ClevelandHeartLab® | Quest Diagnostics

| Patient Information | Specimen Information | Client Information |
|---|---|---|
| | | |

**COMMENTS:**     FASTING:YES

## Cardio IQ®

| Test Name | Current Result & Risk | | Risk/Reference Interval | | | Units | Historical Result & Risk | |
|---|---|---|---|---|---|---|---|---|
| | Optimal | Non-Optimal | Optimal | Moderate | High | | 04/21/2021 | 03/11/2021 |
| **LIPID PANEL** | | | | | | | | |
| CHOLESTEROL, TOTAL | | 329 | <200 | N/A | >=200 | mg/dL | 222 | 269 |
| HDL CHOLESTEROL | 58 | | >=40 | N/A | <40 | mg/dL | 52 | 55 |
| TRIGLYCERIDES | 63 | | <150 | 150-199 | >=200 | mg/dL | 54 | 52 |
| LDL-CHOLESTEROL | | 255 | <100 | 100-129 | >129 | mg/dL (calc) | 155 | 200 |
| CHOL/HDLC RATIO | | 5.7 | <=3.5 | 3.6-5.0 | >5.0 | calc | 4.3 | 4.9 |
| NON-HDL CHOLESTEROL | | 271 | <130 | 130-189 | >=190 | mg/dL (calc) | 170 | 214 |
| **LIPOPROTEIN FRACTIONATION, ION MOBILITY** | | | | | | | | |
| LDL PARTICLE NUMBER | | 2255 | <1138 | 1138-1409 | >1409 | nmol/L | 1110 | 1837 |
| LDL SMALL | | 293 | <142 | 142-219 | >219 | nmol/L | 99 | 181 |
| LDL MEDIUM | | 638 | <215 | 215-301 | >301 | nmol/L | 240 | 447 |
| HDL LARGE | | 6150 | >6729 | 6729-5353 | <5353 | nmol/L | 4294 | 5806 |
| LDL PATTERN | A | | A | N/A | B | Pattern | A | A |
| LDL PEAK SIZE | | 220.5 | >222.9 | 222.9-217.4 | <217.4 | Angstrom | 223.0 | 221.1 |
| **APOLIPOPROTEINS** | | | | | | | | |
| APOLIPOPROTEIN B | | 161 | <90 | 90-119 | >=120 | mg/dL | 104 | 121 |
| LIPOPROTEIN (a) | 10 | | <75 | 75-125 | >125 | nmol/L | 12 | <10 |

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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**PATIENT PROGRESS SUMMARY**

<span style="background-color:green;color:white;">Optimal</span>  <span style="background-color:yellow;">Moderate</span>  <span style="background-color:red;color:white;">High</span>

| Test Name | 01/26/2022 (Current) | | 03/12/2021 | 02/28/2021 | 10/27/2020 |
|---|---|---|---|---|---|
| **LIPID PANEL** | | | | | |
| TRIGLYCERIDES | 63 | 54 | 52 | 54 | 64 |
| CHOLESTEROL, TOTAL | 329 | 222 | 269 | 283 | 262 |
| HDL CHOLESTEROL | 58 | 52 | 55 | 59 | 47 |
| LDL-CHOLESTEROL | 255 | 155 | 200 | 208 | 199 |
| CHOL/HDLC RATIO | 5.7 | 4.3 | 4.9 | 4.8 | 5.6 |
| NON-HDL CHOLESTEROL | 271 | 170 | 214 | 224 | 215 |
| **LIPOPROTEIN FRACTIONATION, ION MOB** | | | | | |
| LDL PARTICLE NUMBER | 2255 | 1110 | 1837 | 1962 | 1698 |
| LDL SMALL | 293 | 99 | 181 | 153 | 173 |
| LDL MEDIUM | 638 | 240 | 447 | 403 | 461 |
| HDL LARGE | 6150 | 4294 | 5806 | 6071 | 4218 |
| **APOLIPOPROTEINS** | | | | | |
| LIPOPROTEIN (a) | 10 | 12 | <10 | <10 | 12 |
| APOLIPOPROTEIN B | 161 | 104 | 121 | 138 | 135 |
| **LIPOPROTEIN FRACTIONATION, ION MOB** | | | | | |
| LDL PEAK SIZE | 220.5 | 223.0 | 221.1 | 224.2 | 219.9 |
| LDL PATTERN | A | A | A | A | A |

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|---|---|---|
| | | |

### Reference Range/Comments

| Analyte Name | In Range | Out Range | Reference Range | Lab |
|---|---|---|---|---|
| APOLIPOPROTEIN B | | **162** | <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. | | | | |
| CHOL/HDLC RATIO | | **5.7** | <3.6 calc | Z4M |
| CHOLESTEROL, TOTAL | | **327** | <200 mg/dL | Z4M |
| HDL LARGE | | **6150** | >6729 nmol/L | Z4M |
| Relative Risk: Optimal >6729; Moderate 6729-5353; High <5353. Reference Range: >6729 nmol/L. | | | | |
| LDL MEDIUM | | **637** | <215 nmol/L | Z4M |
| Relative Risk: Optimal <215; Moderate 215-301; High >301. Reference Range: <215 nmol/L. | | | | |
| LDL PARTICLE NUMBER | | **2255** | <1138 nmol/L | Z4M |
| Relative Risk: Optimal <1138; Moderate 1138-1409; High >1409. Reference Range: <1138 nmol/L. | | | | |
| LDL PEAK SIZE | | **220.5** | >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 is performed by an Ion Mobility 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. | | | | |
| LDL SMALL | | **293** | <142 nmol/L | Z4M |
| Relative Risk: Optimal <142; Moderate 142-219; High >219. Reference Range: <142 nmol/L. | | | | |
| LDL-CHOLESTEROL | | **256** | <100 mg/dL (calc) | 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 levels >=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. For questions about testing for familial hypercholesterolemia, please call Quest Genomics Client Services at 1.866.GENE.INFO. Jacobson T, et al. National Lipid Association Recommendations for Patient-Centered Management of Dyslipidemia: Part 1 Journal of Clinical Lipidology 2015;9(2),129-169. 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 | | **271** | <130 mg/dL (calc) | Z4M |
| Non-HDL level >=220 is very high and may indicate genetic 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. | | | | |
| HDL CHOLESTEROL | **58** | | >39 mg/dL | Z4M |
| LDL PATTERN | **A** | | A Pattern | Z4M |
| Relative Risk: Optimal Pattern A; High Pattern B. Reference Range: Pattern A. | | | | |
| 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 | **63** | | <150 mg/dL | Z4M |

**PERFORMING SITE:**

Z4M    CLEVELAND HEARTLAB INC, 6701 CARNEGIE AVENUE SUITE 500, CLEVELAND, OH 44103-4623 Laboratory Director: BILL G RICHENDOLLAR,MD, CLIA: 36D1032987