Patient Information	Specimen Information	Client Information

COMMENTS:

Test Name	In Range	Out Of Range	Reference Range	Lab
THYROID PANEL WITH TSH				
THYROID PANEL				NL1
T3 UPTAKE	28		22-35 %	
T4 (THYROXINE), TOTAL	7.1		5.1-11.9 mcg/dL	
FREE T4 INDEX (T7)	2.0		1.4-3.8	
TSH	1.01		mIU/L	NL1
			Reference Range	
			> or = 20 Years 0.40-4.50	
			Pregnancy Ranges	
			First trimester 0.26-2.66	
			Second trimester 0.55-2.73	
			Third trimester 0.43-2.91	
HS CRP	<0.3		mg/L	NL1
Reference Range				
Optimal <1.0				
Jellinger PS et al. Endocr Pract.2017;23(Suppl 2):1-87.				
For ages >17 Years:				
hs-CRP mg/L Risk According to AHA/CDC Guidelines				
<1.0 Lower relative cardiovascular risk.				
1.0-3.0 Average relative cardiovascular risk.				
3.1-10.0 Higher relative cardiovascular risk. Consider retesting in 1 to 2 weeks to exclude a benign transient elevation in the baseline CRP value secondary to infection or inflammation.				
>10.0 Persistent elevation, upon retesting, may be associated with infection and inflammation.				
HOMOCYSTEINE	8.4		<10.4 umol/L	NL1
Homocysteine is increased by functional deficiency of folate or vitamin B12. Testing for methylmalonic acid differentiates between these deficiencies. Other causes of increased homocysteine include renal failure, folate antagonists such as methotrexate and phenytoin, and exposure to nitrous oxide.				
Selhub J, et al., Ann Intern Med. 1999;131(5):331-9.				
COMPREHENSIVE METABOLIC PANEL				NL1
GLUCOSE	95		65-99 mg/dL	
			Fasting reference interval	
UREA NITROGEN (BUN)	9		7-25 mg/dL	
CREATININE	0.74		0.50-1.03 mg/dL	
EGFR	95		> OR = 60 mL/min/1.73m2	
The eGFR is based on the CKD-EPI 2021 equation. To calculate the new eGFR from a previous Creatinine or Cystatin C				

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Test Name	In Range	Out Of Range	Reference Range	Lab
result, go to https://www.kidney.org/professionals/kdoqi/gfr%5Fcalculator				
BUN/CREATININE RATIO	NOT APPLICABLE		6-22 (calc)	
SODIUM	143		135-146 mmol/L	
POTASSIUM	4.6		3.5-5.3 mmol/L	
CHLORIDE	108		98-110 mmol/L	
CARBON DIOXIDE		**16 L**	20-32 mmol/L	
CALCIUM	9.4		8.6-10.4 mg/dL	
PROTEIN, TOTAL	7.2		6.1-8.1 g/dL	
ALBUMIN	4.4		3.6-5.1 g/dL	
GLOBULIN	2.8		1.9-3.7 g/dL (calc)	
ALBUMIN/GLOBULIN RATIO	1.6		1.0-2.5 (calc)	
BILIRUBIN, TOTAL	0.4		0.2-1.2 mg/dL	
ALKALINE PHOSPHATASE	56		37-153 U/L	
AST	16		10-35 U/L	
ALT	7		6-29 U/L	
HEMOGLOBIN A1c		**5.7 H**	<5.7 % of total Hgb	NL1
For someone without known diabetes, a hemoglobin A1c value between 5.7% and 6.4% is consistent with prediabetes and should be confirmed with a follow-up test. For someone with known diabetes, a value <7% indicates that their diabetes is well controlled. A1c targets should be individualized based on duration of diabetes, age, comorbid conditions, and other considerations. This assay result is consistent with an increased risk of diabetes. Currently, no consensus exists regarding use of hemoglobin A1c for diagnosis of diabetes for children.				
PHOSPHATE (AS PHOSPHORUS)	3.8		2.5-4.5 mg/dL	NL1
URIC ACID	4.1		2.5-7.0 mg/dL	NL1
Therapeutic target for gout patients: <6.0 mg/dL				
LD	148		120-250 U/L	NL1
GGT	8		3-70 U/L	NL1
T4, FREE	1.0		0.8-1.8 ng/dL	NL1
T3, FREE	2.8		2.3-4.2 pg/mL	NL1
VITAMIN A (RETINOL)	41		38-98 mcg/dL	AMD
Vitamin supplementation within 24 hours prior to blood draw may affect the accuracy of the results. This test was developed and its analytical performance characteristics have been determined by Quest Diagnostics Nichols Institute Chantilly, VA. It has not been cleared or approved by the U.S. Food and Drug Administration. This assay has been validated pursuant to the CLIA regulations and is used for clinical purposes.				
ESTROGEN, TOTAL, SERUM	84.3		pg/mL	EZ

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Test Name	In Range	Out Of Range	Reference Range	Lab
Reference Ranges for Total Estrogen:				
Follicular Phase (1-12 days):	90-590 pg/mL			
Luteal Phase:	130-460 pg/mL			
Postmenopausal:	50-170 pg/mL			
The total estrogen assay is not recommended for use in pre-pubertal children.				
IGF 1, LC/MS	123		50-317 ng/mL	EZ
Z SCORE (FEMALE)	-0.2		-2.0 - +2.0 SD	
This test was developed and its analytical performance characteristics have been determined by Quest Diagnostics Nichols Institute San Juan Capistrano. It has not been cleared or approved by FDA. This assay has been validated pursuant to the CLIA regulations and is used for clinical purposes.				
CBC (INCLUDES DIFF/PLT)				NL1
WHITE BLOOD CELL COUNT	4.4		3.8-10.8 Thousand/uL	
RED BLOOD CELL COUNT	3.99		3.80-5.10 Million/uL	
HEMOGLOBIN	12.2		11.7-15.5 g/dL	
HEMATOCRIT	35.2		35.0-45.0 %	
MCV	88.2		80.0-100.0 fL	
MCH	30.6		27.0-33.0 pg	
MCHC	34.7		32.0-36.0 g/dL	
RDW	13.0		11.0-15.0 %	
PLATELET COUNT	200		140-400 Thousand/uL	
MPV	9.7		7.5-12.5 fL	
ABSOLUTE NEUTROPHILS	2658		1500-7800 cells/uL	
ABSOLUTE LYMPHOCYTES	1329		850-3900 cells/uL	
ABSOLUTE MONOCYTES	330		200-950 cells/uL	
ABSOLUTE EOSINOPHILS	62		15-500 cells/uL	
ABSOLUTE BASOPHILS	22		0-200 cells/uL	
NEUTROPHILS	60.4		%	
LYMPHOCYTES	30.2		%	
MONOCYTES	7.5		%	
EOSINOPHILS	1.4		%	
BASOPHILS	0.5		%	
URINALYSIS, COMPLETE				NL1
COLOR	YELLOW		YELLOW	
APPEARANCE	CLEAR		CLEAR	
SPECIFIC GRAVITY	1.004		1.001-1.035	
PH	5.5		5.0-8.0	
GLUCOSE	NEGATIVE		NEGATIVE	
BILIRUBIN	NEGATIVE		NEGATIVE	
KETONES	NEGATIVE		NEGATIVE	
OCCULT BLOOD	NEGATIVE		NEGATIVE	
PROTEIN	NEGATIVE		NEGATIVE	
NITRITE	NEGATIVE		NEGATIVE	
LEUKOCYTE ESTERASE	NEGATIVE		NEGATIVE	
WBC	NONE SEEN		< OR = 5 /HPF	
RBC	NONE SEEN		< OR = 2 /HPF	
SQUAMOUS EPITHELIAL CELLS	NONE SEEN		< OR = 5 /HPF	

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Test Name	In Range	Out Of Range	Reference Range	Lab
BACTERIA	NONE SEEN		NONE SEEN /HPF	
HYALINE CAST	NONE SEEN		NONE SEEN /LPF	

This urine was analyzed for the presence of WBC, RBC, bacteria, casts, and other formed elements. Only those elements seen were reported.

IRON AND TOTAL IRON BINDING CAPACITY				NL1
IRON, TOTAL	65		45-160 mcg/dL	
IRON BINDING CAPACITY	346		250-450 mcg/dL (calc)	
% SATURATION	19		16-45 % (calc)	
VITAMIN B12	254		200-1100 pg/mL	NL1

Please Note: Although the reference range for vitamin B12 is 200-1100 pg/mL, it has been reported that between 5 and 10% of patients with values between 200 and 400 pg/mL may experience neuropsychiatric and hematologic abnormalities due to occult B12 deficiency; less than 1% of patients with values above 400 pg/mL will have symptoms.

FOLATE, SERUM	23.3	ng/mL	NL1
		Reference Range	
		Low:	<3.4
		Borderline:	3.4-5.4
		Normal:	>5.4
CORTISOL, TOTAL	10.4	mcg/dL	NL1

Reference Range: For 8 a.m.(7-9 a.m.) Specimen: 4.0-22.0
Reference Range: For 4 p.m.(3-5 p.m.) Specimen: 3.0-17.0
* Please interpret above results accordingly *

DHEA SULFATE	92	5-167 mcg/dL	NL1

DHEA-S values fall with advancing age.
For reference, the reference intervals for 31-40 year old patients are:

Male: 93-415 mcg/dL
Female: 19-237 mcg/dL

FSH	101.1	mIU/mL	NL1

Reference Range

Follicular Phase	2.5-10.2
Mid-cycle Peak	3.1-17.7
Luteal Phase	1.5- 9.1
Postmenopausal	23.0-116.3

GROWTH HORMONE (GH)	0.8	< OR = 7.1 ng/mL	NL1

Because of a pulsatile secretion pattern, random (unstimulated) growth hormone (GH) levels are frequently undetectable in normal children and adults and are not reliable for diagnosing GH deficiency. Regarding suppression tests, failure to suppress GH

Patient Information	Specimen Information	Client Information

Test Name	In Range	Out Of Range	Reference Range	Lab
is diagnostic of acromegaly. Typical GH response in healthy subjects: Using the glucose tolerance (GH suppression) test, acromegaly is ruled out if the patient's GH level is <1.0 ng/mL at any point in the timed sequence. [Katznelson L, Laws Jr ER, Melmed S, et al. Acromegaly: an Endocrine Society Clinical Practice Guideline. J Clin Endocrinol Metab 2014; 99: 3933-3951]. Using GH stimulation testing, the following result at any point in the timed sequence makes GH deficiency unlikely: Adults (> or = 20 years): Insulin Hypoglycemia > or = 5.1 ng/mL Arginine/GHRH > or = 4.1 ng/mL Glucagon > or = 3.0 ng/mL Children (< 20 years): All Stimulation Tests > or = 10.0 ng/mL				
LH	36.1		mIU/mL Reference Range Follicular Phase 1.9-12.5 Mid-Cycle Peak 8.7-76.3 Luteal Phase 0.5-16.9 Postmenopausal 10.0-54.7	NL1
PROGESTERONE	<0.5		ng/mL Reference Ranges Female Follicular Phase < 1.0 Luteal Phase 2.6-21.5 Post menopausal < 0.5 Pregnancy 1st Trimester 4.1-34.0 2nd Trimester 24.0-76.0 3rd Trimester 52.0-302.0	NL1
ESTRADIOL	<15		pg/mL Reference Range Follicular Phase: 19-144 Mid-Cycle: 64-357 Luteal Phase: 56-214 Postmenopausal: < or = 31	NL1
Reference range established on post-pubertal patient population. No pre-pubertal reference range established using this assay. For any patients for whom low Estradiol levels are anticipated (e.g. males, pre-pubertal children and hypogonadal/post-menopausal females), the Quest Diagnostics Nichols Institute Estradiol, Ultrasensitive, LCMSMS assay is recommended (order code 30289). Please note: patients being treated with the drug fulvestrant (Faslodex(R)) have demonstrated significant interference in immunoassay methods for estradiol measurement. The cross reactivity could lead to falsely elevated estradiol test results leading to an				

Patient Information	Specimen Information	Client Information

Test Name	In Range	Out Of Range	Reference Range	Lab
inappropriate clinical assessment of estrogen status. Quest Diagnostics order code 30289-Estradiol, Ultrasensitive LC/MS/MS demonstrates negligible cross reactivity with fulvestrant.				
SEX HORMONE BINDING GLOBULIN		**129 H**	17-124 nmol/L	NL1
TESTOSTERONE, FREE (DIALYSIS) AND TOTAL,MS				AMD
TESTOSTERONE, TOTAL, MS	22		2-45 ng/dL	
For additional information, please refer to http://education.questdiagnostics.com/faq/TotalTestosteroneLCMSMSFAQ165 (This link is being provided for informational/educational purposes only.)				
This test was developed and its analytical performance characteristics have been determined by Quest Diagnostics Nichols Institute Chantilly, VA. It has not been cleared or approved by the U.S. Food and Drug Administration. This assay has been validated pursuant to the CLIA regulations and is used for clinical purposes.				
TESTOSTERONE, FREE	1.1		0.1-6.4 pg/mL	
This test was developed and its analytical performance characteristics have been determined by Quest Diagnostics Nichols Institute Chantilly, VA. It has not been cleared or approved by the U.S. Food and Drug Administration. This assay has been validated pursuant to the CLIA regulations and is used for clinical purposes.				

Patient Information	Specimen Information	Client Information

Endocrinology

Test Name	Result	Reference Range	Lab
VITAMIN D,25-OH,TOTAL,IA	35	30-100 ng/mL	NL1

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Vitamin D Status          25-OH Vitamin D:

Deficiency:                     <20 ng/mL
Insufficiency:            20 - 29 ng/mL
Optimal:                  > or = 30 ng/mL
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For 25-OH Vitamin D testing on patients on D2-supplementation and patients for whom quantitation of D2 and D3 fractions is required, the QuestAssureD(TM) 25-OH VIT D, (D2,D3), LC/MS/MS is recommended: order code 92888 (patients >2yrs).

For additional information, please refer to http://education.QuestDiagnostics.com/faq/FAQ199 (This link is being provided for informational/ educational purposes only.)

Physician Comments:

Patient Information	Specimen Information	Client Information

Cardio IQ®

Test Name	Current Result & Risk: Optimal	Current Result & Risk: Non-Optimal	Risk/Reference Interval: Optimal	Moderate	High	Units	Historical Result & Risk
LIPID PANEL							
CHOLESTEROL, TOTAL		292	<200	N/A	>=200	mg/dL	
HDL CHOLESTEROL	83		>=50	N/A	<50	mg/dL	
TRIGLYCERIDES	53		<150	150-199	>=200	mg/dL	
LDL-CHOLESTEROL		194	<100	100-129	>129	mg/dL (calc)	
CHOL/HDLC RATIO	3.5		<=3.5	3.6-5.0	>5.0	calc	
NON-HDL CHOLESTEROL		209	<130	130-189	>=190	mg/dL (calc)	
LIPOPROTEIN FRACTIONATION, ION MOBILI							
LDL PARTICLE NUMBER		2322	<1138	1138-1409	>1409	nmol/L	
LDL SMALL		260	<142	142-219	>219	nmol/L	
LDL MEDIUM		324	<215	215-301	>301	nmol/L	
HDL LARGE	7547		>6729	6729-5353	<5353	nmol/L	
LDL PATTERN	A		A	N/A	B	Pattern	
LDL PEAK SIZE	226.1		>222.9	222.9-217.4	<217.4	Angstrom	
APOLIPOPROTEINS							
APOLIPOPROTEIN B		121	<90	90-119	>=120	mg/dL	
LIPOPROTEIN (a)	<10		<75	75-125	>125	nmol/L	

For details on reference ranges please refer to the reference range/comment section of the report.

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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 questions about any of the tests in our Cardio IQ offering, please call Client Services at our Quest Diagnostics-Cleveland HeartLab Cardiometabolic Center of Excellence. They can be reached at 866.358.9828, option 1 to arrange a consult with our clinical education team.

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Reference Range/Comments

Analyte Name	In Range	Out Range	Reference Range	Lab
APOLIPOPROTEIN B		121	<90 mg/dL	Z4M
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.				
CHOLESTEROL, TOTAL		292	<200 mg/dL	Z4M
LDL MEDIUM		324	<215 nmol/L	Z4M
Relative Risk: Optimal <215; Moderate 215-301; High >301. Reference Range: <215 nmol/L.				
LDL PARTICLE NUMBER		2322	<1138 nmol/L	Z4M
Relative Risk: Optimal <1138; Moderate 1138-1409; High >1409. Reference Range: <1138 nmol/L.				
LDL SMALL		260	<142 nmol/L	Z4M
Relative Risk: Optimal <142; Moderate 142-219; High >219. Reference Range: <142 nmol/L.				
LDL-CHOLESTEROL		194	<100 mg/dL (calc)	Z4M
LDL-C levels > or = 190 mg/dL may indicate familial hypercholesterolemia (FH). Clinical assessment and measurement of blood lipid levels should be considered for all first degree relatives of patients with an FH diagnosis. LDL Cholesterol (LDL-C) levels > or = 300 mg/dL may indicate homozygous familial hypercholesterolemia (HoFH). Untreated, these extremely high LDL-C levels can result in premature CV events and mortality. Patients should be identified early and provided appropriate interventions to reduce the cumulative LDL-C burden from birth. For questions about testing for familial hypercholesterolemia, please call Quest Genomics Client Services at 1.866.GENE.INFO. Jacobson T, et al. J National Lipid Association Recommendations for Patient-Centered Management of Dyslipidemia: Part 1 Journal of Clinical Lipidology 2015;9(2), 129-169. Cuchel, M. et al. (2014). Homozygous familial hypercholesterolaemia: new insights and guidance for clinicians to improve detection and clinical management. European Heart Journal, 35(32), 2146-2157. 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		209	<130 mg/dL (calc)	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.				
CHOL/HDLC RATIO	3.5		<3.6 calc	Z4M
HDL CHOLESTEROL	83		>49 mg/dL	Z4M
HDL LARGE	7547		>6729 nmol/L	Z4M
Relative Risk: Optimal >6729; Moderate 6729-5353; High <5353. Reference Range: >6729 nmol/L.				
LDL PATTERN	A		A Pattern	Z4M
Relative Risk: Optimal Pattern A; High Pattern B. Reference Range: Pattern A.				
LDL PEAK SIZE	226.1		>222.9 Angstrom	Z4M
Relative Risk: Optimal >222.9; Moderate 222.9-217.4; High <217.4. Reference Range: >222.9 Angstrom. Adult cardiovascular event risk category cut points (optimal, moderate, high) are based on an adult U.S. reference population plus two large cohort study populations. Association between lipoprotein subfractions and cardiovascular events is based on Musunuru et al. ATVB.2009;29:1975. For additional information, please refer to http://education.QuestDiagnostics.com/faq/FAQ134 (This link is being provided for informational/educational purposes only.)This test was developed and its analytical performance characteristics have been determined by Quest Diagnostics Cardiometabolic Center of Excellence at Cleveland HeartLab. It has not been cleared or approved by the U.S. Food and Drug Administration. This assay has been validated pursuant to the CLIA regulations and is used for clinical purposes.				
LIPOPROTEIN (a)	<10		<75 nmol/L	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.				
TRIGLYCERIDES	53		<150 mg/dL	Z4M