ClevelandHeartLab® Know your risk. | Quest Diagnostics®

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

**COMMENTS:**

## 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 | 180 | | <200 | N/A | >=200 | mg/dL | |
| HDL CHOLESTEROL | 59 | | >=40 | N/A | <40 | mg/dL | |
| TRIGLYCERIDES | 70 | | <150 | 150-199 | >=200 | mg/dL | |
| LDL-CHOLESTEROL | | 105 | <100 | 100-129 | >129 | mg/dL (calc) | |
| CHOL/HDLC RATIO | 3.1 | | <=3.5 | 3.6-5.0 | >5.0 | calc | |
| NON-HDL CHOLESTEROL | 121 | | <130 | 130-189 | >=190 | mg/dL (calc) | |
| **LIPOPROTEIN FRACTIONATION, ION MOBILIT** | | | | | | | |
| LDL PARTICLE NUMBER | | 1597 | <1138 | 1138-1409 | >1409 | nmol/L | |
| LDL SMALL | | 270 | <142 | 142-219 | >219 | nmol/L | |
| LDL MEDIUM | | 348 | <215 | 215-301 | >301 | nmol/L | |
| HDL LARGE | | 5593 | >6729 | 6729-5353 | <5353 | nmol/L | |
| LDL PATTERN | A | | A | N/A | B | Pattern | |
| LDL PEAK SIZE | | 217.8 | >222.9 | 222.9-217.4 | <217.4 | Angstrom | |
| **APOLIPOPROTEINS** | | | | | | | |
| APOLIPOPROTEIN B | 87 | | <90 | 90-129 | >=130 | mg/dL | |
| LIPOPROTEIN (a) | 10 | | <75 | 75-125 | >125 | nmol/L | |
| **INFLAMMATION** | | | | | | | |
| HS CRP | 0.4 | | <1.0 | 1.0-3.0 | >3.0 | mg/L | |



CLIENT SERVICES: 866.697.8378

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| | | |

| Test Name | Current Result & Risk | | Risk/Reference Interval | | | Units | Historical Result & Risk |
|---|---|---|---|---|---|---|---|
| | Optimal | Non-Optimal | Optimal | Moderate | High | | |
| LP PLA2 ACTIVITY | 101 | | <=123 | N/A | >123 | nmol/min/mL | |

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

**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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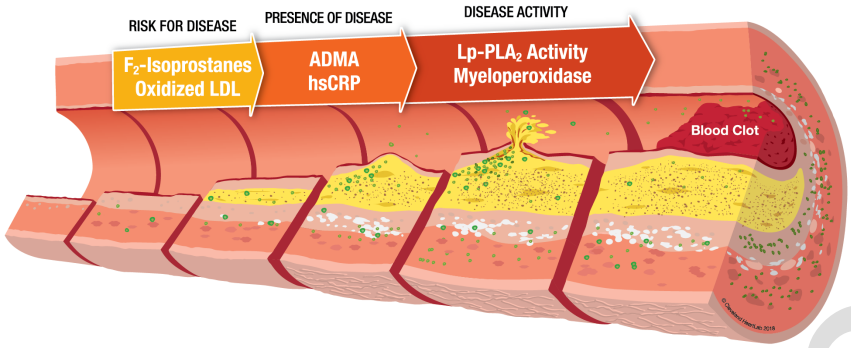
## INFLAMMATION SUMMARY

**Your medical provider has gone beyond standard testing to examine your inflammation levels so you can Know Your Risk® for heart attack and stroke!**

Lowering blood pressure, blood sugar and cholesterol reduces risk, but 50% of heart attack or stroke victims have normal cholesterol levels. Measuring inflammation levels can help identify hidden risk so your provider can catch the beginning or treat advanced stages of vascular disease. Always review your results and treatment considerations with your medical provider.




**Disclaimer:** The information provided here is for educational purposes only, and the results provided should be reviewed and interpreted by the treating physician.
This Inflammation Summary is generated when two or more of the inflammation tests listed below are ordered, or for repeat tests due to a sample problem.

### Risk for Disease

| Test | Result |
|---|---|
| F2-Isoprostanes/Creatinine | TNO |

***This urine test was not ordered.***

*Your body needs F2-Isoprostanes for basic functions like making muscle. In excess, F2-Isops caused by inactivity, smoking and processed foods increase oxidation and blood vessel damage.*

| Test | Result |
|---|---|
| Oxidized LDL | TNO |

***This blood test was not ordered.***

*OxLDL measures oxidized damage to LDL cholesterol (bad cholesterol). High levels trigger inflammation, increasing your risk of developing metabolic syndrome and your future risk of plaque build-up.*

#### Your Lifestyle Considerations

- Continue to focus on a healthy diet and exercise regularly to reduce your risk of developing cardiovascular disease in the future.

### Presence of Disease

| Test | Result |
|---|---|
| ADMA/SDMA | TNO |

***This blood test was not ordered.***

*ADMA is a chemical in your blood that reduces nitric oxide, a molecule needed to keep a healthy endothelium (the cells that line your blood vessels). High levels of ADMA indicate unhealthy cells in the blood vessel and may identify risk of cardiovascular disease.*

| Test | Result |
|---|---|
| hsCRP mg/L | 0.4 L |

**Your result in the desirable range suggests that you have low amounts of general inflammation in your body.**

*hsCRP measures inflammation in the body. Increases of hsCRP are seen with recent illness, tissue injury, if you are fighting a virus or infection, with periodontal (gum) disease as well as with cardiovascular disease.*

### Disease Activity

| Test | Result |
|---|---|
| Lp-PLA2 Activity nmol/min/mL | 101 L |

**Your result is in the desirable range suggesting that you may have limited active cholesterol build-up.**

*Lp-PLA2 Activity measures vascular-specific inflammation. When cholesterol enters and gets trapped in the vessel wall, inflammation occurs. Lp-PLA2 Activity may identify active cholesterol build-up inside the vessel wall and the progression of cardiovascular disease.*

| Test | Result |
|---|---|
| Myeloperoxidase | TNO |

***This blood test was not ordered.***

*MPO identifies vulnerable plaque due to the breakdown of cells lining the blood vessel. This breakdown leads to white blood cells attacking the vessel wall and marks the progression of cardiovascular disease.*

**"L" or Low Risk**
**UND = Undetectable**

**"M" or Moderate Risk**

**"H" or High Risk**

**TNO = Test Not Ordered**
**TNP = Test Not Performed**
**INC = Incomputable**

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| | | |

**Reference Range/Comments**

| Analyte Name | In Range | Out Range | Reference Range | Lab |
|---|---|---|---|---|
| HDL LARGE | | **5593** | >6729 nmol/L | Z4M |
| Relative Risk: Optimal >6729; Moderate 6729-5353; High <5353. Male Reference Range: 4334 to 10815 nmol/L; Female Reference Range: 5038 to 17886 nmol/L. | | | | |
| LDL MEDIUM | | **348** | <215 nmol/L | Z4M |
| Relative Risk: Optimal <215; Moderate 215-301; High >301. Male Reference Range: 167 to 485 nmol/L; Female Reference Range: 121 to 397 nmol/L. | | | | |
| LDL PARTICLE NUMBER | | **1597** | <1138 nmol/L | Z4M |
| Relative Risk: Optimal <1138; Moderate 1138-1409; High >1409. Male and Female Reference Range: 1016 to 2185 nmol/L. | | | | |
| LDL PEAK SIZE | | **217.8** | >222.9 Angstrom | Z4M |
| 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. Relative Risk: Optimal >222.9; Moderate 222.9-217.4; High <217.4. Male and Female Reference Range: 216 to 234.3 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.) | | | | |
| LDL SMALL | | **270** | <142 nmol/L | Z4M |
| Relative Risk: Optimal <142; Moderate 142-219; High >219. Male Reference Range: 123 to 441 nmol/L; Female Reference Range: 115 to 386 nmol/L. | | | | |
| LDL-CHOLESTEROL | | **105** | <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 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) | | | | |
| APOLIPOPROTEIN B | **87** | | <90 mg/dL | Z4M |
| Reference Range <90<br><br>Risk Category:<br>Optimal <90<br>Moderate 90-129<br>High > or = 130<br><br>A desirable treatment target may be <80 mg/dL or lower depending on the risk category of the patient including patients on lipid lowering therapies, patients with ASCVD, diabetes with >1 risk factors, Stage 3 or greater CKD with albuminuria, or heterozygous familial hypercholesterolemia. ApoB relative risk category cut points are based on AACE/ACE and ACC/AHA recommendations (Grundy SM, et al. 2019. doi:10.1016/j.jacc.2018.11.002; Handelsman Y, et al. 2020. doi:10.4158/CS-2020-0490). | | | | |
| CHOL/HDLC RATIO | **3.1** | | <5.0 calc | Z4M |
| CHOLESTEROL, TOTAL | **180** | | <200 mg/dL | Z4M |
| HDL CHOLESTEROL | **59** | | >39 mg/dL | Z4M |
| HS CRP | **0.4** | | <1.0 mg/L | Z4M |
| Reference Range: Optimal <1.0 mg/L, according to Jellinger PS et al. Endocr Pract.2017;23(Suppl 2):1-87. The AHA/CDC Guidelines recommend hs-CRP ranges for identifying Relative Cardiovascular Risk in patients ages >17 years: <1.0 mg/L Lower Relative Cardiovascular Risk; 1.0-3.0 mg/L Average Relative Cardiovascular Risk; 3.1-10.0 mg/L Higher Relative Cardiovascular Risk. If result is between 3.1 and 10.0 mg/L, consider retesting in 1-2 weeks to exclude a benign transient elevation secondary to infection or inflammation from the baseline CRP value. Persistent elevations of >10.0 | | | | |

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| | | |

**Reference Range/Comments**

| Analyte Name | In Range | Out Range | Reference Range | Lab |
|---|---|---|---|---|
| mg/L upon retesting may be associated with infection and inflammation. The AHA/CDC recommendations are based on Pearson TA, Mensah GA, Alexander RW, et al. Markers of inflammation and cardiovascular disease: application to clinical and public health practice: A statement for healthcare professionals from the Centers for Disease Control and Prevention and the American Heart Association. Circulation 2003; 107(3): 499-511. | | | | |
| 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. | | | | |
| LP PLA2 ACTIVITY | **101** | | <124 nmol/min/mL | Z4M |
| Relative Risk: Optimal <=123 nmol/min/mL; High >123 nmol/min/mL. This test was developed and its analytical performance characteristics have been determined by Quest Diagnostics. 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. | | | | |
| NON HDL CHOLESTEROL | **121** | | <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. | | | | |
| TRIGLYCERIDES | **70** | | <150 mg/dL | Z4M |

**PERFORMING SITE:**

Z4M CLEVELAND HEARTLAB INC, 6701 CARNEGIE AVENUE SUITE 500, CLEVELAND, OH 44103-4623 Laboratory Director: M. QASIM ANSARI, MD , CLIA: 36D1032987