



Legend

Result Value Colors

Normal Result is within the clinical reference range

Result Value Labels

- H** Above High Normal
- A** Abnormal

Comments

FASTING: YES FASTING: YES

Result	Value	Reference Range	Lab
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Cardiovascular Health

Cholesterol & Triglycerides

Lipid Panel with Ratios

Cholesterol, Total

CHOLESTEROL, TOTAL	275 H 03/22/23	<200 mg/dL	SKY
TRIGLYCERIDES	49 03/22/23	<150 mg/dL	SKY
CHOL/HDLRATIO	2.7 03/22/23	<5.0 (calc)	SKY
LDL/HDL RATIO	1.6 03/22/23	(calc)	SKY

Comments

Below average Risk:	<2.34
Average Risk:	2.35-4.12
Moderate Risk:	4.13-5.56
High Risk:	>5.57

NON HDL CHOLESTEROL	174 H 03/22/23	<130 mg/dL (calc)	SKY
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Result	Value	Reference Range	Lab
Comments	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.		

HDL Particles

Apolipoprotein A1 + B

APOLIPOPROTEIN A1	225 03/22/23	mg/dL	EZ
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Comments	Reference Range: > or = 125 Risk Category: Optimal > or = 125 High <125 Cardiovascular event risk category cut points (optimal, high) are based on the AMORIS study, Walldius G et al. J Intern Med. 2004;255:188-205.		
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APOLIPOPROTEIN B/A1 RATIO	0.47 03/22/23		EZ
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Comments	Reference Range: <0.63 Risk Category: Optimal <0.63 Moderate 0.63-0.78 High >0.78 Cardiovascular event risk category cut points (optimal, moderate, high) are based on the AMORIS study, Walldius G et al. J Intern Med. 2004;255:188-205.		
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Lipid Panel with Ratios

HDL CHOLESTEROL	101 03/22/23	> OR = 50 mg/dL	SKY
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Lipoprotein Fractionation, Ion Mobility, Cardio IQ™

HDL LARGE	11801 03/22/23	>6729 nmol/L	Z4M
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Comments	Relative Risk: Optimal >6729; Moderate 6729-5353; High <5353. Reference Range: >6729 nmol/L.		
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LDL Particles

Result	Value	Reference Range	Lab
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Apolipoprotein A1 + B

APOLIPOPROTEIN B	105 H 03/22/23	mg/dL	EZ
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Comments Reference Range: <90

Risk Category:

Optimal <90
 Moderate 90–119
 High > or = 120

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.

Lipid Panel with Ratios

LDL-CHOLESTEROL	159 H 03/22/23	mg/dL (calc)	SKY
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Comments Reference range: <100

Desirable range <100 mg/dL for primary prevention; <70 mg/dL for patients with CHD or diabetic patients with > or = 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>)

Lipoprotein Fractionation, Ion Mobility, Cardio IQ™

LDL PARTICLE NUMBER	2002 H 03/22/23	<1138 nmol/L	Z4M
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Comments Relative Risk: Optimal <1138; Moderate 1138–1409; High >1409.
 Reference Range: <1138 nmol/L.

LDL SMALL	254 H 03/22/23	<142 nmol/L	Z4M
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Comments Relative Risk: Optimal <142; Moderate 142–219; High >219. Reference Range: <142 nmol/L.

LDL MEDIUM	327 H 03/22/23	<215 nmol/L	Z4M
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Result	Value	Reference Range	Lab
Comments	Relative Risk: Optimal <215; Moderate 215–301; High >301. Reference Range: <215 nmol/L.		
LDL PATTERN	A 03/22/23	A Pattern	Z4M
Comments	Relative Risk: Optimal Pattern A; High Pattern B. Reference Range: Pattern A.		
LDL PEAK SIZE	226.7 03/22/23	>222.9 Angstrom	Z4M
Comments	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.		

Coagulation

Fibrinogen Activity, Clauss

FIBRINOGEN ACTIVITY, CLAUSS	257 03/22/23	175-425 mg/dL	KS
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Inflammation

C-Reactive Protein (CRP)

C-REACTIVE PROTEIN	0.6 03/22/23	<8.0 mg/L	KS
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Metabolic & Endocrine Health

Thyroid

T3 Total

Result	Value	Reference Range	Lab
T3, TOTAL	122 03/22/23	76-181 ng/dL	KS

T3 Uptake

T3 UPTAKE	29 03/22/23	22-35 %	KS
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T4 (Thyroxine), Total

T4 (THYROXINE), TOTAL	8.5 03/22/23	5.1-11.9 mcg/dL	KS
FREE T4 INDEX (T7)	2.5 03/22/23	1.4-3.8	KS

TSH

TSH	1.43 03/22/23	0.40-4.50 mIU/L	SKY
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Diabetes & Insulin Resistance

Comprehensive Metabolic Panel (CMP)

GLUCOSE	83 03/22/23	65-99 mg/dL	SKY
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Comments Fasting reference interval

Hemoglobin A1c (HgbA1C)

HEMOGLOBIN A1c	5.2 03/22/23	<5.7 % of total Hgb	KS
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Comments For the purpose of screening for the presence of diabetes:

- <5.7% Consistent with the absence of diabetes
- 5.7–6.4% Consistent with increased risk for diabetes (prediabetes)
- > or =6.5% 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)

Result	Value	Reference Range	Lab
	<p>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).</p>		

Reproductive Hormones

DHEA Sulfate, Immunoassay

DHEA SULFATE	82 03/22/23	9-118 mcg/dL	KS
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Comments

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

Estradiol

ESTRADIOL	<15 03/22/23	pg/mL	KS
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Comments

Reference Range

Follicular Phase:	19-144
Mid-Cycle:	64-357
Luteal Phase:	56-214
Postmenopausal:	< or = 31

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 inappropriate clinical assessment of estrogen status. Quest Diagnostics order code 30289-Estradiol, Ultrasensitive LC/MS/MS demonstrates negligible cross reactivity with fulvestrant.

Estrogen, Total, Serum

Result	Value	Reference Range	Lab
ESTROGEN, TOTAL, SERUM	132.6 03/22/23	pg/mL	EZ

Comments

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.

Progesterone, Immunoassay

PROGESTERONE	<0.5 03/22/23	ng/mL	KS
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Comments

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

Testosterone, Free (Dialysis) and Total MS

TESTOSTERONE, TOTAL, MS	31 03/22/23	2-45 ng/dL	Z3E
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Comments

For additional information, please refer to <https://education.questdiagnostics.com/faq/FAQ165>
 (This link is being provided for informational/educational purposes only.)
 (Note)

This test was developed and its analytical performance characteristics have been determined by medfusion. It has not been cleared or approved by the FDA. This assay has been validated pursuant to the CLIA regulations and is used for clinical purposes.

TESTOSTERONE, FREE	1.9 03/22/23	0.1-6.4 pg/mL	Z3E
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Comments

(Note)

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MDF

Result	Value	Reference Range	Lab
	[REDACTED]		
	[REDACTED]		
	[REDACTED]		
	[REDACTED]		
	[REDACTED]		

Liver Health

Liver Enzymes and Function Tests

Comprehensive Metabolic Panel (CMP)

PROTEIN, TOTAL	7.2 03/22/23	6.1-8.1 g/dL	SKY
ALBUMIN	4.8 03/22/23	3.6-5.1 g/dL	SKY
GLOBULIN	2.4 03/22/23	1.9-3.7 g/dL (calc)	SKY
ALBUMIN/GLOBULIN RATIO	2.0 03/22/23	1.0-2.5 (calc)	SKY
BILIRUBIN, TOTAL	0.5 03/22/23	0.2-1.2 mg/dL	SKY
ALKALINE PHOSPHATASE	79 03/22/23	37-153 U/L	SKY
AST	20 03/22/23	10-35 U/L	SKY
ALT	15 03/22/23	6-29 U/L	SKY

Gamma Glutamyl Transferase (GGT)

GGT	14 03/22/23	3-65 U/L	SKY
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Lactate Dehydrogenase (LD)

LD	176 03/22/23	120-250 U/L	SKY
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Urinalysis (UA), Complete

BILIRUBIN	NEGATIVE 03/22/23	NEGATIVE	SKY
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Result	Value	Reference Range	Lab
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Kidney & Urinary Health

Kidney Function Metabolic

Comprehensive Metabolic Panel (CMP)

UREA NITROGEN (BUN)	27 H 03/22/23	7-25 mg/dL	SKY
CREATININE	1.04 03/22/23	0.50-1.05 mg/dL	SKY
EGFR	61 03/22/23	> OR = 60 mL/min/1.73m ²	SKY

Comments: The eGFR is based on the CKD-EPI 2021 equation. To calculate the new eGFR from a previous Creatinine or Cystatin C result, go to <https://www.kidney.org/professionals/kdoqi/gfr%5Fcalculator>

BUN/CREATININE RATIO	26 H 03/22/23	6-22 (calc)	SKY
CALCIUM	9.5 03/22/23	8.6-10.4 mg/dL	SKY

Uric Acid

URIC ACID	4.3 03/22/23	2.5-7.0 mg/dL	SKY
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Comments: Therapeutic target for gout patients: <6.0 mg/dL

Kidney & Urinalysis

Urinalysis (UA), Complete

COLOR	YELLOW 03/22/23	YELLOW	SKY
APPEARANCE	CLEAR 03/22/23	CLEAR	SKY
SPECIFIC GRAVITY	1.023 03/22/23	1.001-1.035	SKY
PH	6.0 03/22/23	5.0-8.0	SKY
GLUCOSE	NEGATIVE 03/22/23	NEGATIVE	SKY

Result	Value	Reference Range	Lab
KETONES	NEGATIVE 03/22/23	NEGATIVE	SKY
OCCULT BLOOD	NEGATIVE 03/22/23	NEGATIVE	SKY
PROTEIN	NEGATIVE 03/22/23	NEGATIVE	SKY
NITRITE	NEGATIVE 03/22/23	NEGATIVE	SKY
LEUKOCYTE ESTERASE	1+ A 03/22/23	NEGATIVE	SKY
WBC	0-5 03/22/23	< OR = 5 /HPF	SKY
RBC	NONE SEEN 03/22/23	< OR = 2 /HPF	SKY
SQUAMOUS EPITHELIAL CELLS	NONE SEEN 03/22/23	< OR = 5 /HPF	SKY
BACTERIA	FEW A 03/22/23	NONE SEEN /HPF	SKY
CRYSTALS	NONE SEEN 03/22/23	NONE SEEN /HPF	SKY
CASTS	NONE SEEN 03/22/23	NONE SEEN /LPF	SKY
YEAST	NONE SEEN 03/22/23	NONE SEEN /HPF	SKY
NOTE	See Below 03/22/23		SKY

Comments

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

Electrolytes

Electrolytes

Comprehensive Metabolic Panel (CMP)

SODIUM	142 03/22/23	135-146 mmol/L	SKY
POTASSIUM	4.2 03/22/23	3.5-5.3 mmol/L	SKY

Result	Value	Reference Range	Lab
CHLORIDE	106 03/22/23	98-110 mmol/L	SKY
CARBON DIOXIDE	29 03/22/23	20-32 mmol/L	SKY

Blood Health

Iron

Iron and Total Iron Binding Capacity (TIBC)

IRON, TOTAL	62 03/22/23	45-160 mcg/dL	KS
IRON BINDING CAPACITY	318 03/22/23	250-450 mcg/dL (calc)	KS
% SATURATION	19 03/22/23	16-45 % (calc)	KS

Platelets

CBC (includes Differential and Platelets)

PLATELET COUNT	302 03/22/23	140-400 Thousand/uL	SKY
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Red Blood Cells

CBC (includes Differential and Platelets)

RED BLOOD CELL COUNT	4.93 03/22/23	3.80-5.10 Million/uL	SKY
HEMOGLOBIN	14.9 03/22/23	11.7-15.5 g/dL	SKY
HEMATOCRIT	44.2 03/22/23	35.0-45.0 %	SKY
MCV	89.7 03/22/23	80.0-100.0 fL	SKY
MCH	30.2 03/22/23	27.0-33.0 pg	SKY
MCHC	33.7 03/22/23	32.0-36.0 g/dL	SKY

Result	Value	Reference Range	Lab
RDW	12.4 03/22/23	11.0-15.0 %	SKY
MPV	9.6 03/22/23	7.5-12.5 fL	SKY

White Blood Cells

CBC (includes Differential and Platelets)

WHITE BLOOD CELL COUNT	8.5 03/22/23	3.8-10.8 Thousand/uL	SKY
ABSOLUTE NEUTROPHILS	6605 03/22/23	1500-7800 cells/uL	SKY
ABSOLUTE LYMPHOCYTES	1377 03/22/23	850-3900 cells/uL	SKY
ABSOLUTE MONOCYTES	383 03/22/23	200-950 cells/uL	SKY
ABSOLUTE EOSINOPHILS	60 03/22/23	15-500 cells/uL	SKY
ABSOLUTE BASOPHILS	77 03/22/23	0-200 cells/uL	SKY
NEUTROPHILS	77.7 03/22/23	%	SKY
LYMPHOCYTES	16.2 03/22/23	%	SKY
MONOCYTES	4.5 03/22/23	%	SKY
EOSINOPHILS	0.7 03/22/23	%	SKY
BASOPHILS	0.9 03/22/23	%	SKY

Vitamins, Minerals & Dietary Fatty Acids

Vitamins

QuestAssureD™ 25-Hydroxyvitamin D (D2, D3), LC/MS/MS

VITAMIN D, 25-OH, TOTAL	44 03/22/23	30-100 ng/mL	Z3E
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Result	Value	Reference Range	Lab
Comments	<p>(Note)</p> <p>Vitamin D, 25-Hydroxy reports concentrations of two common forms, 25-OHD2 and 25-OHD3. 25-OHD3 indicates both endogenous production and supplementation. 25-OHD2 is an indicator of exogenous sources such as diet or supplementation. Therapy is based on measurement of Total 25-OHD, with levels <20 ng/mL indicative of Vitamin D deficiency, while levels between 20 ng/mL and 30 ng/mL suggest insufficiency. Optimal levels are > or = 30 ng/mL.</p> <p>Vitamin D is fat-soluble and therefore inadvertent or intentional ingestion of excessively high amounts could be toxic. Studies in children and adults suggest blood levels would need to exceed 150 ng/mL before there is any concern. Holick MF, Binkley NC, Bischoff-ferrari HA, et al. Evaluation, treatment and prevention of vitamin D deficiency: an Endocrine Society clinical practice guideline. J Clin Endocrinol Metab. 2011;96(7):1911-30.</p> <p>For additional information, please refer to http://education.QuestDiagnostics.com/faq/FAQ199</p>		
VITAMIN D, 25-OH, D3	<p>44 03/22/23</p>	ng/mL	Z3E
Comments	Reference range: Not established		
VITAMIN D, 25-OH, D2	<p><4.0 03/22/23</p>	ng/mL	Z3E
Comments	<p>(Note)</p> <p>Reference range: Not established</p> <p>This test was developed and its analytical performance characteristics have been determined by medfusion. It has not been cleared or approved by the US Food and Drug Administration. This assay has been validated pursuant to the CLIA regulation and is used for Clinical purposes.</p> <p>MDF med fusion [REDACTED] [REDACTED] [REDACTED] [REDACTED]</p> <p>See Note 1</p> <p>Note 1</p> <p>For additional information, please refer to http://education.QuestDiagnostics.com/faq/FAQ199 (This link is being provided for informational/educational purposes only.)</p>		

Result	Value	Reference Range	Lab
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Vitamin B12 (Cobalamin) and Folate Panel, Serum

VITAMIN B12	467 03/22/23	200-1100 pg/mL	KS
FOLATE, SERUM	15.8 03/22/23	ng/mL	KS

Comments	Reference Range
	Low: <3.4 Borderline: 3.4-5.4 Normal: >5.4

Minerals

Magnesium

MAGNESIUM	2.2 03/22/23	1.5-2.5 mg/dL	SKY
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Performing Laboratory Information

- SKY Quest Diagnostics-Utah Laboratory
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