result and Flag	Previous Result and Date	Units	Reference Interval
Vitamin B12 [02]	975		pg/mL	232-1245
Folate (Folic Acid), Serum [02]	6.6		ng/mL	>3.0
Note: [02]				

A serum folate concentration of less than 3.1 ng/mL is considered to represent clinical deficiency.

ESR-Wes+CRP

Test	Current Result and Flag	Previous Result and Date	Units	Reference Interval
Sedimentation Rate-Westergren [02]	9		mm/hr	0-30
C-Reactive Protein, Quant [02]	2		mg/L	0-10

Hemoglobin A1c

Test	Current Result and Flag	Previous Result and Date	Units	Reference Interval
Hemoglobin A1c [02]	5.6		%	4.8-5.6
Please Note: [02]				

```
Prediabetes: 5.7 - 6.4
Diabetes: >6.4
Glycemic control for adults with diabetes: <7.0
```

Date Collected: **10/30/2024**

Cortisol

Test	Current Result and Flag	Previous Result and Date	Units	Reference Interval
Cortisol [02]	10.3		ug/dL	6.2-19.4

Please Note: The reference interval and flagging for this test is for an AM collection. If this is a PM collection please use: Cortisol PM: 2.3-11.9

TSH

Test	Current Result and Flag	Previous Result and Date	Units	Reference Interval
TSH [02]	1.360		uIU/mL	0.450-4.500

Vitamin D, 25-Hydroxy

	Test	Current Result and Flag	Previous Result and Date	Units	Reference Interval
▼	**Vitamin D, 25-Hydroxy** [02]	**18.8 Low**		ng/mL	30.0-100.0

Vitamin D deficiency has been defined by the Institute of Medicine and an Endocrine Society practice guideline as a level of serum 25-OH vitamin D less than 20 ng/mL (1,2). The Endocrine Society went on to further define vitamin D insufficiency as a level between 21 and 29 ng/mL (2).

1. IOM (Institute of Medicine). 2010. Dietary reference intakes for calcium and D. Washington DC: The National Academies Press.
2. Holick MF, Binkley NC, Bischoff-Ferrari HA, et al. Evaluation, treatment, and prevention of vitamin D deficiency: an Endocrine Society clinical practice guideline. JCEM. 2011 Jul; 96(7):1911-30.

Lipoprotein (a)

	Test	Current Result and Flag	Previous Result and Date	Units	Reference Interval
▲	**Lipoprotein (a)** [02]	**260.1 High**		nmol/L	<75.0

Note: Values greater than or equal to 75.0 nmol/L may indicate an independent risk factor for CHD, but must be evaluated with caution when applied to non-Caucasian populations due to the influence of genetic factors on Lp(a) across ethnicities.

Testosterone, Free, Direct

	Test	Current Result and Flag	Previous Result and Date	Units	Reference Interval
▼	**Free Testosterone(Direct)** [01]	**2.4 Low**		pg/mL	7.2-24.0

Methylmalonic Acid, Serum

Test	Current Result and Flag	Previous Result and Date	Units	Reference Interval
Methylmalonic Acid, Serum [A, 01]	111		nmol/L	0-378

Homocyst(e)ine

Test	Current Result and Flag	Previous Result and Date	Units	Reference Interval
Homocyst(e)ine [02]	9.5		umol/L	0.0-14.5

Date Collected: **10/30/2024**

Uric Acid

Test	Current Result and Flag	Previous Result and Date	Units	Reference Interval
Uric Acid [02]	4.6		mg/dL	3.8-8.4
		Therapeutic target for gout patients: <6.0		

Phosphorus

Test	Current Result and Flag	Previous Result and Date	Units	Reference Interval
Phosphorus [02]	3.3		mg/dL	2.8-4.1

Bilirubin, Direct

Test	Current Result and Flag	Previous Result and Date	Units	Reference Interval
Bilirubin, Direct [02]	0.14		mg/dL	0.00-0.40

Magnesium

Test	Current Result and Flag	Previous Result and Date	Units	Reference Interval
Magnesium [02]	2.2		mg/dL	1.6-2.3

Insulin

Test	Current Result and Flag	Previous Result and Date	Units	Reference Interval
Insulin [02]	21.1		uIU/mL	2.6-24.9

Ferritin

Test	Current Result and Flag	Previous Result and Date	Units	Reference Interval
▼ **Ferritin** [02]	**28** **Low**		ng/mL	30-400

Disclaimer
The Previous Result is listed for the most recent test performed by Labcorp in the past 5 years where there is sufficient patient demographic data to match the result to the patient. Results from certain tests are excluded from the Previous Result display.

Icon Legend
▲ Out of Reference Range ■ Critical or Alert

Comments
A: This test was developed and its performance characteristics determined by Labcorp. It has not been cleared or approved by the Food and Drug Administration.

Performing Labs
01: BN - Labcorp Burlington, 1447 York Court, Burlington, NC 27215-3361 Dir: Sanjai Nagendra, MD
02: CB - Labcorp Dublin, 6370 Wilcox Road, Dublin, OH 43016-1269 Dir: Vincent Ricchiuti, PhD
03: UY - Esoterix Inc, 8490 Upland Drive Ste 100, Englewood, CO 80112-7116 Dir: Brian F. Poirier, MD
For inquiries, the physician may contact Branch: 800-598-3345 Lab: 800-282-7300

Patient Details
Siddiqui, Khan
630 N MADISON ST, HINSDALE, IL, 60521

Phone: **443-847-5106**
Date of Birth: **07/02/1973**
Age: **51**
Sex: **Male**
Patient ID: **PAT-KDGPQE5XQ4HL**
Alternate Patient ID: **PAT-KDGPQE5XQ4HL**

Physician Details
S CLARK
Clark Family Medicine
1246 Yellowstone Ave Ste A2, Pocatello, ID, 83201

Phone: **208-595-6976**
Account Number: **11009950**
Physician ID: **1093078578**
NPI: **1093078578**

Specimen Details
Specimen ID: **304-305-5927-0**
Control ID: **1401631**
Alternate Control Number: **1401631**
Date Collected: **10/30/2024 0859 Local**
Date Received: **10/30/2024 0000 ET**
Date Entered: **10/30/2024 1839 ET**
Date Reported: **11/07/2024 2307 ET**

LabCorp
Laboratory Corporation of America

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Burlington, NC 27215
800-788-9223
Medical Director: Sanjai Nagendra, MD

Specimen Number	Patient ID	Account Number	Account Phone	Account Fax
304-305-5927-0	PAT-KDGPQE5XQ4HL	11009950	(208) 595-6976	(208) 595-6976

Patient Last Name	Patient First Name	Account Address
SIDDIQUI	KHAN	Clark Family Medicine 1246 Yellowstone Ave Ste A2 Pocatello, ID 83201

Age	Date of Birth	Sex	Fasting
51	07/02/1973	M	YES

Control Number	NPI
1401631	1093078578

Date Collected	Date Entered	Date and Time Reported	Physician ID & Name	Page Number
10/30/2024	10/30/2024	11/01/2024 12:15 PM ET	1093078578 - CLARK, S	1 of 2

❖ NMR LipoProfile ® test

		Reference Interval[1]				
	Percentile[1]	20th	50th	80th	95th	
	nmol/L	Low	Moderate	Borderline High	High	Very High
LDL-P (LDL Particle Number)	**756**	**< 1000**	**1000 - 1299**	**1300 - 1599**	**1600 - 2000**	**> 2000**

1. Reference population (5,362 men and women) not on lipid medication enrolled in the Multi-Ethnic Study of Atherosclerosis (MESA). Mora, et al. Atherosclerosis 2007.

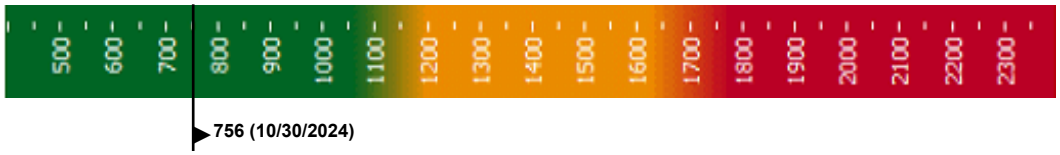
❖ Lipids

	mg/dL	Optimal	Near or Above Optimal	Borderline High	High	Very High
LDL-C (calculated)	**70**	**< 100**	**100 - 129**	**130 - 159**	**160 - 189**	**≥ 190**

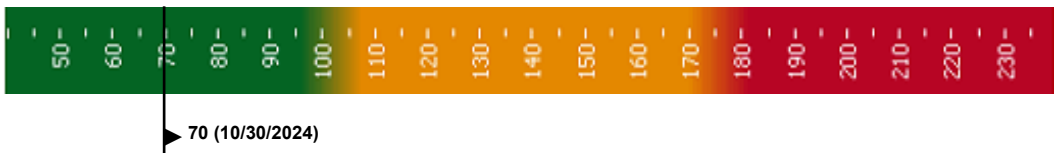
	mg/dL		mg/dL		mg/dL
HDL-C	**37**	**Triglycerides**	**91**	**Total Cholesterol**	**125**
Desirable ≥ 40		Desirable < 150		Desirable < 200	

Historical Reporting

LDL-P



LDL-C



❖ This test was developed and its performance characteristics determined by LabCorp. It has not been cleared or approved by the US Food and Drug Administration.

Issued or Pending PATENTS	The NMR LipoProfile ® test may be covered by one or more issued or pending patents, including U.S. Patent Nos. 6,518,069; 6,576,471; 6,653,140; and 7,243,030	CLIA Number	34D0655059

LabCorp
Laboratory Corporation of America

1447 York Court
Burlington, NC 27215
800-788-9223
Medical Director: Sanjai Nagendra, MD

Specimen Number	Patient ID	Account Number	Account Phone	Account Fax
304-305-5927-0	PAT-KDGPQE5XQ4HL	11009950	(208) 595-6976	(208) 595-6976

Patient Last Name	Patient First Name	Account Address
SIDDIQUI	KHAN	Clark Family Medicine 1246 Yellowstone Ave Ste A2 Pocatello, ID 83201

Age	Date of Birth	Sex	Fasting
51	07/02/1973	M	YES

Control Number	NPI
1401631	1093078578

Date Collected	Date Entered	Date and Time Reported	Physician ID & Name	Page Number
10/30/2024	10/30/2024	11/01/2024 12:15 PM ET	1093078578 - CLARK, S	2 of 2

PARTICLE CONCENTRATION AND SIZE

❖ LDL and HDL Particles

Lower CVD Risk ← → Higher CVD Risk

Percentile in Reference Population①

		high	75th	50th	25th	low
HDL-P (total)	µmol/L 26.3		34.9	30.5	26.7	

		low	25th	50th	75th	high
SMALL LDL-P	nmol/L 328		117	527	839	

		23.0	Large (Pattern A)	20.6	20.5	Small (Pattern B)	19.0
LDL SIZE	nm 20.9						

Small LDL-P and LDL Size are associated with CVD risk, but not after LDL-P is taken into account.

Insulin Resistance Score②③

Insulin Sensitive ← → Insulin Resistant

Percentile in Reference Population①

		insulin sensitive	25th	50th	75th	insulin resistant
LP-IR SCORE**	0-100 37		27	45	63	

** The LP-IR score is a laboratory developed index that has been associated with insulin resistance and diabetes risk and should be used as one component of a physician's clinical assessment. The LP-IR score has not been cleared by the US Food and Drug Administration.

Clinician Notes

❖ This test was developed and its performance characteristics determined by LabCorp. It has not been cleared or approved by the US Food and Drug Administration.

① LipoScience reference population comprises 4,588 men and women without known CVD or diabetes and not on lipid medication.

② Shalaurova I et al., Metab Syndr Relat Disord 2014; 12:422-9.

③ Mackey RH et al., Diab Care 2015; 38:628-36.